National Significant Wildland Fire Potential Outlook

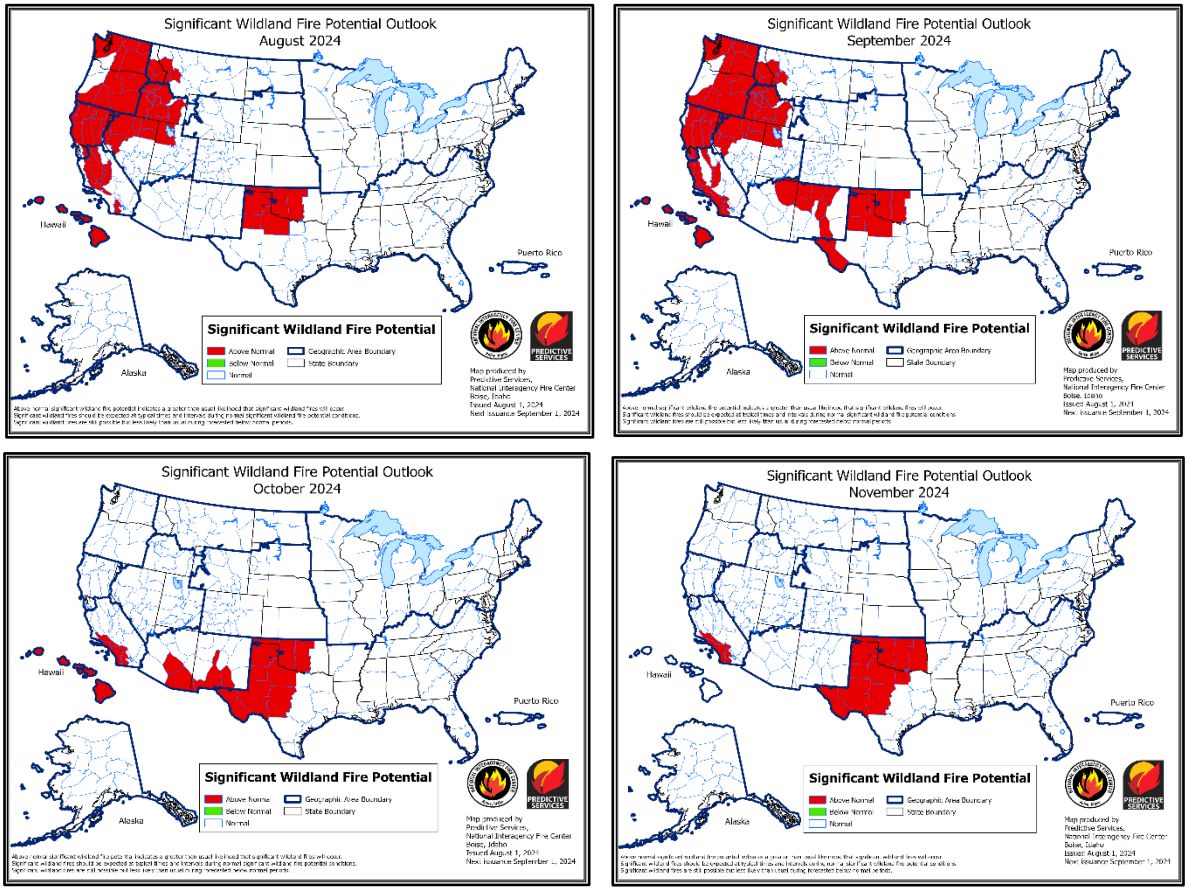
Predictive Services
National Interagency Fire Center

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

Outlook Period – August through November 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 increased significantly across the western US in the first half of July and remained at extreme levels through the end of the month. With the increase in activity through the first half of July, the National Preparedness Level was increased to four (on a scale of 1-5) on July 10 and five on July 18. The most significant increase in activity occurred in the Northwest Geographic Area which increased from Preparedness Level two to three July 10, to four July 16, and to five July 19. However, Alaska decreased in activity through the month, going from Preparedness Level five at the beginning of the month to one at the end of the month. California, Great Basin, Rocky Mountain, and Northern Rockies Geographic Areas also observed increases in activity while Southwest Area remained moderately active through the month. Year-to-date annual acres burned for the US is above the 10-year average at 123% of normal, but the national year-to-date tally of wildfires remains below average, near 82%.

Precipitation in the western US in July was mostly below normal, especially from northern California into the Northwest, Idaho, and Montana. Localized areas of above normal precipitation in the West were observed in the central Sierra, northern Nevada, northern Utah, southern Wyoming, and central New Mexico. Well above normal precipitation fell in south and east Texas, then northward into the Mississippi Valley and eastward into much of the Southeast. Mixed precipitation anomalies were noted in the Plains, while Alaska received above normal precipitation except for the southeast Interior which was below normal, with Hawai'i below normal as well. Temperatures in July were above normal across much of the West, with near to below normal temperatures across much of the Plains and near to above normal temperatures for the Appalachians and East Coast. Drought intensified in the Appalachians, Northwest, and northern Rockies, with improvement in Florida. Small areas of extreme to exceptional drought were present in western Montana, southern New Mexico, west Texas, northern Virginia, and small portions of Alabama, Tennessee, and South Carolina.

Climate Prediction Center and Predictive Services outlooks issued in late July depict above normal temperatures are likely across much of the US in August that will continue through November. Temperatures are likely to be below normal in southern Alaska, with above normal temperatures possible for the North Slope. Precipitation is likely to be above normal along the Gulf and East Coasts into the Upper Midwest in August, while precipitation is likely to be below normal from the southern Plains northwestward into the Northwest and northern Rockies. For the fall, below normal precipitation is forecast for much of the southwestern quarter of the US, with above normal precipitation likely for the East Coast and portions of the Northwest.

In comparison to the outlook issued a month ago, larger areas of the West are expected to experience above normal significant fire potential in August and September. Above normal significant fire potential is forecast for much of the Northwest, northern Great Basin, and northern California through September. Above normal significant fire potential is also forecast for portions of the Idaho Panhandle, southwest Montana, and central and southern California in August and September. Most areas of California and the northwestern US will return to normal potential in October, but the southern California coast and mountains will have above normal potential through November. Normal significant fire potential is forecast for the Southwest in August, with portions of New Mexico and Arizona forecast to have above normal potential in September and October. Above normal potential is forecast for north Texas and western Oklahoma in August and September, expanding to all of Oklahoma and much of central and west Texas by November. Above normal potential is forecast for Hawai'i through October, especially for the lee sides.

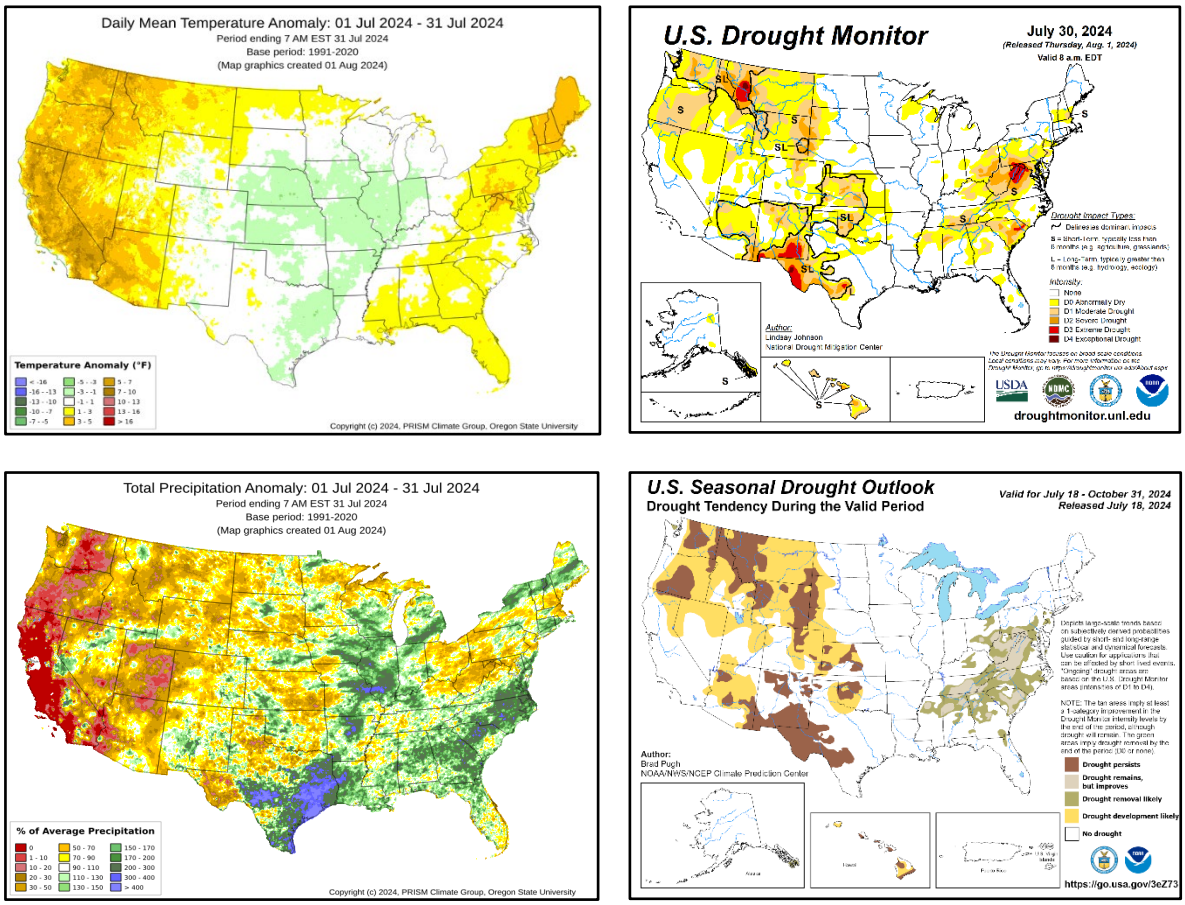
Past Weather and Drought

Temperatures were above normal for much of the West in July. The first half of July was very hot in the West as a strong and long-lasting heat dome developed over California then spread north and east July 4-15. Several all-time record high temperatures were set in the West, including Palm Springs, California, at 124°F, Las Vegas, Nevada, at 120°F, and Redding, California, at 119°F. Widespread monthly and daily records were set across the rest of the West during the period as well. Temperatures farther east were near to below normal across much of the Plains and Mississippi Valley, while near to above normal temperatures were observed from the Appalachians to the East Coast. Below normal temperatures were recorded in much of Alaska, except for the southeast Interior which was above normal. Temperatures across Hawai'i were generally near normal, although temperatures were above normal for the Big Island.

Below normal precipitation was observed across much of the West in July, with a few areas in California and the Columbia Basin recording no precipitation during the month. Precipitation was well below normal across much of California, the Great Basin, and Northwest, coinciding with the heat dome. However, localized areas of above normal precipitation were observed in portions of eastern California, northern Nevada, northern Utah, southern Wyoming, eastern Colorado, and central New Mexico. Well above normal precipitation was observed in south and east Texas, with

much of the rain due to Hurricane Beryl, which made landfall early in July. Above normal precipitation also spread across much of the Mississippi Valley and Southeast, while precipitation anomalies across the Plains, Great Lakes, and Northeast were mixed. However, much of the central Appalachians, centered on West Virginia, was drier than normal. Precipitation was below normal for Hawai'i, while Alaska recorded above normal precipitation except for the southeast Interior.

The heat dome the first half of July rapidly dried fuels across California and the Northwest into the Great Basin and northern Rockies, with large fires breaking out each day. The heat also coincided with a significant dry lightning outbreak July 13-15 along the West Coast into the northern Rockies resulting in dozens of new large fires, especially in the Northwest. Another, shorter-lived heat wave occurred July 18-22 and was followed by a strong cold front that moved through the West July 22-25. More dry lightning occurred July 21-23 ahead of the cold front with dozens of additional large fires, with extreme growth also observed on several fires as westerly winds gusted to 50 mph both ahead of and behind the front. The Park Fire, a human start outside Chico, California that began July 24, rapidly grew to over 350,000 acres in the first 72 hours after ignition and illustrates the extreme condition of the fuels along the West Coast.



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).*

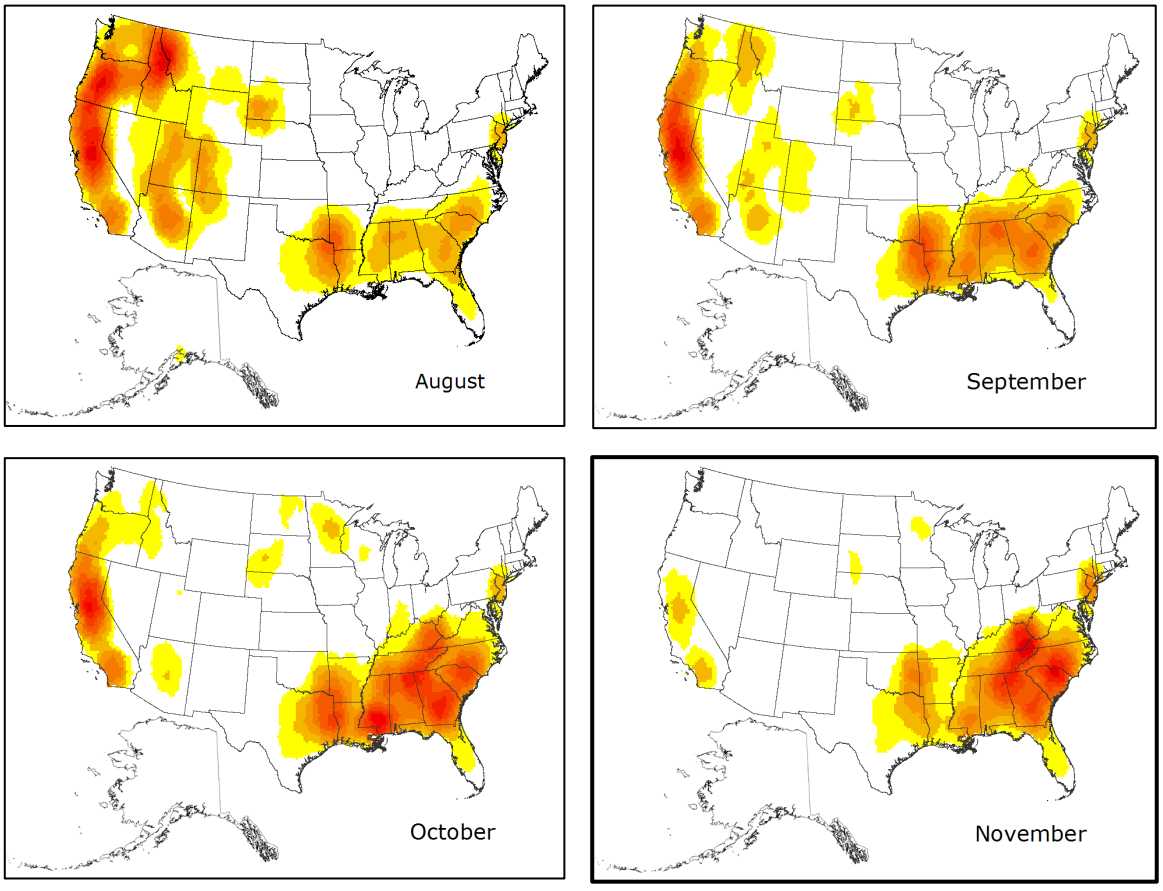
Drought expanded and worsened across much of the Northwest into the northern Rockies and portions of northern California. Abnormally dry conditions expanded across much of the northern Great Basin, with drought development in portions of northwest Utah. Drought also developed and intensified in the central and southern Appalachians and west Texas, while drought improved in Florida and the Lower Ohio Valley. Drought also improved across portions of the central Plains. Heading into August, small areas of extreme to exceptional drought are occurring in portions of southern New Mexico, west Texas, northern Virginia, eastern West Virginia, and western Montana. Very small areas of extreme drought are also noted in Tennessee, Alabama, and South Carolina. Extreme drought persists in much of southern New Mexico and portions of southwest

Texas. For the next three months, drought is expected to improve across the Appalachians and Tennessee Valley. However, drought is expected to expand and/or intensify across much of the northern half of the West, from the Cascades east to the northern High Plains. Drought is also expected to expand into portions of the central High Plains as well as central and northern Arizona.

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 forecast into the fall, with the Climate Prediction Center forecasting a 70% chance of La Niña developing in the August through October period, and 79% 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. Other climate oscillations like the madden-Julian Oscillation and the weakening easterly phase of the Quasi-Biennial Oscillation are expected to have little impact, leaving the developing La Niña and negative PDO as the main drivers.

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 wildfire potential is expected for Alaska from August through November. Weather has moderated, with significant, season-slowing rains moving through the entire state during the last week of July. The US Drought Monitor shows areas of abnormally dry conditions in parts of the

eastern Interior, but it is suspected that most of these areas will disappear when the rainfall amounts update on the next product issuance. The only areas of increased dryness are near Tok in the Upper Tanana Valley and a sliver of the Copper River Basin.

Recent rains have dampened fire activity. Only a few fires in the northeast Interior remain active on warmer and drier days, and they are generally in areas with little population and few values at risk. At the end of July, only three fires remained staffed, and activity is not expected to increase significantly in August.

At the end of July, fuels are wet at the surface and the mid to upper duff. The deeper duff layers, represented by Drought Code (DC), show moderate dryness for the western two-thirds of the state and some scattered high and very high dryness in the east. 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.

August will start with ridging building in over the state, bringing a period of warmer and drier weather. The ridge will not remain for more than four or five days, followed by another cool, wet flow setting up over the state. The Climate Predicition Center (CPC) indicates a cooler trend in the southwest and warmer in the northeast for the next few weeks. CPC also indicates a wetter than normal month statewide. In addition, the heart of lightning season has passed, and storms that do occur will be wet.

Season-slowing rains have dampened the upper and mid duff layers significantly and slowed fire activity to near nothing. Though we may see a warmer and drier period at the beginning of August, daylight hours are getting shorter, sun angle is lower, and the heart of lightning season has passed. All of this adds up to bringing a normal end of the Alaska fire season. During August and early September, some human starts will occur, and existing fires may increase in activity at times, but all should be easily managed with the expected weather and fuel conditions.

Northwest

All Predictive Service Areas (PSA) except NW02 and NW03, which encompass the west side of the Cascades from central Oregan into southwest Washington, are indicated to have above normal significant fire potential for August and September.

July rapidly became much warmer and drier than normal as a large and persistent upper-level ridge moved over the region, then amplified over the western US during the first week of the month. Temperatures in every PSA climbed well above average and lingered there for the first three weeks of the month before dropping back toward normal in the last week of July. Several daily high temperature records were set in every PSA. Relative humidity dropped to record low values, including poor overnight recovery. A weak front brought precipitation to western Washington early in the month, but effectively nothing thereafter until a storm the last three days of the month brought more rain to western Washington. Thunderstorms elsewhere during the month were primarily dry but did occasionally bring localized footprints of wetting rain. However, storms were mainly detrimental as numerous lightning ignitions occurred.

Portions of north-central Washington were placed in severe drought, and moderate drought designations were introduced along the Idaho border. The far north Olympic Peninsula remains in moderate drought. Oregon began July free of drought designation but quickly worsened as most of the area east of the Cascade Crest returned to moderate drought status. Portions of the south Cascades and western foothills were also placed in moderate drought.

Fire activity was well above average in eastern Oregon for July. In the middle of July, fires in eastern Oregon began to grow rapidly in grass and brush and were not easily suppressed in one burn period. Within a week, multiple fires east of the Cascades were almost 100,000 acres with continued daily moderate to heavy initial attack activity. Lightning around the middle of month started multiple long duration fires in southwest Oregon, with additional initial attack in eastern

Washington and Oregon. By the end of the month, five fires east of the Cascades were over 100,000 acres with the largest just shy of 300,000 acres. By the end of the month, many fires east of the Cascades were being contained due to the decrease in the severity of the fire environment. Fires in southwest Oregon are expected to be long duration fires that will remain on the landscape for the remainder of the fire season.

Energy Release Components (ERCs) for all PSAs rapidly increased the first week of July as many PSAs reached record values. Moisture content in 1000-hour fuels in all PSAs also fell rapidly and reached record dryness across the entire Geographic Area. A Fuels and Fire Behavior Advisory was issued for portions of eastern Oregon July 12 for increased fine fuel loading, continuous fuels, and rapid curing occurring at low elevations. The advisory was updated and expanded July 24 to include all of eastern Oregon and most of eastern Washington for continued extreme fire behavior across all fuel types. An additional Fuels and Fire Behavior Advisory was issued on July 24 for southwest Oregon. Recent fire spread was observed in fuels that are normally barriers to fire spread, and fuel conditions are a month ahead of schedule.

Equatorial sea surface temperatures continue to indicate ENSO-neutral conditions are in place. The Climate Prediction Center (CPC) maintains their La Niña Watch, showing a 70% probability for a transition to La Niña conditions during the August through October period. The transition to La Niña is occurring slower than past projections anticipated. As such, even the warmer and drier 2016 analog year is no longer favored as the lack of current rainfall accumulation does not show similarities to 2016, nor any other previously favored analog. This year is at best a loose match to 2007 and 2010 for the remainder of the summer and early fall. Both these years had season-slowing or season-ending events that occurred in mid to late September. Southern Oregon was the slowest to see ERCs remain below the 80th percentile in those analog years.

For eastern portions of the geographic area, the CPC now favors near to above normal temperatures for the September to October period along with near normal precipitation amounts. Western portions of the area do not show strong temperature signals but do slightly favor above normal precipitation. However, this year 2024 is matching the 2016 analog for lightning tendencies with below normal counts thus far. In addition, this year's lightning events have strongly favored minimal rain from thunderstorms and numerous ignitions. This trend is expected to continue through August.

The geographic area has further expanded above normal significant fire potential designations to cover all PSAs except NW02 and NW03. Fuels personnel within those latter two PSAs continue to indicate conditions closer to normal. Despite fewer numbers of fires across the landscape, most remaining PSAs are experiencing fire behavior above what ordinarily would be expected in a typical season. The worsening short term drought is likely the primary contributor to this behavior. Northwest Washington's PSA NW01 has yet to see notable fire activity, but longer-term drought effects remain in place, and larger, long-duration fires are possible should ignitions occur, especially in difficult to access terrain.

Northern California and Hawai'i

Significant fire potential is projected to be above normal for August and September across most Predictive Service Areas (PSAs) with the exceptions being the Bay Area-Marine PSA during August and the North Coast PSA during September. Normal is expected for October and November across all the PSAs. During August, one to four large fires typically occur per PSA except for the North Coast, where the monthly average is less than one. During September, one or two large fires typically occur per PSA except for the Bay Area PSAs and Far Eastside, where the monthly average is less than one. During October, generally one large fire or less occurs per PSA, and the average falls even lower, to less than one large fire per PSA, during November. Hawaii's significant fire potential is above normal from August through October across the leeside areas then returns to normal during November.

The weather pattern during July was comprised of dominant ridging with occasional weakening

of the ridge due to Pacific trough passages. An atmospheric blocking pattern set the stage for a historic two-week heat wave during the first half of July. Average July temperatures were generally above to well above normal across inland areas, away from coastal influences, while coastal areas were close to normal. Weak upper-level troughs brought enhanced summertime wind flows and aided in the development of two monsoon thunderstorm events. Precipitation was generally below normal across most of the area, although near to above normal precipitation was observed across the far east due to the thunderstorm events. Around 2,900 lightning strikes were recorded during the month, which fell short of the 2012-2022 July average of around 7,500 strikes. A dry and gusty northerly wind event occurred July 2-3, otherwise wind-induced Red Flag Warning and High-Risk issuances were due to warm and dry westerly and southerly wind events.

The July heat wave events set up historically dry and flammable conditions throughout a good portion of the month. Several PSAs experienced near record-to-record high Energy Release Component and Burning Index values during extended stretches. The abundant grasses continued to cure across the low and mid elevations while green-up existed generally above 6,000 feet in the sheltered, less exposed areas. Cheatgrass had cured across most elevations earlier in the month. Herbaceous fuel loading observations that were finalized during June and July show above to near record levels of growth from the growing season, and this is one key contributor to the large fire growth exhibited during July. The intense and prolonged July heat wave also made the woody fuels and shrubs more flammable with many of the live fuel moisture readings switching from near to above normal early in the summer season to near to below normal by the end of July. The last of the snowpack can only be found across the highest elevations and in small patches. The US Drought Monitor shows moderate drought returning to the far north, and flash drought has impacted the fuels across a broad area due to the various intense heat waves that occurred during June and July.

Fire business continued to increase during July, especially across the low and mid elevations, with an average of 24 fires per day. Large, costly fires occurred throughout the month, starting with the Thompson Fire near Oroville and ending with the Park Fire near Chico. Large fires occurred across all fuel types including grass, shrub, and timber. Incident Management Teams were requested to help manage the Thompson, Shelly, Hill, Gold Complex, and Park incidents. The Park Fire ignited during the afternoon of July 24 and had grown to over 350,000 acres in oak woodland and timber by the evening of July 27. Column rotation was observed on two separate days during this significant growth period. Very few prescribed burn projects were carried out during July due to the lack of resources and very flammable conditions.

An even split of ridging and troughing should occur during August with a little more troughing during September. Based on the current state of the fuels, this projected weather pattern does not bode well for the area since it includes heat waves, wind, and lightning events. The temperature pattern experienced during June and July is likely to continue the rest of the summer with near normal readings found near the coast and above normal readings farther inland. Drought conditions are likely to expand the rest of the summer with continued extended periods of critically flammable fuels. Accordingly, above normal significant fire potential is forecast for most of the area during August and September. The one exception is some of the near coastal areas, where marine layer influences will keep significant fire potential near normal.

During past developing La Niñas some moisture intrusions due to troughing have occurred during the fall period and primarily impacted the northern tier, leaving areas west of the Sierra Crest including the Mid Coast, Bay Area, and Sacramento Valley on the drier side. It is possible a period of enhanced offshore winds could affect portions of the area this fall and will largely be dependent on how the trough and offshore ridge pattern evolves. The grass crop is abundant, and a new period of green-up is not likely to occur across the lower elevations until late fall or early winter. However, above normal potential is not forecast for the Sierra Crest westward until better confidence can be gained on the effects of the La Niña transition.

Sea surface temperature (SST) anomalies surrounding the Hawai'ian Islands were generally near normal. Average temperature anomalies observed during July were near normal except for above normal temperatures found across large portions of the Big Island. Precipitation was below to well below normal. Drought conditions have intensified and expanded significantly across all the islands since late June. The most severe drought conditions are found across Maui and the Big Island. Enhanced trade winds were observed July 8-10, otherwise more typical wind patterns were observed, and no Red Flag Warnings were issued. Three large fires occurred on the islands, two on Kauai and one on Maui. Two of these fires grew larger than 1,000 acres.

The ENSO neutral state is expected to transition to La Niña this fall, either before or during Hawai'i's transition from the dry to wet season. Average temperatures during the next four months should generally be near to above normal while precipitation should generally be below normal. The one wildcard will be tropical systems, which can either provide some rainfall relief or provide conditions conducive to fire. During developing La Niñas the east Pacific is generally not as active. Drought conditions should continue to increase in intensity and coverage during the next three months, which will result in live fuels becoming more available to ignite and burn. Several growing periods that occurred during the wet season have led to an abundant and now curing grass crop. Fuels should be most flammable during August to October. Above normal significant fire potential is forecast from August through October in Hawai'i, favoring the leeside areas, and normal is projected for November due to the expected transition to the wet season.

Southern California

A hot and dry pattern persisted for the majority of July across central and southern California. Latest analyses show temperatures mainly ranged between 6 and 8^{o}F above average for most of the region during July. The warmest anomalies are located through the high desert, Central Valley, Sierra Nevada, Sierra foothills, and the central coast interior. For precipitation, most areas received less than 50% of the average July precipitation with widespread areas receiving less than 5% of the average July precipitation. The driest anomalies are located across the south coast, western, eastern, and southern mountains, northern deserts, central coast, and central coast interior. However, for the entire water year (since Oct 1), precipitation remains near to above normal across most locations.

Current sea surface temperature (SST) patterns show the cooler than normal SSTs expanding across the equatorial Pacific. This suggests the continuation of the El Niño Southern Oscillation (ENSO) transitioning to La Niña this fall.

Fuels continue to remain very dry across most of central and southern California. Multiple Predictive Service Areas (PSAs) have 1000-hour dead fuel moistures between the 10th and 3rd percentile with Energy Release Components (ERCs) between the 90th and 97th percentiles. There is also a very large load of fine dead fuel because of the abnormally wet winter and spring seasons.

Live fuel moisture values have decreased considerably over the past couple of months. The latest live fuel moisture average for Los Padres National Forest shows values around 85%. Given the hot and dry July, perennial and annual grasses have cured. The latest US Drought Monitor shows zero areas in drought across central and southern California. Overall, fuels remain more susceptible to fire than normal, with an anomalously large load of fine fuels at elevations below 3,000 feet.

Climate models suggest the continued strengthening of La Niña conditions during the August to November forecast period. Strengthening La Niña conditions means there is a moderate likelihood toward a warmer and drier late summer and fall season. Due to the likelihood of a predominant warmer and drier pattern for this forecast period, there is a moderate chance of above normal significant fire potential for many of the lower elevation PSAs in August, becoming more focused on the southern California coast and mountains by October and November. Fine

and medium size fuels remain the most susceptible to ignition for the forecast period due to higher live fuel moisture values in timber dominated fuels.

Northern Rockies

Significant wildland fire potential in the Northern Rockies Geographic Area (NRGA) for August and September is expected to be above normal in the central Idaho Panhandle and central portions of western and southwestern Montana (PSAs NR3, NR4, NR5, NR6, and NR8) 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, continuing into November.

July was generally hot and dry in the NRGA under a strong upper-level ridge of high pressure. Mean temperatures were above normal in July for all areas other than southeast North Dakota, and precipitation in July ranged from slightly below normal in most of North Dakota to well below normal in north Idaho and most of southwest Montana. Below normal soil moistures in the western NRGA are centered around the Camas Prairie of Idaho and cover most locations west of the Continental Divide. As the drying of soil and fuels continue to push east across the region, places as far east as western North Dakota will begin reaching the point of critical fuel moistures and soil moistures. 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. The rest of Idaho and Montana is abnormally dry. A small area of moderate to severe drought sits along the border between Montana, South Dakota, and North Dakota.

Fire activity has reflected complexity in the fuel conditions, where record dry dead fuels are being offset by presence of live fuels still holding moisture in many areas, though Growing Season Index indicates that the curing of fine herbaceous fuels across central and eastern Montana has occurred with the recent bout of hot and dry weather. These ecosystems in central and eastern Montana are now fully cured and will readily carry fire. West of the Continental Divide, heavy fuels have dried out and Energy Release Components (ERCs) have ranged between the 80th percentile to above the 95th percentile. Although 1000-hour dead fuel moistures reached the 3rd percentile in most PSAs in the western half of the NRGA by July 22, predicted moisture in areas of the Idaho Panhandle and northwestern Montana will moderate heavier fuels in these locations. East of the Continental Divide, values for 1000-hr fuels are below ten percent and, in some locations, below five percent. Strong heat waves continue to push grasses and shrubs that have not yet cured towards dormancy, but in many places this process is not yet complete. These locations in central and eastern Montana have ERC values above the 95th percentile and will continue with these low fuel moistures. In mountain ecosystems, soil moisture remains adequate, and live fuel moistures are still slightly above normal. Live fuel moisture measurements show species like fir were still holding moisture in late July. These ecosystems will still present containment challenges with heavy fuel loading. However, ERC values will moderate from the elevated levels caused by the very hot and dry weather seen in July. This changes seasonally when August arrives.

This complexity is reflected in fire behavior, so this outlook makes an inference on a relative low volume of aggressive emerging fires. Following a couple of days of very hot weather, a substantial weather event passed through the region on July 24. This event produced over 3,000 lightning strikes and a swath of 60 to 80 mph winds in central Idaho and western Montana. The relative lack of numerous aggressive fire starts emanating from this event confirms observations that live fuel moistures continue to provide a buffer against the impact of major heat waves plaguing the West.

July saw large fire activity in southern and western Montana and western Idaho. Early month wildfire activity favored drier westerly aspects but later in the month fires occurred in more areas favoring southwest Montana, western Montana, the southern Idaho Panhandle, and Camas

Prairie. There were lulls between periods of escalated fire activity, and days of moderated weather conditions allowed suppression efforts to be effective. This caused most of the fires in the first three weeks of July to reach containment. Late month fires were presenting greater challenges.

Fire activity with multiple Incident Management Team deployments and very high fire danger indicators caused the Preparedness Level to increase to three (on a scale of 1 to 5) on July 12, then four on July 22. A reduction in Preparedness Level was expected at the beginning of August due to precipitation in the northwest part of the NRGA.

The forecast aligns with current drought conditions to project above normal significant wildland fire potential for five of NRGA's westernmost PSAs for August and September, including PSAs NR3, NR4, NR5, NR6, and NR8. These PSAs are the Southern Idaho Panhandle, Camas Prairie of Idaho, North Central Idaho and the Bitterroot/Sapphire Mountains, Western Montana, and Southwest Montana west of the Continental Divide. The other PSAs should see normal fire activity for August and September. In October, as the long-range climate outlooks show weather conditions returning to more seasonable conditions as daylight hours shorten, all PSAs are expected to return to normal fire potential. As a result of the abnormally warm and dry conditions that are currently projected for north Idaho and western Montana for late summer and early fall, there is an increased chance of fall storms and frontal passages interacting with wildfires.

Great Basin

Heading into August, fire activity is increasing in the Great Basin. Due to winter and spring moisture, fine fuel growth has been above normal over northern and western Nevada, southern Idaho, northern Utah, and small portions of southern Nevada and southwest Utah. Carryover fine fuel will still be present in many of these areas as well, adding to the fine fuel loading since very little fire activity occurred in 2023 after a wet winter and spring in 2023. Fine fuels are cured in lower elevation areas due to a very hot and dry June and July. Live and dead fuel moisture levels are critically low in Nevada, Utah, the Arizona Strip, and southern Idaho. Fuel moisture has been decreasing rapidly in central Idaho and the higher elevations of Wyoming as well. Above normal significant fire potential is expected across the northern and western areas in August and possibly into September with expectations of warm and dry weather continuing.

Temperatures over the last 30 days leading into August have been much warmer than normal in most areas of the Great Basin due to a few heat waves throughout July. Precipitation was well below normal in most areas, except for parts of northern Nevada into northwest Utah that saw wetter thunderstorms for short periods. Due to a weaker than normal monsoon and drier than normal conditions in June and July, drought has begun to develop over parts of the Great Basin. Abnormally dry conditions are expanding across the region and pockets of moderate drought have developed in portions of central and eastern Idaho, Wyoming, and northwest Utah. Drought may intensify in parts of Idaho and Wyoming later in the summer or in the fall as persistent monsoon moisture is expected to remain farther south.

Fuels are cured across the Great Basin. Energy Release Component values are above the 80th to 90th percentile in central Idaho, western Nevada, and much of the eastern and southern half of Utah into the Arizona Strip, despite recent moisture bringing indices down a bit. Both 100- and 1000-hour dead fuel moistures were well below normal and at record low levels in early to mid-July across most of the Great Basin, and they remain below normal despite having increased modestly in recent weeks due to occasional thunderstorms. Live fuel moisture rapidly dropped in July due to the very hot and dry conditions. Fuel moistures for nearly all areas exceed critical thresholds, and some areas of western and northern Nevada are at record lows. Fine fuel loading over much of northern and western Nevada, southern Idaho, and northwest Utah is above normal, as well as in smaller areas of southern Nevada and southwest Utah.

Fire activity increased significantly in July in the Great Basin, with many large fires arising over the latter part of the month in all areas, but especially in Nevada, Utah, and Idaho. The Great

Basin's Preparedness Level was elevated to four in July, and separate Fuel and Fire Behavior Advisories have been in effect since July 10 for portions of Nevada, Idaho, Utah, and the Arizona Strip. The higher elevations of Wyoming have not seen much large fire activity but will likely see increasing fire activity throughout August and possibly into September.

Fire potential will continue to increase at all elevations through August as hot and dry weather dominates Nevada, Idaho, and western Wyoming, with pulses of lightning activity to increase ignitions. Wetter conditions are expected to be most consistent in Utah and the Arizona Strip, with only brief surges of moisture pushing farther north and west. Drier and warmer conditions are expected to linger into September in the Great Basin. However, a West Coast trough may still develop and produce windy conditions for the western half of the region. The combination of dry and occasionally windy conditions will keep significant fire potential above normal well into September, especially in areas of Nevada, Idaho, and northern Utah that have above normal fine fuel loading. Wetter conditions may push into Idaho and Nevada by October to drop fire potential to near normal that will continue into November.

Southwest

Between June 15-20, an advantageous weather pattern allowed elevated moisture into the region. Despite some generally brief periods of up and down moisture over the prior five weeks, this trend is expected to continue through much of the month of August. As a result, normal significant fire potential is expected for the region for August. Drier weather is likely across the eastern third of New Mexico through the first few weeks of August and could lead to some increased initial attack. However, around late August to early September, a drier pattern is expected to begin to take shape across the region. Areas of above normal significant fire potential are likely to develop and spread regionally in September and 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 eastern, and especially southeastern New Mexico. High temperatures were generally below normal during this period from central New Mexico westward across Arizona with areas across the eastern plains right around normal for the spring period. In July, high temperatures were above to well above normal along and west of the Divide, with areas of below normal temperatures over the far north and east. Precipitation has generally been above average for most areas along and east of the Divide. Areas west of the Divide have been below average across the far west and far northern tier, but closer to normal across sections of central Arizona.

A shift in the equatorial Pacific sea surface temperatures will play a prominent role in shaping the weather pattern for the late summer into the fall. El Niño has transitioned into neutral territory and is expected to transition to La Niña by the late summer into the fall although some uncertainty remains. An inspection of past El Niño to La Niña flip years reveals overall a warm and hot summer with a moist tendency early in the monsoon period near the Divide. Areas both across the far west and far southeast will have a drier tendency overall through late August.

Despite the early onset of the monsoon back in June, there is elevated potential for a slower and drier monsoon period to emerge later in August. A higher tendency for both drier and hotter than normal conditions is expected to linger into September east of the Divide. An uptick in large fire activity very well could reemerge by late August or early September, then linger much longer than usual, especially along and east of the Divide. However, it could spread across much of the region as a shift to La Niña normally heralds a return to a drier than normal pattern by late summer into the fall.

Rocky Mountain

Periods of hot and dry conditions mixed with surges of monsoonal moisture dominated the weather across the Rocky Mountain Area through the month of July. Wyoming was largely missed by the monsoonal moisture and continued to see drier than average conditions, which has led to worsening drought. However, due to light winds through much of the month, most fires remained small. Normal significant fire potential is expected through November.

July started out relatively mild for temperatures, but by mid-month temperatures soared above normal with much of the Rocky Mountain Area seeing highs in the 90s with some of the lower elevations pushing above 100°F. This heat was brought on by a ridge of high pressure that moved out of the Great Basin and settled over Wyoming and Colorado. Once the high pressure moved back to the west, more seasonal temperatures settled into the area. The month ended with more hot temperatures moving into the area once again. Along with the hot temperatures came periods of very dry air. This resulted in afternoon relative humidity falling into the single digits across Colorado and Wyoming. Through much of the month there were no significant winds, which helped limit fire growth potential. Most days, wind gusts remained around 20 to 25 mph. However, the last week of the month Wyoming and the West Slope of Colorado observed stronger winds as the ridge broke down. Precipitation was spotty across the area, with Wyoming largely missing out on most of the monsoon moisture that moved out of the Southwest. The West Slope, eastern Colorado, and parts of the central Plains observed more shower and thunderstorm activity resulting in the month being wetter than average. Drought conditions continue to expand with the increasingly hot and dry conditions through July, mostly across Wyoming, along the Front Range, in northwest Colorado, and into the Black Hills.

The cheatgrass below 6,000 feet, especially on the West Slope and into Wyoming, continued to cure, becoming increasingly receptive to fire. With the hot and dry conditions, the higher elevation 1,000-hour fuels continued drying out in many parts of Wyoming as values dropped. High fine fuel loading in eastern Colorado, Wyoming, and western South Dakota, Nebraska, and Kansas remains a concern.

Due to the lack of strong winds, most of the fires arising in July remained small and were contained within one operational period. However, the hot, dry conditions created periods of heightened initial attack. Earlier in July, the largest fire was the Badger Fire in Sheridan County Wyoming, which grew to 6,000 acres, with growth aided by the alignment of southerly winds with the terrain. At the end of July, even more significant fires emerged and continued to burn into August as this document was issued. These included the Pleasant Valley fire in southeast Wyoming, that burned over 25,000 acres in its first two burning periods, and three very high-profile fires along Colorado's northern Front Range – the Alexander Mountain, Stone Mountain, and Quarry Fires.

August and September will continue to be hot. Much of the Rocky Mountain Area is forecast to see below normal rainfall through the month. The West Slope has a better chance of seeing more normal rainfall as there will be periods of monsoonal rain. October and November will remain warmer than average, but Wyoming may see closer to normal precipitation.

Given the observed fire activity through the first couple of months of fire season across the Rocky Mountain Area, normal fire potential is expected through November. As indicated by the late July emergence of those large fires noted previously, there is still potential for the occasional large fire to develop during a short duration period of stronger winds, especially with terrain alignment.

Eastern Area

Normal fire potential is forecast across the majority of the Eastern Area through November. The greatest 30- to 60-day negative precipitation anomalies were indicated across portions of the Mid-Atlantic States and east-central New England. These areas may experience periods of above normal fire potential heading into September if forecast warmer and drier trends come to fruition.

The El Niño Southern Oscillation (ENSO) continues to transition from a neutral sea surface temperature regime to a La Niña regime heading into August. Other sea surface temperature regimes also contribute to global weather patterns, adding to some uncertainty in long term weather forecasts. Much of the Eastern Area is expected to experience above normal temperatures into the fall, with the greatest anomalies across the southern and eastern tiers. Precipitation trends are more uncertain, but drier than normal conditions may develop or persist over portions of New England and the Mid-Mississippi Valley in August, then across much of the eastern tier of the Eastern Area in September, with wetter than normal trends over the northwestern tier into the early fall season.

The Predictive Services precipitation outlooks forecast above normal precipitation across the Great Lakes and much of the Mid-Atlantic States for August. Drier than normal precipitation is forecast over the Mid-Mississippi Valley and central New England for August. For September, wetter than normal conditions are expected across the western tier of the Eastern Area and drier than normal conditions across the eastern tier. Wetter than normal precipitation is also expected over the Upper Mississippi Valley, southern Mid-Atlantic States, and central New England. Looking farther out, the 90-day Climate Prediction Center precipitation outlook forecasts above normal precipitation is likely across the eastern tier of the Eastern Area into October with drier than normal trends across parts of the western Mississippi Valley.

According to the Predictive Service and Climate Prediction Center temperature outlooks, above normal temperatures are forecast across mainly the southern and eastern tiers of the Eastern Area into September.

Normal fire activity for the rest of the summer through the fall season is expected for the Eastern Area during the outlook period. 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 down. With above normal temperatures forecasted for the outlook period, any persistence of a combination of hot, dry, windy days could quickly reduce fuel moistures and increase ignition and spread potential. New England and the Mid-Atlantic states are of the most concern for increased fire potential due predicted above normal temperature and normal to below normal precipitation trends during the outlook period. Moisture stress on live fuels from predicted above normal temperatures could make normally “green” fuels more available to burn. Prolonged dry periods and persistent winds will be a big determinant in both the potential for increased and significant fire activity during the outlook period.

Short to medium range precipitation deficits developed through the summer season over portions of the Mid-Atlantic states and central New England combined with periods of above normal temperatures. If these areas experience additional periods of below normal precipitation and above normal temperatures through the rest of the summer into the fall season, periods of above normal fire potential are likely. The remainder of the Eastern Area should experience near normal fire potential through the rest of the summer season into the fall outside of any dry and windy periods that may occur.

Southern Area

The first half of July began with a heat wave across almost the entire Southern Area as an upper-level ridge sat over the eastern half of the US. Widespread temperatures near 100°F occurred. This also caused a dry period for the area, which helped to cure fuels, especially fine and dead fuels that normally would be wet due to summertime rain in the Southeast.

For the latter half of July, a ridge built over the West while the ridge over the East broke down. This brought relief to the heat and a wetter pattern for most of the Southern Area. However, the western halves of Texas and Oklahoma remained warm and dry. The only real relief those areas felt were periods of lower temperatures and an increase in relative humidity. Hurricane Beryl,

which made landfall along the northern Texas coast on July 8, brought much-needed rain to at least East Texas, with the Houston area seeing around 8 inches of rain, and an area southwest of Houston receiving around 13 inches of rain. Beryl also brough much-needed rain to Mississippi, Louisiana, and Arkansas. Behind Beryl, a layer of Saharan dust prohibited any further tropical systems from developing and impacting the US. Also, several stalled cold fronts over the Southern Area allowed for significant rainfall to occur over most of the area, but west Texas and Oklahoma were once again missed by most of the rain, with no significant relief. Even with the hot, dry conditions in July, the Southern Area saw light fire activity, with only a few large fires through the month.

The rainfall in July has allowed any flash drought that developed previously in the Southeast to dwindle. As of the beginning of August, there may still be some localized areas of drought persisting, especially in the Virginia mountains and the northern portion of Kentucky. These areas have not seen as much rain as areas to the south and east have. While the recent rain and lower temperatures have brought relief compared to the beginning of July, any further hot and dry spells may cause localized areas to have a higher potential for significant fire. However, any such affected areas in August and possibly September would likely be relatively isolated or otherwise small in scale, thereby keeping overall potential of significant fire normal at this time.

With ENSO finally shifting from neutral to La Niña and the Saharan dust layer dissipating, the tropical season should be under way. This may help to bring better chances of rain to Puerto Rico and the Virgin Islands, the southern Atlantic Coast, as well as the Gulf Coast.

The Climate Prediction Center (CPC) forecast indicates chances of above normal rainfall for much of the area east of the Mississippi Valley for August and September. This combines with the significant rainfall that has already fallen, resulting in the forecast for normal to perhaps below normal fire potential across most of the Southern Area for the August through November outlook period. This excludes the western half of Texas and western Oklahoma, where drought conditions are likely to continue and contribute to above normal fire activity, especially the panhandle areas. Above normal activity resulting from these dry conditions could be further exacerbated by any thunderstorms producing lightning, resulting in abundant fire starts and increasing the strain on initial attack.

As the season turns from summer into fall, above normal precipitation is likely for the eastern half of the Southern Area, although by the second half of the fall season, the area should see normal precipitation. The CPC is forecasting much of the area that has been in a drought to be removed, or at least improve this fall. Therefore, normal fire potential is forecast outside of Texas and Oklahoma as it is too uncertain to trend one way or the other at this time. The amount of rain over the next couple of months, as well as the timing of foliage curing will play a major role for October and November, especially for the Appalachians and the surrounding areas. Tropical activity is another factor that is much too uncertain to add into the current forecast. As for Texas, with a warmer and drier than normal pattern forecast to continue, the area of above normal potential will increase, covering all of Oklahoma and the western half of Texas by November.

In summary, with the forecast evolution of the ENSO pattern and the current state of conditions, the Southern Area from the Mississippi Valley, to the Atlantic Coast should see normal potential for significant fires for the entire August through November outlook period. In contrast, Texas and Oklahoma will have an above normal potential for significant fire activity, beginning in the panhandles for August and September, then increasing in October and November to include all of Oklahoma and the western two-thirds of Texas.

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