

North American Seasonal Fire Assessment and Outlook

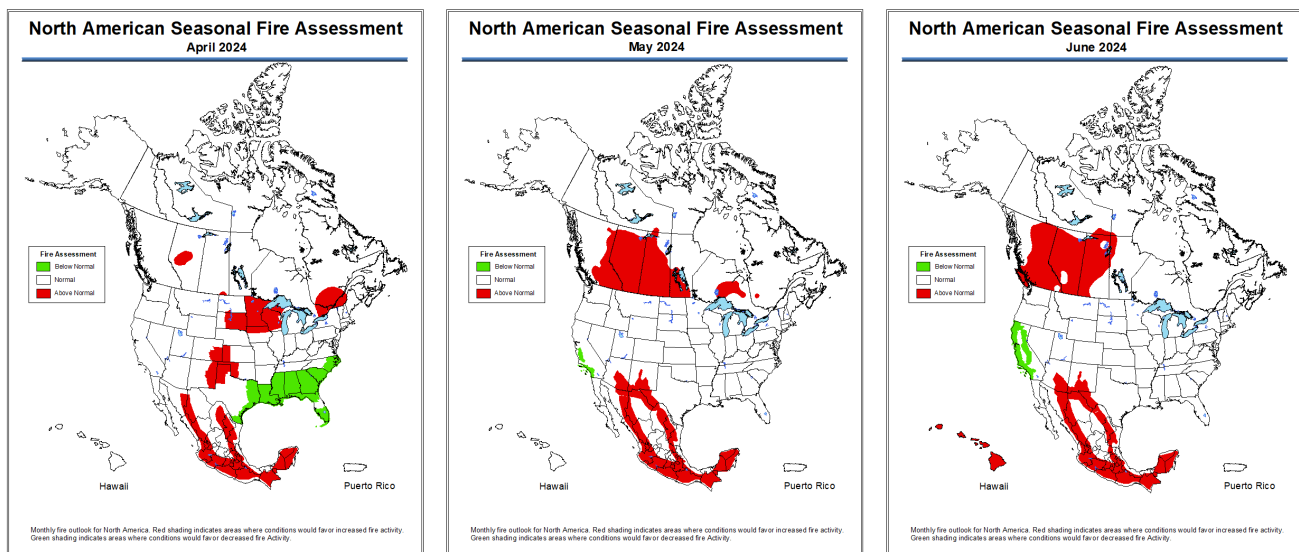
National Interagency Fire Center • Natural Resources Canada • Servicio Meteorológico Nacional
United States Canada Mexico

Outlook Period April through June 2024
Issued 12 April 2024

Executive Summary

Early March in western and central Canada started out cold and snowy, with heavy snow falling in parts of central Saskatchewan. Warmer weather began filtering back in by March 7 and most regions were normal to warmer than normal until mid-month when an upper trough and cold airmass dominated the north, the Prairies, and central provinces. While some regions experienced non-negligible snow fall such as the Alberta foothills, and parts of Saskatchewan, most regions in western Canada received below normal precipitation amounts for the month.

Very warm temperatures occurred in early March in southern portions of the eastern provinces. While temperatures remained generally warm to seasonal into mid-month, heavy fall snow was received in parts of Ontario, Quebec, and the Atlantic provinces as a series of systems moved through central and eastern Canada. A strong system passing through Atlantic Canada near the end of March resulted in record breaking or near record breaking precipitation amounts for some regions. March precipitation anomalies are above normal over most of Ontario eastward except for well above normal amounts received along portions of the Atlantic provinces and normal to drier than normal conditions in southern Quebec.



Monthly fire outlook for North America for April 2024 (left), May 2024 (middle), and June 2024 (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.*

Temperatures in eastern Canada in early March were warm enough to start fire weather calculations in some southern Ontario locations. By mid-March, the southern parts of western Canada, Ontario, and Quebec stations reached the threshold for calculation start-up, and as of April 10, most provinces and territories have at least one weather station that has begun calculating indices.

April has begun with above normal temperatures across the entire country and snow free regions over most of the Prairies, large portions of British Columbia, and the southern regions of Northwest Territories, Ontario, Quebec, and the Atlantic Provinces.

In the United States, fire activity remained active at low levels east of the Rocky Mountains, although a brief dip in activity occurred the latter half of March outside the Appalachians. Fire activity increased modestly across the Eastern, Rocky Mountain, and Northern Rockies Areas in early April. Climate Prediction Center and Predictive Services outlooks issued in late March depict above normal temperatures for much of the US and Alaska. Precipitation is forecast to be above normal across much of the Southeast and across portions of Alaska, but below normal for portions of the northwestern US, Southwest, and central and west Texas. Much of the Southern Area is forecast to have below normal significant fire potential from southeast Texas to the Southeast Coast in April. Above normal significant fire potential is forecast for portions of the central and southern High Plains and Upper Midwest in April. Fire potential will increase to above normal in the lower elevations of the Southwest into West Texas and lee sides of Hawai'i in May and June. Portions of central and southern California will have below normal potential in May expanding to include all California mountains and the Bay Area in June.

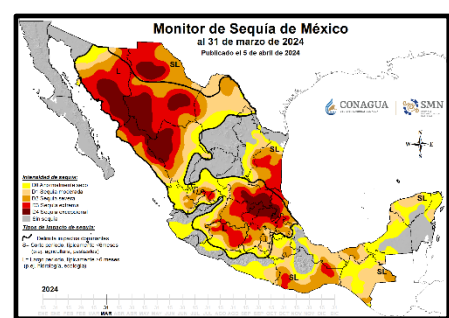
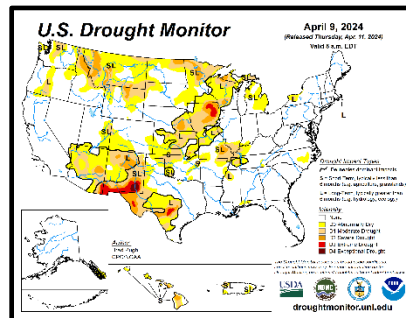
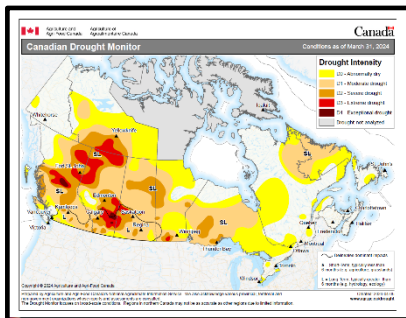
So far this year, forest fire activity and affected areas have remained below normal across Mexico. During the months of January and March 2024, precipitation was below normal, while in February it was above normal. Average temperatures at national level have also been above the climatological range. Given the current conditions of temperature, precipitation, and drought across the country, along with the forecast of a dry and warm April through June, fire activity is expected to increase with above normal potential for much of the mountainous regions of Mexico and the Yucatan Peninsula.

Critical Factors

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

El Niño-Southern Oscillation (ENSO):

El Niño continues in the equatorial Pacific Ocean, with the warmest sea surface temperature (SST) anomalies in the central Pacific Ocean. El Niño has been weakening the past three months, and another active episode of the Madden Julian Oscillation (MJO) developed in mid to late March. A rapid weakening of the current El Niño is forecast to continue through April, with the Climate Prediction Center (CPC) forecasting neutral El Niño-Southern Oscillation (ENSO) conditions for the April – June period (an 83% chance). A rapid transition to La Niña is becoming increasingly likely by early summer, with CPC forecasting a 62% chance of La Niña for the June – August period. The MJO, Pacific Decadal Oscillation, Pacific-North American Pattern, and Arctic Oscillation are likely to influence weather and climate during the outlook period, especially the MJO during the first half of April, but the transition from El Niño to ENSO neutral and potential La Niña conditions will be the main driver.



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:

Since the end of February, drought conditions have remained largely static, except for some improvement in parts of northern/eastern Ontario, portions of northern Quebec, and the Atlantic provinces. A large region extending through central and northern British Columbia, northern Alberta,

and the southern Northwest Territories remains in severe and extreme drought. Similar levels of drought intensity persist in southern Alberta and into western Saskatchewan. According to the Canadian Drought Monitor, 66% of the country is currently classified as abnormally dry or in drought conditions. Drought is minimal or absent in northwestern Canada, including Yukon and northwestern British Columbia. Similarly, drought is absent in parts of northeastern Manitoba extending into extreme northern Ontario, as well as in extreme northern Quebec and the majority of eastern Quebec extending into much of the Atlantic region.

Temperatures were above normal for much of the eastern half of the US, with near to below normal temperatures were observed across much of the West, except for portions of Washington and the northern Rockies, which were slightly above normal. Temperatures in Alaska and Hawai'i were near to slightly above normal except for Kaua'i which was well below normal. Above normal precipitation fell across much of the East Coast and Southeast, with almost 300% of normal precipitation falling across south Florida. Precipitation was also above normal in much of the Great Basin, northern California, Four Corners, and Great Lakes. However, below normal precipitation was found on much of the Plains, including the southern High Plains, and across much of the Ohio Valley. Below normal precipitation fell across the Mojave and Sonoran Deserts, Washington, and northern Rockies. Precipitation was below normal across much of south-central and Interior Alaska as well.

A strong downslope wind event occurred across the central Appalachians on March 20, where strong westerly winds amid relative humidity as low as 15% resulted in critical fire weather conditions. Numerous significant fires emerged on that day with two incident management teams deployed. A strong storm developed on the Plains March 24-26, with strong winds across the southern High Plains, but no significant fires resulted due to slightly improved fuel conditions. The storm also brought heavy snow and blizzard conditions to much of the central High Plains into Minnesota, with heavy rainfall across much of the Great Lakes.

Drought improved in portions of Iowa, Nebraska, and Wisconsin but worsened across portions of southeast Missouri. Drought also improved across portions of the Cascades and eastern North Carolina. However, drought persisted across much of the northern Rockies, with drought development across northeast Minnesota. California remains drought free, but drought persists on the Big Island of Hawai'i with drought development on the lee sides on the rest of the Hawai'ian Islands. Drought persists across portions of Puerto Rico and the US Virgin Islands but has continued to improve the past month. Drought is forecast to persist across much of New Mexico into West Texas, with drought development across the Texas High Plains. Drought improvement is forecast across Arizona, the Mid-Mississippi Valley, central Plains, and northern Wyoming. Drought is forecast to develop across portions of northeast Minnesota and northwest North Dakota as well as northern Minnesota and the Upper Peninsula of Michigan

During the second half of March, several weather systems affected Mexico. These included three cold fronts and the presence of several troughs. In addition, atmospheric instability interacted with the polar and subtropical jet streams, leading to the development of two winter storms. Due to these storms, positive precipitation anomalies were recorded in portions of Baja California, Sonora, Chihuahua, Coahuila, Nuevo Leon, Tamaulipas, Puebla, Veracruz, Oaxaca, Chiapas, and Yucatan. The precipitation resulted in reduction of areas with extreme drought to severe drought in portions of Sonora and Tamaulipas, as well as a reduction of abnormally dry conditions in Nuevo Leon.

Despite the observed precipitation, it was not enough to mitigate most effects of the current drought in the country. This resulted in an increase in areas with extreme to exceptional drought in parts of Guanajuato, Querétaro, Hidalgo, and Veracruz, as well as an increase in abnormally dry conditions in Nayarit, Jalisco, Michoacán, Guerrero, Tlaxcala, Puebla, Chiapas, and the Yucatán Peninsula. The percentage of coverage with moderate to exceptional drought across Mexico for the second half of March was 57.5%; slightly lower (0.67%) than that observed in the first half of March.

Fire Season Status:

Fires from 2023 continue to be monitored in Alberta, British Columbia, and Parks Canada regions, and possibly the Northwest Territories and other jurisdictions. Fifty-five of the currently burning fires reported are from 2023 and as of April 10, 15 new starts have been reported across the country. Stations in southern/central British Columbia, southern Ontario, southern Quebec, and over spotty regions across the prairies, Northwest Territories, and Atlantic Canada have met the threshold to begin fire weather index calculations. With above average temperatures forecast and lower than normal snow cover over many regions, the number of stations reporting will rapidly increase.

Fire activity was active at the beginning of March for the Southern, Eastern, and Rocky Mountain Areas, but subsided some at the end of the month except for the Southern Area. Activity increased again in early April across the Rocky Mountain, Eastern, and eastern portion of the Northern Rockies Areas. The Eastern and Southern geographic areas are at preparedness level 2 (on a scale of 1-5), with all other geographic areas at preparedness level 1. Significant fires continued to emerge at times across the Upper Midwest and southern/central Plains the first half of the month, but timely precipitation mid-month resulted in a decrease in activity. However, fire activity increased in the central Appalachians the latter half of March, with several large fires in West Virginia and Virginia. Fire activity increased moderately across much of the Plains in early April. Through April 12, 9,458 fires have burned a total of 710,011 hectares (1,754,439 acres), 75% of average for fires and 297% of the average area burned.

So far this year 1,669 forest fires have been recorded in 26 states resulting in 68,539 hectares burned. The vegetation corresponding to grass and brush was 93%, while timber was 7%. States with the highest number of wildfires were State of Mexico, Mexico City, Puebla, Tlaxcala, Durango, Veracruz, Morelos, Chiapas, Jalisco, and Guerrero, representing nearly 79% of the total fires. States with the largest area burned were State of Mexico, Mexico City, Puebla, Tlaxcala, Durango, Veracruz, Morelos, Chiapas, Jalisco, and Guerrero, representing almost 87% of the national area burned. Of the total fires, 224 (13%) occurred in fire-sensitive ecosystems, with a burned area of 13,292 hectares, which represents 19% of the total area burned.

Canada Discussion

April/May/June: April temperatures are expected to above normal over much of the country, with closer to normal conditions likely in the west near the Pacific coast. Dry conditions are expected over the east and patchy above and below normal precipitation is expected over the rest of the country. The Canadian Wildland Fire Information system is indicating above average severity anomalies in southern Quebec and into eastern Ontario, as well as northern Alberta. While the April forecast is indicating few areas of above normal fire risk, grass fires in snow free regions are possible as green-up has yet to occur over many regions in Canada this early in the spring. Warmer than normal temperatures coupled with below normal snowpack may result in early snow melt, drying, and fire activity in some regions.

Above average temperatures are expected over the entire country for May. While there is less certainty in the precipitation forecast, ensembles are suggesting normal to below normal precipitation is possible for much of Canada. Normal to below normal precipitation may not offset warmer temperatures, lingering drought, and lower than normal snowpack in many of the provinces and territories. The Canadian Wildland Fire Information System seasonal forecast indicates increased risk in southern/eastern British Columbia, the majority of Alberta and Saskatchewan, southern Manitoba, and two regions north of Lake Superior and western Quebec.

Like May, model forecasts for June indicate average temperatures are likely across the entire country. The Canadian Wildland Fire Information system indicates the potential for above average fire activity over a large region extending from southern, central, and northeastern British Columbia to the southeastern corner of Northwest Territories and into northwestern Manitoba. This region also includes the majority of Alberta and Saskatchewan.

United States Discussion

April/May/June: In the United States, fire activity was active at the beginning of March for the Southern, Eastern, and Rocky Mountain Areas, but subsided some at the end of the month except for the Southern Area. Significant fires continued to emerge at times across the Upper Midwest and southern/central Plains the first half of the month, but timely precipitation mid-month resulted in a decrease in activity, at least temporarily. However, fire activity increased in the central Appalachians the latter half of March, with several large fires in West Virginia and Virginia.

Climate Prediction Center and Predictive Services outlooks issued in late March depict above normal temperatures are likely for much of the US and Alaska, although there is no strong signal for temperatures across portions of the central and northern Plains. Precipitation is likely to be above normal across much of the Southeast and across portions of Alaska, but below normal for much of the Northwest, northern Rockies, Southwest, and central and west Texas. Much of the Southern Area is forecast to have below normal significant fire potential from southeast Texas to the Southeast Coast in April, although portions of the Florida Peninsula will have normal potential. Above normal significant fire potential is forecast for portions of the central and southern High Plains in April, as well as eastern South Dakota and the Upper Midwest. These areas will return to normal potential in May, but potential will increase to above normal in southeast Arizona, southwest New Mexico, and West Texas in May and June. Above normal potential is forecast for the lee sides of Hawai'i May in May and June. Portions of central and southern California will have below normal potential in May expanding to include the Sierra, Coast Ranges, Bay Area, and Transverse and Peninsular Ranges in June.

Mexico Discussion

April/May/June: Across the Baja California Peninsula and in small areas in the north, northeast, west, south, and southeast of the country, precipitation caused by various weather systems was above normal, which contributed to a decrease in drought indices and affected areas. However, regions of extreme to exceptional drought persist in the states of Sonora, Chihuahua, Durango, Sinaloa, San Luis Potosi, Guanajuato, Queretaro, Hidalgo, Puebla, and Veracruz.

Climate forecasts from the International Research Institute show the probability of precipitation is expected to be below normal in the Baja California peninsula, Sonora, Chihuahua, Sinaloa, Nayarit, Durango, Zacatecas, Aguascalientes, Jalisco, Colima, Michoacán, Guanajuato, Querétaro, and Guerrero. On the other hand, precipitation probability is expected to be above normal in eastern Oaxaca and southern Chiapas. In the remaining states, none of the categories dominates. As for temperature, it is expected to be above normal in most of the Mexican Republic.

Given the weather outlook for the April through June is forecast to be warm and dry, fire potential is expected to increase to above normal across the Mexican highlands and jungle regions during April, May, and June. In May, the maximum peak of wildfire activity is expected to be reached, with a tendency to decrease in June and reach a minimum in July, due to the influence of the North American Monsoon.

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.

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