North American Seasonal Fire Assessment and Outlook

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

Outlook Period April 2025 through June 2025 Issued 14 April 2025

Executive Summary

Much of Canada had a wet end to March as storm systems in the northern US spread rain and heavy snow through central parts of the western provinces and mixed precipitation in the east, including freezing rain that damaged trees and caused transportation issues. A heavy snowfall in mid-March in central parts of the western provinces was followed by cool temperatures, which also invaded the southern Prairie. However, a strong ridge pushed across western Canada in early April bringing warm temperatures.



Monthly fire outlook for North America for April 2025 (left), May 2025 (middle), and June 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*.

Cool and snowy conditions continued in northern parts of eastern Canada as April began, with mixed conditions prevailing in the south. The coldest temperature anomalies occurred across northern Manitoba and northwestern Ontario. Temperatures in central Quebec also remained below normal, while values remained slightly above normal south and east of Lake Huron and into southern Quebec. The Atlantic region had a warm March, with the highest anomalies in eastern New Brunswick, Prince Edward Island, central and northern Nova Scotia, and part of Newfoundland. Cool weather occurred in northern Labrador, and normal temperatures were recorded in extreme northern New Brunswick. Some record highs were set in mid-March as storms moving out of the northern US and into southern Ontario and Quebec drew warm air northward.

Under Arctic air, dry conditions covered much of Manitoba and northwest Ontario, but the rest of Ontario had greater precipitation, with the heaviest amounts in a line from Lake Michigan northeast into central Quebec. This band weakened and branched off into southern Labrador and the Gulf of St Lawrence, with another band heading north towards the Ungava Peninsula. Most of Quebec and southern Labrador had above normal precipitation with only spots in the extreme south and far northwest remaining drier than normal. Some regions had ice storms that damaged trees late in March; this was

the wettest period of the month. The moist conditions also continued into western New Brunswick, while Nova Scotia and extreme southeast Prince Edward Island remained drier than normal. Most of Newfoundland had close to normal precipitation. Precipitation in the Atlantic Provinces generally fell as rain, but some mixed precipitation occurred. Snowfall was most plentiful in northern New Brunswick.

Fire activity increased through mid-March across the US with moderate activity continuing the remainder of March before decreasing in early April. March precipitation was above normal in the central and western Great Lakes, with generally above normal precipitation in southern California, the Great Basin, Oregon, and northern Rockies. Well above normal rainfall fell across Deep South Texas, but below normal precipitation was observed in New Mexico and the Four Corners into the central and southern Plains. Below normal precipitation fell in eastern Montana to the Dakotas, with below normal precipitation in Arkansas, much of the Appalachians, and the Florida peninsula, as well. Precipitation has been above normal thus far in April for north Texas and Oklahoma through the Ohio Valley and into the Southeast, but below normal for most of the Intermountain West and Florida. Drought improved for portions of the eastern US east of the Mississippi River but intensified in portions of the southwestern US.

Climate Prediction Center and Predictive Services outlooks show a trend of warmer and drier than normal conditions developing across the northern half of the West and West Coast starting in May and continuing through June. Warm and dry conditions in the Southwest to the southern Plains are likely in the spring. Above normal significant fire potential is forecast from southeast Arizona into southern and eastern New Mexico into much of the southwestern US by June. Above normal potential is also forecast across portions of the Plains in April, returning to normal in May, and back to above normal in the southern Plains in June. Above normal potential is also forecast in much of the Southeast in April, retreating to the immediate southeast Atlantic coast and Florida by June.

During January, February, and March, precipitation across Mexico was mostly below average, while temperatures were below average in January and above average in February and March. Precipitation from several weather systems contributed to the reduction of areas of extreme drought in extreme northwest Baja California, and a reduction of moderate to severe drought in northeastern Mexico. However, the presence of strong upper-level high pressure resulted in very warm and dry conditions for the rest of the country and increased drought to extreme to exceptional in Sonora, Chihuahua, and northern Coahuila, and to severe to extreme drought in Durango and Sinaloa

The climate outlook for April and May predicts for hot and dry conditions, while hot and wet conditions are expected for June. Given recent temperature and precipitation, the country's drought patterns, and the climate forecast for the next three months, wildfire activity is expected to remain above average in Mexico's mountainous and jungle regions through June. Wildfire activity in Mexico is expected to gradually intensify during April and the first half of May before gradually decreasing during the second half of May and June.

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 and Other Climatic Teleconnections:

La Niña continues to weaken in the equatorial Pacific Ocean, with the coolest sea surface temperature (SST) anomalies in the central equatorial Pacific. However, sea surface temperature anomalies in the central Pacific have warmed to near average the past couple weeks, with slightly above normal SST anomalies off the west coast of South America. A transition to El Niño-Southern Oscillation (ENSO) neutral conditions is expected shortly, with the Climate Prediction Center forecasting a 62% chance ENSO-neutral conditions persisting through August. Beyond August, significant uncertainty remains for the ENSO forecast due to the spring predictability barrier.

A strongly negative phase of the Pacific Decadal Oscillation (PDO) is also expected to persist this spring and will impact the weather patterns into early summer. The Madden-Julian Oscillation (MJO) has been active this winter but is expected to be weaker for the next month with minimal impacts on this outlook. The La Niña transition to ENSO neutral conditions and the negative PDO are expected to be the main drivers of this outlook.



Left: <u>Canadian Drought Monitor</u> from Agriculture and Agri-Food Canada. Middle: <u>United States Drought Monitor</u>. Right: <u>Mexican Drought Monitor</u> from CONAGUA-Servicio Meteorológico Nacional.

Drought:

Canada's drought situation is better than seen in spring the past two years. As of March 31, about 35% of Canada outside Nunavut was abnormally dry or in some drought stage, down from 38% at the end of February. Improvement occurred in southern British Columbia, where the past two months featured favorable precipitation, although drought continued to intensify in southwestern Alberta, and in patchy regions elsewhere in the Prairie Provinces and eastern Canada. The large drought area in northern British Columbia, Alberta, and the western Northwest Territories remains largely unchanged.

Temperatures in March for the US were above normal across the Northwest, and across the Plains to much of the East Coast except Florida, which was near to below normal. Temperatures in California into the Great Basin and Southwest, west of the Divide, were near to below normal for March. Temperatures were above normal for much of Alaska and Hawai'i for March, as well, with the greatest anomalies across south-central Alaska and Kauai.

Precipitation across the US in March was above normal in the Northwest, except in portions of the Columbia Basin and southeast Oregon where it was near to below normal. Above normal precipitation was also observed in southern California and the central Great Basin to western Wyoming, as well as in portions of the western Great Lakes states. Well above normal precipitation fell in Deep South Texas. Below normal precipitation was observed in the Four Corners, much of New Mexico, the central and southern Plains, Arkansas, and southern Missouri. Below normal precipitation fell in the Dakotas to eastern Montana, and across much of the Appalachians and the Florida Peninsula. Precipitation in Hawai'i was well below normal, with Kauai receiving less than 25% of normal March precipitation, while precipitation was generally below normal for most of the Cascades and Sierra to the northern and central Rockies but is below normal near the Canadian border. Snowpack remains well below normal for the southern Great Basin, Southwest, and southwest Colorado.

Overall drought was reduced to less than 39% of the US April 8, compared to nearly 44% in early March. Drought improved across portions of the northern Plains, Midwest, and from the Appalachians to the East Coast. However, drought persisted across much of the rest of the Plains, the Florida Peninsula and portions of the northern Rockies. Drought expanded and intensified in the southwestern US, centered on Arizona and New Mexico. Extreme drought is observed in portions of southern California and southern Nevada into much of southern Arizona, southern New Mexico, and southwest Texas. Smaller areas of extreme drought are noted in portions of Wyoming, the western South Dakota-Nebraska border, western Montana, western North Dakota, and northern New Mexico. Exceptional drought persists in far West Texas, and has expanded into portions of the Texas Hill Country, southwest New Mexico, western Arizona, and far southeast Nevada. During the second half of March 2025, above normal precipitation was recorded in the northeast and portions of central and southern Mexico, caused by two cold fronts combining with the polar and subtropical jet streams. This precipitation contributed to the reduction of areas with extreme drought in northwestern Baja California and reduction in area of moderate to severe drought in the northeast of the country. However, the presence of a strong and dry upper-level high-pressure system resulted in a very warm environment with little precipitation in much of the rest of Mexico. These warm and dry conditions contributed to an increase in regions with extreme to exceptional drought in Sonora, Chihuahua, and northern Coahuila, with severe to extreme drought increasing in Durango and Sinaloa. As of March 31, the percentage of areas with moderate to exceptional drought nationwide was nearly 43%, slightly higher than observed the first half of March.

Fire Season Status:

Fire weather calculations started in February in parts of southern and central British Columbia and have continued since then. Calculations have also started and stopped in southern Alberta with variations between warm and cool weather with short-lived snow cover. Warm weather in early April is resulting in many more western Canadian stations starting seasonal calculations; these should continue until next winter.

As of April 7, less than 100 fires have been reported through Natural Resources Canada, with most of these events small and located in Alberta and British Columbia. A few have occurred in eastern Canada, in Point Pelee National Park in southern Ontario, and in New Brunswick. The largest fire to date, which occurred in Alberta, is about 17 hectares, while two others were reported at 5 to 10 hectares each.

In the US, fire activity increased significantly across the Southern Area in early March, continuing through late in the month before abating in early April. The Southwest, Rocky Mountain, and Eastern Areas also observed modest increases in fire activity in March. The National Preparedness Level was increased to two (on a scale of 1-5) March 4, before returning to one April 4. On March 2-3 strong and dry northwesterly winds affected the Southeast with several large fires emerging. Several strong wind events also swept across the central and southern Plains during March, the strongest and most widespread occurring March 14 when a fire outbreak occurred across the southern Plains centered on Oklahoma. Very dry conditions occurred across the Appalachians, as well, with anomalously long stretches of relative humidity in the teens and poor overnight recovery. Several days of southwesterly and northwesterly winds at the end of the month resulted in several large fires and incident management team mobilizations in North Carolina, South Carolina, and Georgia the latter half of March. Total acres burned through April 11 of this year is above the 10-year average at nearly 112% of normal, with 333,044 hectares (822,951 acres) burned. The total number of fires through April 11 is 17,400, or 148% of normal.

So far this year, 2,097 wildfires have been recorded in 32 states, with a total of 132,762 hectares burned. Grass and brush accounted for 95% of the area burned, while the timber was 5%. The states with the highest number of wildfires were Jalisco, the State of Mexico, Michoacán, Mexico City, Chihuahua, Durango, Puebla, Morelos, Veracruz, and Chiapas, accounting for almost 80% of the total wildfires. The states with the largest burned area were Baja California, Jalisco, Durango, Guerrero, Tamaulipas, Michoacán, Sinaloa, Nayarit, Chihuahua and Chiapas, representing almost 80% of the national burned area. Of the total wildfires, 467 (22%) occurred in fire-sensitive ecosystems, with a burned area of 29,584 hectares, representing 22% of the total. From January 1 to April 3, the largest fires were recorded in western, central, and northern Mexico. The states of Jalisco, the State of Mexico, and Michoacán were the most affected, with 368, 29, and 253 fires, respectively.

Canada Discussion

April/May/June: April weather conditions should vary frequently with a vigorous Pacific flow crossing western Canada. While eastern regions have been in a cool and at times moist pattern, variable conditions should reappear by mid-April with some warm and dry periods but frequent returns to normal

temperatures. While plenty of locations in western Canada are starting fire weather calculations, regions to the east will be a bit slower for calculations to start as snow cover has been lingering due to the recent cool temperatures. Some fire activity is likely in British Columbia, the southern Prairies, and the southern Atlantic region, but at normal levels.

An increase in above normal fire activity may be likely for southern British Columbia and the parkland region of the Prairie Provinces. Alberta often has the bulk of its fire activity in spring, so even with a normal activity level, some large events are possible. Similar activity could also occur in western Saskatchewan and northeastern British Columbia. Normal fire activity is expected in other regions, with adequate precipitation expected despite expected above normal temperatures. While precipitation is hard to forecast, higher probability of above normal amounts exists in northern parts of the provinces and the Northwest Territories, so fire activity may be restrained in these regions.

Warmth across the country, and higher probability of dryness in central Canada suggests fire could begin to creep into the eastern Prairies and western Ontario. Fire in this region may be partly a consequence of Arctic air dominating the region through the earlier part of the spring, limiting precipitation into June. Regions west of that, for example southern British Columbia, may also be susceptible to fire with potential for a dry belt across the northern USA pushing into southern Canada. Prairie grassland areas should not be at risk at this time of year since growth and green-up should be keeping vegetation fire-resistant.

United States Discussion

April/May/June: The weak La Niña is ending with neutral conditions forecast to continue through the summer. Above normal temperatures in the southern tier of the US are likely to expand across much of the US in May and June. Below normal precipitation is likely to continue in the southwest US in April, expanding across much of the West into the southern and central Plains in May and June. Above normal precipitation is likely in the Mid-Mississippi and Ohio Valleys in April, continuing in the Ohio Valley and Lower Great Lakes in May and June. Climate models and previous years' analogs also are also consistent with a warm and dry spring in much of the West. The warmer and drier than normal conditions in the West forecast later in spring are likely to lead to a more rapid melting of the western snowpack. These conditions may also lead to an early start to the North American Monsoon in late June. However, these latter two factors are not expected to have a significant impact on fire potential through June except in the southwestern US.

Above normal significant fire potential is forecast from southeast Arizona into southern and eastern New Mexico into much of western Texas and Oklahoma in April, as well as portions of eastern Colorado, western Kansas, the eastern Dakotas, and western Minnesota. Above normal potential is also forecast from the east slopes of the southern Appalachians to the southeast Atlantic coast and Florida in April, retreating to the immediate coast and Florida by June. Above normal potential is also forecast for much of southern Alaska in April and May, mainly due to the low snowpack from the winter, before returning to normal in June during what is traditionally the start of Alaska's peak fire season. Elsewhere in May, potential will return to normal in the Plains and southern Appalachians but remain above normal along the southeast Atlantic coast and Florida, while expanding across most of the Southwest. In June, above normal potential will continue in much of the Southwest, expanding to portions of the southern Great Basin, southwest Colorado, and central and southern California. Above normal potential is forecast to return to central Oklahoma and Texas in June, as forecast above normal temperatures and drier than normal conditions lead to curing of fine fuels.

Mexico Discussion

April/May/June: Below average precipitation is expected in most states in April, except for regions of Mexico City, Hidalgo, the State of México, Puebla, Quintana Roo, and Tlaxcala, where average to above-average precipitation is expected. Above average maximum temperatures are forecast for most

of the country, except for the Baja California Peninsula, and regions of Chihuahua, Sinaloa, Nayarit, Jalisco, Colima, Tamaulipas, Oaxaca, Chiapas, Veracruz and Quintana Roo.

For May, above average precipitation is expected in Campeche, Chiapas, Tabasco, Yucatán, Quintana Roo, and some regions of Veracruz, Puebla, Hidalgo, San Luis Potosí, Queretaro, Oaxaca, and Tamaulipas, while the precipitation will be below-average in the remaining states. Above average maximum temperatures are forecast for most of the country, except for the Baja California Peninsula and some regions of Sonora, Sinaloa, Nayarit, Jalisco, Colima, and Tamaulipas where below-average maximum temperatures are forecast.

In June, below average precipitation is expected across most of the country, except for Yucatán, Campeche, Chiapas, Oaxaca, Coahuila, Tamaulipas, San Luis Potosí, Guanajuato, and Guerrero. Above average temperatures are forecast for most of the country, except for the Baja California Peninsula and some regions of Sonora, Sinaloa, Nayarit, Jalisco, Colima, Veracruz, and Tamaulipas where below average temperatures are forecast

Given the recent temperature and precipitation trends, the country's drought pattern, and climatological forecast through June, wildfire activity through June is expected to be above average in the Sierra Madre Occidental, the Sierra Madre Oriental, the Neovolcanic Axis, the Sierra Madre del Sur, the Chiapas highlands, and jungle areas of Mexico. The recent turn to ENSO-neutral conditions, combined with a negative PDO and a positive Pacific-North American climate pattern, predict warm and dry conditions for April and May. However, warm and wetter conditions are forecast for June as the North American Monsoon begins.

Additional Information

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

United States: National Significant Wildland Fire Potential Outlook <u>https://www.nifc.gov/nicc-files/predictive/outlooks/monthly_seasonal_outlook.pdf</u>

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.

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