

North American Seasonal Fire Assessment and Outlook

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

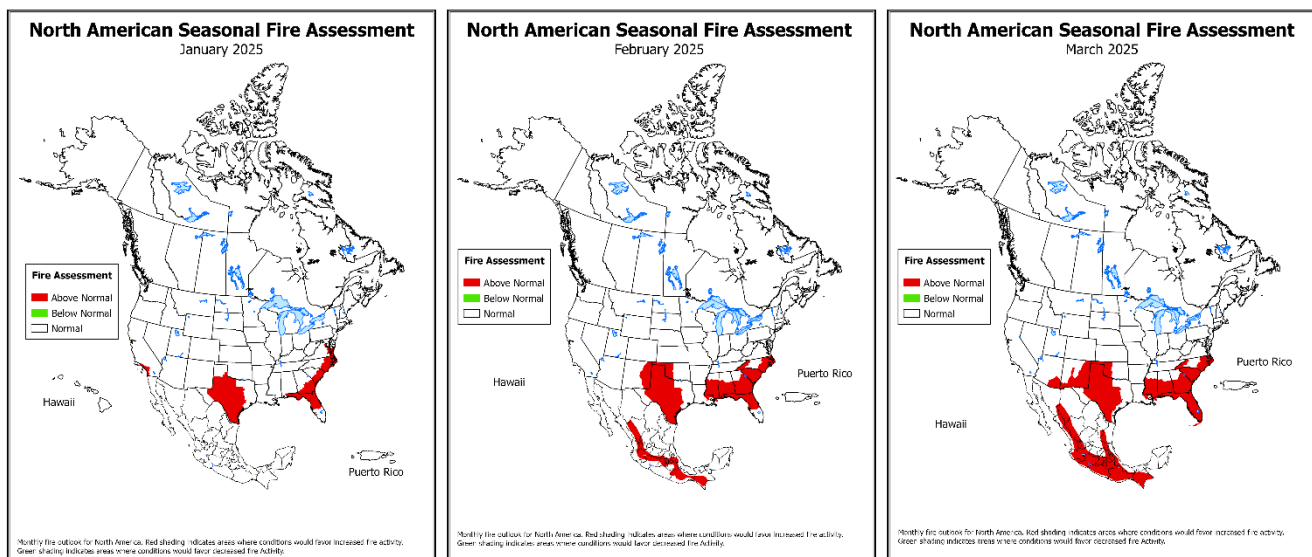
Outlook Period January 2025 through March 2025

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Executive Summary

December in western Canada brought relatively typical winter conditions in the west, as a series of storm systems resulted in alternating above and below normal temperatures, with the month ultimately ending in mild conditions, particularly around the holidays. The southern half of British Columbia is the exception, as warm temperatures persisted for nearly the entire month with several record high temperatures set. Temperatures in central and eastern Canada were also warm for the entire month of December, except from southern Ontario, along the Canada/US border to the Atlantic coast, where temperatures were closer to normal. Monthly anomalies around the southern half of Hudson Bay and James Bay reached 5 C above normal and several high temperature records were set.

Precipitation in Canada's west and north was generally normal with patchy regions of above and below normal scattered across the landscape, except coastal British Columbia, which received less precipitation than usual in December. Like the west, central and eastern Canada generally experienced normal and patchy precipitation patterns with exceptions in northern Quebec, where greater than usual snowfall occurred, and around Montreal to Quebec City and throughout the Maritimes, which were much drier than normal, despite frequent rain and snow.



Monthly fire outlook for North America for January 2025 (left), February 2025 (middle), and March 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.*

Most regions in the eastern half of Canada currently have below normal snowpack, despite receiving normal to above normal precipitation. The Prairie provinces entered the new year with close to normal snow depths overall, although scattered stations are indicating patchy above and below normal depths. British Columbia, however, is split between below normal snow depths in the Okanagan region and northward, and well above normal depths in the south and along the southeastern border with Alberta. Snow depths are normal in Yukon, and below normal throughout most of the Northwest Territories and Nunavut.

For the outlook period, significant fire potential is expected to remain normal across all of Canada, with minimal activity in many areas due to snow-covered fuels.

Fire activity continued at low levels across the US in December with brief spikes in activity, mainly in southern California and the Southwest. A more notable increase in activity occurred in early January due to a strong Santa Ana wind event in southern California January 7-9. Climate Prediction Center outlooks show that warm and drier than normal conditions are likely to persist through the end of January in the West, with below normal temperatures east of the Rockies focused on the Southeast. Precipitation is likely to be above normal in portions of the Northeast. For February and March, above normal temperatures are likely from the Southwest into much of Texas, the Southeast, and East Coast, but below normal temperatures are likely from the Northwest to the northern Plains. Precipitation is likely to be above normal in much of the northwestern US and in the Great Lakes to the Ohio and Tennessee Valleys. Below normal precipitation is likely in the Southwest and central Rockies into southern and central Plains, then along the Gulf and Southeast coasts.

Above normal significant fire potential is forecast across portions of southern California, the southern Plains, and along the Atlantic coast from central Florida into eastern Virginia. Above normal potential will expand from much of Texas into much of the southern Plains in February, while above normal potential in the Southeast will expand westward toward the Mississippi River. For March, above normal significant fire potential will continue in the same areas as February, with an expansion westward into southeast Arizona.

Wildfire occurrence in Mexico in 2024 exceeded the annual average for both fires and burned area, with 8,002 wildfires recorded and a total area of 1,672,216 hectares burned. As is typical, wildfire activity reverted to low levels as the year ended. Activity normally increases gradually as winter turns to spring, reaching peak levels in March and April in the central and western states of the country.

For the period spanning October to December, Mexico saw below normal precipitation and above normal temperatures in general, nationwide. Warm temperatures and clear skies were common in most areas. Timely precipitation helped maintain drought-free areas while eliminating or reducing areas with moderate drought in the states along the Gulf of Mexico coast, including San Luis Potosí, Hidalgo, and Veracruz. In northwest Mexico, the Northern Plateau, and part of the Central Plateau, which saw little rain, there was a persistence and increase in areas with moderate to extreme drought. Over the latter half of December, areas of moderate to exceptional drought increased by nearly 7%, now accounting for over 38% of Mexico's total area.

Mexico's climate outlook for January through March tilts toward it being warm and dry across most of the Republic. Some areas of Chiapas and Tabasco are expected to have above normal chances for precipitation, while no particular forecast trend is indicated for areas Campeche, Yucatán, Quintana Roo, Veracruz, Tabasco, and Oaxaca.

Normal wildfire potential is expected to persist across all of Mexico in January but will increase in February and March in mountainous regions, resulting in above normal fire potential in the Sierra Madre Occidental, Sierra Madre Oriental, the Trans-Mexican Volcanic Belt, the Sierra Madre del Sur, and the highlands of Chiapas for the latter two months of this outlook period.

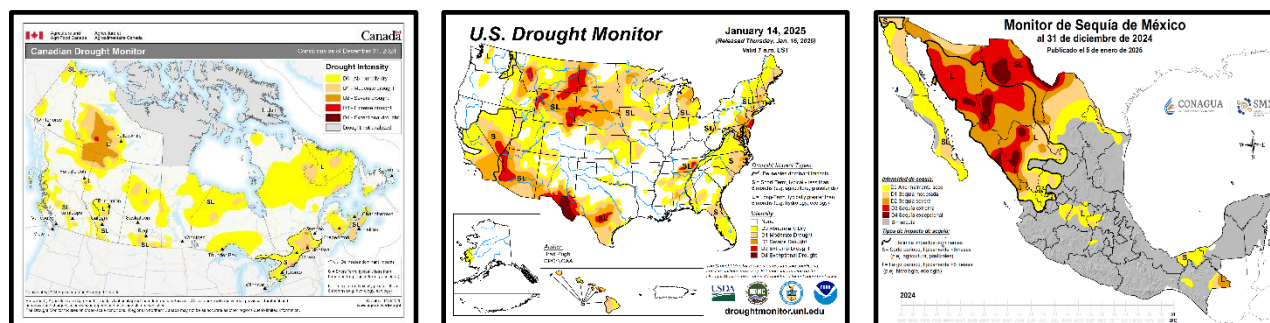
Critical Factors

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, although rapid cooling of the central equatorial Pacific Ocean has occurred the past two to three weeks. Sea surface temperature (SST) anomalies in the central equatorial Pacific are near to below average, as much as 1 C below average. La Niña has emerged the past two weeks, with the Climate Prediction Center forecasting the La Niña to remain weak and persist into March and April. SST anomalies along

the South American coast are currently near normal, suggesting this La Niña is likely to be a La Niña Modoki, with the greatest cooling in the central tropical Pacific. A strongly negative phase of the Pacific Decadal Oscillation (PDO) is also expected to persist through the winter. The Madden-Julian Oscillation (MJO) has also been active the past two months, with another active phase moving into Indonesia and the Philippines late this month. The MJO is expected to remain active into early February, with other active phases possible later this winter into spring. For this outlook, the developing La Niña and negative PDO are expected to be the main drivers, although shorter term fluctuations are possible due to any active MJO periods, 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:

For Canada, normal to above normal precipitation during the month of December has resulted in drought improvement in most provinces and territories. Severe drought remains around the intersection of British Columbia, Alberta, and Northwest Territories, although the scattered patches of extreme drought in the region that were observed in November are now reduced to a single patch east of the Mackenzie Mountains. Similarly, northeastern Quebec, Labrador, the Maritimes, and the area extending from southern Ontario to Quebec City, which were previously in large areas of moderate and patchy severe drought, have seen improvement as only a few small patches of severe drought remain, and the extent of moderate drought is generally smaller. Exceptions lie in small areas in the southern half of British Columbia, western Yukon, and northern Nova Scotia.

Above normal temperatures were observed across much of the western US into the Plains and Mississippi Valley as well as Alaska in December. Normal to below normal temperatures were observed in the eastern US. For the first half of January, temperatures were near to below normal in the West, with well below normal temperatures in the eastern US, especially the Southeast. Precipitation was above normal across northern California into the Northwest, northern Nevada, and Snake River Plain for December, with areas of well above normal precipitation for the Inland Northwest. Above normal precipitation was also observed from east Texas into the Ohio Valley and much of Michigan, with other areas of above normal precipitation in eastern Montana and portions of North Dakota, northern Minnesota, the northern Gulf Coast, New York, and New England. Well below normal precipitation was observed from southern California into the Southwest, southern Great Basin, central Rockies, southern High Plains, and central Plains. Many areas of southern California, the Southwest, and central and southern High Plains received no measurable precipitation in December and the first half of January. Well below normal precipitation was observed in Hawai'i, with many areas receiving less than 25% of their normal rainfall for December. Alaska precipitation was generally below normal, as well, except for an area of well above normal precipitation in the central and eastern Interior. Several significant Santa Ana wind events occurred in southern California since December 1, the strongest occurring January 7-9 with peak wind gusts exceeding 150 kph (95 mph). This last wind event resulted in the Palisades and Eaton Fires, which burned several thousand structures and 24 known fatalities to date.

Overall drought was slightly reduced across the US in December, with the area designated in drought falling from over 41% in late November to near 38% in late December. Drought development was noted across much of north Florida, while drought persisted in much of the Plains, Mid-Atlantic, and portions of the Deep South. Drought intensified in portions of southern Nevada, but drought improved in portions of the northern Rockies. Drought also improved across much of the central Appalachians, with portions

of West Virginia removed from drought altogether. Drought improvement was also noted in New England and southern Alabama. At the end of December, areas of extreme drought were observed across portions of West Texas, central Texas, southern New Mexico, western Arizona, southern Nevada, western Montana, the northern High Plains, and southern New Jersey. A small area of exceptional drought persists in West Texas.

In Mexico, during the second half of October, portions of the Gulf of Mexico slope, mainly in the south of Veracruz, north of Oaxaca, Tabasco, and the coasts of Quintana Roo, above-normal rainfall was recorded. This rain was caused by Tropical Storm Nadine interacting with areas of low-pressure over the northeast, east, and southeast of the country, causing intense to torrential rains. In addition, there were three frontal systems that moved through portions of the country. The aforementioned rain resulted in the elimination of moderate drought in Tabasco, and to reduce the abnormally dry conditions in northern Oaxaca, Chiapas, and southern Veracruz.

However, the presence of strong upper-level high pressure generated a scarcity of rain in the northern and northwestern states, with a hot to very hot environment, as temperatures often neared or exceeded 40 C. This caused drought to intensify, with some expansion of the afflicted areas too, throughout December. A sharp increase (+7%) over the last week of the month results in 38% of Mexico's overall area now being in moderate to exceptional drought.

Fire Season Status:

Fire weather calculations were shut down in early December for most of Canada and are not expected to begin again until closer to April. New fire starts in 2025 are minimal as of January 9. According to the Canadian Interagency Forest Fire Centre, Canada recorded 5,374 fire starts and burned 5.3 million hectares in 2024. However, area burned and number of fire starts reported for 2024 may change over the next couple of months as provinces and territories continue mapping and updating their databases. According to the most recent records, 2024 featured the fourth highest annual area burned since 1983.

Fire activity remained at low levels across the US in December, with the National Preparedness Level remaining at one (on a scale of 1-5). However, portions of southern California and the Southwest were periodically active through the month due to persistently dry conditions. Southern California had the one biggest spike in activity December 9-10 as a strong Santa Ana wind event resulted in the Franklin Fire. However, activity increased more markedly in southern California due to a very strong Santa Ana event, with the National Preparedness Level increasing to two January 8, and the Southern California Geographic Area Preparedness Level increasing to four. Preliminary total acres burned in 2024 was above the 10-year average at 127% of normal with 3,577,965 hectares burned (8,841,152 acres), with a slightly above average tally of wildfires, near 104% at 59,593 fires. As of January 15, 12,877 hectares have burned so far in 2025 (30,820 acres), almost six times or 588% of the average, with a total of 737 fires, or 165% of the average number of fires through mid-January.

So far this year 8,002 forest fires have burned across 32 states in Mexico resulting in 1,672,216 hectares burned. The vegetation corresponding to grass and brush was 97%, while 3% was timber. States with the highest number of wildfires were State of México, Mexico City, Jalisco, Michoacán, Chihuahua, Chiapas, Puebla, Durango, Guerrero, and Oaxaca, representing nearly 78% of the total fires. States with the largest area burned were Durango, Chiapas, Sinaloa, Chihuahua, and State of Mexico, representing almost 82% of the national area burned. Out of the total fires, 1,278 (16%) occurred in fire-sensitive ecosystems, with a burned area of 262,529 hectares, which represents 16% of the total area burned.

From January to December 2024, positive fire anomalies were observed in western, central, eastern, southern, and southeastern Mexico. Jalisco and Mexico City were the most affected states, with 260 and 198 fires above average respectively. In terms of hectares burned, most of the country had positive anomalies, with the states on Mexico's southern Pacific slope being the most affected. Oaxaca burned more than 135,000 hectares above its climatology, Chiapas more than 165,000 hectares above, and Guerrero, which remains as the state with the largest burned area, has so far burned more than 386,000 hectares.

Canada Discussion

January/February/March: January will see normal winter conditions with minimal fire activity. The middle of January is expected to feature warmer than normal conditions in the northern half of Canada, with drying in southern British Columbia and along the Atlantic coast, and above normal precipitation just north of the Great Lakes in Ontario. Towards the end of the month, arctic air will settle in over the southern half of the country, and warm anomalies are likely to persist only in Yukon and western Northwest Territories. Dry conditions are expected in eastern Canada, with spotty precipitation scattered throughout the west as high pressure continues to dominate the Pacific coastal region.

February should be a normal winter month with minimal fire activity. Weak La Niña conditions are expected, and models are reasonably consistent favoring Arctic air dominating western and central Canada, with warmer conditions in Ontario eastward. Normal precipitation is expected for most of the country, although forecasts are indicating above normal precipitation possible in the southern half of British Columbia, southern Ontario, and western Quebec.

March should see normal fire weather conditions, with a cooler than normal temperatures in the west and warmer than normal in the east. Normal precipitation is expected for most regions across Canada; however, the southern half of British Columbia may see above average amounts. Extensive snow-free regions combined with warmer than normal conditions could result in increased number of fire starts in Manitoba and eastward but fire activity is still expected to remain low.

United States Discussion

January/February/March: A weak La Niña has developed and is forecast to persist through March and affect the pattern. While Climate Prediction Center and Predictive Services outlooks continue to indicate temperatures and precipitation consistent with La Niña, at least January will start slightly different. Above normal temperatures and drier than normal conditions are likely the rest of January in much of the West to the southern Plains. However, below normal temperatures are likely across much of the eastern US, especially this Southeast. Precipitation in January is likely to be above normal for portions of the Northeast, with equal chances of above and below normal precipitation elsewhere. By February, drier and warmer conditions are expected across the southern tier of the US, consistent with La Niña, while cooler than normal conditions are likely from the Northwest to the northern Plains. Above normal precipitation is likely in the Northwest, Great Lakes, and Ohio Valley through the remainder of winter.

For January, above normal significant fire potential is forecast across portions of southern California, much of central and south Texas, and from the central Florida Peninsula northward through the Panhandle and along the Atlantic coast into eastern Virginia. Above normal potential will expand from much of Texas into western Oklahoma and eastern New Mexico in February, with the above normal area in the Southeast expanding westward into much of Alabama, Mississippi, and eastern Louisiana. For March, above normal significant fire potential is expected from southeast Arizona into much of southern/eastern New Mexico, western Oklahoma, and central and south Texas, with another area from much of Mississippi and eastern Louisiana into the much of the Carolinas, Georgia, and all of Florida.

Mexico Discussion

January/February/March: Below normal precipitation is expected for most Mexican states over this three-month outlook period; however, there are some exceptions. Areas favored for normal or above normal precipitation in January include parts of Campeche, Yucatan, and Quintana Roo, plus lesser areas of Chiapas, Nuevo León, Tabasco, and Tamaulipas. For February, above normal precipitation is expected for only Veracruz, Tabasco, Chiapas, and Oaxaca. For March, the Yucatan Peninsula will join the preceding group, where above normal precipitation is expected to continue; however, Oaxaca will return to the far larger group of states where below normal precipitation will persist. Of course, the occurrence of an extreme hydrometeorological event could significantly modify these expected conditions.

In addition to the widespread dryness, most states are expected to stay warm, having above average minimum temperatures throughout the outlook period. In January, below normal temperatures will be limited to some areas of Chihuahua and Durango. In February, Chihuahua will warm back up, but Baja California and Jalisco will join Durango in seeing below normal temperatures. In March, that limited area of below normal temperatures will shift to some parts of northwestern Mexico, whereas warmer than normal minimum temperatures will persist elsewhere throughout most of the Republic.

The effects of La Niña in combination with other influences, notably the negative Pacific Decadal Oscillation (PDO) and positive Pacific/North American (PNA) teleconnection pattern, are reflected in this dry and warm climate outlook. However, La Niña is forecast to be short-lived and weak, which decreases the probability of its conventional winter and spring impacts on Mexico's climate and associated fire potential.

Given the current conditions of temperature, precipitation, and drought behavior in Mexico, along with climatological analysis, it is expected that wildfire potential will remain normal throughout all the states in January, but the Republic's mountainous regions will experience above normal potential in February and March.

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

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