National Significant Wildland Fire Potential Outlook

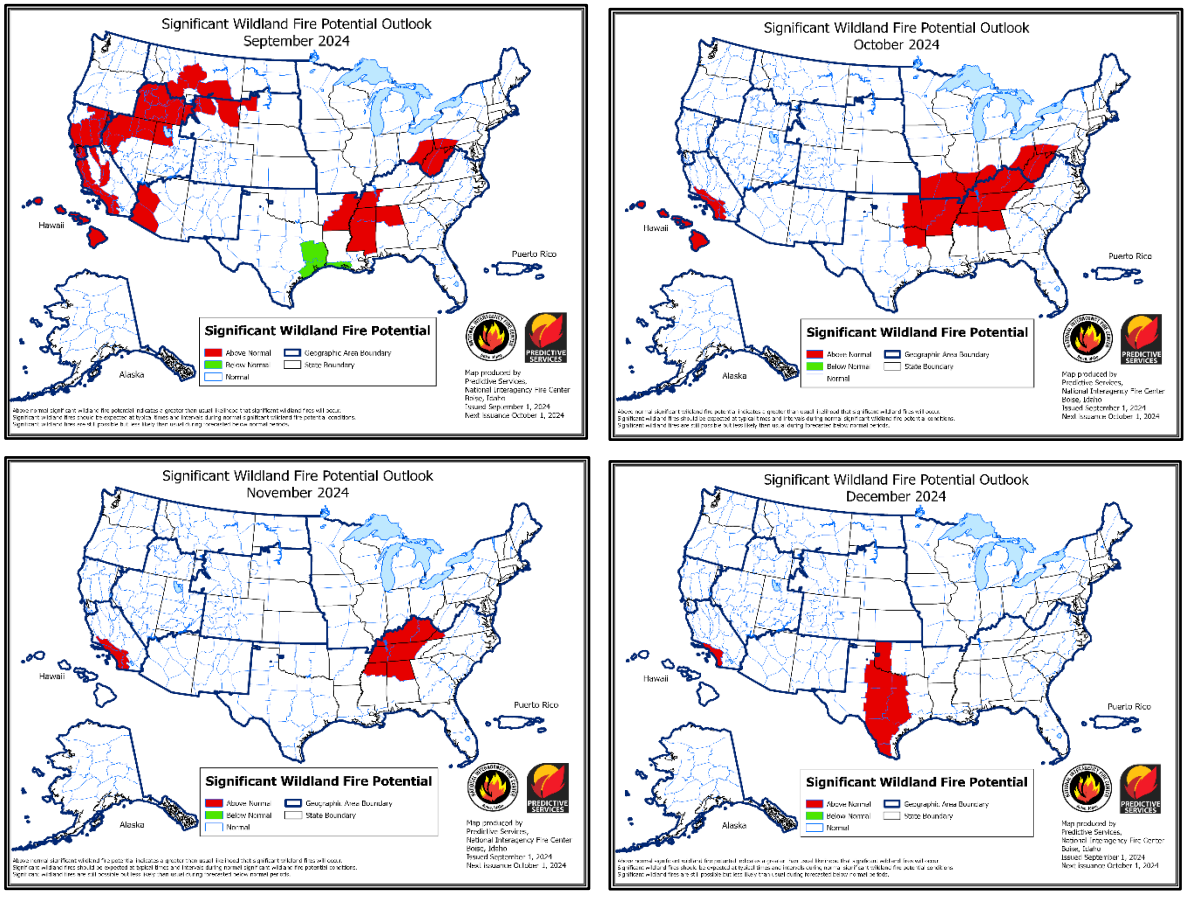
Predictive Services
National Interagency Fire Center

Issued: September 1, 2024
Next Issuance: October 1, 2024

Outlook Period – September through December 2024

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 a high level in early August, but gradually decreased during mid to late August. With decrease in activity the latter portion of August, the National Preparedness Level was decreased from five to four (on a scale of 1-5) on August 22. The Northwest Geographic Area had the greatest decrease in activity, with California, Northern Rockies, and Southwest geographic areas also decreasing. However, the Great Basin had an increase in activity, especially across central Idaho where numerous fires continue to burn. Year-to-date annual acres burned for the US is above the 10-year average at 127% of normal, but the national year-to-date tally of wildfires remains below average, near 81%.

Precipitation in the western US in August was above normal in northern California and along and west of the Cascades in Washington and Oregon, but below normal from southern California and southern Arizona into Nevada, the Inland Northwest, and Idaho. Above normal precipitation was observed in much of Utah to the West Slope, with mixed anomalies in Montana and Wyoming. A

large area of below normal precipitation occurred from Texas into north Georgia and into the Ohio Valley, while above normal precipitation occurred along the East Coast. Alaska continued to receive above normal precipitation, with Hawai'i mostly below normal except for above normal precipitation on the Big Island. Temperatures in August were closer to normal for the northern two-thirds of the US but were above normal in the Southwest into much of Texas and Oklahoma. Drought expanded and intensified in the northwestern US, Upper Ohio Valley, and much of Texas into the Deep South. Drought in late July improved or was removed along the East Coast. Small areas of extreme to exceptional drought are present in western Montana, southern New Mexico, west Texas, southwest Oklahoma, West Virginia, and small portions of Alabama, Tennessee, Wyoming, and central Washington.

Climate Prediction Center and Predictive Services outlooks issued in late August depict above normal temperatures are likely across much of the Intermountain West into the Plains, with below normal temperatures likely in the Mid-Atlantic. Precipitation in September is likely to be above normal along the Pacific Northwest coast and from Texas to the Southeast, while below normal precipitation is likely in much of the Intermountain West, northern Plains, and Great Lakes. For October through December, above normal temperatures are likely in the southern two-thirds of the US into the Great Lakes and Northeast. Below normal precipitation is forecast for much of the southern half of the West into the central and southern Plains, with above normal precipitation likely for the Northwest and Northeast.

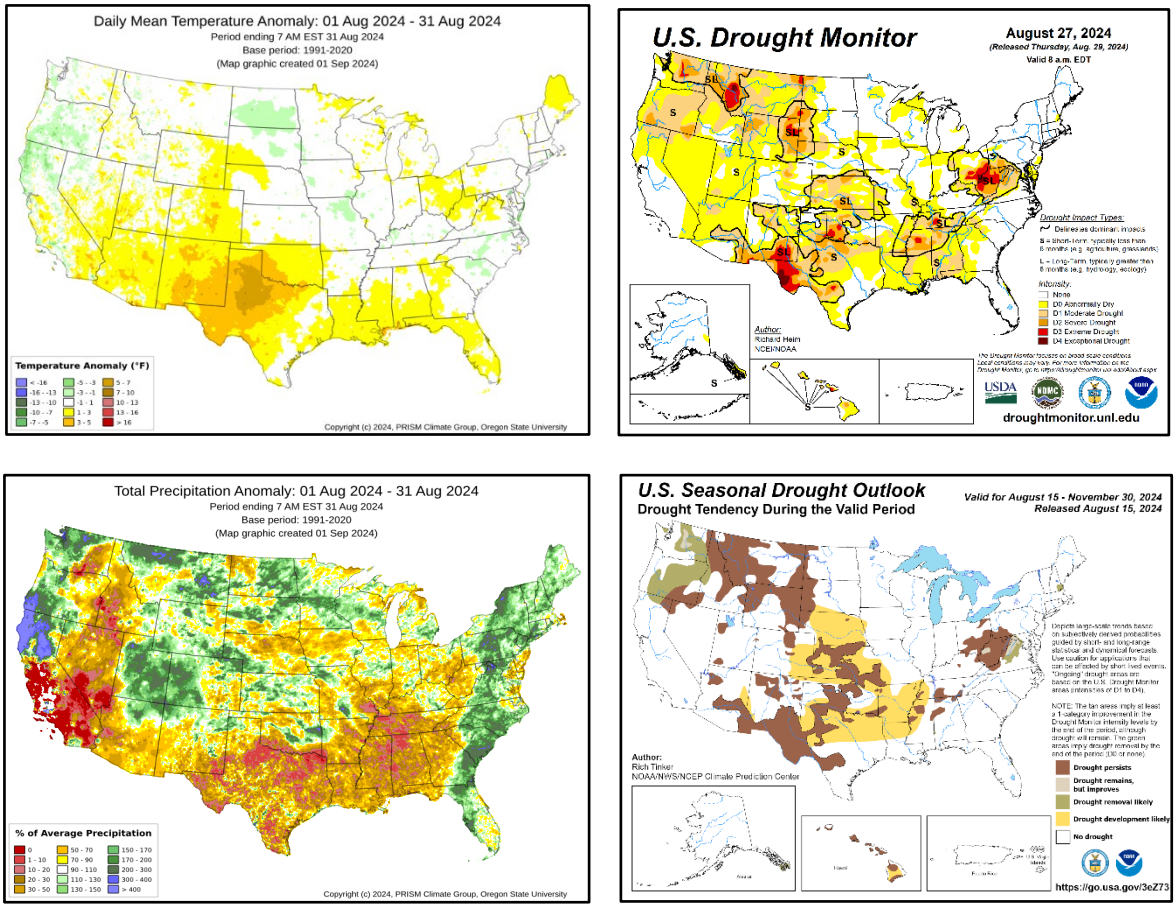
Above normal significant fire potential is forecast for much of California, the northern half of the Great Basin, and portions of southern Montana into northern Wyoming in September. Above normal potential is also forecast in western Arizona, the Lower Mississippi Valley, Upper Ohio Valley, and lee sides of Hawai'i in September. For southeast Texas and the southwest Louisiana coast, below normal fire potential is forecast in September. In October, much of the West will return to normal potential except for the southern California coast and mountains, which will remain above normal along with Hawai'i. Above normal potential is also forecast in much of eastern Oklahoma and northeast Texas into the Ohio and Tennessee Valleys in October. Above normal potential will continue across the Tennessee Valley into Kentucky in November, with above normal potential continuing for the southern California coast and mountains. Above normal potential will continue across the southern California coast into December, with much of central Texas and western Oklahoma forecast to have above normal potential as well.

Past Weather and Drought

Temperatures were generally near normal for the northern half of the US in August. Portions of northern California, Oregon, and Washington were slightly below normal for August, mainly due to a cool, wet pattern in the middle of August. Much of the Southwest into the southern Plains was above normal, with the Gulf Coast states slightly above normal, as well. Below normal temperatures were recorded in much of Alaska, except for the eastern Interior and North Slope which were above normal. Temperatures across Hawai'i were generally above normal, especially on the Big Island, although temperatures were a bit below normal on Maui.

Below normal precipitation was observed across much of Texas into the Southeast in August, with drier than normal conditions also spreading into the Ohio Valley and central Appalachians. Above normal precipitation occurred along the East Coast, with more mixed anomalies in the Great Lakes and central and northern Plains. Precipitation was below normal from much of southern California and southern Arizona into Nevada, Idaho, and the Inland Northwest. Above normal precipitation occurred in northern California into western Oregon and Washington, with above normal precipitation in northern Montana, Utah, and the West Slope. Precipitation was above normal in much of Alaska, except for southeast Alaska and the panhandle, which were much drier than normal. Drier than normal conditions also occurred in northwest Hawai'i, while well above normal precipitation occurred on the Big Island due to the passage of Hurricane Hone, where up to 2 feet of rain fell on Mauna Loa and Mauna Kea.

Another round of lightning occurred across the northern half of the West August 3-5, with a significant amount of dry lightning in southern and central Idaho resulting in several new significant fires, such as the Middle Fork Complex. However, persistent troughing developed near the Northwest coast in mid-August and persisted through August 25 with periods of rain into northern California and the Cascades. A deep upper low moved onshore August 24, with 1-3 inches of rain in portions of northern California, and snow fell above 8,000 feet in the Sierra and Cascades, an unusual late summer event. This rain helped to reduce fire activity in the Cascades, with cooler temperatures and higher relative humidity also aiding in the containment of the eastern Oregon fires. However, the persistent warm and dry conditions in the Southern Area resulted in periodic large fires from Texas and Oklahoma into Mississippi, Alabama, and Tennessee.



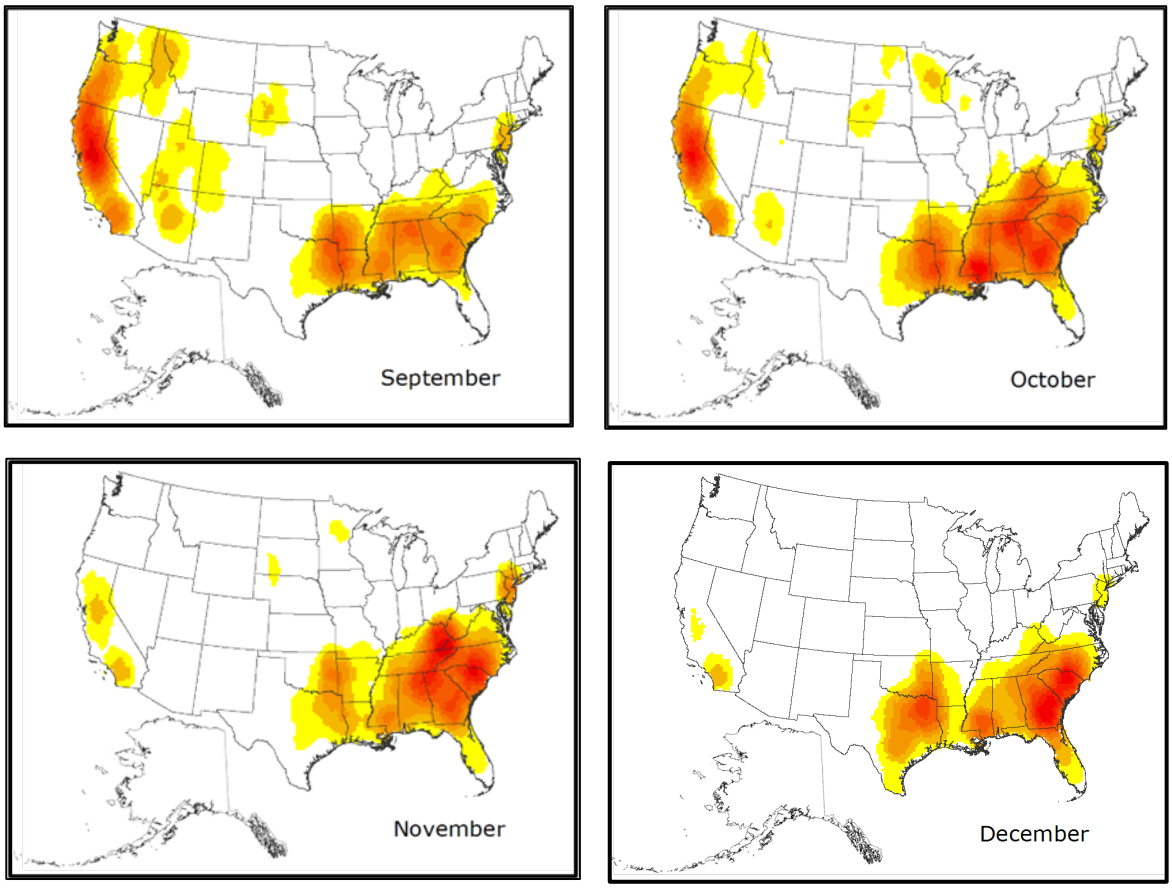
Left: Departure from Normal Temperature (top) and Percent of Normal Precipitation (bottom) *(from PRISM Climate Group, Oregon State University).* **Right: U.S. Drought Monitor (top) and Seasonal Drought Outlook (bottom)** *(from National Drought Mitigation Center and the Climate Prediction Center).*

Drought expanded and worsened across much of the Northwest into the northern Rockies and portions of northern California and Wyoming. Abnormally dry conditions expanded across much of Nevada, Utah, Arizona, and southeast California. Drought also intensified in the Upper Ohio Valley, with expansion and intensification of drought in the southern Plains to the Deep South. Drought improved east of the Appalachians, especially in Virginia and the Carolinas, which had areas of severe to extreme drought removed. Currently, small areas of extreme to exceptional drought are occurring in west Texas, southeast New Mexico, southwest Oklahoma, Mississippi, Tennessee, southern Ohio, northeast Wyoming, western Montana, and central Washington. Much of West Virginia is also in extreme to exceptional drought. For the next three months, drought is expected to improve in northern Virginia, and across Oregon and Washington. However, drought will persist in the Upper Ohio Valley and the northern Rockies. Drought will persist across portions of the Southwest, with drought expected to expand across much of the central and southern Plains where it does not yet exist.

Weather and Climate Outlooks

El Niño-Southern Oscillation (ENSO) neutral conditions are present in the equatorial Pacific Ocean. Sea surface temperature (SST) anomalies in the central equatorial Pacific are near average, while cooler than average SST anomalies are found off the South America coast. A transition to La Niña is still forecast into the fall, with the Climate Prediction Center forecasting a 66% chance of La Niña developing in the September through November period, and 74% chance of La Niña persisting into the winter. A negative phase of the Pacific Decadal Oscillation (PDO) is also expected to persist into the fall. The Madden-Julian Oscillation may have increased activity in September which could also affect the pattern. However, the developing La Niña and negative PDO are expected to be the main drivers of this outlook.

Geographic Area Forecasts



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)

Alaska

Normal significant fire potential is expected for Alaska from September through December. Weather has been cool and damp for most of the state over the last month. The US Drought Monitor shows areas of abnormally dry conditions along the Upper Tanana Valley from Tok to the Canadian border and in the southern panhandle. There is also an area of moderate drought in the southern extremes of the panhandle, but significant rain has fallen there in the week since that product was published.

September will open with a cool and damp pattern for most of the state. Though the Climate Prediction Center (CPC) forecasts warmer than normal temperatures for the eastern half of the

state in the 6-to-10-day outlook, CPC also shows a probability of wetter than normal conditions. The one-month outlook is near normal for both variables for most of Alaska. Though September weather may have some warm and dry days, conditions are generally too cool and humid for much fire activity.

Only 19 new ignitions were reported for the month of August, and only one of these was more than one acre. Existing fires have shown little growth, and initial attack has been successful with no need for outside resources.

At the end of August, fuels are wet at the surface and the mid to upper duff layers. Drought Code (DC) values, which represent moisture levels in deeper duff layers, are classified as low (relatively wet) for most of the state with a few isolated areas in the east in the drier, high and very high, classes. This is typical for this time of year and indicates that fires can burn in deeper duff through wetting rain events in those areas with elevated DC. However, the wet upper layers will prevent significant fire spread from occurring.

Season-ending rains have dampened all duff layers and brought fire activity to a halt. Though there is a chance that some human-ignited fires could start in parts of the eastern Interior over the next month, activity will be minimal. With shorter daylight hours and lower sun angle, burn periods will be decreasing, and fire potential will be low to non-existent. Snowfall during the month of October will bring the season to a close.

Northwest

All previous Predictive Service Areas (PSAs) listed with above normal significant fire potential have been returned to normal for September. The pair of August low pressure systems have taken the edge off the fire season with conditions having returned closer to average. Single day rapid fire growth events are expected but are very unlikely to result in new significant fires.

August started hot and dry with an upper ridge over much of the West Coast. Moisture rotated north around the high pressure which brought a mix of dry and wet thunderstorms. Strong low-level instability, combined with periodically enhanced diurnal winds, resulted in increased growth on new and existing fires. Occasional smaller scale upper-level low-pressure systems briefly displaced the upper ridge and often brought gusty winds to areas east of the Cascades. A pair of large low-pressure systems crossed the region the second and third weeks of the month bringing additional thunderstorms and periods of rain. The first one on August 17 was especially active with over 6,000 lightning flashes occurring over a single 24-hour period. These also brought moderate to heavy rain along the Cascade Crest and westward, but storms farther east arrived with much less rain. Several days later a second upper-level low reinforced cooler and wetter conditions. However, it still produced drier thunderstorms across the far eastern portions of the geographic area. Ultimately, these lows took the edge off the fire season to date and returned conditions near or below average. The month finished under hot and dry weather as high pressure returned.

Drought worsened the first two weeks of August. The Washington Cascade east slopes advanced into extreme drought. Southeast Oregon, the upper Rogue Basin, and an area of north-central Washington advanced to severe drought. Remaining areas east of the Cascades reached moderate drought outside of the lower Columbia Basin. Aside from the upper Rogue Basin, the Cascade Crest and westward showed little change in drought designations.

Fire activity moderated in August and overall was much lower than July. Initial attack was below average for most of the month with only two spikes in lightning-caused ignitions. Large fires east of the Cascades continued to have periods of growth but not to the extent that was experienced earlier in the summer. Periods of moderated weather conditions allowed suppression efforts to make gains towards containment objectives. Fires along the Cascade Crest and in southwest Oregon continued to show a high resistance to control. Fire growth on west-side forests was

steady and larger growth periods coincided with favorable weather conditions. Two precipitation events near the end of August slowed fire spread across southwest Oregon.

Energy Release Component (ERC) for all PSAs never reached the record high values experienced in July but did spike across the geographic area into mid-August. This spike coincided with the initial Fuels and Fire Behavior Advisory for eastern Oregon being extended to include much of eastern Washington. A second advisory was issued for southwest Oregon after rapid drying of live fuels occurred. For a good portion of August, ERCs in general, were average to below average across much of the Pacific Northwest. A drying trend near the end of the month will rapidly bring fuels conditions to above the 90th percentile.

Deterministic weather models indicate the first half of September starts warmer and drier as high pressure dominates the upper pattern. Brief periods of low-pressure may temper that pattern at times. Then, low pressure systems situated off the Canadian coast will bring a more dominant and cooler and wetter regime to close the month. There is concern for one or more moderately strong east wind events to develop that would affect ongoing fire activity from the Cascade Crest westward. These events are slightly more favored to occur during a fall season El Niño to La Niña transition like the current trend.

The Climate Prediction Center (CPC) outlook for September has the month ending somewhat in agreement. Equatorial sea surface temperatures continue to indicate ENSO-neutral conditions. The transition to La Niña continues slower than early season forecasts indicated. CPC forecast ENSO-neutral conditions are expected to continue for the next couple months. La Niña is favored to emerge during September-November (66% chance) then is likely to persist through the Northern Hemisphere winter 2024-25 (74% chance during November-January). Much of Washington and northwest Oregon show above normal precipitation chances but no strong signal regarding temperature. Far southeast Washington and the rest of Oregon favor above normal temperatures but no strong precipitation signal. CPC shows a similar picture for October through December but with the above normal precipitation potential expanding to cover most of the geographic area.

Above normal significant fire potential previously forecasted for September has been removed for all areas. Lower rainfall amounts and continued above average fuel loading remains for PSAs NW06 and NW12, north-central Oregon and southeast Oregon, respectively. Rapid spread events over one or two burn periods can still occur for any central and eastern PSA. However, even a multi-week hot and dry spell across eastern Oregon would not likely produce new significant fire activity necessitating resources from outside the dispatch area. Remaining PSA fuel and weather conditions have returned to near average from their July and early August extremes. October through December are expected to remain at normal, or low, fire activity levels across the entire geographic area.

Northern California and Hawai'i

All previous Predictive Service Areas (PSAs) listed with above normal significant fire potential have been returned to normal for September. The pair of August low pressure systems have taken the edge off the fire season with conditions having returned closer to average. Single day rapid fire growth events are expected but are very unlikely to result in new significant fires.

August started hot and dry with an upper ridge over much of the West Coast. Moisture rotated north around the high pressure which brought a mix of dry and wet thunderstorms. Strong low-level instability, combined with periodically enhanced diurnal winds, resulted in increased growth on new and existing fires. Occasional smaller scale upper-level low-pressure systems briefly displaced the upper ridge and often brought gusty winds to areas east of the Cascades. A pair of large low-pressure systems crossed the region the second and third weeks of the month bringing additional thunderstorms and periods of rain. The first one on August 17 was especially active with over 6,000 lightning flashes occurring over a single 24-hour period. These also brought moderate to heavy rain along the Cascade Crest and westward, but storms farther east arrived with much less rain. Several days later a second upper-level low reinforced cooler and wetter

conditions. However, it still produced drier thunderstorms across the far eastern portions of the geographic area. Ultimately, these lows took the edge off the fire season to date and returned conditions near or below average. The month finished under hot and dry weather as high pressure returned.

Drought worsened the first two weeks of the month. The Washington Cascade east slopes advanced into extreme drought. Southeast Oregon, the upper Rogue Basin, and an area of north-central Washington advanced to severe drought. Remaining areas east of the Cascades reached moderate drought outside of the lower Columbia Basin. Aside from the upper Rogue Basin, the Cascade Crest and westward showed little change in drought designations.

Fire activity moderated in August and overall was much lower than July. Initial attack was below average for most of the month with only two spikes in lightning caused ignitions. Large fires east of the Cascades continued to have periods of growth but not to the extent that was experienced earlier in the summer. Periods of moderated weather conditions allowed suppression efforts to make gains towards containment objectives. Fires along the Cascade Crest and southwest Oregon continued to show a high resistance to control. Fire growth on west-side forests was steady and larger growth periods coincided with favorable weather conditions. Two precipitation events near the end of August slowed fire spread across southwest Oregon.

Energy Release Component (ERC) for all PSAs never reached the record high values experienced in July but did spike across the geographic area into mid-August. This spike coincided with the initial Fuels and Fire Behavior Advisory for eastern Oregon being extended to include much of eastern Washington. A second advisory was issued for southwest Oregon after rapid drying of live fuels occurred. For a good portion of August, ERCs in general, were average to below average across much of the Pacific Northwest. A drying trend near the end of the month will rapidly bring fuels conditions to above the 90th percentile.

Deterministic weather models indicate the first half of September starts warmer and drier as high pressure dominates the upper pattern. Brief periods of low-pressure may temper that pattern at times. Then, low pressure systems situated off the Canadian coast will bring a more dominant and cooler and wetter regime to close the month. There is concern for one or more moderately strong east wind events to develop that would affect ongoing fire activity from the Cascade Crest westward. These events are slightly more favored to occur during a fall season El Niño to La Niña transition like the current trend.

The Climate Prediction Center (CPC) outlook for September has the month ending somewhat in agreement. Equatorial sea surface temperatures continue to indicate ENSO-neutral conditions. The transition to La Niña continues slower than early season forecasts indicated. CPC forecast ENSO-neutral conditions are expected to continue for the next couple months. La Niña is favored to emerge during September-November (66% chance) then is likely to persist through the Northern Hemisphere winter 2024-25 (74% chance during November-January). Much of Washington and northwest Oregon show above normal precipitation chances but no strong signal regarding temperature. Far southeast Washington and the rest of Oregon favor above normal temperatures but no strong precipitation signal. CPC shows a similar picture for October through December but with the above normal precipitation potential expanding to cover most of the geographic area.

Above normal significant fire potential previously forecasted for September has been removed for all areas. Lower rainfall amounts and continued above average fuel loading remains for PSAs NW06 and NW12, north-central Oregon and southeast Oregon, respectively. Rapid spread events over one or two burn periods can still occur for any central and eastern PSA. However, even a multi-week hot and dry spell across eastern Oregon would not likely produce new significant fire activity necessitating resources from outside the dispatch area. Remaining PSA fuel and weather conditions have returned to near average from their July and early August extremes. October through December are expected to remain at normal, or low, fire activity levels across the entire geographic area.

Southern California

A warm and dry pattern has persisted across central and southern California through August. Temperature anomalies generally ranged from 0-4ºF above normal for the majority of the area. Most of the area also saw less than 50% of the average August precipitation. There are localized areas of positive precipitation anomalies due to intermittent monsoon moisture resulting in slow moving thunderstorms; however, most of the region remained dry.

The El Niño Southern Oscillation (ENSO) currently remains in a neutral state after transitioning from El Niño. Sea surface temperature (SST) anomalies now range between 0.2 C and 0.4 C below normal in the equatorial Pacific.

Fuels continue to remain dry across most of central and southern California. The latest analysis of the 1000-hr dead fuel moisture shows 12 out of 16 Predictive Services Areas (PSAs) have below normal 1000-hr dead fuel moisture. This can be attributed to the very dry conditions in July and August since 1000-hr fuels have the longest response time. Some indications show the fuels are less dry at the end of August than a month ago, corresponding to below normal Energy Release Component (ERC) values for much of the Sierra PSAs due to an uptick in monsoon activity over that portion of the region.

However, live fuel continued to dry across the area in August. The latest live fuel moisture values from sample sites on the Los Padres National Forest are near normal, falling from well above normal earlier in the year. There continues to remain a large load of fine dead fuel due to the wetter than normal winter and spring months, which has resulted in an active fire season this year.

Climate models suggest the continued trend towards the La Niña supports a warmer and drier pattern on average during the fall and winter months for central and southern California. This trend is also reflected in the past several runs of the various climate models. Due to the combination of weather and fuels, there is a likelihood toward above normal fire potential in the Sierra Foothills, Southern Sierra, Central Coast, Central Coast Interior, Western Mountains, Eastern Mountains, Southern Mountains, and South Coast PSAs for September and near normal potential for everywhere else in the central and southern California region. There is also a moderate tilt toward above normal fire potential in the Western Mountains, Eastern Mountains, Southern Mountains, and South Coast PSAs for October and November. For December, there is a possibility toward above normal fire potential for the South Coast PSA due to an increasingly likely dry fall and a delayed start to the wet season.

Northern Rockies

Significant wildland fire potential in the Northern Rockies Geographic Area (NRGA) for September is expected to be above normal in southwest, west central, and southcentral Montana (PSAs NR9, NR11, and NR14) and is expected to remain normal in all other PSAs. In October, based on current projections of long-range climate anomalies, all PSAs return to normal, and remain normal heading into Northern Hemisphere winter.

Weather in August was generally unsettled, as ridge placement and monsoon activity generated abundant thunderstorm activity throughout the area. This has also led to very fragmented areas of above and below normal precipitation for the month of August, as almost all precipitation fell with thunderstorms. Most of the area was slightly above normal for temperatures, but there were a few spots that ended up with near to slightly below average temperatures. Exceptional drought is centered just to the east of Missoula, primarily located in southwest Montana west of the Continental Divide. Extreme drought extends to the west and south from this point almost to the Idaho border, and severe drought extends west to Couer d'Alene in the Idaho Panhandle and south to Dillon in southwest Montana. Moderate drought extends east to the Continental Divide and west over most of the Idaho Panhandle, with the rest of Idaho and Montana abnormally dry.

An area of moderate to severe drought sits along the border between Montana, South Dakota, and North Dakota.

Widespread precipitation in August from atypical thunderstorms elevated 1,000-hour dead fuel moistures and decreased fire danger for much of the Northern Rockies. Live fuels also showed a rebound (increased Growing Season Index values), indicating areas are holding moisture or new grass and herbaceous growth is occurring.

Concerns with September include low temperatures below freezing killing existing grasses and shrubs. These now dead “live” fuels contribute to fine fuel loading and contribute significantly to fire spread especially during dry, windy cold front passages. Despite the precipitation, some level of drought is present in most of the NRGA, except eastern North Dakota, and fuels can dry out quickly. Combinations of low relative humidity and gusty winds will lead to challenges with initial attack and opportunities for passive or active crown fire behavior when slope and wind align. Areas to watch in September include southwest Montana (PSAs NR6, NR9, and NR11), southeast Montana (NR14, southwestern NR16), and west-central Idaho (NR03) where Energy Release Component and Burning Index values are trending higher.

Late July rainfall events over Idaho and Montana had a significant impact on mitigating fire activity during most of August. Weak monsoon surges played a role in maintaining higher relative humidity and frequent lightning episodes through the month, but most of the fires generated from lightning remained small. There were numerous starts of up to five acres in size, but few of these fires lasted more than one operational period.

Fire danger indices slowly rebounded through the month and by the fourth week of August a strong weather system moved into the Pacific Northwest and ejected through the Northern Rockies. The escalated thunderstorm activity supported more fire starts between August 20-23, which were more resistant to initial attack efforts.

Two distinct areas of fire activity evolved by late August. Central and southeast Montana saw numerous lighting strikes followed by windier days, which supported the development of large fires. The most prominent was the Barber Draw fire because of its proximity to Tongue River Reservoir. This situation was compounded by a low-level jet wind event that pushed the Remington Fire from Wyoming into Montana, eventually consuming more than 100,000 acres east of the Tongue River.

The second area of fire activity was over higher elevations of western and southwest Montana, where lightning starts were in challenging locations for suppression efforts. These fires encountered multiple windier days and have established a significant footprint on the landscape, which will require long duration suppression efforts. The most notable of these fires is the Sharrott Creek Fire west of Stephensville, requiring complex incident management team support.

Our forecast for above normal fire potential is primarily aligned with areas that have had above normal temperatures and below normal precipitation the last month as well as ongoing significant fire activity. With warmer and drier conditions expected as we move into September, these areas are likely to become active again. While higher drought intensities are centered farther west in Montana and north Idaho, long range climate models show cooler and wetter weather reaching the western edge of the NRGA to help mitigate significant fire activity in these PSAs. As a result, we are forecasting above normal significant fire potential in southwest and south-central Montana (PSAs NR9, NR11, and NR14), and normal fire potential in all other PSAs in September. In October, as the long-range climate outlooks show weather conditions returning to more seasonable conditions and as daylight hours shorten, we are expecting all PSAs to return to normal fire potential. With above normal fire potential still in the forecast for September, we may see an increased chance of fall storms and frontal passages interacting with wildfires, and a concurrence of wildfire and prescribed burning.

Great Basin

Fire activity was very busy across the Great Basin early in August across nearly all areas. Monsoon moisture greatly diminished fire activity mid-month across southern and eastern Utah as well as the Arizona Strip. However, large fire complexes in the central Idaho mountains and western Wyoming continued to burn actively the entire month.

Temperatures over the last 30 days have been near normal to slightly above normal for most of the region, while precipitation has been 150-300% wetter than normal across eastern and southern areas. It was much drier across most of Nevada and Idaho, however, where precipitation was mostly just 25-50% of normal. The US Drought Monitor shows some areas of Idaho and western Wyoming are in moderate drought, with portions of western Wyoming in severe drought. Otherwise, most other regions remain drought-free.

Fuels were moistened a bit mid-August across all areas, due to a combination of monsoon moisture across the south, and several weak cold fronts moving across the northern areas by mid-August. However, fuels began drying out steadily the last week of August as a strong ridge of high pressure across the region increased temperatures and lowered relative humidity. Otherwise, the above normal fine fuel loading across southern Idaho and northern Nevada into northwest Utah remains a concern, especially as grasses cured earlier this summer.

Fires remain very active at the end of August, with numerous established large fires across the central Idaho mountains, where extreme fire behavior is regularly observed. New and emerging fires continue across most of the region, even in southeastern areas after a few days of dry and warm conditions.

Above normal significant fire potential is expected in September for most northern areas, where we have established fires in the timbered areas of Idaho and Wyoming, and in areas having above normal fine fuel loading in the lower elevations of southern Idaho and northern Nevada and Utah. Long range models are showing a persistent ridge of high pressure across the region through at least mid-September, which will bring much warmer and drier conditions, keeping fuels at critically dry levels. There are some indications of a low-pressure trough bringing cooler and wetter conditions in the latter half of September, which would fit the normal seasonal pattern. However, there is much lower confidence in the overall weather pattern beyond mid-September. So, established large fires are expected to continue with moderate to occasionally extreme fire behavior in September, while new and emerging fire activity will be above normal for this time of year for most of September. Afterward, a return to normal (low season) fire activity is expected from October onward. This is due to rapidly shortening days and increasing chances of cool season precipitation events that typically occur in the northern half of the Great Basin by October.

Southwest

Between June 15-20 an advantageous synoptic setup allowed elevated moisture into the region. The summer monsoonal period has been up and down, which is not unusual, with an overall wetter tilt across southeastern Arizona and many areas east of the Divide. The month of August will wind down and end up cooler and wetter east of the Divide overall. A drier pattern in September is expected for many parts of the region along with warmer than normal temperatures. As a result, normal significant fire potential is expected for much of the region during September with above normal significant fire potential expected for western and southwestern Arizona.

Areas of above normal significant fire potential are likely to continue to develop in early fall and spread a bit farther east later in September and even into October before decreasing burn periods, a lower sun angle and some frontal systems draw the large fire season to a close from north to south across the Southwest Area.

Over the bulk of the period from March through May an active weather pattern generally brought above normal moisture to areas along and west of the Divide and below normal precipitation to the eastern portion of New Mexico. High temperatures were generally below normal during this period from around central New Mexico westward across Arizona, with areas across the eastern plains right around normal for the spring period. So far in August, high temperatures have been above to well above normal across most of the region, but especially from the Continental Divide onto the eastern plains. Precipitation has generally been above average from northern and northeastern Arizona eastward into northern New Mexico and for some sections of the northeastern plains. Elsewhere, precipitation has been below normal regionally.

A shift in the equatorial Pacific sea surface temperatures will likely play a prominent role in shaping the weather pattern for the fall months. El Niño has transitioned neutral and is expected to transition to La Niña sometime in the fall, although the shift so far has been slow, and some uncertainty remains.

Despite the early monsoonal onset in June, there is elevated potential for a slower and drier end to the monsoon period during the first half of September. Elevated significant fire potential could linger well into mid-late September across the west before a possible pattern change later in the month brings some relief. The possible emergence of a La Niña will be monitored as that could strongly impact the fall weather and climate for the Southwest Area. The longer a neutral ENSO lingers, the more dynamic the weather pattern will be into the fall compared to a less dynamic and drier weather pattern with a firmer, more distinct trend to La Niña.

Rocky Mountain

Periods of hot and dry conditions mixed with surges of monsoon moisture were again the main driving force across the Rocky Mountain Area through the month of August. Wyoming continued to see drier than average conditions, resulting in several very large fires late in the month. Drought conditions have continued to worsen slightly. Normal significant fire potential is expected through December for much of the Rocky Mountain Area, but northern Wyoming will see above normal potential through September.

The ridge breakdown that started the last week of July across Wyoming and the West Slope of Colorado, with stronger winds, continued into the first week of August. Along with the period of stronger winds, conditions remained hot and dry to start the month. Relief came as the next round of monsoon moisture came out of the Southwest. This brought cooler temperatures, higher humidity, and less winds to much of the area. Mid-month saw the monsoon moisture briefly move out. During this period of drier weather, temperatures remained closer to seasonal normal. Another weaker surge of the monsoon brought scattered showers and thunderstorms to the West Slope of Colorado. The latter part of the month turned warm and dry again, with the return of stronger winds, with gusts up to 50 mph in Wyoming. With the hot and dry conditions, areas of drought continued to expand and slightly worsen across much of the Rocky Mountain Area.

The surge of monsoon moisture the second week of August helped to bring fire indices below average, after starting the month around or above the 90th percentile. The cheatgrass below 6,000 feet, especially in Wyoming, responded quickly once the hotter, drier weather moved back in, becoming increasingly receptive to fire. High fuel loading in eastern Colorado, Wyoming, western South Dakota, Nebraska, and Kansas remains a concern.

With the monsoon moisture, most of the large fires that started in late July saw moisture and were quickly wrapped up. During periods of light winds, most of the fires remained small and were contained within one operational period. However, late August saw the winds increase again in northeast Wyoming resulting in several very large fires, including the House Draw, over 170,000 acres, and Remington, over 190,000 acres, both in northeast Wyoming, while Remington burned into Montana. These were both in fine fuels resulting in rapid spread.

September will continue to be hot and dry across the Rocky Mountain Area with October through December remaining warmer than average. For precipitation, much of the area will remain below normal through the end of the year. However, Wyoming and South Dakota will likely see more normal precipitation by the end of the year.

Given the current fuels conditions and the recent fire activity in northern Wyoming, the lower elevations in northern Wyoming will continue to see above normal fire potential in September, then will return to normal the remainder of year. For the rest of the Rocky Mountain Area, normal fire potential is expected through December.

Eastern Area

Normal significant fire potential is forecast across the majority of the Eastern Area through December. The greatest 30-to-60-day negative precipitation anomalies were indicated across the southwestern Mid-Atlantic states and portions of the Mid-Mississippi Valley. These areas may experience periods of above normal fire potential heading into the fall season if forecast warmer and drier trends come to fruition.

Neutral El Niño Southern Oscillation (ENSO) conditions remained in place over the central Pacific towards the end of August. A transition to a La Niña sea surface temperature regime is still forecast through the end of the year but confidence is lower than previous forecasts. Other sea surface temperature regimes also contribute to global weather patterns adding to some uncertainty in long term weather forecasts. Above normal temperatures overall are forecast over the Eastern Area this fall with precipitation trends more uncertain.

The Predictive Services precipitation outlooks forecast above normal precipitation for much of the western half of the Eastern Area in September. Drier than normal precipitation is forecast over the southwestern Mid-Atlantic States in September with above normal precipitation over much of the western half of the Eastern Area. Drier than normal conditions are forecast over the western half of the Eastern Area in October with wetter conditions over central New England. Wetter than normal conditions are expected over the Upper Mississippi Valley and the central Great Lakes in November, and for the eastern half of the Great Lakes heading into December. The 90-day Climate Prediction Center (CPC) precipitation outlook forecasts above normal precipitation is likely across the far eastern tier of the Eastern Area into November, with drier than normal conditions likely across portions of the western Mid-Mississippi Valley.

According to the Predictive Service and CPC temperature outlooks, above normal temperatures are projected over the southern and eastern tiers in September and over the Mississippi Valley in October. Above normal temperatures are forecast across the majority of the Eastern Area in November with below normal temperatures likely over northern New England. The CPC forecasts above normal temperatures are likely overall across the Eastern Area this fall, with the greatest departures over the Northeast.

Fuels are of most concern for periodic days of significant fire potential in the southeastern tier states where drought persists, but periodic precipitation events have kept fire potential low. With above normal temperatures forecasted for the outlook period, any persistence of hot, dry, and windy days could quickly reduce fuel moistures and increase ignition and spread potential. The southern tier and the Mid-Atlantic states are of the most concern for increased fire potential due to predicted above normal temperatures and normal to below normal precipitation during the outlook period. Moisture stress on live fuels from predicted above normal temperatures could make normally “green” fuels more available to burn. Freezing temperatures and leaf fall will increase the available fuels in the environment so that prolonged dry periods and persistent winds will be a big determinant in the potential for increased and significant fire activity during the outlook period.

Short to medium range precipitation deficits developed through the summer season over the southwestern Mid-Atlantic states and parts of the Mid-Mississippi Valley combined with periods of above normal temperatures. If these areas experience additional periods of below normal precipitation and above normal temperatures this fall, periods of above normal fire potential are likely. The remainder of the Eastern Area should experience near normal fire potential through the fall season outside of any dry and windy periods.

Southern Area

Well over half of the Southern Area is entering September with some form of abnormal dryness or drought after an unusually parched August. According to the US Drought Mitigation Center's long-term composite drought indicator, an objective measure of soil moisture and atmospheric conditions, the most significant drought is scattered from the Lower Mississippi Valley to the mountains of Virginia, with similar conditions in much of West Texas and northeast Oklahoma. Fuel conditions of note that played into this outlook include pine mortality from the 2023 drought and subsequent beetle infestations inland from the central Gulf Coast. Above normal grass loading in parts of the Plains will likely come back into the picture as La Niña is expected to begin this fall.

Tropical activity has recently been subdued due to Saharan dust and large-scale subsidence across the Atlantic, but these conditions are likely to wane during September, October, and November. A back-loaded hurricane season is not uncommon in developing La Niñas, but it is also important to note that two hurricanes have already made landfall in the contiguous US. Tropical disturbances the next few months may play an outsized role in the fire environment, not only in terms of drought relief, but in their potential to produce critical fire weather generally to the west or north of their tracks. Most seasonal climate models indicate the highest risk for direct tropical impacts along or near the East Coast, centered across Florida. If this holds true, dry cold fronts working in tandem with dry and enhanced winds from nearby tropical storms or hurricanes may bring above normal wildfire risks to areas from the Appalachians to the Mississippi Valley. Otherwise, weather patterns that support unusually low relative humidity have been common this summer, and similar intrusions of dry air appear likely to continue heading into fall.

Hurricane Beryl's rainfall and an overall wet summer tempered wildfire activity in timber litter over much of southeast Texas in August despite drier trends most of the month. Heading into early September, another disturbance producing heavy rain there should maintain below normal risks for significant wildfires, which is expected to also include southwest Louisiana. Meanwhile, increasing drought has resulted in an uptick in wildfire occurrence in the Mississippi Valley. An increase in moisture in early September is not expected to diminish wildfire risks in the longer term, especially in parts of Mississippi and Alabama that have observed widespread pine mortality. Above normal significant fire potential is forecast in central and north Mississippi, north Alabama, west Tennessee, and southeastern Arkansas in September as a result of continuing or worsening drought. These conditions may include adjacent parts of northern Louisiana, western Alabama, and middle Tennessee, but confidence is lower there. Normal wildfire activity is now expected in North Texas and southern Oklahoma, but a return of dry and hot weather is likely later in the month.

Warm and dry conditions, continuing or worsening drought. and the potential for dry and breezy weather due to dry cold fronts or tropical systems will likely result in above normal significant fire potential for northeast Texas, eastern Oklahoma, Arkansas, northern Mississippi and Alabama, much of Tennessee, Kentucky, and the mountains of far western Virginia in October. The rest of the Appalachians are of lower confidence, but the main concern would be in parts of Virginia, southwest North Carolina, and east Tennessee if drought relief does not occur.

The highest confidence in above normal significant fire potential in November is expected to persist over far western Virginia, Kentucky, and most of Tennessee into north Mississippi and Alabama. These conditions could easily expand into Arkansas, Oklahoma, and North Texas.

Model guidance is in poor agreement on what to expect in the rest of the Appalachians, leading to very low confidence in what is typically the busiest part of the fall fire season.

Heading into winter, recent precedence is for unusual fire occurrence in the Plains states during December, due to the combination of periods of wet weather in the growing season followed by a strengthening La Niña. December 2021 was historically busy across western parts of the geographic area, due to dry and record warm conditions in areas of above normal grass loading. This combination of abnormal fuel and weather conditions appears more likely than not to repeat itself heading into the dormant season across the Plains. Thorough surveys of the landscape will not be completed in Texas and Oklahoma until late in the year, but at least localized exceptional grass loading has already been noted by the Texas A&M Forest Service in northwest Texas. Otherwise, periods of abnormally wet conditions during the growing season have occurred in all the indicated predictive service areas. Confidence is high in worsening or developing drought there through the end of the year, but it is perhaps too early to say if a weather pattern supporting periodic high winds will occur in December. Above normal significant fire potential is forecast in areas of Texas expected to have above normal grass loading, and this may eventually have to be expanded elsewhere in Oklahoma and the High Plains.

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