National Significant Wildland Fire Potential Outlook

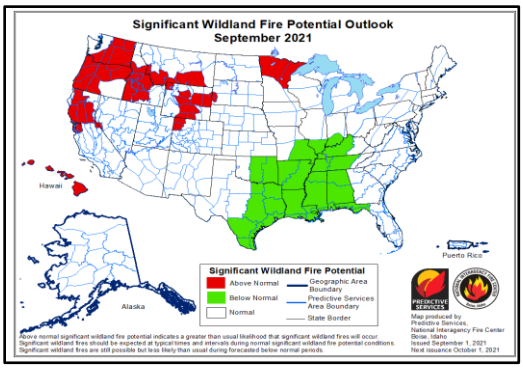
Predictive Services
National Interagency Fire Center

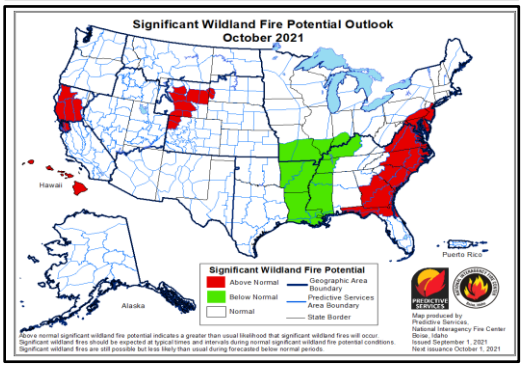
Issued: September 1, 2021
Next Issuance: October 1, 2021

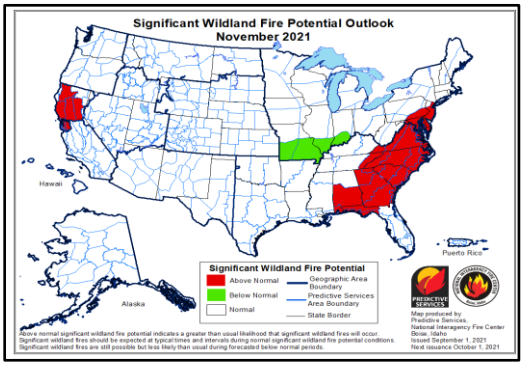
Outlook Period – September 2021 through December 2021

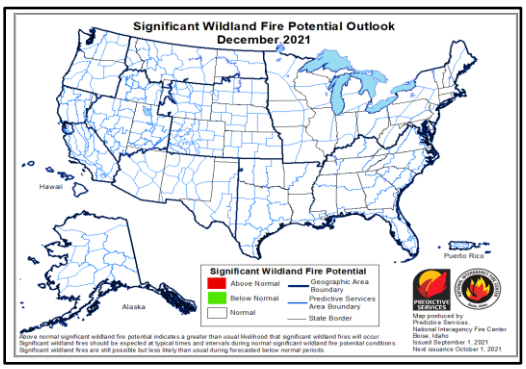
Executive Summary

The significant wildland fire potential forecasts included in this outlook represent the cumulative forecasts of the ten Geographic Area Predictive Services units and the National Predictive Services unit.









Fire activity continued at very high levels through August. Significant fire activity moderated across Idaho and Montana the latter half of August, but increased significantly across the Northwest, northern California, and Minnesota. The national preparedness level remained at five through August. At 71 days, the current streak at preparedness levels four and five are tied for the third longest period ever with 2020. Only 2017 at 75 days, and 2002 at 88 days, were longer.

Drought remains across more than 95% of the West with more than half of the West in the highest two categories of drought. Drought intensified across the northern Plains and much of Minnesota, but relief in drought continued across the Southwest, southern Great Basin, and Colorado Rockies. Above normal temperatures continued in California, Oregon, Washington, and Minnesota but were closer to average across the Southwest, Great Basin, and Rockies. Strong monsoon surges brought above normal rainfall to much of the Great Basin and Northern Rockies. However, rainfall was well below average for the West Coast, Nevada, and northeast Minnesota.

Climate outlooks indicate warmer than normal conditions are likely for much of CONUS through fall. Wetter than average conditions are likely across western Washington for the fall with below normal precipitation likely across the Southwest, Great Basin, central Rockies, and much of the Plains. The Southeast is forecast to have near normal precipitation through October but turn drier in late fall and early winter.

Much of Southern Area and areas south of the Ohio River are likely to have below normal significant fire potential in September, but much of the southeast US and Mid-Atlantic is forecast to have above normal fire potential in October and November. Normal significant fire potential is forecast for Alaska along with most of Eastern Area through the period. The entire US is forecast to have normal fire potential in December.

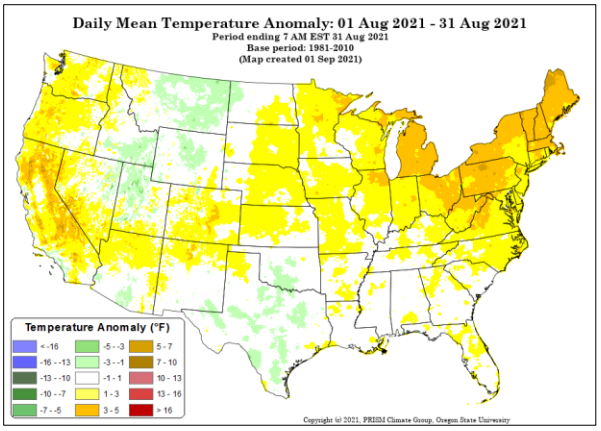
Above normal significant fire potential is forecast to continue for September across much of the Northwest and portions of the Great Basin, Northern Rockies, and Rocky Mountain Geographic Areas. Most of these areas will return to normal fire potential in October and November except for portions of Wyoming, northwest Colorado, and the Black Hills, which will remain above normal into October. Much of northern California is forecast to have above normal potential through November with leeside locations in Hawaii likely to have above normal significant fire potential into October.

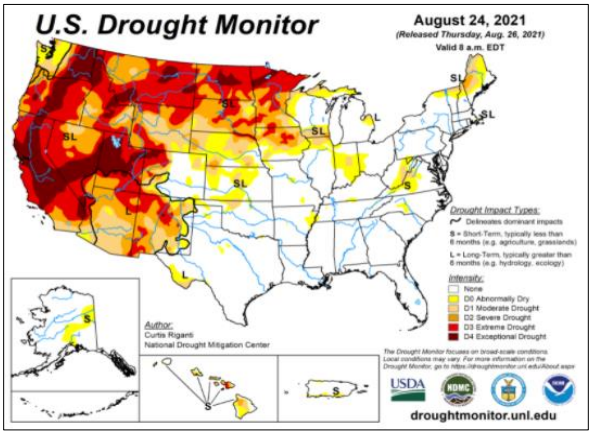
Past Weather and Drought

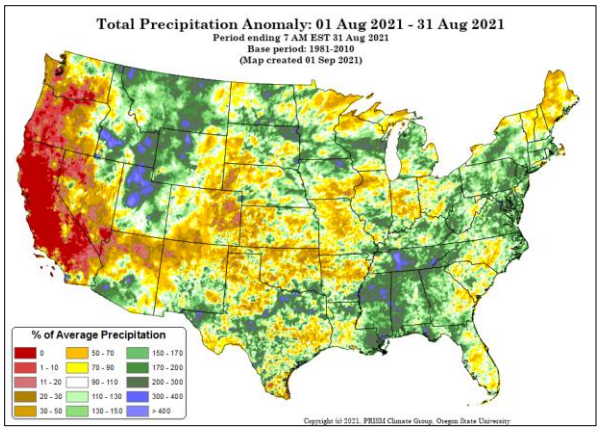
More than 95% of the West remains in drought with over half the region in extreme to exceptional drought. This represents the most expansive and intense drought for the West this century according to the US Drought Monitor. Drought continues to intensify across portions of northern California, the Northwest, northern Plains, and Minnesota. However, some improvement in the drought was observed over the Southwest, Utah, Colorado, and Wyoming due to a continued strong monsoon. Drought was alleviated in the rest of the Great Lakes and Northeast due to continued precipitation events in August.

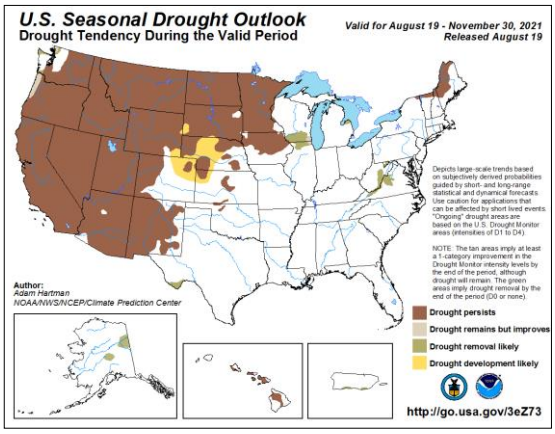
Temperatures were above normal across California, Oregon, Washington, Minnesota, the Great Lakes, and Northeast in August. The hot and dry conditions contributed to the Dixie and Caldor Fires crossing the Sierra Crest, the first time in recorded history this has occurred. Mostly near normal temperatures were observed in the Southwest, Rockies, Great Basin, and Southeast. Above average precipitation was observed across Utah, southern Idaho, western Wyoming, and much of Montana in August. Above normal rainfall was also observed across much of the Mid-Atlantic, southern New England, and Southeast. While southern Arizona and New Mexico recorded above normal precipitation, rainfall was below normal across northern Arizona, northern New Mexico and into Colorado. Rainfall was also well below average for California, Oregon, and southern Washington. Alaska observed temperatures near to below average for August with above normal precipitation for much of the Interior.

Lightning activity continued across much of the West in August but decreased across Alaska. A round of thunderstorms in late July into early August ignited numerous large fires across northwest California into the Oregon and Washington Cascades. This lightning episode was also followed by periods of hot and dry weather into mid-August. A strong surge of monsoon moisture brought beneficial rainfall to Utah, western Colorado, southeast Idaho, western Wyoming and much of Montana. The monsoon continued across the Southwest through August while the Southeast continued to see above normal rainfall. The tropical Atlantic was active with Tropical Storm Henri making landfall in Rhode Island on August 22, and Hurricane Ida in Louisiana on August 29.









Left: Departure from Normal Temperature (top) and Percent of Normal Precipitation (bottom) *(from PRISM Climate Group, Oregon State University).* **Right: U.S. Drought Monitor (top) and Drought Outlook (bottom)** *(from National Drought Mitigation Center and the Climate Prediction Center)*

Weather and Climate Outlooks

ENSO-neutral conditions are present with near-to-below average sea surface temperatures (SSTs) over much of the equatorial Pacific Ocean. Other teleconnection patterns, like the Madden-Julian Oscillation, are likely to play bigger roles in shaping the weather and climate patterns during ENSO-neutral conditions. The Climate Predicter Center (CPC) forecasts ENSO neutral conditions will continue through September with 70% chance of La Niña conditions developing late fall into winter (November through January).

Geographic Area Forecasts

Alaska: Normal fire potential is expected in Alaska through the fall and into the first part of winter.

Weather over Alaska through the end of August has not featured any serious bouts of heat and drought necessary to facilitate extreme wildfire behavior. Many areas received heavy rainfall in August, with the far eastern Interior being the only notable exception. The US Drought Monitor no longer shows any regions of Alaska as being in moderate drought, although portions of the Interior and south-central Alaska remain abnormally dry from a short-term perspective.

Solar heating will continue to weaken, and weather that would support significant wildfire behavior is unlikely in September. The winter's permanent snowpack is typically established across most of the state in late October, putting Alaska out of season for the long winter.

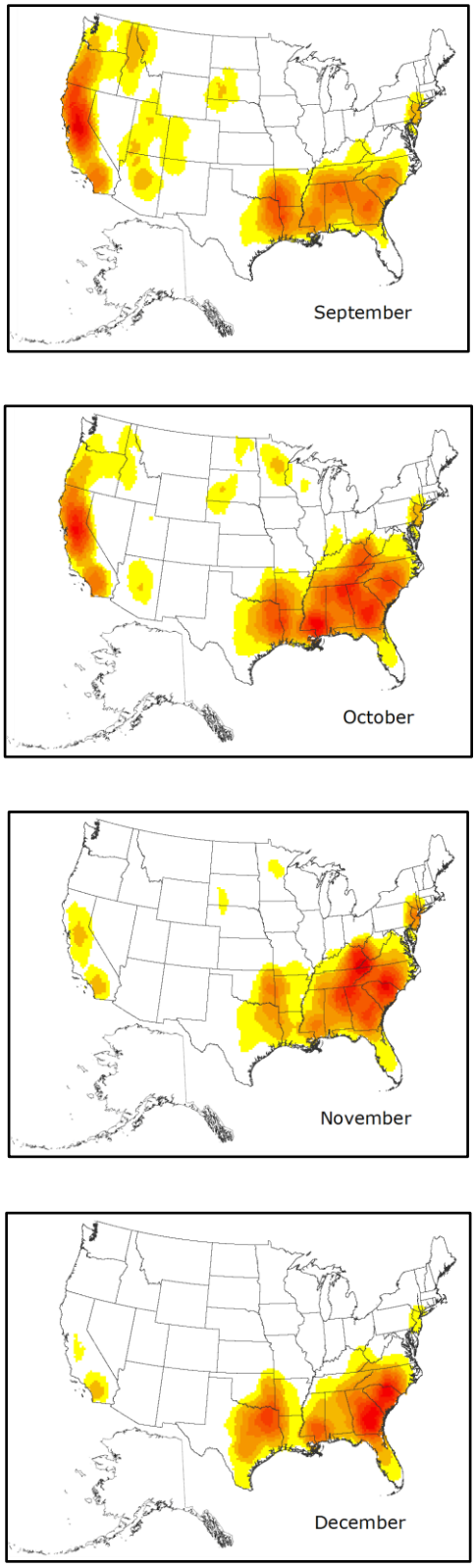
Wildfire activity has been minimal through the end of August, and the 2021 wildfire season in Alaska is effectively over. Fuels are wet statewide except for the far southeastern Interior where conditions are moderately damp.

Fuels are extremely wet with little hope of any substantial warming and drying due to decreasing sun angle and daylight hours. Snow is already falling across low elevations in the Interior and higher elevations in the south. Alaska is moving out of fire season with normal fall weather expected to establish the winter snowpack across the state in the next two months. Fire potential is expected to be normal for this period.

Northwest: The potential for significant fires remains above normal in central and southwest Oregon and central Washington for September.

Temperature varied significantly across the region through August. A cooling trend arrived during the first week of the month that pushed temperatures below normal everywhere except southern Oregon. A significant warming and drying trend followed that pushed temperatures to record values for the middle of August. Another cooldown occurred during the last half of the month with below average temperatures.

Rainfall varied across the region during August. The western two thirds of Oregon and much of southwest Washington received well below normal amounts. However, the eastern third of Oregon and the northeastern third of Washington observed well above normal rainfall from thunderstorms associated with



Normal fire season progression across the contiguous U.S. and Alaska shown by monthly fire density (number of fires per unit area). Fire size and fire severity cannot be inferred from this analysis. (Based on 1999-2010 FPA Data)

a surge of monsoonal moisture. Rainfall was also boosted by the arrival of incoming troughs from the Pacific, which enhanced precipitation.
However, precipitation observed during August over eastern Washington and eastern Oregon was insufficient to affect the severity of the exceptional drought depicted in the US Drought Monitor.

The geographic area continued to see an increase in large fire activity, which produced rounds of lightning activity over western Oregon and northern Washington. Early in the month Oregon received lightning, which generated several new large fires along the west slopes of the Cascades from the Mount Hood area down to the Umpqua Divide as multiple new starts were merged into four complexes. New large fires were also observed in north-central Washington during the middle of the month.

The weather events that produced new ignitions also resulted in growth on existing large fires in some areas where favorable terrain and wind conditions aligned. Following the second round of new large fires in the geographic area in mid-August, a cooling trend slowed initial attack and perimeter growth on the large fires. Over the latter half of the month, significant rainfall was observed over north-central Washington, the Olympics, the north Cascades, and the Blue Mountains. While lightning also was observed with the storms, rainfall kept initial attack light and helped suppress growth on existing large fires. Significant rain did not fall over western and south-central Oregon where dry fuels continued to result in growth on large fires through the end of the month. Cloudy conditions along with local and regional smoke production also lowered fire behavior over the Oregon fires temporarily and to a lesser extent on the Washington fires.

The hot and dry trend in early August continued to impact live and dead fuels. Heavy dead fuel moisture was well below average for most PSAs through mid-August with a few locations near record low fuel moisture values. Fire danger indices also reached maxima in several areas. Drought deepened through the central part of the geographic area with extreme and exceptional drought over many areas. Lightning ignition efficiency was very high as thunderstorms moved through and holdovers plagued resources in areas that received light rainfall in western Oregon. The very dry fuels were evident as fires exhibited a high resistance to control. By the middle of the month, overnight humidity recovery began to return to normal levels as marine air began to reach east of the Cascades and monsoon moisture occasionally traversed the eastern part of the geographic area. With cooler and more moist conditions at the end of the month, fuel moistures began to return to more seasonal values and new ignitions decreased. Despite the cooldown, south-central Oregon had a fuels and fire behavior advisory extended for the third time with another new large fire starting during the middle of August. Live fuels are now cured in the geographic area at lower and middle elevations, while high elevations have not fully cured, with fires exhibiting some resistance to spread on north slopes and through riparian areas.

Long range outlooks from NOAA and other sources suggest September will be warmer and drier than typical for the Northwest Geographic Area. For October through December, outlooks are mixed but suggest wetter than normal conditions are most likely for much of the geographic area.

The potential for significant fires remains elevated in central and southwest Oregon and central Washington for September. For October through December, significant fire potential is forecast to be normal across the entire geographic area. It is important to note that it is rare for significant new fire starts after September, even during dry falls.

Northern California and Hawai'i: Significant fire potential is forecast to be above normal for areas west of the Cascade-Sierra crest except the North Coast PSA through November. Fire potential is forecast to be normal east of the crest and for the North Coast PSA. Normal is defined as up to one large fire in the Bay Area, northeast California, and Far Eastside PSAs and 1.2-2.9 large fires elsewhere in September and up to 1.2 large fires per PSA in October. All PSAs average below one large fire in November. All areas are forecast to have normal significant fire potential in December. In Hawai'i, significant fire potential is forecast to be above normal for lee sides, divides, and saddles through October. Normal fire potential is forecast in October except locally above normal conditions will occur during dry stretches due to above normal fuel loading. All areas are forecast to have normal significant fire potential across Hawai'i in November and December.

Dry conditions continued in northern California through August, with only a few periods of isolated convective thunderstorm activity that produced light rainfall. Temperatures were above average across much of the region in August, except in a few areas near the coast that were influenced by nearby cooler than average sea surface temperatures and in areas with consistent thick smoke cover. The low elevation grass crop is cured and fuel loading among low elevation brush and grasses is lighter than average. Fuel moisture readings, in both live and dead fuels, are at critical levels and setting new records at many locations across all elevations. The climatological outlook for the North Ops region is for drier and warmer than average conditions over the three-month period from September through November, followed by near to above average precipitation in December.

Any new ignitions will have the potential to exhibit extreme fire behavior and spread rates in dry, breezy weather. However, large fire potential will return to near normal in September for areas east of the Cascade-Sierra crest due to longer nights and very light fuel loading, and in the North Coast PSA due to the frequent presence of cool humid marine air. With the resumption of dry north-northeast offshore winds in September all other areas west of the Cascade-Sierra crest have above normal significant fire potential from through November. All areas are forecast to have normal significant fire potential in December due to precipitation forecast to increase to above normal.

Sea surface temperatures surrounding the Hawai'ian Islands range from slightly warmer than normal in the northwest to slightly cooler than normal near the Big Island. Temperatures throughout the region are expected to be near average through September then trend to above normal October through December. Dry weather since April has led to increasing drought throughout the region especially on the lee sides, divides, and saddles of the islands. The four-month outlook calls for below average precipitation in September followed by a trend to above normal precipitation as fall ends and winter begins. Fuel loading remains above normal due to heavy rainfall received in March. These fuels have dried out and become vulnerable to fire spread, especially on lee sides, divides, and saddles. These fuels will occasionally become locally critically dry on windward slopes during periods of dry weather. Significant fire potential is forecast to be above normal throughout the islands on the lee sides, divides, and saddles in September and October. Significant fire potential is forecast to be normal on windward sides, although some local spots may see periods of above normal conditions during dry spells. In November and December, significant fire potential is forecast to return to normal in all areas as the rainy season begins.

Southern California: The large fire potential will be near normal across southern California through December.

A ridge of high pressure over the southwestern United States continued to bring above normal temperatures to most of central and southern California in August. A few Pacific troughs brought periods of much cooler temperatures, but overall, temperatures were up to 2°F above normal. Most of the area received near normal rainfall for the month, with thunderstorm activity less in August compared to what occurred in July. Thunderstorms were more isolated over the mountains and deserts due to more persistent breaks in the monsoon from the east. The marine layer was fairly deep and at times generated light rainfall along the coastal mountain slopes. Winds remained out of the southwest much of the month except for periods of stronger west winds with trough passages.

Extreme to exceptional drought continued to expand across most of central California in August, while moderate to severe drought persisted across southern California south and east of Los Angeles County. Cooler and more humid conditions in mid-August increased 1000-hr and 100-hr dead fuel moisture vales to above normal over most of the region except across the Sierra where the 1000-hr dead fuel moisture is below the 10th percentile and the 100-hr dead fuel moisture below normal. Live fuel moisture slowly dropped to between 50 and 70 percent, with old growth fuel moisture falling to near 40 percent.

Sea surface temperatures (SSTs) warmed to above normal off the West Coast and remain above normal over the Gulf of Alaska. Equatorial Pacific Ocean SSTs are near normal across the basin, with climate models showing a cooling trend into December. The warm SSTs across the Gulf of Alaska and portions of the northern Pacific Ocean are likely to result in an area of high pressure along the West Coast in September then persist through the fall months and shift farther inland. Temperatures are forecast to be

above normal for the region because of the ridge. The cool marine layer that has been in place across the coastal areas will be less prevalent during the fall months.

Rainfall is forecast to be below normal through December as most low pressure systems are likely to move north of the ridge into the Pacific Northwest during the fall. This pattern may also result in a normal amount of Santa Ana wind events for southern California as more storms will track over the Pacific Northwest into the Northern Rockies instead of dropping through the Great Basin.

Above normal large fire potential that was predicted for central and southern California for the summer months has not occurred with below normal fire activity observed. The diminished potential can be contributed to above normal monsoon rainfall in July and August across the mountains and deserts, and the lack of fine fuels across the lower elevations due to below normal precipitation over the 2020-21 winter. Significant fire potential across the central and eastern Sierra will decrease through December as daylight hours decrease and temperatures become colder. Monsoon moisture may persist across the southern Sierra and high deserts into mid-September. Lightning and gusty outflow winds from thunderstorms may contribute to short-term elevated fire potential in these areas. The lack of fine fuels will also help mitigate large fire potential from any fires fanned by Santa Ana winds across southern California. Despite anticipated warmer and drier than normal conditions into the fall months, significant fire potential is forecast to be normal September through December.

Northern Rockies: Significant fire potential in the Northern Rockies Geographic Area is expected to be normal for September, except for PSAs along the southern border in Idaho and Montana (PSAs 5, 6, 9, 12, and 14), which will have above normal potential. All of the Northern Rockies is expected to have normal fire potential October through December.

The beginning of the summer saw multiple record setting maximum temperatures across most of the Northern Rockies Geographic Area, but temperatures for August dropped to near or below. While drought has not changed much, rainfall over the past two weeks has significantly moistened the fuels. Energy Release Component values were at historic highs through mid-August but have decreased dramatically across almost the entire geographic area since August 19. Upper-level troughs began moving through the geographic area in August bringing wetting rainfall through August 10 and again August 18-21 with a dry period between.

Much of Central Montana received around 1.5 to 3 inches of rainfall, while North Dakota received up to 5 inches. The remainder of August was mostly dry for Montana and northern Idaho, but North Dakota received additional significant rain through the end of the month. The increase in rainfall and cooler temperatures significantly decreased fire activity much of the month, with most fires showing little growth. There has been a slight uptick in activity since August 23 across northern Idaho and Montana, but nothing significant.

Eastern areas of the Northern Rockies Geographic Area have fuel moistures at or just below average, but 100-hour and 1000-hour fuel moistures are well above average elsewhere. Fine fuels exposed to the sun and wind began to dry at the end of the month, but sheltered areas remain moist. Live fuels are cured in most locations.

The Northern Rockies Geographical Area saw an increase in fire activity during the first week of August. Since August 1, there were 541 new fires and an additional 380,782 acres burned with 823,728 acres burned to date. The most notable fires by acreage burned as of August 26 are the Woods Creek Fire (55,411 acres), the Dixie Fire (43,430 acres), the Trail Creek Fire (39,243 acres), and the West Lolo Complex (39,053 acres). Currently, there are no Type 1 Incident Management Teams committed to fires in the Northern Rockies Geographic Area.

While the current US Drought Monitor has shown some improvement, there has been significant fuel moisture increases due to the rainfall in August. The improvement in fuel moisture resulted in a significant decrease in fire activity. With upper-level troughing forecast to continue for the next two weeks, no significant warming is forecast, although there will be some warm and dry periods that may cause brief

upticks in activity. However, the Climate Prediction Center is calling for above normal temperatures to return for most of September with below normal chances for precipitation across Montana and North Dakota. Given the September climate outlook and the current fuel conditions, near normal fire activity is forecast for most areas in September. There is a possibility that PSAs (9 and 12) in southwest Montana, the far southeast corner of Montana (southeastern portion of PSA 14 and western PSA 16) and north central Idaho (PSAs 5 and 6) may have above normal fire activity as they have observed the least amount of rain.

Looking into the fall outlooks, the Climate Prediction Center is showing a neutral ENSO pattern trending towards La Niña for the winter. For now, outlooks for October, November, and December show equal chances at being near, above, or below normal. This outlook would indicate fire activity returning to normal levels October through December. In November, the mountainous portions of the Northern Rockies in north Idaho and western Montana are typically out of season with the eastern plains portion of the Northern Rockies Geographic Area out of season by December.

Significant Wildland Fire Potential in the Northern Rockies for September is expected to be above normal in the southwest PSAs (05, 06, 09, 12, and 14), but normal elsewhere. All the Northern Rockies is expected to have normal fire potential in October through December.

Great Basin: Significant wildfire potential is expected to remain above normal through September in the higher elevations of the Sierra Front and over portions of southern and western Idaho, which remain dry. Significant long-term drought remains in these areas with lower-than-average fuel moisture. Fire potential is expected to remain low and normal for the time of year over the southern half of the Great Basin due to periods of monsoon moisture. The southern Great Basin also received above normal precipitation in July and August.

Temperatures during August have been near to just below normal over much of the eastern two-thirds of the Great Basin and just above normal over western Nevada into central and southwest Idaho. Cool and wet storm systems moved across the northern and eastern half of the Great Basin in August bringing periods of cooler temperatures, breezy winds, and widespread precipitation. Most of Idaho, Wyoming, and Utah received 2-4 times the normal rainfall for August. However, some areas of western and southern Nevada and the Arizona Strip, received only light amounts of precipitation with some areas remaining dry.

The recent active weather pattern has not alleviated the long-term drought in the eastern half of the Great Basin, but there was some improvement. The drought remains extreme to exceptional across portions of southern and eastern Nevada, into western and central Utah, and portions of central Idaho. The precipitation observed over the last couple of months in the eastern Great Basin has brought some much needed relief to these areas, but the long-term precipitation deficit remains larger than the above normal precipitation received this summer. Moderate to severe drought also continues across the rest of the Great Basin, with areas of extreme drought still over western Nevada and portions of southern Idaho. The drought is expected to persist over the next few months.

All fuels remain exceptionally dry over western Nevada and portions of northern Nevada into southwest Idaho. Sagebrush and 1000-hr fuel moisture are at or near record lows for the time of year. A Fuels and Fire Behavior Advisory remains in effect for the mid to higher elevations of the Sierra Front. Pinyon-Juniper die off is still being reported across Utah into eastern and southern Nevada due to the long-term drought but not at the rate seen earlier this summer due to recent rainfall. Rain that occurred in August over the eastern half of the Great Basin have triggered new areas of fine fuel growth. The new grass growth will be monitored for curing as cured grasses could be an issue for the lower elevation during dry frontal passages.

Overall fire activity has decreased for the Great Basin from mid to late August. Great Basin dropped to PL2 on August 20. Small fires continue to occur daily, but they have been easily extinguished by initial attack resources. Fire activity may increase in September in the very dry areas of the Sierra Front into southwest Idaho if an increase in lightning or strong wind events are observed.

Climate forecasts are expecting warm and dry conditions in September for much of the Great Basin. However, pulses of monsoon moisture are still likely to bring occasional showers and thunderstorms to Utah, the Arizona Strip, and portions of southern and eastern Nevada. Western Nevada into western Idaho will likely remain dry as any moisture from the monsoon is likely to remain south and east. Western Nevada into central Idaho is also more likely to be affected by breezier winds as upper-level troughs move across the Northwest and Northern Rockies. During October and November, a wetter and cooler patter may return to the northern third of the Great Basin, with warmer and drier conditions farther south. If this were to occur, there could be brief increases in fire potential on windy days after prolonged dry periods.

Fire activity typically decreases over the southern and eastern Great Basin through September. Fire potential is often briefly increased in the western and northern areas as cold fronts move through after prolonged dry periods with this fall likely to follow those trends. The greatest concerns are in the mid to upper elevations of the Sierra Front due to well below normal fuel moisture in all fuel types with some areas near record lows. Fire potential is also likely to elevated over parts of southwest Idaho into September due to dry fuels and a lack of recent moisture. If dry and warm weather were to return to the southern half of the Great Basin in October and November, there could be brief increases in fire potential from strong wind events associated with frontal passages after prolonged dry periods. However, any increase in fire potential would likely be short-lived and return to normal as winds decreased.

Above normal fire potential will remain along the Sierra Front in the mid to upper elevations and across western and southern Idaho as early fall cold fronts bring windy conditions. The rest of the Great Basin is forecast to see normal fire potential in September with all areas of the Great Basin having normal fire potential October through December.

Southwest: Normal significant fire potential is anticipated across the region September through December.

The summer monsoonal pattern has been robust this year and has dampened significant fire activity during the summer months. The only areas that have not received above to well above normal precipitation have been across parts of northern New Mexico and near the Big Bend region in southwest Texas. Most areas across the region observed between 125% and 400% of normal rainfall. The rainfall was much needed due to the extreme to exceptional drought at the beginning of the summer. Despite the wet summer period, areas of severe to extreme drought continue across much of the northern portions of the region and near the Continental Divide.

The climate forecast is for a drier and warmer than normal fall into early winter for the Southwest as a weak to perhaps moderate La Niña develops. The La Niña influenced pattern will likely keep moisture north of the region as storms are forecast to be focused over the northern US once the monsoon weakens around mid-September. Drought will likely worsen once again across the Southwest as fall turns into early winter. There could be some increased fire activity this fall focused across the Four Corners and northern New Mexico, but overall, near normal fire potential is expected through December.

Rocky Mountain: Above normal significant fire potential is forecast for September and the first half of October across the northwest corner of Colorado through much of Wyoming, and the Black Hills of South Dakota. Significant fire potential is expected to return to normal during the second half of October and continue through December.

Above normal temperatures were observed in July over most of the region except normal to below normal temperatures were observed in much of Kansas. After an early onset and persistent monsoon pattern developed over the RMA, precipitation in July was above normal across central and southern Colorado, portions of central and southeast Wyoming, and central and southern South Dakota. In August, the pattern changed and brought above normal precipitation along and west of the Divide. The US Drought Monitor portrays extreme to exceptional drought persisting in western Colorado, with severe to extreme drought expanding across southwest and northern Wyoming into central and northern South Dakota.

Precipitation in late July through mid-August resulted in a temporary decrease in new significant fire activity as well as decreasing growth on existing large fires west of the Divide. However, there was a slight increase in fire activity on the High Plains, including the Black Hills and Nebraska Panhandle that continued through much of August until showers and thunderstorms brought rainfall that lowered activity. The final days of August resulted in another increase of fire activity across much of Colorado, both in the timbered areas of western Colorado as well as the plains of northeastern Colorado. The increase in activity was due to multiple dry cold fronts with gusty winds that hastened drying after the mid-August rainfall.

While precipitation and higher humidity brought an increase in fuel moisture across a large portion of the geographic area west of the Divide in mid-August, an increase in fire danger indices and decreasing fuel moistures occurred late in July and August along the Front Range and adjacent plains. In western South Dakota, many observation sites reported fire danger values greater than the 97th percentile for much of August, and portions of central to northeast Wyoming were above seasonal highs until a mid-August weather system brought wetting rain and light snow to moderate conditions.

The CPC forecast for the first two weeks of September indicate drier and warmer than normal conditions mainly over western portions of the Rocky Mountain Area. These conditions will be tempered at times additional monsoon moisture surges producing showers and thunderstorms with rainfall. More extensive warming and drying is still projected for the fall period, especially west of the Continental Divide.

Beneficial rain in an early onset and persistent monsoon pattern occurred over much of the Rocky Mountain Area this summer, unlike 2020. However, the moisture surges were more sporadic over northern portions of the geographic area resulting in occasional increases in fire danger values, especially late in July and again in late August following dry cold fronts. Additionally, extreme to exceptional drought remains in place over western Colorado with severe to extreme drought expanding in southwest and northern Wyoming into central and northern South Dakota. Short term forecasts into the first half of September depict monsoon moisture is likely to move through the geographic area again, although occasional breezy west winds will scour the moisture out of the area at times. Above normal significant fire potential is forecast for September into the first half of October across the northwest corner of Colorado through much of Wyoming and into the Black Hills of South Dakota. Significant fire potential is then expected to return to normal during the second half of October and continue through December.

Eastern Area: Thirty to 90-day soil moisture and precipitation anomalies were below normal across portions of the northwest and north-central Great Lakes as well as northern Maine at the end of August. Long range drought conditions remain present across portions of the western Great Lakes and northern New England.

Cooler than normal temperatures are forecast to spread northward from the Mid-Mississippi Valley into portions of the southern Great Lakes during September and October. Warmer than normal conditions are expected over coastal portions of the Eastern Area September into November. Cooler than normal conditions are then forecast across the northern tier of the Eastern Area in December. Precipitation is forecast to be above average from the Mid-Mississippi Valley in September spreading into the eastern Great Lakes in October. Drier than normal conditions are expected across the southeastern Mid-Atlantic states into New England October into November.

Fuel moisture is likely to remain below normal across portions of the northwestern Great Lakes into September if precipitation coverage and frequency do not increase from the very dry conditions over the summer.

Near normal fire potential is forecast across the majority of the Eastern Area September through December. However, if precipitation coverage and frequency do not increase over drier portions of the northwestern Great Lakes, periods of above normal fire potential will persist into the fall. Warmer and drier than normal trends are possible over portions of the eastern states October into November, which may create periods of above normal fire potential.

Southern Area: Below average-to-average fire potential is still forecast across most of the Southern Area through September as a moist pattern is expected to continue, with recurring periods of average to above average rainfall across the Southern Area. Tropical development and the potential for impacting tropical storms impacting the region with rainfall will also be peaking in mid-September aiding the continuation of below normal fire potential. After September and through the fall, a cooling trend in the ENSO region of the tropical Pacific should produce a drier pattern affecting the Gulf Coast and Southeast coast. This drier pattern, if it aligns and peaks during fall leaf drop, is likely to produce drier fuels, elevated ignitions, and higher fire potential. The forecast above average fall fire threat could still be mitigated by any significant rainfall from Atlantic tropical storms and how quickly the current moist pattern transitions to a dry one this fall. Puerto Rico is not forecast to have any periods of critical fire danger so a normal to below normal fire potential is forecast.

Frequent frontal incursions with high moisture and atmospheric instability resulted in a pattern of almost daily and widespread showers and thunderstorms. Due to the above average rainfall, live and dead fuel moistures remain well above seasonal and monthly averages with no drought conditions present. However, one exception is the presence of a small moderate to severe drought area in western Virginia. The drought outlook forecasts this area to improve with no drought conditions forecast for the Southern Area through December.

Minimal fire activity was observed in August, which was below normal. Below normal fire activity is forecast to continue into September. Beyond September, the potential development of a drier La Niña pattern should result in fine fuel drying and begin to contribute to an increase in ignitions and elevated fire potential during October-November.

100 and 1000-hr fuel moistures remain very moist, with 100-hr fuels ranging from 10-17% for Texas and Oklahoma to 16-26% elsewhere and 1000-hr fuel moistures of 15%-25%.

An unfolding tropical Pacific ENSO episode change from neutral to potential weak La Niña is likely to produce below average precipitation. The drier pattern, if it aligns and peaks during fall leaf drop, should produce drier fuels with elevated fire potential. Currently, the main area for the drier pattern is along the southern Atlantic coast. Any significant rainfall impacting the South, particularly the southeastern US from any potential Atlantic tropical storms, would likely result in lower fire potential than the above average forecast.

Outlook Objectives

The National Significant Wildland Fire Potential Outlook is intended as a decision support tool for wildland fire managers, providing an assessment of current weather and fuels conditions and how these will evolve in the next four months. The objective is to assist fire managers in making proactive decisions that will improve protection of life, property, and natural resources, increase fire fighter safety and effectiveness, and reduce firefighting costs.

For questions about this outlook, please contact the National Interagency Fire Center at (208) 387-5050 or contact your local Geographic Area Predictive Services unit.

Note: Additional Geographic Area assessments may be available at the specific GACC websites. The GACC websites can also be accessed through the NICC webpage at: **http://www.nifc.gov/nicc/predictive/outlooks/outlooks.htm**