

North American Seasonal Fire Assessment and Outlook

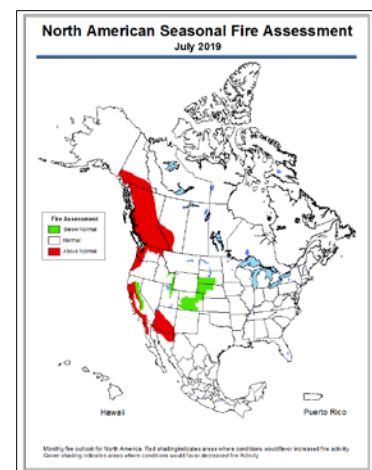
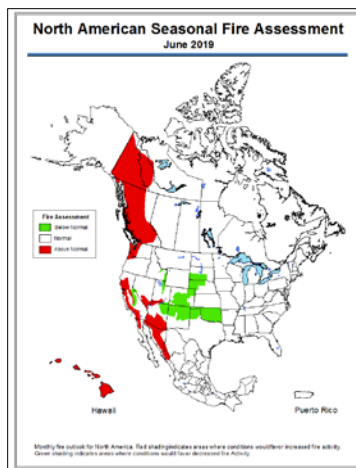
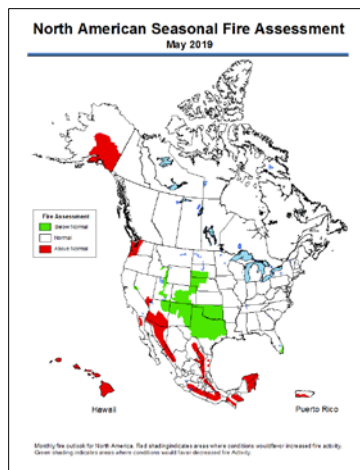
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United States Canada Mexico

Outlook Period May, June and July 2019 Issued 10 May 2019

Executive Summary

The spring green up became increasingly prevalent across southern and central portions of the continent in April as fuels across northern Mexico and most of the United States exited dormancy. Fuels across Canada mostly remained dormant. Snow cover in the lower elevations across the country and Alaska melted off at an earlier than average date. An active weather pattern continued across a majority of the North American continent in April as cold, moist systems continued to move across Canada and the coterminous United States. Drier than normal conditions developed along the border of the United States and Mexico west of the Continental Divide while generally wetter than average conditions were observed across southwestern Canada and the northwestern portion of the United States. Drought conditions across the continent showed little change from the previous month except across portions of Chiapas in Mexico where there was some intensification observed.

Mountain snowpack levels across most of the western states of the United States continued to be above average and showed initial signs of melting off at an average rate. Snowpack along the Canadian Border with the United States and across portions of northern British Columbia and the southern Yukon Territory remained below average due to ongoing drier than average conditions observed in these areas. Areas of concern across Alaska's interior showed some mitigation as periodic wet conditions added moisture to the fuels while ongoing dry conditions across eastern and southern Mexico allowed the elevated fire potential to persist.



Monthly fire outlook for North America for May 2019 (left), June (middle), and July 2019 (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.*



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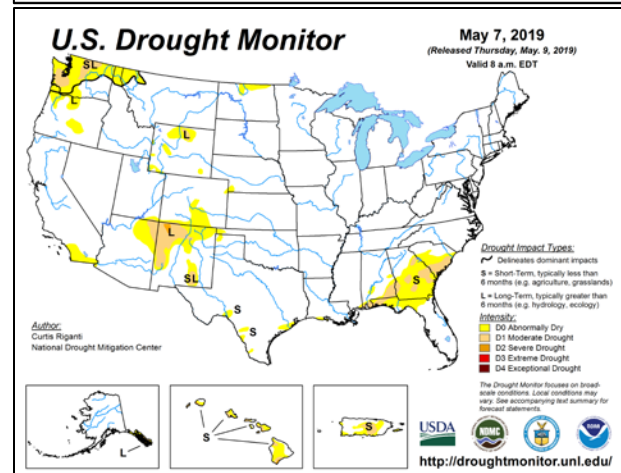
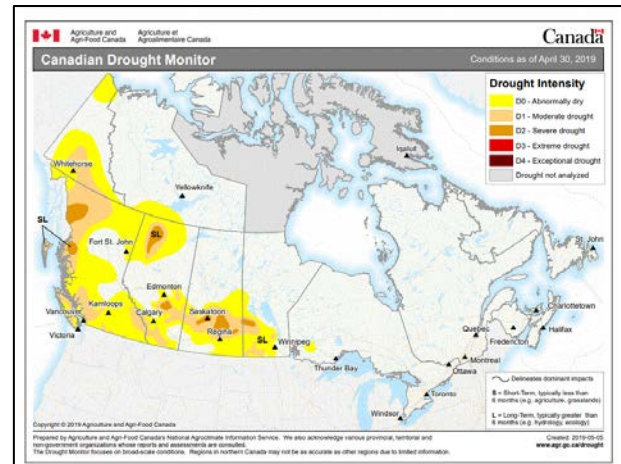
Most years, noticeable increases in fire activity are observed in May across northern Mexico, the southwestern United States, and Alaska. While this is expected in 2019, the entry into peak season may be muted or delayed slightly across portions of the coterminous United States. Early spring was wetter than average across the Four Corners region of the southwestern United States, so a muted or late entry is expected. However, across California, southern Arizona, and northwestern Mexico, conditions have been much drier than average. A more noticeable increase in activity is expected as the month progresses and transitions into June. While winter was drier than average across the Alaskan Interior and portions of northwestern Canada, recent precipitation activity should allow for a more gradual entry into the fire season in those locations. The remainder of the central and northern portion of the continent will be in various states of green up and thus out of season until June when the fuels dry and cure from south to north. As this occurs, regional entry into the fire season will also occur.

Critical Factors

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

El Niño-Southern Oscillation: Latest Sea Surface Temperature Anomalies across the equatorial Pacific Ocean indicate that the weak El Niño continues and has reached nearly a steady state. Latest model forecasts show almost no change from the previous month's forecast. The event should persist through the summer months with some slight strengthening and weakening fluctuations. Neutral conditions are not expected at least until the middle to late fall.

Drought: Drought trends showed slight intensification across portions of western Canada during April. Areas most impacted by drought are along the southern territorial lines of the Yukon Territory and the Northwest Territory with British Columbia and Alberta. The southwestern border with the United States continues to be impacted by drought as well. The trend of drought reduction continued across the western United States; however, there were areas of drought development and intensification across portions of the southeastern states. In Mexico, little change to the drought across the northern portion of the country occurred. However, the continuance of abnormally dry conditions allowed drought to intensify in the southern states, especially in Veracruz, Tabasco, Oaxaca, and Chiapas. By late month, significant fire activity was observed daily on visible satellite imagery.



Top: Canadian Drought Monitor for 31 March 2019 (from Agriculture and Agri-Food Canada). **Middle:** United States Drought Monitor for 25 April 2019 (from U.S. National Center for Environmental Information). **Bottom:** Mexican Drought Monitor for 15 April 2019 (from CONAGUA-Servicio Meteorológico Nacional).

Fire Season Status: While fire data from the first four months of 2019 is not available, activity noted thus far in 2019 is minimal due to the persistent cold and snowy winter. In 2018, Canada reported over 7200 fires burning approximately 2,200,000 hectares (5,436,310 acres). This represents an increase of about 16% more fires than the 10-year average and a 19% decrease in area burned than the 10-year average. British Columbia burned about 1,360,000 hectares (3,360,628 acres), the highest on record for the province.

While the number of wildfires occurring doubled in March in the U.S., fire activity remained well below average for the first four months of the year as the nation remained largely out of fire season. Year to date, 11,736 wildfires have burned 97,724 hectares (229,126 acres). This is well below the 10-year average of 21,325 wildfires that burn 1424,248 hectares (1,048,342 acres).

Fire activity in Mexico became more active as significant increases were observed. Year-to-date fire statistics for the country show 3,923 fires across 30 states that burned a total of 118,408 hectares (292,592 acres).

Canada Discussion

May/June/July: A generally dry airmass occupied western Canada from mid-March until late April, then a cool period with bands of rain and/or snow followed. Spring has since returned, with dry air and warm temperatures dominating western regions, and values typical of late spring or early summer occurring regularly in southern British Columbia. Eastern Canada faces the opposite problem: too much precipitation. Slow warming and excessive rainfall is slowly eroding a deep snow pack, but this is contributing to heavy runoff. Snow-free areas may have saturated or frozen ground, also resulting in most rainfall flowing away instead of soaking into the soil. Some minor fire activity has appeared in most provinces, with some interface events resulting in loss of homes or other buildings. These fires have not been large to date. Nationally, the number of fires is slightly below normal for this time of year, although all provinces and territories from Manitoba west have had more fires than normal. Area burned remains at or below normal in all regions for this time of year.

Climate model forecasts for Canada appear to be struggling this spring, possibly from weak driving forces e.g. (El Nino-Southern Oscillation, Pacific Decadal Oscillation) producing erratic weather trends. As a result, the wildland fire seasonal forecasts have also been erratic.

For May, recent climate model runs suggest Canada will have lower fire severity than normal. While an early start to warm and dry conditions is leaving much of British Columbia prone to fire starts, rainfall is likely in the last half of the month, which will likely result in normal monthly fire severity for the province. The latest climate model runs hint at continued blocking ridges in the eastern Pacific during June, resulting in warm and dry conditions and resulting elevated fire severity indexes in British Columbia and Yukon. This pattern often features the eastern side of the ridge over the Prairies, so western Alberta also appears prone to elevated fire risk, while conditions east of Alberta are likely to have normal values. July's forecast is similar to June's forecast, with elevated fire severity indexes expected throughout British Columbia, western Alberta, and southern Yukon. A slight difference exists as the Yukon area depicted covers only the southern part of the territory in July, while in June it extended north near the Arctic coast.

United States Discussion

May/June/July: Greenup is occurring across the nation entering May; fuels across the Southwest are now drying and curing and will become increasingly receptive to fire activity as the month progresses. Looking north, Alaska's interior is becoming drier and increasing activity is expected. By late May and early June, California and the southern Great Basin will see an increase in activity as fine fuels dry and cure. In July, low and middle elevation fine fuels will dry across the remainder of the West and will gradually become receptive to fire activity from south to north. Unlike most years, there could be a delayed start to the season in the higher, timbered elevations due to preexisting weather conditions and slower than average snowpack melting rates. An exception to this could be along the Canadian Border

with Washington, Idaho, and western Montana where below average snowpack and moderate drought conditions exist. These areas can expect an average start to the season with a potential for above normal activity. A normal transition out of fire season is expected across Alaska in July. The onset of the southwestern monsoon may be slightly delayed.

August marks the beginning of the peak of the western fire season. Most of the country can expect Normal conditions. Exceptions will be along the West Coast. A heavy crop of grasses and fine fuels has developed across California and should elevate the potential as it cures and dries. Higher elevations in the Sierra will likely see a late entry into the season due to the record-setting snowpack and slow melt-off. The Pacific Northwest has entered a period of moderate drought. An early entry is possible across the Cascades and in the Okanogan. Elsewhere, some high elevations across the Great Basin and central Rockies could experience Below Normal potential and conditions.

Mexico Discussion

May/June/July: Precipitation probabilities are predicted to be above normal the next three months across Nuevo León and Tamaulipas and in isolated areas of Chihuahua, Baja California and Baja California Sur; probabilities should be below normal in Nayarit and in isolated areas of Sonora, Coahuila, Oaxaca, Chiapas, Tabasco and Yucatán. The remaining states should be near normal with respect to precipitation received. Temperature probabilities are predicted to be above normal in Campeche, Yucatán and Quintana Roo and in the remaining states should experience near normal temperatures.

The sum of the climatic factors of temperature and precipitation, together with the analysis of the drought monitor in the country, continues present the conditions of occurrence of forest fire to be above normal in the month of May, in the northern states of Chihuahua, Durango, Zacatecas, Coahuila, Aguascalientes. Above normal potential also exists in the northeastern states of Tamaulipas, Nuevo León and San Luis Potosí. In the southeastern states, above normal potential exists across Guerrero, Veracruz, Tabasco, Oaxaca, Chiapas, Campeche, Quintana Roo and Yucatán. In May, above normal potential is expected across the areas surrounding the capitol city and the central states of Morelos, Puebla, Tlaxcala, Queretaro and Hidalgo, Nayarit, Colima, Jalisco, Michoacán and Guanajuato. In the southeast, fire occurrence is expected to diminish in most areas, but ongoing drought conditions may allow some activity to linger. In June and July, most of the remaining fire activity will begin to diminish as precipitation arrives with the monsoon across most of the country except the northwest corner, which will be entering its seasonal peak.

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

http://smn.cna.gob.mx/index.php?option=com_content&view=article&id=156&Itemid=113

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

Contributions to this document were made by:

Canada: Richard Carr, Natural Resources Canada
Ginny Marshall, Natural Resources Canada

United States: Bryan Henry, Predictive Services, U. S. Forest Service
Dianna Sampson, GIS, Bureau of Land Management

Mexico: Martín Ibarra, Servicio Meteorológico Nacional
Dario Rodríguez, Servicio Meteorológico Nacional