Executive Summary

In early August, a major upper trough crossed western Canada, bringing some rainfall to central Alberta but not much in southern parts of the western provinces. During much of the remainder of the month, a large upper ridge resided over the western US, which moved clouds and showers into Yukon and the Arctic, leaving British Columbia through Manitoba, and the Northwest Territories in hot, dry, and at times windy conditions. Hot weather continued into September in western Canada, setting many daily record highs and some all-time September highs and some occurred as far north as the Arctic coast and southern Arctic islands. Above normal temperatures also occurred in eastern Canada, with some record highs broken. Dry conditions have affected much of western Canada for the past four weeks.

North American Monsoon moisture pushed far enough north to help generate thunderstorms in British Columbia, contributing to hundreds of new lightning fires, with lesser numbers in Alberta and the other western provinces and territories. Existing fires in many regions, including the Northwest Territories and southeast Yukon, showed renewed activity and continued burning through much of August. While dry weather periodically affected eastern regions, some bands of rain moved through eastern Canada, including Newfoundland, where active fires that started in July continued into August.

Fire activity continued across Texas and Oklahoma through mid-August before rapidly decreasing the latter half of the month due to heavy rainfall, especially across Texas. Significant fire activity continued to slowly increase across the West into mid-August, before remaining steady through the end of the month. Large fires were active across California, Oregon, Washington, Idaho, and Montana at the end of August. Above normal significant fire potential is expected across much of northern California and from southwest Oregon through central Oregon into southern Washington. Much of Idaho and western Montana will have above normal potential during September as well. Offshore wind prone areas of

Monthly fire outlook for North America for September 2022 (left), October 2022 (middle), and November 2022 (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.
northern California will retain above normal potential in October and Santa Ana wind-prone areas of southern California are forecast to have above normal potential in October and November. Portions of Hawaii, Oklahoma, and New England are forecast to have above normal potential into November.

Precipitation during the last three months has been slightly above normal, mainly in the states of the Pacific coast, the Yucatán Peninsula, and in some central and northern areas of country, which has helped reduced drought in those areas. In the states along the coast of the Gulf of México, in areas of the Mesa del Norte and Mesa del Centro, rainfall has been scarce, and these dry conditions will be aggravated by the dry and warm weather forecasts. Above normal temperatures are likely to continue across much of the country into November. Below normal precipitation is likely across much of the country in October and November, with a mix of above and below normal precipitation during September. Due to the ongoing drought and forecast weather, above normal fire potential is likely in northern Baja California mid-October into November and in northern Coahuila and Nuevo León during November.

**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. SSTs have remained generally steady for the past month, with La Niña conditions likely to continue through fall. CPC is forecasting an 86% chance of La Niña continuing through the fall, decreasing to a 60% chance of La Niña conditions continuing through the winter. This will be a rare “triple dip” La Niña.

**Drought:** While improvement in drought conditions occurred in spring and early summer in the western Prairie Provinces and western Ontario, hot and dry conditions in late summer re-intensified or created new pockets of drought in western and northern Canada. Abnormally dry conditions with embedded spots of moderate drought now cover much of southern and northeast British Columbia, southern and northern Yukon, and the Northwest Territories. The largest areas of moderate drought in these regions are found in the Northwest Territories between the Yukon border and Yellowknife.

Dry areas expanded in Alberta and Saskatchewan, with growing areas of moderate and severe drought in southeast Alberta and southwest Saskatchewan. Smaller areas of abnormally dry conditions exist in all provinces from Manitoba eastward, although a small strip of moderate drought persists in southern Ontario, north of Lakes Erie and Ontario. While the most severely afflicted regions are grassland and agricultural, these regions could experience autumn grass fires as fine fuels cure in the heat or with cooler nights contributing to dormancy of vegetation.

Drought rapidly intensified and expanded across portions of the Northeast due to very dry conditions in August, with southern New England in severe to extreme drought. Drought improvement was noted in Utah, Colorado, New Mexico, and Arizona due to the North American Monsoon. Improvement or removal of drought also occurred in portions of Carolinas, east Texas, and the Lower Mississippi Valley. However, much of California, the Great Basin, Oregon, and central Montana remained in drought.

In the second half of August, above-average rainfall was observed in the northwest, northern, central-western, and southern portions of the country, as well as in the Yucatán Peninsula. These rains were
caused by the influence of the North American Monsoon, a cold frontal passage, and other tropical moisture due to nearby tropical disturbances. These rains helped reduce the categories of moderate, severe and/or extreme drought in Baja California, Sonora, Durango, Chihuahua, and Coahuila, including the elimination of exceptional drought.

Although in some regions of the country the rains were favorable, in others there were precipitation deficits. Areas of moderate and severe drought increased in the regions of Tamaulipas, San Luis Potosí, and Hidalgo, while moderate drought increased in Veracruz, Oaxaca, and Chiapas. Abnormally dry conditions increased mainly in southern and southeastern parts of the country. As of August 31, the area with moderate to exceptional drought was at 27% nationally, 8% lower than what was quantified as of August 15.

**Fire Season Status:** Widespread fire activity increased in the Northwest Territories and southeast Yukon in the first few days of August, and activity also increased through northern parts of the Prairie Provinces. Increases in activity were noted in British Columbia, northeast Alberta, northern Saskatchewan and Manitoba, and the Northwest Territories by mid-August. In British Columbia, about 900 new fires occurred during August, and although most of these new starts were handled by initial attack, a few created problems. A cluster of fires in Newfoundland that started in late July received rain and enough suppression efforts to bring them under control by mid-August. By late August, fire activity decreased in the Northwest Territories and northern parts of the Prairies, but British Columbia stayed active.

A fire in Jasper National Park in west-central Alberta has interrupted the power supply to Jasper town site and resulted in campground closures. A large prescribed fire, approximately 5,000 hectares, is situated in eastern Banff National Park. Although fire continues to be active in much of western Canada, the Canadian Interagency Forest Fire Centre national preparedness level dropped to one by August 30 as agencies could manage their own fire loads without resorting to resource requests. As of September 8, the Northwest Territories had the most area burned to date, about 511,000 hectares, while British Columbia had recorded the most fires at 1,444. While national fire numbers (over 4,725) and area burned (about 1.4 million ha) are below average for the year, many fires are actively burning, and the totals will continue increasing during the late summer and autumn.

Fire activity continued across much of Texas and Oklahoma through mid-August before a rapid decrease in activity due to heavy rainfall that occurred during the latter half of the month. Large fires emerged across California, Oregon, Washington, Idaho, and Montana and continued to burn at the end of the month. Year-to-date acres burned for the US is approximately 113% of the 10-year average, with over half of the total acres burned in Alaska alone. Year-to-date fire statistics through September 8 showed 49,479 fires burned a total of 2,627,455 hectares (6,492,583 acres). These totals are 117% and 113% of the 10-year average for fires and hectares burned, respectively.

As of September 1, 6,664 forest fires have occurred in 32 states resulting in 667,369 hectares burned this year. Of this area, nearly 94% burned in grass and shrubs while just over 6% of the area burned was in timber. States with the greatest number of fires were Mexico, Jalisco, Mexico City, Michoacán, Chihuahua, Chiapas, Puebla, Durango, Veracruz, and Morelos, representing nearly 78% of the total fires. States with the largest area burned were Guerrero, Durango, Jalisco, Chihuahua, Chiapas, Oaxaca, Sonora, Nayarit, Tamaulipas, and Coahuila, representing almost 80% of the area burned. Of these fires, 1,046 or 16%, occurred in fire-sensitive ecosystems, with an area burned of 80,981 hectares, or 12% of the total acres burned.

**Canada Discussion**

**September/October/November:** Above normal fire severity conditions are expected to continue in southern and central parts of the western provinces as far east as Ontario west of Lake Superior in September. Northern regions should see fewer fire starts as daylight hours shorten, and longer and cooler nights help retain moisture, and thunderstorm activity wanes. However, existing fires in dry areas may continue to burn or smolder.
Above normal temperatures are forecast for much of Canada during October. Rainfall normally increases along the Pacific Coast, with some of this moving over inland British Columbia. Current forecast guidance suggests this will be true in 2022, which should gradually reduce fire activity in British Columbia. The southern Prairies Provinces could be prone to grass fires, with drought increasing and unlikely to be eliminated in October since this region is normally quite dry in the autumn. The Atlantic Provinces appear to remain warm and dry, however, this rarely translates to serious fire problems as rainfall amounts, even if lighter than normal, are usually enough to keep vegetation moist and green.

During November, dry regions in the Prairie Provinces may be prone to grass fire activity, with predictions of warmer than normal temperatures and normal to below normal precipitation. The remainder of Canada should slowly slide into dormant winter conditions.

United States Discussion

**September/October/November:** The monsoon will continue to wane the first half of September across the Southwest, but above normal precipitation is likely for portions of Arizona, as well as the Gulf Coast. The Climate Prediction Center (CPC) forecasts above normal temperatures across the West and Northeast in September, expanding across much of the country for the fall. Below normal precipitation is likely for the fall across much of the US from the Great Basin eastward into the Appalachians, with small areas of above normal precipitation forecast for portions of Florida and Washington. Drought improvement is anticipated across much of the Southwest into the southern Plains, mainly due to anticipated rain through mid-September before drier conditions prevail.

Above normal significant fire potential is forecast for much of the Northeast September through November due to ongoing drought. Above normal potential is also forecast for much of Oklahoma in September and October, expanding to include portions of southwest and central Texas in November. Normal potential is forecast for the remainder of the Eastern and Southern Areas, as well as the Southwest and Rocky Mountain Areas through November.

Most of northern California, central and southwest Oregon, southeast Washington, Idaho, and far western Montana will have above normal potential in September. Most of these areas will return to normal potential in October except across portions of northern California prone to offshore winds. Northern California will return to normal potential for November. The Transverse and Peninsular Ranges of southern California to the coast, areas prone to Santa Ana winds, are likely to above normal potential October through November. Lee sides of the Hawaiian Islands will continue to have above normal potential through November.

**Mexico Discussion**

**September/October/November:** Near to above normal temperatures are expected across much of the country into November. Below normal precipitation is likely for much of the northern half of Mexico except in portions of Baja California, with mixed areas of below and above normal precipitation across the southern half in September. In October, precipitation is expected to be below normal in most of the Mexican Republic, except in Tabasco and Chiapas, where it will be above normal. During November, below normal precipitation is likely across much of the country.

Given the recent temperature, precipitation, and drought trends across the country, along with forecast temperature and precipitation, significant fire potential is forecast to be above normal October into November for northern Baja California, although recent and ongoing rainfall from Hurricane Kay may mitigate above normal potential into early October. Above normal potential is forecast for northern Coahuila and Nuevo León in November due to forecast dry and warm conditions.

**Additional Information**

Additional and supplemental information for this outlook can be obtained at:
United States:
National Significant Wildland Fire Potential Outlook

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.

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