

North American Seasonal Fire Assessment and Outlook

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

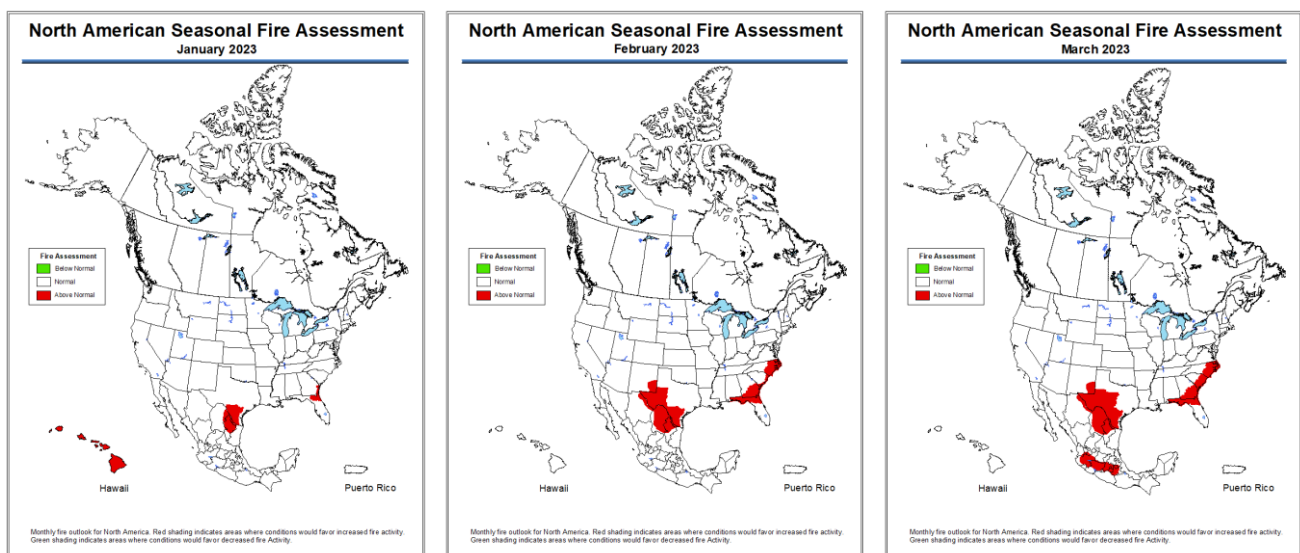
Outlook Period January through March 2023
Issued 12 January 2023

Executive Summary

Winter conditions persist in Canada resulting in minimal fire activity. Snow depths are below normal in eastern Canada, although precipitation amounts were above normal last month. Below normal temperatures dominated much of western Canada in the first few weeks of December, with a transition to warmer than normal temperatures at the end of the month into early January. The Prairie provinces and northern British Columbia have near normal to below normal snow depths whereas southern British Columbia and the Territories are normal to above normal. Some regions in southern Saskatchewan and Alberta are snow-free as of early January.

Significant fire activity was minimal across the US during December 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. Drought continues across much of the country, but a significant reduction in areal coverage and drought severity have occurred since November. Above normal significant fire potential is forecast for portions of south Texas, northeast Florida, and the Georgia coast in January, while much of the US is forecast to have normal potential. Above normal significant fire potential will expand into the Florida Panhandle, southeast US coast, much of west Texas, and southeast New Mexico in February. A further expansion of above normal potential into portions of central Texas and central South Carolina is forecast in March.

Wildfire activity remains low across Mexico, with fires occurring sporadically in Chihuahua, Campeche, Jalisco, Michoacán, and Nuevo León during December. Fire activity typically increases in January over central and western states, peaking during March and April, while fire activity for northern and southeast



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.*

Mexico increases in February, peaking in April and May. It is expected that fire potential will remain normal for January and February across most of the country, except for the northern border, mainly in Coahuila, Nuevo León, and Tamaulipas, where above normal activity is expected. For March the forecasted dry and warm conditions over the country will extend above normal potential into portions of central and western Mexico.

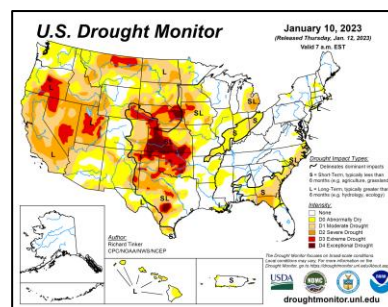
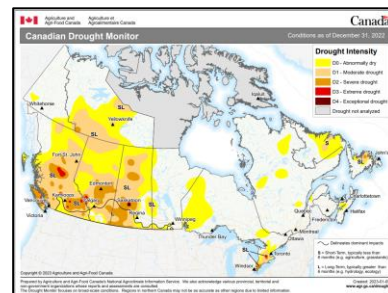
Critical Factors The critical factors influencing significant fire potential for this outlook period are:

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 slightly in the past month in portions of the equatorial Pacific Ocean. La Niña conditions will continue but gradually weaken through winter according to most guidance. The Climate Prediction Center (CPC) is forecasting a 71% 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: Drought continues in the western half of Canada. Precipitation resulted in some reduction of drought levels in central Alberta and the southern half of British Columbia, although all regions remain abnormally dry or drier. Improvement was also observed in northern Ontario and Quebec where the extent of abnormally dry regions is reduced, although southern Ontario continues to range from abnormally dry to extreme drought. Newfoundland and Labrador drought conditions have slightly worsened and abnormally dry conditions are now noted in Nova Scotia, where conditions were previously normal. The Canadian Drought Monitor reports 42% of the country is abnormally dry or drier as of December 31, 2022. No regions in Canada are under exceptional drought.

A significant reduction in drought severity and areal coverage was observed across the US since the end of November. Improvement in drought was noted across much of the West Coast into the Great Basin, with drought removal observed across the Lower Mississippi Valley into the Ohio Valley. However, drought persists across much of the West into the Plains, with areas of exceptional drought across portions of Texas, Oklahoma, Kansas, and Nebraska. Drought also persists across much of the Florida Panhandle and portions of the southeast US coast.

In the first half of December, above average rainfall was observed over northwest Mexico and along the Gulf of Mexico coast, caused by several cold fronts. This rainfall reduced moderate drought areas between Baja California and Sonora. High pressure remained over much of the country with above normal temperatures over the north, northeast, and western portions of Mexico. As a result, abnormal dryness increased in Chihuahua, Coahuila, Sinaloa, Durango, Nuevo León, Zacatecas, Jalisco, Michoacán, State of Mexico, Puebla, Oaxaca, Chiapas, and Campeche. An increase in moderate drought was also observed across the north, west, central, and southern Mexico. Severe drought increased in Michoacán and Oaxaca as well. As of December 15, 2022, moderate to extreme drought area was observed across nearly 15% of Mexico, a more than 5% increase in drought compared to November 30.



Top: Canadian Drought Monitor for December 31 (from *Agriculture and Agri-Food Canada*). **Middle:** United States Drought Monitor for January 10. **Bottom:** Mexican Drought Monitor for December 31 (CONAGUA-Servicio Meteorológico Nacional).

Fire Season Status: Winter conditions have resulted in minimal fire activity thus far. With the last Canadian Interagency Forest Fire Centre (CIFFC) situation report issued in mid-September, fire numbers and area burned come from the Data Integration Project (DIP). This effort features provinces and territories supplying values to a common data compilation platform, which will help automate reporting for future CIFFC situation reports. Adjusted DIP values suggest Canada recorded 4,883 fires burning 1,467,071 hectares in 2022. As of January 10, the DIP indicates Canada has recorded 77 fires burning 187,576 hectares since the start of 2023. Most locations across Canada are experiencing winter conditions with no fire weather calculations are occurring. However, with warmer than normal conditions in eastern Canada, several stations are active and reporting low indices.

Significant fire activity was minimal across the US during December 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. Fire statistics for 2022 showed 68,988 fires burned a total of 3,066,443 hectares (7,577,183 acres). These totals are 112% of the 10-year average for fires, with a near normal number of hectares burned. Through January 6, fire statistics showed 78 fires have burned a total of 222 hectares (549 acres), 97% of average for fires and 67% of the average area burned.

According to preliminary data for 2022, 6,755 fires occurred last year, resulting in 739,626 hectares burned, which is 84% of the average number of fires from 1998 through 2021. During 2022, the states of Mexico, Jalisco, and Mexico City recorded the greatest number of fires.

Canada Discussion

January/February/March: North American climate models are in reasonable agreement for Canada in March as La Niña transitions to neutral conditions. Colder than normal temperatures are forecasted for western Canada while warmer than normal conditions are expected in southern Ontario and regions eastward. Precipitation trends are less certain, with models suggesting above normal precipitation in British Columbia and Alberta where persistent drought conditions have lingered. While winter weather will likely still have a hold on much of Canada in March, snow-free regions could see early season fire activity. Overall, normal winter conditions are expected in Canada in January and February, which translates to minimal fire activity, and drought conditions in western Canada are forecast to improve.

United States Discussion

January/February/March: Below normal temperatures and near to above normal precipitation are forecast from the Pacific Northwest through the northern Plains into the Great Lakes through March due to La Niña. Below normal precipitation is forecast across the southern tier of the US from southern California through the Southwest into the southern Plains and Gulf Coast, with the greatest chance of below normal precipitation across much of the southern High Plains and the Florida Peninsula. Above normal temperatures are forecast across the southwest US into Texas, then spreading northeast into the Gulf Coast, Appalachians, and East Coast.

Much of the US is forecast to have normal significant fire potential in January, with above normal confined to portions of south Texas, northeast Florida, and the Georgia coast. For February, above normal significant fire potential is forecast to expand into west Texas and portions of New Mexico, as well as the Florida Panhandle and much of the southeast US coast. Above normal potential will then expand into portions of central Texas and central South Carolina in March.

Mexico Discussion

January/February/March: Precipitation for the last quarter of 2022 was below normal across Mexico, except for portions of Sonora, Chihuahua, Tamaulipas, Tabasco, Oaxaca, and Chiapas, while temperatures averaged slightly above normal. The climatological dry season will continue to deteriorate vegetation health, contributing to an increase in fire activity the first quarter of 2023, mostly over central and western Mexico.

Climate forecasts indicate precipitation probability will remain below the normal across much of the country, except for northeast Guerrero, south Puebla, west and east Oaxaca, the coasts of Chiapas, and southern Veracruz, where above normal precipitation probability is expected. For central Mexico and the Yucatan Peninsula, equal chances of above or below normal precipitation are forecast. Temperatures are likely to be above normal for much of the country, except for Baja California Sur where equal chances are forecast.

Given the recent temperature, precipitation, and drought trends across the country, along with the climatological forecast, fire potential is expected to be normal across most of the country in January and February. However, northern Coahuila, Nuevo León, and Tamaulipas are forecast to have above normal potential. By March, above normal potential is forecast to expand across portions of central and western Mexico, including the states of Puebla, Tlaxcala, Morelos, Mexico City, State of Mexico, Michoacán, Jalisco, and Nayarit.

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.

Acknowledgements

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