

North American Seasonal Fire Assessment and Outlook

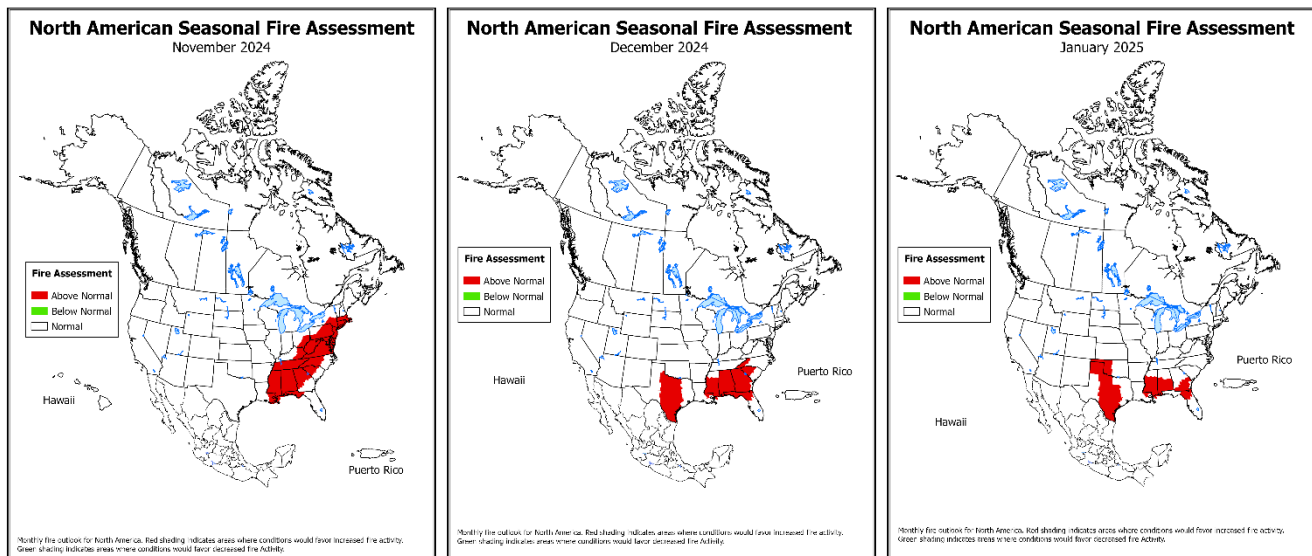
National Interagency Fire Center • Natural Resources Canada • Servicio Meteorológico Nacional
United States Canada Mexico

Outlook Period November 2024 through January 2025

Issued 15 November 2024

Executive Summary

Across almost all of North America, the transition into autumn has greatly reduced wildfire potential. Following the summer period that started with large areas of above normal fire potential designated in Canada and Mexico in May and developed into a particularly busy fire season in the United States through mid-October, this November through January outlook period anticipates near normal fire potential for most of continent, outside of some parts of the eastern and southern US. Moreover, “normal” fire potential for the fall and winter months for many areas results in considerably fewer ignitions and fires that do not burn aggressively except during problematic wind events.



Monthly fire outlook for North America for November 2024 (left), December 2024 (middle), and January 2025 (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.](#)

For Canada, October continued to be warm and dry for much of the country. Temperatures during some periods resembled late summer, with the southern Prairies and British Columbia having some daytime highs in the 24-30C (75-85F) range. Temperatures in the west fell to average values in the last week of October – a few degrees below normal on some days and a few above on others – but this was not enough to result in below normal monthly values. Warm weather also made appearances in the east but was interspersed with cool periods. The greatest temperature anomalies were recorded in the Arctic, southern Prairies, southern British Columbia, and northern parts of eastern Canada.

Eastern Canada’s warmest days resulted in a few record high temperatures, with an occasional record low at other locations during the coolest period. As in western Canada, the cool patterns were not sustained enough to result in below normal mean monthly temperatures. The highest anomalies of up to 3C occurred west and north of Lake Superior, especially along the Minnesota and Manitoba borders, and northern Quebec and Labrador. Normal temperatures occurred north of Lake Ontario and in extreme southwest Quebec, extreme eastern Quebec between Newfoundland and the Labrador border, Nova Scotia, southern New Brunswick, and southern Labrador.

Above normal precipitation fell along British Columbia's Pacific coast, and in the northern interior and higher mountain areas; in north central Alberta, and part of central Saskatchewan. Western Canada had many precipitation events during October, but amounts were light in southern regions, with a constant flow of Pacific air losing most of the moisture over the mountain ranges. The influx of cloud kept overnight temperatures mild in many regions.

Dry conditions were present in most of western Ontario west and the Great Lakes area, with the lowest percentage of mean October precipitation along the Manitoba border and in patches along the north sides of the Great Lakes. Some locations recorded 20-50% of normal October amounts. This dry band affected southern Quebec, where Montreal and Trois Rivières recorded 24% and 21% respectively of their normal October precipitation, and much of Atlantic Canada.

An anomalous trend to increased lightning strikes has been occurring in Atlantic Canada. Following high counts in Labrador through much of 2024, record October lightning strikes occurred in Nova Scotia, while Prince Edward Island recorded its 3rd highest October count.

Snow cover has been accumulating in northern Canada, high mountain areas, and northern parts of provinces outside the Atlantic region. Other regions have had temporary light cover that has subsequently melted.

For the US, precipitation across much of the country was below normal in October, with exceptionally dry conditions from the Lower Mississippi Valley into the Southeast and Mid-Atlantic. Much of the Plains into the Great Lakes recorded well below normal precipitation as well, until periods of heavy precipitation developed at the end of October and continued into early November. Areas of above normal precipitation were confined to northeast New Mexico, southeast Colorado, and central Florida. Near normal precipitation was observed across portions of the central Rockies, northwest Nevada, and far northeast California. Temperatures in October were above normal from the West Coast to the Appalachians, with the most extreme anomalies in California, the Intermountain West, and Plains. Drought expanded across much of the US in October, but some easing of drought conditions was observed in the Plains in early November.

Climate Prediction Center outlooks issued in late October depict above normal temperatures are likely from across the southern half of the western US into the central and southern Plains to much of the East Coast. Precipitation is likely to be above normal in northwestern US and portions of the Great Lakes, but below normal from the Southwest through the southern Plains into the Southeast. Above normal significant fire potential is forecast across much of the Deep South, Appalachians and Mid-Atlantic in November, decreasing to portions of the Southeast in January. Above normal potential in central and south Texas in December will expand into the Texas Panhandle and western Oklahoma in January.

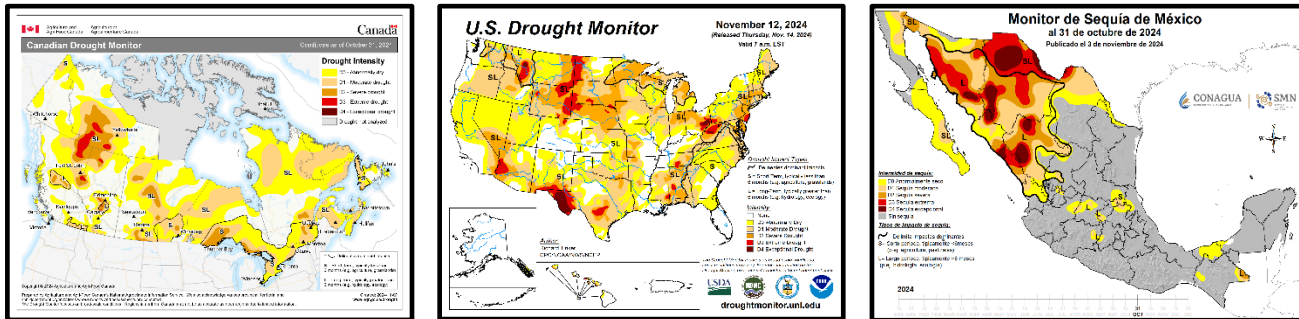
For Mexico, wildfire activity continues at low levels in various parts of the country, primarily in Baja California and Chihuahua. Precipitation was well above normal near the Gulf of Mexico, specifically in southern Veracruz, northern Oaxaca, Tabasco, and the coast of Quintana Roo. However, drier and warmer than normal conditions were observed in northern Mexico due to persistent upper-level high pressure, with drought persisting across much of northwestern Mexico. A decrease in rainfall the next few months will cause the gradual loss of moisture in live and dead fuel, conditions that are reflected in the dry and warm weather outlook. Fire activity is expected to increase the next three months but remain within normal thresholds.

Critical Factors

The critical factors influencing significant fire potential for this outlook period are global climate patterns related to sea surface temperatures, particularly in the Pacific Ocean, and large scale, longer-term soil moisture deficits:

El Niño-Southern Oscillation:

El Niño-Southern Oscillation (ENSO) neutral conditions persist in the equatorial Pacific Ocean. Sea surface temperature (SST) anomalies in the central equatorial Pacific are near to slightly below average and continue to gradually trend cooler, with SSTs slightly below average along the South American coast. A transition to La Niña is still forecast into the fall, with the Climate Prediction Center forecasting La Niña developing over the next month and then persisting through the winter. A negative phase of the Pacific Decadal Oscillation (PDO) is also expected to persist into the winter. The Madden-Julian Oscillation (MJO) has increased in activity the past two weeks, with a strong pulse moving through the western Hemisphere the last few days. The MJO is expected to remain active through November. For December and January, the developing La Niña and negative PDO are expected to be the main drivers of this outlook. Active MJO periods remain possible through the winter, but their location and intensity are difficult to forecast more than two to three weeks in advance.



Left: [Canadian Drought Monitor](#) from *Agriculture and Agri-Food Canada*. Middle: [United States Drought Monitor](#). Right: [Mexican Drought Monitor](#) from *CONAGUA-Servicio Meteorológico Nacional*.

Drought:

Drought is present in all of Canada's provinces and territories as of October 31, although the Northwest Territories/Nunavut border region is now limited to patches classified as abnormally dry. Extrapolation of these areas indicate dryness is likely present in western Nunavut, although drought status in most of the territory is unknown. Parts of Canada, including much of British Columbia, have shown improvement. The broken patch classified as having extreme drought at the juncture of the British Columbia, Alberta, and Northwest Territories border still exists, but the patches are smaller. Areas in eastern Canada that were classified as having severe drought at the end of September have been reduced to the moderate level.

While improvements happened in parts of Canada, drought increased in parts of the southern Prairies, especially in Manitoba and western Ontario. Severe drought developed along the shores of Lake Superior and western Lake Huron. Moderate drought continues between the Manitoba border and James Bay. Other drought levels are present around the Great Lakes, northern and southern Quebec, and in the majority of the Atlantic Provinces. A band between the Ontario border east to Quebec's Port Cartier/Sept-Îles region remains drought-free. Areas of abnormally dry or moderate drought classification cover the entire Atlantic region, except small drought-free patches in northeastern New Brunswick and south central Newfoundland. These dry regions mark the northern extent of drought extending through the New England States. While the east is dry, most years feature enough winter precipitation to reduce drought. We will see if nature follows its usual course over the next few months.

For the first half of October in the US, above normal temperatures were observed across California into the Intermountain West and Plains, especially across the Southwest. Phoenix, Arizona reached 113°F October 6, the latest it has ever been that hot, while the streak of consecutive daily record high temperatures was extended to 21, ending October 14. This streak represents the longest such streak ever recorded in the US. Temperatures were also well above normal across the southern Plains the latter half of the month, with portions of Oklahoma and Kansas exceeding 95°F October 28, the latest such readings for each state. Temperatures closer to normal were observed in portions of the Northwest, and from the Appalachians to the East Coast. Temperatures in Alaska were close to normal, with above normal temperatures observed in Hawai'i.

Below normal precipitation was observed across much of the US in October, with exceptionally dry conditions from the Lower Mississippi Valley into the Appalachians, and Mid-Atlantic. Atlanta, Georgia and Philadelphia, Pennsylvania had their driest calendar month ever recorded with only a trace of precipitation falling in October. New York, New York also recorded its driest month ever with 0.01" of precipitation. For October, above normal precipitation was limited in the US to central Florida due to Hurricane Milton, northern New Mexico, and southern Colorado. Precipitation was well below normal across much of the Plains into the Great Lakes until late in October, but a series of strong systems at the end of October into early November resulted in well above normal rainfall from Colorado and New Mexico through much of the Plains to the Mississippi Valley and Great Lakes. Above normal rainfall was also observed in portions of Georgia and South Carolina, but much drier than normal conditions continue in the Appalachians, Mid-Atlantic, and Northeast in early November.

Drought expanded and intensified across much of the US in October, with nearly 52% of the country now in drought and 87% of the country at least abnormally dry. The 87.78% of the US classified as at least abnormally dry is the most every recorded by the US Drought Monitor since its inception. The greatest expansion and intensification of drought was observed across the Plains into the Mississippi Valley and Great Lakes, although drought eased in portions of the Plains in early November. Drought also intensified in the Colorado River Valley, with expansion of drought into the Appalachians, Mid-Atlantic, and southern New England. Very small areas of drought improvement were noted in northwest Nevada, southeast Oregon, northeast California, southeast Colorado, and northeast New Mexico. Areas of extreme to exceptional drought are noted across portions of western Montana, the northern High Plains, southeast New Mexico, west Texas, central and north Texas, Oklahoma, northwest Arkansas, southwest Missouri, southeast Ohio, northern West Virginia, and southeast New Jersey.

In Mexico during the second half of October, above normal rainfall was recorded in portions of the Gulf of Mexico, mainly in southern Veracruz, northern Oaxaca, Tabasco, and the coast of Quintana Roo. This rainfall was caused by Tropical Storm Nadine and an upper-level trough along the east of Mexico, which resulted in heavy to torrential rain in the region. In addition, three frontal systems affected this area, as well as three tropical waves. The rain resulted in the elimination of moderate drought in Tabasco and the reduction of abnormally dry conditions in northern Oaxaca, Chiapas, and southern Veracruz.

However, the presence of upper-level high pressure resulted in drier than normal conditions in the northern and northwestern states. A hot to very hot environment resulted, as well, with temperatures above 40C. In these areas, moderate to exceptional drought increased slightly. The percentage of areas with moderate to exceptional drought across Mexico was nearly 32%, higher than that recorded in the first half of October.

Fire Season Status:

In Canada, significant fire activity abated overall with the onset of autumn, and the reduction in fire danger has allowed fire weather calculations to be discontinued in Yukon, the Northwest Territories, and in spotty areas in northern parts of the provinces outside the Atlantic region. The Canadian Interagency Forest Fire Centre (CIFFC) reverted to the lowest National Preparedness Level (NPL) – NPL 1 – toward the end of September. Earlier in the year, CIFFC had spent nearly six weeks, from mid-July into late August, at the highest level – NPL 5. On September 25, when CIFFC issued its last Situation Report of the season, the Canadian Wildland Fire Information System had tallied a national year-to-date total of 5,366 fires that burned 5,332,472 hectares. The 2024 seasonal summary is now being prepared, and some of the information may be available for December's edition of this report. Of course, new fires may still arise between now and the end of the year, particularly in the southern Prairies, where increased dryness in October could translate to grass fire activity in November and December if conditions remain dry over that period.

In the US, fire activity escalated the first half of October, as the National Preparedness Level rose from three (on a scale of 1-5) at the beginning of the month to five October 8. This escalation back to five represented the first time the National Preparedness Level increased to five on three separate

occasions in the same fire year. Fire activity then greatly moderated the latter half of October, with the National Preparedness Level decreasing to four October 18, three October 22, and two October 29. While most geographic areas followed this overall trend in activity, the Southern and Eastern Areas remained moderately active into mid-November, mainly in the Appalachians and Mid-Atlantic regions. A Santa Ana wind event November 6-7 across southern California also brought a brief spike in activity there. Year-to-date annual area burned (3,281,867 hectares; 8,109,693 acres) for the US is 124% of the 10-year average, but the national year-to-date tally of 50,276 wildfires remains slightly below average, near 95%.

In Mexico, so far this year 7,932 forest fires have occurred in 32 states, resulting in 1,629,798 hectares burned. Vegetation burned in the grass and brush layers was 95%, while timber accounted for 5%. States with the highest number of wildfires were State of Mexico, Mexico City, Jalisco, Michoacán, Chihuahua, Chiapas, Puebla, Durango, Guerrero, and Oaxaca, representing nearly 79% of the total fires. States with the largest area burned were Guerrero, Chiapas, Oaxaca, Chihuahua, Jalisco, Michoacán, Nayarit, Durango, Quintana Roo, Durango, and State of Mexico, representing almost 83% of the national area burned. Out of the total fires, 1,229 (16%) occurred in fire-sensitive ecosystems, with a burned area of 259,974 hectares, representing 16% of the total area burned.

From January to October 2024, positive fire anomalies have been observed in western, central, eastern, southern, and southeastern Mexico. Jalisco and Mexico City are the most affected states, with each more than 260 fires above average. In terms of hectares burned, most of the country remains above normal, with the states on Mexico's southern Pacific slope being the most affected. Oaxaca has burned more than 150,000 hectares above its climatology, Chiapas more than 185,000 hectares, while Guerrero, which remains as the state with the largest burned area, has so far burned more than 400,000 hectares.

Canada Discussion

November/December/January: For November, normal conditions are expected in Canada, which translates to little fire activity; however, grass fires could occur with the Prairies staying warm and dry. At this time of year, even a modest amount of precipitation prevents much fire activity with long, cool nights and short, cool days reducing active burning periods.

For December, models generally favor a warm month with widespread precipitation in eastern Canada. In western Canada, forecast conditions are more varied, with some models suggesting intrusion of cool air from the north Pacific. This implies troughs moving inland from the northwest, although a couple models suggest Arctic air incursions may also happen. No precipitation signal, or normal amounts are suggested in much of the Prairies, with generous amounts in much of British Columbia. If the Prairies receive close to normal amounts, little fire activity will ensue, which is normal for a Canadian December.

January should be a normal winter month with minimal fire activity. Based on the forecast issued in October, the El Niño-Southern Oscillation (ENSO) negative phase is expected to peak during December and January. This would favor Arctic air dominating much of Canada, locking in snow cover and cooler than normal temperatures.

United States Discussion

November/December/January: Climate Prediction Center and Predictive Services outlooks issued in late October depict above normal temperatures are likely through January across the southern two-thirds of the western US into the central and southern Plains and much of the East Coast. Precipitation is likely to be above normal in the Northwest, northern Rockies, and portions of the Upper Great Lakes. Below normal precipitation is likely in the Southwest through the southern Plains and into the Southeast. Equal chances of above or below normal precipitation are forecast across the rest of the US through January.

In November, above normal significant fire potential is forecast in from the northern Gulf Coast into the Tennessee Valley, Appalachians, Mid-Atlantic, and southern New England. Above normal potential is forecast to continue in much of the Southeast into December, while normal potential returns to the central Appalachians, Mid-Atlantic, and New England. Above normal potential is forecast across central and south Texas in December, expanding into the Texas Panhandle and western Oklahoma for January and February. Above normal potential will continue across portions of the Southeast into January, mainly in southern Mississippi, southern Alabama, south Georgia, and portions of north Florida.

Mexico Discussion

November/December/January: A decrease in rainfall is expected the next few months, which will cause the gradual loss of moisture in live and dead fuel. This process could accelerate because of La Niña in combination with the negative PDO. The climate outlook through January is forecast to be warm and dry across Mexico overall. According to climate models, the probability of precipitation will be below normal in most of the country, with the exception of Quintana Roo, which will be above normal. Temperatures are likely to be above normal in most of the Mexican Republic through January.

During October, some fires have been recorded in Baja California and Chihuahua, with fire activity expected to increase progressively starting in December, forest fire activity is expected to increase progressively. However, fire activity is still expected to remain relatively low and close to normal for the period.

Additional Information

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

United States:

National Significant Wildland Fire Potential Outlook

https://www.nifc.gov/nicc-files/predictive/outlooks/monthly_seasonal_outlook.pdf

Canada:

Canadian Wildland Fire Information System

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

Mexico:

Servicio Meteorológico Nacional

<https://smn.conagua.gob.mx/es/observando-el-tiempo/monitoreo-atmosferico-ambiental>

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

Contributions to this document were made by:

Canada: Richard Carr, Natural Resources Canada
Ginny Marshall, Natural Resources Canada

United States: Jim Wallmann, Predictive Services Meteorologist, US Forest Service

Julie Osterkamp, GIS, Bureau of Land Management
Steve Larrabee, Predictive Services Fire Analyst, Bureau of Indian Affairs

Mexico:

Martín Ibarra Ochoa, Servicio Meteorológico Nacional
Darío Rodríguez Rangel, Servicio Meteorológico Nacional
Alejandro J. García Jiménez, Servicio Meteorológico Nacional
José L. Solís Aguirre, Servicio Meteorológico Nacional