North American Seasonal Fire Assessment and Outlook

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

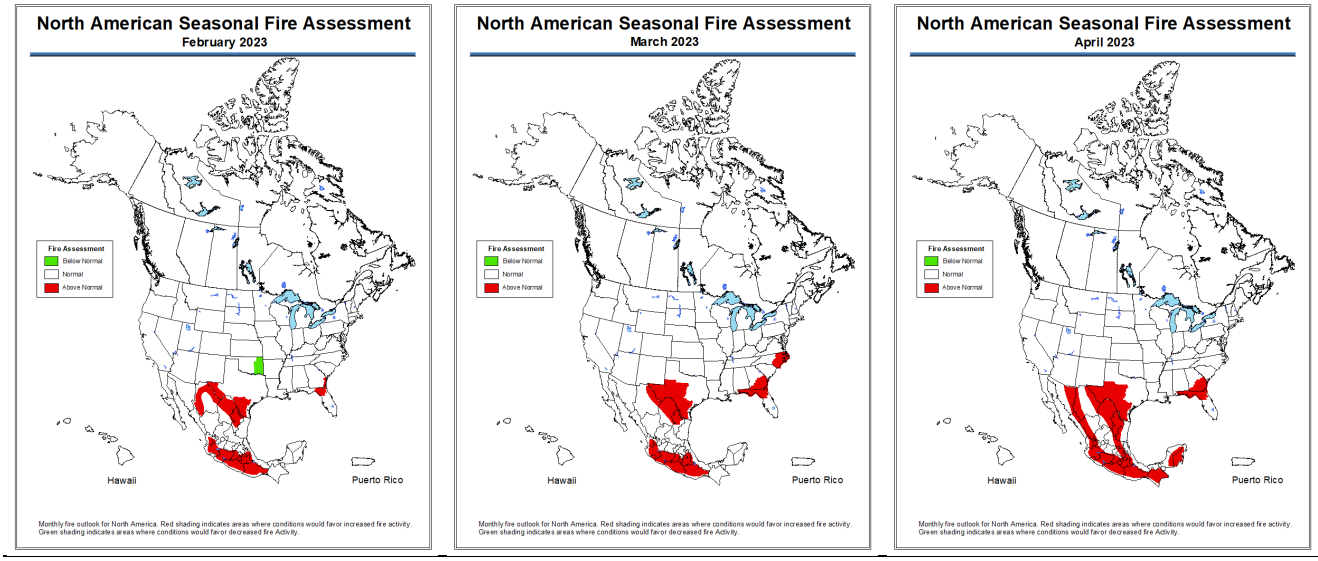
Outlook Period February through April 2023
Issued 13 February 2023

Executive Summary

January was warmer than normal in much of Canada, although northern Quebec, interior Labrador, the eastern Arctic, and the Mackenzie Delta were cooler than normal. A major cold event invaded Canada late in January and early February, but temperatures still averaged above normal for the period. Warm Pacific flow returned to western Canada in early February and moved east across the country. Snow cover is limiting fire activity and will likely prevent an early start to the season, although January precipitation has been below normal in many regions. Thin, patchy, or absent snow cover is present in portions of the southern Prairie Provinces, the eastern Atlantic Provinces, and a strip from northeastern Manitoba northwest along the Northwest Territories-Nunavut border.

Significant fire activity was minimal across the US during January as consistent upper-level trough passages with enough precipitation limited significant fire potential. However, isolated large fires were reported in central Oklahoma and central Florida. It remained dry across much of the southern High Plains into the Rio Grande Valley, with occasional elevated fire weather conditions. Significant drought reduction occurred in January across much of California and the Great Basin. However, drought continues in nearly half the country, with the most intense drought continuing on portions of the southern and central Plains. Above normal significant fire potential is forecast across the west Texas mountains in February, expanding to include much of southwest Texas in March and April. Above normal potential is also forecast in northeast Florida and the Georgia Coast through the period, expanding to include the Florida Panhandle and southeast Georgia in March and April. Below normal potential is expected in eastern Oklahoma in February, with above normal potential in eastern North Carolina in March.

Some fires have occurred sporadically in the first days of February, primarily over western, northern, central, and southern Mexico. Fire activity increased in January for central and western Mexico, and

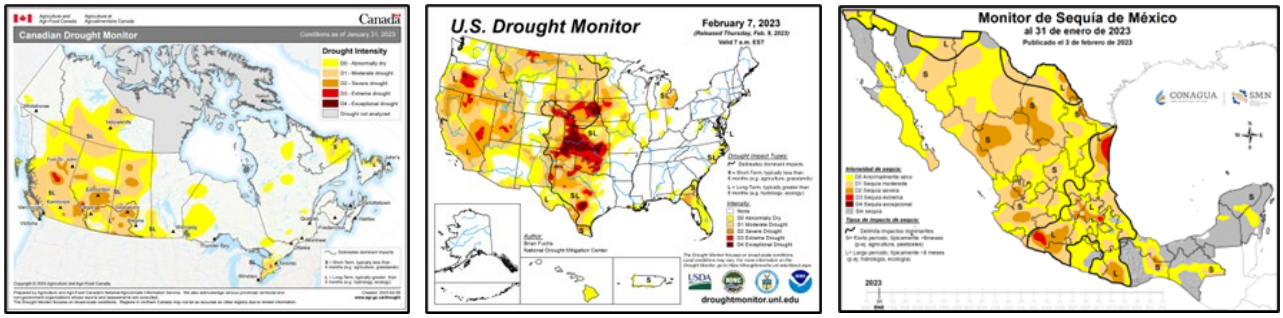


Monthly fire outlook for North America for January 2023 (left), February 2023 (middle), and March 2023 (right). Red shading indicates areas where conditions would favor increased fire activity. Green shading indicates areas where conditions would favor decreased fire activity. *Click on each image to see larger versions.*

this activity will reach its peak during March and April. Fire activity for northern and southern Mexico will increase in February, reaching its peak during April and May. Weather conditions through April are forecast to remain warm and dry, so fire potential is expected be above normal for February, March, and April across much of Mexico.

Critical Factors

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



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

El Niño-Southern Oscillation (ENSO):
La Niña conditions continue, with below average sea surface temperatures (SSTs) over much of the equatorial Pacific Ocean, but SSTs have warmed over the past month. La Niña conditions will continue for the next month but continue to weaken through March according to most guidance. The Climate Prediction Center (CPC) is forecasting an 82% chance of neutral El Niño-Southern Oscillation (ENSO) conditions returning in spring. Other teleconnection patterns, such as the Madden-Julian Oscillation, Pacific Decadal Oscillation, Pacific-North American Pattern, and Arctic Oscillation are likely to influence weather and climate during the outlook period, but La Niña is forecast to remain the dominant influence through February.

Drought:
Much of western Canada lacks varying amounts of surface moisture, with a large area of abnormally dry conditions and moderate drought from the Manitoba-Saskatchewan border west through most of British Columbia. This area extends into southeastern Yukon and across the Northwest Territories to the Nunavut border between Great Slave Lake and Great Bear Lake. A few pockets in this region are without drought, but other patches south of the 60th parallel feature severe drought, and small areas of extreme drought are still present in central Banff National Park and central British Columbia. Minor improvements have been noted in western Canada through January, although precipitation has remained below normal in coastal and southern British Columbia, much of Alberta, most of Saskatchewan and Manitoba, and northern Ontario and Quebec.

From Manitoba east, a few abnormally dry spots are present, with small patches of moderate drought in southern Ontario, southeast Labrador, and northeastern Newfoundland.

Significant drought improvement was observed across California into much of the Great Basin due to the numerous atmospheric river events during the first half of January. However, drought continues in almost half the country, and drought expanded in portions of the southeast Coastal Plain and northern Ohio Valley. Precipitation associated with atmospheric rivers fell across the Southwest during January, with a slight amelioration of drought in portions of eastern New Mexico. The most intense drought remains on the southern and central Plains, with severe to extreme drought also in portions of California, Oregon, Nevada, Utah, Montana, and Wyoming.

Above average rainfall was observed the first half of January over northwest and southern portions of Mexico and along the Yucatan Peninsula. This rain was caused by two cold fronts that interacted with the polar and subtropical jet streams. Despite this rainfall, drought only diminished across a small portion of Mexico, in Baja California, where the area of abnormal dryness was slightly reduced. The

most important precipitation deficits were observed along the Sierra Madre Occidental, Oaxaca, and over northeast and southern Veracruz. These conditions generated an increase of abnormally dry conditions and moderate drought across most of rest of the country. Severe drought also increased over northern, western, central, and southern Mexico. As of January 31, moderate to extreme drought covers over 44% of Mexico, 25% greater than the amount of drought observed December 1, 2022.

Fire Season Status:
Fire activity has been stifled over the winter of 2022-23 in Canada as snow cover has been present in most areas, although variable in others. Snow cover is thin or absent in parts of the drought regions in the Prairie Provinces and thin along the Northwest Territories-Nunavut border. While the latter region does not normally have fire activity until late spring or early summer, snow melt in parts of western Canada should be watched as mild weather through January and early February has exposed some grass and shrub lands. This is especially true in the Chinook belt of southwestern Alberta, where some regions are snow-free, and fire may make an appearance in these regions.

Significant fire activity was very low across the US in January as consistent upper-level trough passages with enough precipitation limited significant fire potential. However, it remained dry across much of the central and southern High Plains into the Rio Grande Valley, with occasional elevated fire weather conditions and isolated significant fires. Through February 10, fire statistics showed 2,170 fires have burned a total of 7,160 hectares (17,693 acres), 89% of average for fires and 38% of the average area burned.

So far this year 253 forest fires have been registered in 22 states resulting in 3,422 hectares burned. Grasses and shrubs represent 96% of the total, while timber is only 4%. States with the greatest number of fires were Jalisco, Mexico City, Puebla, State of Mexico, Veracruz, Michoacán, Tlaxcala, Hidalgo, Oaxaca, and Zacatecas, representing nearly 89% of the total fires. States with the largest area burned were Jalisco, Oaxaca, Guerrero, Zacatecas, Chihuahua, State of Mexico, Puebla, Mexico City, Michoacán, and Veracruz, representing almost 94% of the area burned. Out of the total number of fires, 41 (16%) occurred in fire-sensitive ecosystems, with a burned area of 643 hectares, which represents 19% of the total area burned.

Canada Discussion

January/February/March: Normal winter conditions are expected in Canada in February, which translates to minimal fire activity. A lack of snow cover in southwestern Alberta and little ground moisture may allow the presence of fire during February, although levels likely will not be of concern since periodic cold spells appear likely, which will temporarily preserve newly fallen snow.

Cool conditions are forecast by climate models during March in Canada, and if correct, normally translates to minimal early spring fire activity. However, January and February to date have featured warm temperatures and light precipitation despite forecasts of below normal temperatures. Areas with minimal snow cover in parts of the southern Prairies Provinces could periodically support fire, however, precipitation normally begins to increase in March in this region. Normal precipitation amounts would likely keep fire off the landscape, so this may still translate to normal fire levels in this region.

Snow has normally melted from much of southern Canada by April, although periods of snow cover are still normal. At the time of this report, no indications exist to suggest above normal fire activity in any part of the country in April. However, if snow continues disappearing through February and March, some areas could support fire activity. This is especially true in southwestern Alberta, where snow has vanished or almost vanished in early February. If dryness continues into the spring, fire could be present in grassland, brush land, and in the parkland where grassland intermingles with open forest.

United States Discussion

January/February/March: Near to below normal temperatures and near to above normal precipitation are likely from the Pacific Northwest to the Great Lakes into April. Warmer and drier than normal

conditions are likely through April in the Southwest and southern Plains, then stretching along the Gulf Coast into Florida. Above normal temperatures are also forecast for much of the eastern US near and east of the Appalachians, with above normal precipitation in the Ohio and Tennessee Valleys. Drought is anticipated to expand into portions of the Four Corners, south Texas, and Florida Peninsula, but drought conditions will likely improve across northern California, northern Great Basin, Montana, and the northern Plains.

Much of the US is forecast to have normal significant fire potential in February, with small areas of above normal confined to portions of west and south Texas, northeast Florida, and the Georgia coast. Below normal potential is forecast for eastern Oklahoma as well in February. In March, above normal fire potential is forecast to expand into much of southwest and portions of central Texas, the Florida Panhandle, southeast Georgia, and eastern North Carolina. For April, normal fire potential will return to eastern North Carolina, but above normal potential will continue across central and southwest Texas, north Florida, and southeast Georgia.

Mexico Discussion

January/February/March: The precipitation for the past three months (November, December, and January) was below the normal across most of Mexico, except for portions of Baja California, Sonora, San Luis Potosi, Oaxaca, Chiapas, Campeche, and Yucatan. Temperatures were also above normal across much of Mexico, except for the Baja California Peninsula, Sonora, Tabasco, Chiapas, and south of Veracruz. The dry season will continue to deteriorate vegetation health, creating conditions that will contribute to increasing fire activity through April.

According to the seasonal climate forecasts, it is expected that precipitation will remain below the normal across much of the country, except for central and south states, where none of the categories dominates. Temperatures are forecast to be above the normal across most of the country as well, except for Baja California Sur, where none of the categories dominates.

Given the recent temperature, precipitation, and drought trends across the country, along with the precipitation and temperature forecast, the fire potential is expected to be above normal during February for Nuevo León, Tamaulipas, northeast Chihuahua, northern Coahuila, and west-central Mexico. For March and April, an increase of fire activity is expected over most of Mexico, focused on the northern, northeast, central, western, south, and southeast regions of the country.

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
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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