
North American Seasonal Fire Assessment and Outlook

National Interagency Fire Center • Natural Resources Canada • Servicio Meteorológico Nacional
United States Canada Mexico

Outlook Period October, November, and December 2020
Issued 9 October 2020

Executive Summary

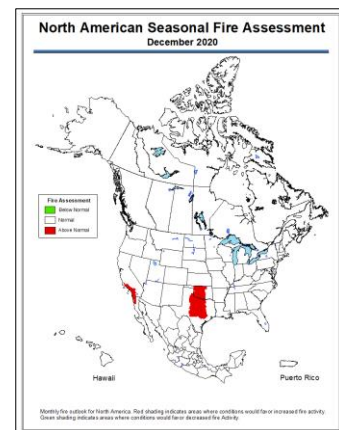
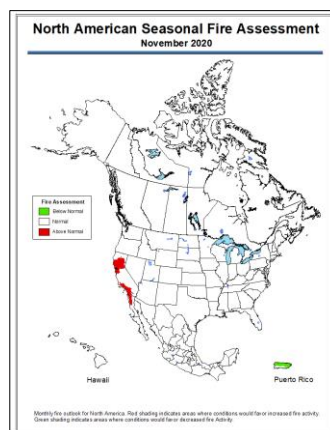
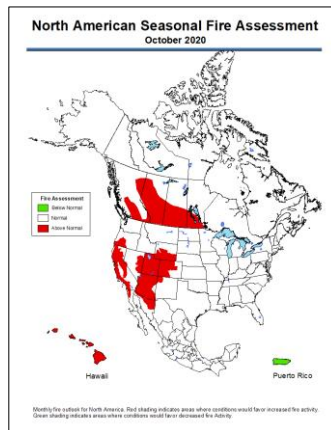
Dry conditions continue across British Columbia's interior and the Prairie Provinces having persisted for more than two months in far southern regions. This pattern marks the northern edge of the hot and dry conditions that have led to severe fire activity in the western United States (US), although fire activity in Canada is minimal with a few stubborn blazes in southern British Columbia and Alberta. These regions will likely continue to be prone to fire in forest, brush, or grasslands over the next few weeks. In eastern Canada, although deep forest floor moisture is still lacking in New Brunswick and parts of the other Atlantic Provinces, the middle and upper organic layers are moist enough that fire is likely not an issue. Central Ontario and Quebec have received adequate rainfall to alleviate fire concerns.

Multiple wind events resulted in significant large fire activity in the western US, including a historic offshore wind event that began Labor Day and continued during the following few days. Rapid fire spread and extreme fire behavior developed on numerous new and existing large fires across the West Coast. Early in September, the Creek Fire in southern California produced the first two pyrotornadoes ever surveyed by the National Weather Service. Fire activity also increased across much of the West in response to the heat waves and very dry fuels.

La Niña, ongoing large fire activity, and current fuel conditions are the main drivers of significant fire potential through fall and into winter. Drought conditions are expected to continue for much of California, the Great Basin, and the Southwest through October with drying expected to increase across portions of the southern Plains and possibly the southeast US later in the fall. Above normal significant fire potential is expected across much of California, Arizona, eastern Nevada, Utah, Colorado Rockies, and southern Wyoming in October. However, fire activity and potential will likely diminish across the West, except for portions of California, and remain normal over the eastern half of the US through November. Elevated periods of fire activity are likely in portions of Oklahoma and Texas and possibly in other locations in the southeast US during fall into winter.

Low forest fire activity continues in much of Mexico. In the last three months, rainfall in most of Mexico has been below normal, except in the Pacific states, from Jalisco to Chiapas, which have been above normal as well as the north of Nuevo León and Tamaulipas. The rainy season is almost over with vegetation remaining moist, and the winter season is expected to help further conserve fuel moisture. Average monthly temperatures in recent months have been above normal, although sporadic cold frontal passages have helped fuels retain their moisture.

Overall, in Mexico, precipitation is expected to be near normal in October with forecast below normal precipitation for November-December. Above normal temperatures are forecast for most of the country through the outlook period. Some parts of northwestern Mexico will experience periods of above normal significant fire potential risk due to forecast hot, dry, and unstable conditions through the fall. However, these conditions may be mitigated at times by the passage of upper-level troughs.



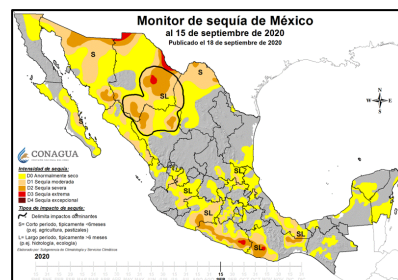
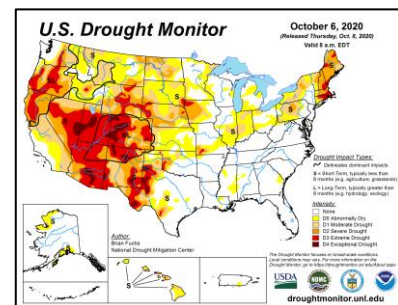
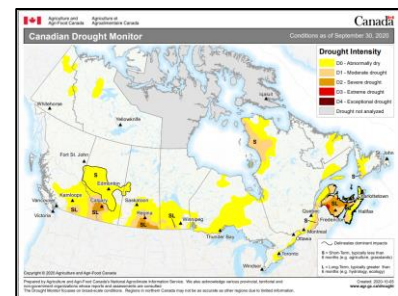
Monthly fire outlook for North America for October 2020 (left), November 2020 (middle), and December 2020 (right). Red shading indicates areas where conditions would favor increased fire activity. Green shading indicates areas where conditions would favor decreased fire activity. *Click on each image to see larger versions.*

Critical Factors The critical factors influencing significant fire potential for this outlook period are:

El Niño-Southern Oscillation: La Niña developed in September with below average sea surface temperatures (SSTs) in the equatorial east-central and eastern Pacific Ocean. The Climate Predictor Center forecasts a 75% chance that La Niña conditions will continue through the winter. La Niña has the potential to significantly impact the fall fire season in California and Baja California by producing persistent drier than average conditions along with a possible higher frequency of wind events. Warmer and drier conditions are also likely to continue for much of the Great Basin, southwest US, and much of Mexico through the fall. Drier than average conditions may also develop across the southeast US this fall and winter.

Drought: Above normal temperatures and below normal precipitation continued across much the western US except for areas along and west of the Cascades. As a result, abnormally dry to exceptional drought conditions remain in much of the western US and onto portions of the High Plains. Landfalling tropical cyclones brought above normal conditions from the southern Plains through much of the southeast US while the northeast US remained relatively mild and dry.

Drought assessment shows patchy abnormally dry areas north of about 53° latitude; below that, an abnormally dry area is continuous from southern British Columbia eastward to the Ontario/Quebec border. Within this band, a few areas of moderate drought have appeared with the eastern end at Lake Superior, and an isolated area of moderate drought has developed on the east side of Hudson Bay near Inukjuak. Another band of dry conditions exists from the eastern Great Lakes to western Newfoundland, with the epicenter over New Brunswick and Prince Edward Island, where a patch of extreme drought exists. Around this, severe drought extends mainly west over Gaspésie, and moderate drought southwest into the New England states.



Top: Canadian Drought Monitor for 30 September (from *Agriculture and Agri-Food Canada*). **Middle:** United States Drought Monitor for 8 October (from *U.S. National Center for Environmental Information*). **Bottom:** Mexican Drought Monitor for 15 September (from *CONAGUA-Servicio Meteorológico Nacional*).

In the first half of August, precipitation was above average in eastern Mexico and in portions of northeast, central, and southeast Mexico and along the Pacific coast. This precipitation was the result of trough passages, tropical waves, and moisture from the Caribbean Sea, Gulf of Mexico, and Pacific Ocean. Drought recovery was observed in northern Veracruz and the coast of Jalisco and Nayarit. Below-average rainfall covered much of the country with the most significant deficits located on the Baja California Peninsula, in northwest and northern Mexico, and in areas of Zacatecas, Aguascalientes, Guanajuato, Michoacán, Guerrero, and Oaxaca. Due to these conditions, there was an expansion of drought in northwest and northern Mexico while the drought in the Mexican Pacific region from Michoacán to Oaxaca remained with minimal changes. As of 15 August, the moderate to extreme drought coverage (D1-D3) at the national level was 19.7%, 4.6% lower than what was observed on 31 July.

Fire Season Status: Although Canada's fire season was very quiet, a few active fires continue to burn in southern British Columbia and Alberta. The largest include a fire of over 7,000 hectares that started in mid-August north of the Kimberley/Cranbrook area in British Columbia. A human-caused fire started in early September in the eastern slopes of the Rocky Mountains west of Calgary and has recently been driven by strong winds and grown to over 3,500 hectares (as of 6 October). At this time, the fire was out of control with a local state of emergency declared. With continuing dry conditions, human-caused incidents could continue for a few weeks, with lightning starts negligible, a normal occurrence as autumn progresses.

Fire activity continued to increase across the western US in September as multiple extremely strong wind events exacerbated warmer and drier than normal conditions and ongoing fire activity. Year-to-date fire statistics show that through 8 October, 45,314 fires burned 3,228,826 hectares (7,978,603 acres) across the US. More than 4 million acres have burned in California alone, which is a record. The year-to-date acres burned is 27% above the 10-year average with the number of fires slightly below the 10-year average.

Year-to-date data show 5,593 forest fires have been registered in 32 states, affecting an area of 336,506 hectares. Of the total fires, 93% corresponded to herbaceous and shrub vegetation and 7% in timber. The states with the highest number of fires were: Mexico, Michoacán, Jalisco, Mexico City, Chihuahua, Chiapas, Puebla, Durango, Guerrero and Tlaxcala, which represent 79% of the national total. States with the largest area affected were: Guerrero, Baja California, Quintana Roo, Jalisco, Michoacán, Oaxaca, Chiapas, Durango, Nayarit and Campeche, which represent 76% of the national total.

Canada Discussion

October/November/December: In October, the fire season normally ends in northern Canada as rain begins turning to snow. Rainfall increases along the Pacific coast with the seasonal switch to autumn and winter. Forests in much of the rest of the country retain moisture, although deep-burning fires may still smolder in dry sites. Models generally predict warm and dry conditions continuing, especially east of the Rocky Mountains, likely prolonging burning conditions in southern British Columbia and Alberta extending eastward through the southern Prairies. Here, Buildup Index values of 40 or higher indicate High to Extreme classes as defined by the Canadian Wildland Fire Information System.

November normally brings the first continuous winter snow cover in much of Canada except for coastal regions, southwest Alberta, and southern Ontario and Quebec. Despite a La Niña, northern Pacific Ocean water temperatures remain warm in early October and models continue to predict warmth with near-normal precipitation east of the Rocky Mountains. While British Columbia may receive enough precipitation to eliminate most fire activity, it may continue to be possible in the Prairie Provinces. Dry conditions forecast by most models across the Great Lakes may allow fire activity in Ontario, although by this time of year the primary concern in most of Canada is for enough soil moisture to allow minimal fire activity the following spring.

Model guidance suggests December will have normal temperatures and possibly wetter than normal conditions in the Prairie Provinces, where fire potential through November may continue. Since a wet December in this region normally translates to snow, fire activity should return to normal winter (minimal) levels. In other regions, minimal fire activity should also prevail.

United States Discussion

October/November/December: Ongoing large fire activity, La Niña, and current fuel conditions are the main drivers of significant fire potential through fall and into winter. Drought conditions are expected to continue for much of California, the Great Basin, and the southwest US through October with drying expected to increase across portions of the southern Plains and later in the fall and winter in the southeast US. However, above normal precipitation is anticipated for much of the Pacific Northwest into the Northern Rockies due to the ongoing La Niña and transition to fall, which will likely improve drought conditions in these areas.

Significant fire potential is forecast to remain above normal for California due to the number of active large fires, near record dry fuels, and anticipated offshore wind events. Above normal significant fire potential is also expected across Arizona, eastern Nevada, Utah, Colorado Rockies, and southern Wyoming in October where very dry and in some cases record dry fuels continue. However, fire activity and potential will likely diminish across the western US, except for portions of California, and remain normal over the eastern half of the US in November. Elevated periods of fire activity are likely in portions of Oklahoma and Texas and possibly in other locations in the southeast US during fall into winter.

Mexico Discussion

October/November/December: Temperatures are expected to be above normal for much of Mexico through the fall and into winter. Below normal precipitation is likely in portions of northern, northwest, and central Mexico and near to above normal precipitation in portions of eastern and southern Mexico and southern Baja California. By November, mostly below normal precipitation is forecast across much of Mexico except for northwest portions of the country where near to above normal precipitation is possible. Much of Mexico is forecast to have drier than normal conditions through December as well.

Temperature, precipitation, and drought conditions across Mexico, together with the climatological analysis indicate continued above normal significant fire potential in northern Baja California October through December and in Sonora for October. For the rest of Mexico, wildfire risk will remain low because of high fuel moisture content, although sporadic increases in fire activity due to anthropogenic activity cannot be ruled out.

Additional Information

Additional and supplemental information for this outlook can be obtained at:

United States:

National Significant Wildland Fire Potential Outlook

http://www.predictiveservices.nifc.gov/outlooks/monthly_seasonal_outlook.pdf

Canada:

Canadian Wildland Fire Information System

<http://cwfis.cfs.nrcan.gc.ca/home>

Mexico:

Servicio Meteorológico Nacional

http://smn.cna.gob.mx/index.php?option=com_content&view=article&id=156&Itemid=113

Outlook Objective

The North American Seasonal Fire Assessment and Outlook is a general discussion of conditions that will affect the occurrence of wildland fires across Canada, the United States, and Mexico. Wildland fire

is a natural part of many ecosystems across North America. This document provides a broad assessment of those factors that will contribute to an increase or decrease of seasonal fire activity. The objective is to assist wildland fire managers prepare for the potential variations in a typical fire season. It is not intended as a prediction of where and when wildland fires will occur nor is it intended to suggest any area is safe from the hazards of wildfire.

Acknowledgements

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