National Significant Wildland Fire Potential Outlook

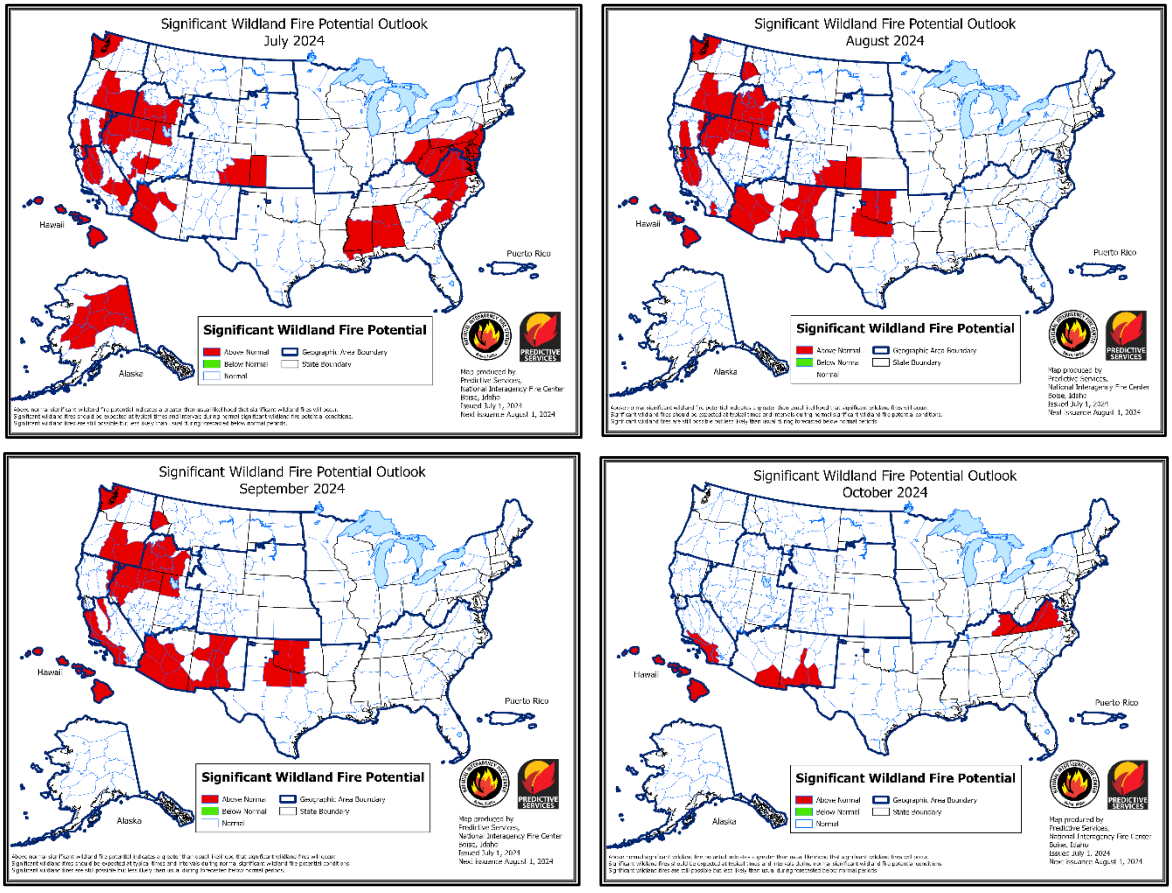
Predictive Services
National Interagency Fire Center

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

Outlook Period – July through October 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 across Alaska and the western geographic areas of the US in June, with a more significant increase in activity the final third of the month. Fire activity continued at low levels in the Southern and Eastern Areas during June. With the increase in activity in late June, the National Preparedness Level was increased to three (on a scale of 1-5) on June 28. Alaska observed the greatest increase in activity, with the Alaska Interagency Coordination Center elevating its preparedness level increasing to three on June 22 and to four on June 26. The Southwest Area was active through much of the month, although fire activity moderated late in the month, while California activity continued to increase throughout the month. Year-to-date annual acres burned for the US is above the 10-year average at 133% of normal, but the national year-to-date tally of wildfires remains below average, near 79%.

Precipitation across the contiguous US in June was mostly below normal. However, above normal precipitation was observed in western Washington, portions of Arizona and the Four Corners, and

in the Upper Midwest, where historic flooding was observed in late June. Significant precipitation also fell in southern Florida and southern Texas in June, helping resolve deficits from the prior month in those areas. In contrast, June's precipitation was significantly below normal across much of the Great Basin, Inland Northwest, northern and central Rockies, and from the Appalachians to the East Coast. Temperatures in June were above normal across much of the southern two-thirds of the West, but near to below normal near the Canadian border from Washington to Minnesota. Near to above normal temperatures were observed in much of the eastern US. Extreme drought persists in southern New Mexico and small portions of southwest Texas. Drought or abnormally dry conditions persist in much of Washington, northern Idaho, and western Montana, while drought has developed in eastern portions of Wyoming, and portions of the Ohio Valley, Mid-Atlantic, and Southeast. Drought has improved or been removed from central and south Florida, and in portions of southeast Colorado into western Kansas.

Climate Prediction Center and Predictive Services outlooks issued in late June depict above normal temperatures are likely across much of the US in July continuing through October. Temperatures are likely to be below normal in southwest Alaska through the period, with a slight chance of above normal temperatures for the Brooks Range and North Slope. Precipitation is likely to be above normal along the Gulf and East Coasts and Upper Midwest in June, with above normal precipitation expected for the eastern Gulf and East Coasts August through October. Below normal precipitation is likely for much of the northern half of the West into the southern Plains, with precipitation more uncertain in the Southwest, with a small area of above normal precipitation possible. Below normal precipitation is likely across much of the Rockies and Plains August through October, with above normal precipitation likely in Alaska in July.

In comparison to the outlook issued a month ago, more and larger areas are expected to experience above normal significant fire potential starting in July. Above normal significant fire potential is now forecast for much of Alaska, Alabama, Mississippi, the central Appalachians, Mid-Atlantic, portions of the Carolinas, southern Nevada, southwest Utah, and southeast California in July before returning to normal in August. Above normal potential is forecast for much of the northern Great Basin into central and southeast Oregon and far northeast California July through September due to well above normal fine fuel loading. Above normal potential is forecast for southeast Colorado into western Kansas in July and August as well, with above normal potential expected in northwest Washington through September. Above normal potential in western Arizona in July is forecast to expand into much of southeast Arizona and central New Mexico by September before returning to normal except for southeast Arizona and southwest New Mexico in October. Above normal potential is expected in the California Central Valley and Diablo Mountains in July and August, with above normal potential in much of coastal southern California September and October. Above normal potential is forecast for Hawai'i through October, especially for the lee sides.

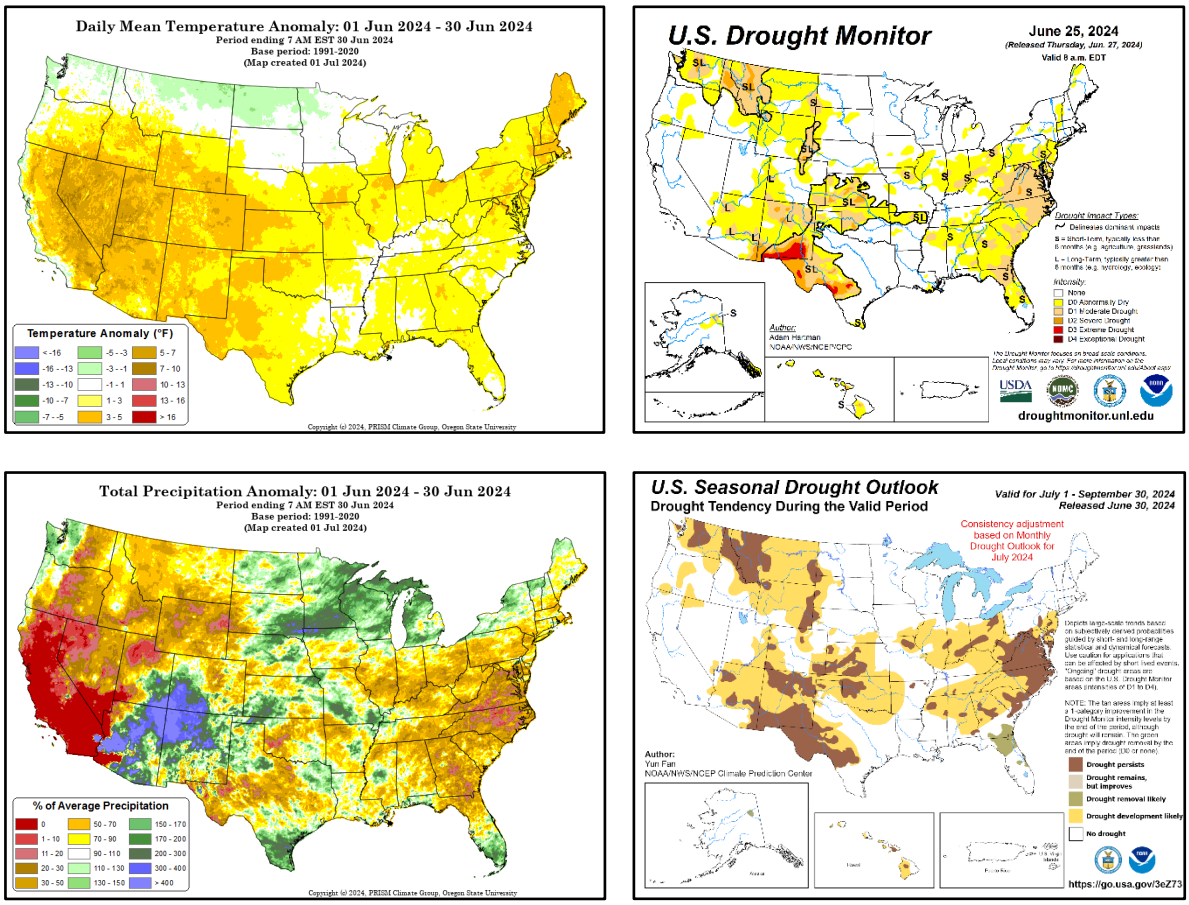
Past Weather and Drought

Temperatures were above normal for much of the southern two-thirds of the West in June, with a significant heat wave across the southern half of the West June 19-23. Temperatures were also above normal from the Mid-Mississippi Valley into the Mid-Atlantic and Northeast, mostly due to the heat wave from June 17-23. Temperatures were near to above normal in the Southeast into the central and southern Plains. Temperatures were near to slightly below normal along the Canadian border from Washington to Minnesota. Temperatures in Alaska were above normal for much of the state in June, with well above normal temperatures observed from June 20 through the end of the month. Temperatures across Hawai'i were generally near normal, although temperatures were above normal for the Big Island.

Above normal precipitation fell across much of the Upper Midwest with historic flooding in portions of northern Iowa into southern Minnesota from June 16 through the end of the month. Above normal precipitation was also observed across much of Arizona into northwest New Mexico and

southwest Colorado. Above normal precipitation fell across south Texas, south Florida, and western Washington as well. However, precipitation was below normal for much of the rest of the US, with significant dry anomalies across the Great Basin, Inland Northwest, and northern and central Rockies. Well below normal precipitation was also observed across the Ohio Valley to the Appalachians and East Coast. Precipitation was well below normal across Hawai'i, with less than 25% of normal precipitation for Maui and the Big Island. While isolated to scattered thunderstorms brought occasional precipitation to Alaska, precipitation was below to well below average for the state.

Strong northerly winds across California June 16 resulted in the Post, Aero, and Sites Fires, indicative of the significant increase in activity the latter half of June. Strong southwest winds in New Mexico the following day, June 17, resulted in the South Fork and Salt Fires that burned several hundred structures in and around the Village of Ruidoso that evening. A sudden increase in moisture followed June 19-23, rapidly replacing the fire threat with damaging debris flows off the burn scars. Modest amounts of moisture with an incoming Pacific trough ignited several fires June 24-26 across California into southeast Oregon and the Great Basin, with the Fresno June Lightning Complex and Basin Fires in central California the most notable.



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).*

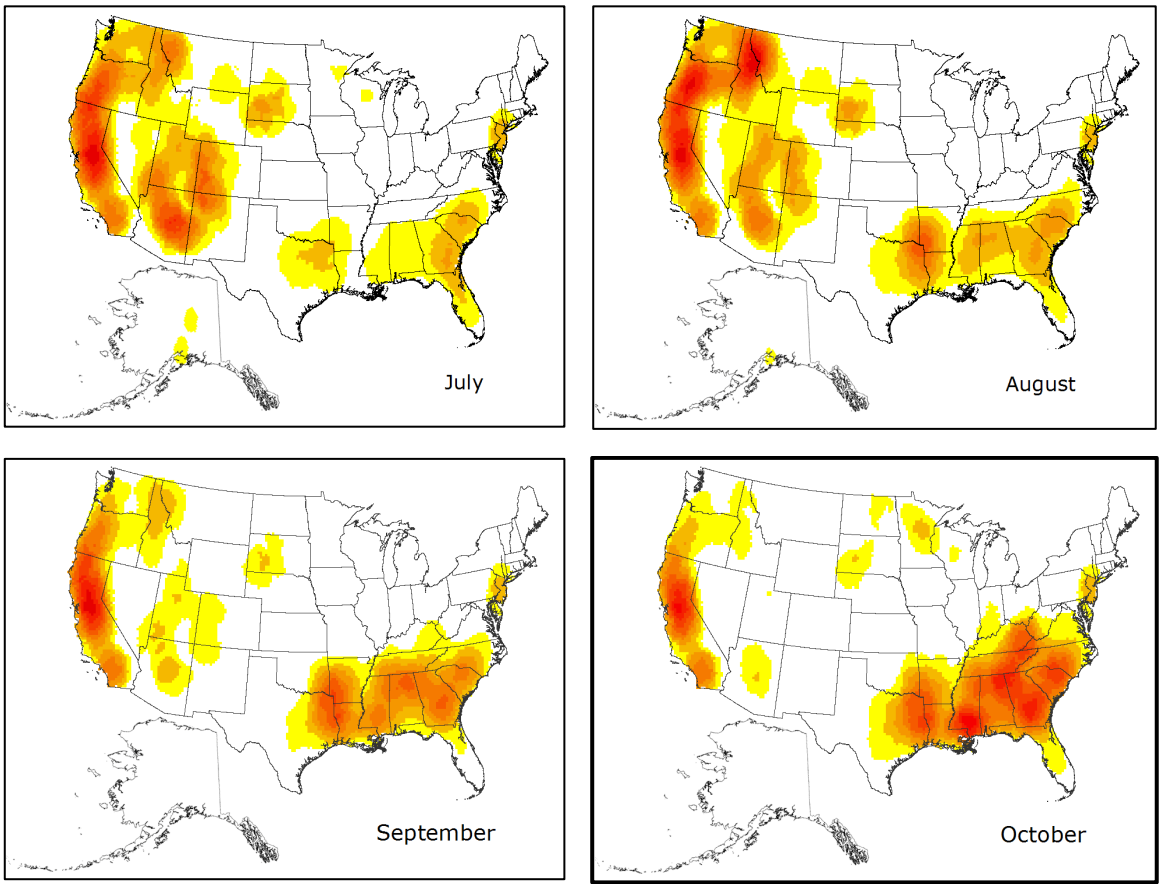
Relatively few areas saw drought improvement in June, some existing areas of drought intensified and expanded, and new drought-impacted areas arose. Extreme drought persisted in much of southern New Mexico and portions of southwest Texas, and lesser drought conditions persisted in portions of Washington, northern Idaho, and western Montana. Drought increased across portions of eastern Wyoming, with drought development across a large region from the Ohio Valley and through the Mid-Atlantic into the Southeast. Drought improved marginally in southeast Colorado and western Kansas but developed in portions of western Oklahoma. Drought was resolved in far southern Florida and improved in central Florida but was offset by drought onset in north Florida. For the next three months, drought is expected to continue to develop across

much of the Ohio Valley. Drought is also expected to expand across much of the Southwest into the Four Corners and adjacent High Plains. Drought is expected to expand across much of Washington and northern Wyoming, with drought expected to expand across all of Montana by September. Drought is also expected to expand to all lee side areas of Hawai'i, but drought is forecast to be removed from south Texas.

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 rapid transition to La Niña continues to be forecast over the summer into the fall, with the Climate Prediction Center forecasting a 65% chance of La Niña developing in the July through September period, and 85% chance of La Niña persisting into the winter. A negative phase of the Pacific Decadal Oscillation (PDO) is also expected to impact the forecast this summer. 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

Above normal fire potential is expected for Interior and Southwest Alaska for July, then return to normal for August through October.

Hot and dry weather has held over Interior Alaska for the second half of June, with extremely hot weather and dry conditions for the last ten days of the month. Though thunderstorms have brought some rain, precipitation has not been enough to slow fire activity significantly. Due to this drying pattern, the US Drought Monitor has classified a small portion of the Yukon Flats as abnormally dry or in moderate drought. This area also shows very high to extreme fire danger indices at the surface and into the upper and mid duff layers, though the deepest duff is slower to dry out.

The upper-level ridge bringing the hot and dry weather is very strong and entrenched over Alaska. Medium and longer-range forecasts indicate that this pattern will hold at least into the first week July. Thunderstorm potential is likely each afternoon around parts of the Interior, either along the edges of the ridge as it moves around, under the thermal trough that often sets up over Interior Alaska on hot days, or due to disturbances rotating around low pressure in the Gulf of Alaska. These thunderstorms will not bring enough rain to douse fires, but instead lead to new ignitions as lightning finds dry fuels. Once the ridge begins to breakdown, a more vigorous thunderstorm event is possible, which would bring several new ignitions.

As of late June, there are numerous fires burning around the state, due to human ignitions along the road corridor and multiple widespread lightning events that have ignited more than 100 fires across a wide swath of the mainland. With fires spread across the state, initial attack resources are tapped out most evenings as thunderstorms continue to find dry fuels and create new starts.

Surface fuels dry easily under hot and dry conditions, so most of the state has extremely dry fine fuels. Little wind is needed to cause rapid spread in these conditions. In addition, the upper and mid layers of duff have dried to extreme values in the northeastern and central Interior, and deeper fuels will soon follow in this weather pattern. There are also areas of the far west which are becoming remarkably dry in the upper duff layers compared to typical conditions. This all amounts to dry fuels able to ignite and carry fire easily, while showing a high level of resistance to control.

Hot and dry weather will continue for at least the first week of July. This takes Alaska into the heart of the duff-driven stage of the fire season, where mid layers of duff are very dry and prone to burning despite several days of cooler weather and wetting rains, if they were to occur. As those deepest duff layers continue to dry, the season moves into the drought-driven stage, where resistance to extinguishment is high and control is challenging. With such dry fuels spread across the Interior, it is likely that July is going to be extremely busy. However, it is expected that the pattern will change in late July or early August, which is typically when season slowing and then season ending rains appear. Therefore, it is expected that in August, conditions will return to normal and remain that way into the fall.

Northwest

Four Predictive Service Areas (PSAs) are indicated to have above normal significant fire potential beginning in July: NW01 – much of western Washington, NW06 – north central Oregon, NW07 – south central Oregon, and NW12 – southeast Oregon. This elevated potential in NW01 and NW07 is resulting from lingering drought effects on vegetation plus past fire history in similar conditions. In NW06 and NW12, multi-season, heavy grass fuel loading across the rangelands is the key contributor.

June began with a cool and wet upper low which brought record precipitation to many areas of western Washington and northwest Oregon. Over 18 inches of snow fell on the higher Cascades and wetting rains affected areas east of the Cascades. Then, westerly flow aloft brought ten days of mild temperatures and sporadic precipitation to western Washington. Dry conditions and periodic gusty winds prevailed elsewhere. Then, the westerly flow center drifted northward to allow for rising temperatures across much of Oregon and eastern Washington covering the third and fourth weeks of the month as periodic dry and windy conditions continued. Multiple low-

pressure systems then dominated the end of June, bringing cooler temperatures, precipitation, and some thunderstorm days with ignitions occurring on the drying fuels.

Overall, temperatures in June ended up near and below normal for Washington while Oregon was near to much above normal. Precipitation was above normal for much of western Washington and northwest Oregon. However, the precipitation that occurred was of rather short duration and ineffective at increasing longer term fuel moistures. The interior lowlands ended near and slightly below normal for precipitation under westerly rain shadows. Below to much below normal precipitation occurred east of the Cascades.

By the end of June, areas of moderate drought have become more concentrated for Washington with coverage including the northern Olympic Peninsula, the central and northern Cascades, and the extreme far northeast corner of the state. A small area of severe drought has also developed in the central Washington Cascades. Oregon, meanwhile, will enter the heart of fire season removed from drought designations for the first time since 2017. However, some areas of abnormally dry designations do remain across central and northeast Oregon.

Fire activity was near average in June. There have been a few large grass and rangeland fires east of the Cascades, but those were limited to one burn period. The Pioneer Fire, which started on June 8 on the east shore of Lake Chelan in timber, brush, and grass, has the potential to be on the landscape for the entire season. Several other large fires occurred in the latter half of June, including the Upper Applegate Fire in southwest Oregon. The Darlene 3 and Little Valley fires started and grew significantly in the last few days of the month. These fires demonstrated fuels were curing ahead of schedule in many areas of the region. Fire behavior has been more active than anticipated, especially at higher elevations that were expected to retain high live fuel moisture.

Live fuel moisture has peaked and is starting to decrease throughout the region. East of the Cascades there have been reports of higher-than-average grass fuel loading in central and southeast Oregon. There is a greater risk for large fires in those areas as grass fuels become fully cured. In western Washington, the Olympic Peninsula and Washington Cascades continue to be drier than normal and are areas with increased potential for significant fires as the season progresses. Lingering impacts from multiple prior drought years across western Washington will likely cause more active fire behavior in those areas.

Equatorial sea surface measurements indicate ENSO-neutral status is now in place. The Climate Prediction Center (CPC) has issued a La Niña watch with a 65% probability for a rapid transition to La Niña conditions during the July to September period. Past similar transitions from moderate El Niño to any La Niña have resulted in large parts of the geographic area ending the fire season with near or below normal temperatures and near to above normal precipitation amounts. However, 2016 is an exception where the opposite occurred. The CPC's mid-June update continues to back away from a definitive warmer and drier outlook for the remainder of fire season. The Cascades and westward indicate equal chances, or no strong signals either way. The eastern half of the region continues leaning toward warmer and drier patterns but is far less definitive than prior outlooks. There is increasing confidence that the outlook period may mimic the 2016 analog year, which resulted in below normal precipitation for much of the region. However, western PSAs are likely to lean toward the remaining wetter analog years. Of note, 2016 had much fewer lightning events than the long-term average, but those events were more commonly from drier thunderstorms.

The outlook expands the above normal significant fire potential designation from NW01 and NW12 from July through September to also include NW06 and NW07. This is owing to reports of an abundant grass crop, like reports from NW12. Otherwise, the remainder of the area is anticipated to see normal amounts of significant fire activity. All PSAs are expected to return to normal significant fire levels by October as fall rains arrive in late September, like most of the analog years.

Northern California and Hawai'i
Significant fire potential in northern California and far northwest Nevada is projected to be normal for July through October with the exceptions of the Far Eastside, Sacramento Valley-Foothills, and the Diablo-Santa Cruz Mountain Predictive Service Areas (PSAs), which are designated above normal for July through September. Significant fire potential in Hawai'i is expected to remain above normal during July through October across the leeside areas.

Based on historic averages for July, generally one to three large fires occur per PSA except for the North Coast, where the average is less than one. During August, one to four large fires typically occur per PSA, again except for the North Coast, where the average remains less than one. During September, one or two large fires occur per PSA except for the Bay Area PSAs and Far Eastside, where large fire occurrence drops to less than one. During October, all PSAs generally average one or fewer large fires.

The weather pattern during the earlier half of June was a mix of Pacific troughing and ridging while the latter half of the month was dominated by Pacific troughing. Average temperatures were generally above to well above normal, although near normal temperatures were observed along the coastal areas due to the dominant onshore flow. Precipitation was generally below to well below normal with the exception being portions of the North Coast where near to above normal precipitation occurred. The most pronounced precipitation event occurred June 2-3, otherwise just isolated wetting rain associated with thunderstorms occurred the rest of the month. Around 2,000 lightning strikes were recorded during the month, which fell short of the 2012-2022 June average of nearly 3,600 strikes. Two dry northerly wind events occurred, with the strongest occurring mid-month and prompting the region's first Red Flag Warning of the season. The majority of the dry-gusty wind events were due to westerly winds with Red Flag Warnings issued the last week of the month for portions of the east on three separate days.

The unusually dry and warm June promoted an unseasonably flammable dead fuel bed, rapid curing across the lower elevations, and significant snowpack erosion across the higher elevations. The North Ops composite Energy Release Component reached the 80th percentile mid-month and the 90th percentile during the last week of the month. Many herbaceous species were mostly cured below 3,000 to 4,000 feet by the end of the month, while cheat grass was curing as high as around 7,000 feet in the most exposed locations. Based on field observations, the herbaceous fuel loading is unusually high this year. Woody fuels and shrubs were more resistant to fire spread during most of June unless there was a strong and dry wind aligned with slope. The snowpack by the end of the month was generally limited to areas in the most sheltered locations above 7,500 feet. A couple of abnormally dry areas showed up on the US Drought Monitor map across far northern California at the end of the month.

Fire business increased substantially during June, especially across the lower elevations, with nearly 20 fires occurring daily. Several large fires arose during the month, starting with the Corral Fire that ignited on June 1 southwest of Tracy, California, and burned 12,500 acres in grass. Most of the other large fires occurred the latter half of the month in dominant grass or oak woodland fuel regimes. Most of the activity occurred within the Sacramento Valley-Foothills PSA, although a fire requiring an incident management team occurred in the Mid Coast-Mendocino PSA. The Sites fire, located along the western edge of the Sacramento Valley, grew to nearly 20,000 acres and required an incident management team. Less than 10 lightning ignitions were reported during the month. Prescribed burning occurred throughout the month. However, some of the projects were canceled due to dry conditions.

Pacific troughing should remain a dominant weather pattern during the summer months and lead to more wind-driven fire issues versus lightning created ones. Pacific troughing will also lead to more of an onshore flow influence, which should create shorter duration heat wave events and more frequent marine layer intrusions across the near coastal areas. Inland areas should

experience more above normal temperatures with the stronger anomalies found across eastern portions of the area. Precipitation is expected to be near to below normal with less frequent monsoon and tropical east Pacific moisture surges. Temperatures during the fall are expected to be near to above normal. Mixed precipitation signals show up for the fall, thus making it a less confident forecast.

The unusually warm and dry June created a quicker advancement in a flammable fuel bed. Therefore, the previously designated below normal significant fire potential for July has been replaced with normal potential. A heavy herbaceous fuel loading combined with more gusty-dry wind periods helps increase the potential across the Sacramento Valley-Foothills, Far Eastside, and Diablo Mountains, especially as the shrubs cure to more flammable levels. Live shrubs and trees will initially be less flammable across the mid and upper elevations but several of the species will become seasonably flammable during the next couple of months. Sage fuel moisture levels across the east will transition into a more flammable category during July. The main wildcards will be untimely human ignitions and lightning events, plus whether drought develops during the outlook period. The most problematic lightning is expected to occur during August.

Sea surface temperature anomalies surrounding the Hawai'ian Islands were generally near normal. Average temperature anomalies observed during June were near normal except for above normal departures found across portions of the Big Island. June's precipitation in Hawai'i was below to well below normal. Drought conditions remained relegated to portions of Maui and the Big Island. Wind events in Hawai'i were much less common during June compared to May, and no Red Flag Warnings were issued. A couple of notable fires occurred, one on Kauai and the other on Molokai.

The ENSO neutral state is expected to transition to La Niña late during the dry season of Hawai'i. Average temperatures during the next four months should generally be near to above normal while precipitation should generally be below normal. Drought conditions should increase in intensity and coverage during the next three to four months, which will result in live fuels becoming more available to ignite and burn. Fuels should be most flammable during August and September. Wind events will be a wildcard, but a developing La Niña may portend enhanced trade wind scenarios, which could lead to larger fire growth periods as the summer progresses. There is less likelihood of tropical storms creating fire season slowing events or growing periods due to the transition towards La Niña. Above normal significant fire potential has been designated for Hawai'i for July through October especially favoring the leeside areas.

Southern California

Since the start of the water year (October 1, 2023), southern California has received above average precipitation across most of the region. The largest wet anomalies are along the South Coast Predictive Service Area (PSA) and through the high desert. Some areas in those two regions received over 150% of the average precipitation since October. The driest areas are along the leeward slopes of the southern Sierra and portions of the lower and eastern deserts. Some of the driest areas only received 70-80% of their average precipitation since October. Temperature departures over the last month show most areas between 2-6^{o}F above average.

Latest sea surface temperature (SST) pattern across the equatorial Pacific shows the continuation of a cooling pattern as the El Niño Southern Oscillation (ENSO) continues to transition from El Niño to La Niña. The current state of ENSO at the end of June is ENSO neutral.

The latest USDA Drought Monitor indicates no areas in drought across central and southern California. There is a small area of abnormally dry conditions in eastern Riverside and San Bernardino counties, though abnormal dryness does not constitute drought.

Due to the anomalously wet winter and spring, there is a much larger than normal load of fine fuel, especially grasses. Due to warm and dry conditions for May and June, these fine fuels are

cured at elevations below 3,000 feet. Grass fire activity was above average during June due to the large load of cured fine fuels below 3,000 feet. The current 100-hour fuels are anomalously dry in the western portions of the geographic area since monsoonal moisture allowed for shower and thunderstorm activity to moisten the finer fuels in the deserts. Larger dead fuel (1000-hour) remains below normal for most of the PSAs and have become more susceptible to ignition.

Live fuel moisture remains near to mostly above normal. Reports from the Post Fire in Los Angeles County and the Flash Complex in Fresno County show the larger live fuels remaining unburned despite consumption of nearby fine fuels. Reports from the Flash Complex also indicate the live timber fuels are not very susceptible as only the fine fuels in the understory appear to be igniting.

Climate models continue to suggest there is a high probability towards the continuation of the transition towards La Niña. Above normal temperatures are favored for the next four-month period. There are equal chances of above, near and below normal precipitation for the southeastern portions of the South Ops area and a slight tilt towards below normal precipitation for the northern and western portions of South Ops in the next four months.

La Niña patterns typically constitute a predominantly warmer and drier weather pattern. However, there is a large degree of uncertainty with respect to the monsoon forecast this season. Cold SST anomalies have significantly weakened off the California coast while there is an expected above normal Atlantic tropical cyclone season. The more active Atlantic and Gulf of Mexico means there is likely to be more moisture to move into the southwestern US. Due to the cold SST anomalies off the California coast weakening, this means there is a greater chance of the monsoonal moisture to reach farther west. However, no strong signals are present to determine if the orientation of the high pressure over the Desert Southwest will allow this moisture to reach southern California.

With respect to significant fire potential, above normal fire activity is likely for several PSAs due to the large grass crop. The fine fuel load combined with periods of prolonged warm and dry conditions will increase the receptiveness of these fuels. The coming fire season is likely to be more of a grass and fine fuels dominated fire season compared to a timber year since the large live fuels are significantly less receptive due the lack of drought and two consecutive wet winters. The eastern and central Sierra are favored to have near normal significant fire potential due to the well above average live fuel moistures in the large timber dominated fuels, but the finer fuels in the understory are more susceptible to ignition.

Northern Rockies

Significant wildland fire potential in the Northern Rockies Geographic Area (NRGA) for July is expected to be normal. For August and September, the central portion of the Idaho Panhandle increases to above normal while the rest of the Northern Rockies Predictive Services Areas (PSAs) are expected to remain normal. In October, based on current projections of long-range climate anomalies, all PSAs return to normal. After the above normal precipitation received across the NRGA in May, June totals have been slightly below normal across north Idaho and Montana. Temperatures have been slightly below normal in the north and east and slightly above normal in the south and west. As a result, the severe drought in the central Idaho Panhandle is expected to start causing above normal fire activity for the second half of the summer, while continuing dryness through the summer and early fall months is expected to extend the end of fire season.

With slightly below normal June moisture in Idaho and Montana, an area of abnormal dryness is now present across all but southcentral portions of Montana. Almost all western Montana and the Idaho Panhandle currently has moderate to severe drought. A smaller area of moderate drought is present where the Montana, North Dakota, and South Dakota borders meet.

Snowpack has melted across most stations in the NRGA. While the maximum snowpack depths were below normal in all Northern Rockies basins, late spring snowfall meant that most basins kept snowpack until close to their climatologically normal timeframes.

Growing Season Index (GSI) trends have been steady since the end of May across the Northern Rockies PSAs as live fuels have continued growing across the geographic area. Satellite products show green vegetation across the landscape. Soil moisture percentiles show above normal soil moisture in North Dakota, below normal soil moisture in north Idaho and west Montana, and patchy conditions in central and eastern Montana; this lines up well with what the drought monitor is portraying. As the summer progresses, curing of fine herbaceous fuels will continue throughout the month especially in central and eastern Montana, with a slower onset in forested ecosystems.

Large dead fuel moistures in eastern and southwest Montana continue to trend dry, reflecting less than normal precipitation than is typical for June. Lower values for 1000-hour time lag class fuels have contributed to Energy Release Components inching above the 80th percentile for PSAs NR7 (Glacier National Park) and NR09 (Beaverhead-Deerlodge National Forest). Drought is in place for most of Montana and portions of Idaho indicating a deeper, long-term dryness. Summer heat coupled with poor nighttime humidity and lack of precipitation will dry out fine and large dead fuels contributing to challenges with initial attack efforts. West of the Continental Divide, live fuels are generally green in higher elevations and will present a barrier to fire spread for the beginning of July. This is especially evident in PSA NR01 (northern Idaho), which has received close to normal June precipitation.

Wildfire activity remained slow in June in the Northern Rockies, likely due to precipitation in May and below normal temperatures in June across much of the area. Just under 500 acres has burned, spread across 160 incidents. Prescribed fire has decreased significantly since last month, with only 11 acres reported across 9 prescribed fires for the month of June so far.

All PSAs are expected to have normal significant wildland fire potential for July, with the central Idaho Panhandle PSAs moving into above normal fire potential for August and September and returning to normal in October. Overall, a later start and a later end to fire season is expected in the Northern Rockies. The main impacts of a drier late summer would be a better window for live vegetation to cure and be available to wildland fire, the increased chance of fall storms and frontal passages interacting with wildfires, concurrence of wildfire and prescribed burning, and the increased chance for agricultural fires to become an issue during harvest time in the eastern NRGA.

Great Basin

Fire activity is increasing in the Great Basin. Due to winter and spring moisture, fine fuel growth is above normal over northern and western Nevada, southern Idaho, northern Utah, and small portions of southern Nevada and southwest Utah. Carryover fine fuel loads will contribute in many of these areas as well, since very little fire activity occurred last year after a wet winter and spring in 2023. Fine fuels are now cured in most lower elevation areas due to a very hot and dry June in many areas over the western two-thirds of the Great Basin, and brush has been drying rapidly. Live fuel moisture has not quite caught up with the dry dead fuels in many areas, but that will occur early in July. Above normal fire potential is expected across the northern areas mentioned by July and August and possibly into September. Otherwise, smaller areas of above normal fire potential are possible in parts of southern Nevada near Red Rock and the Spring Mountains, over southern Lincoln County in Nevada, and into far southwest Utah. This is due to above average fine fuel loads that are consistent with higher fire years, combined with below normal summer moisture as this season’s beneficial monsoon moisture is expected to be focused mainly to the east. By August and September, fire potential may pick up in portions of central Idaho due to below normal snowpack over the past winter and the forecast for drier conditions through the fire season.

Due to multiple heat waves in June, temperatures over the last 30 days have been much warmer than normal in most areas of the Great Basin. There were a couple strong cold fronts that moved through to significantly drop temperatures. However, those periods were short-lived, and temperatures were mostly well above normal. Precipitation was well below normal in most areas, except for portions of eastern Utah where moisture pushed north in the form of showers and thunderstorms over the latter half of June. The snowpack across the region decreased rapidly through June with the hot and dry weather. The Great Basin is generally absent of drought. However, abnormally dry conditions in central Idaho, especially on the Salmon-Challis National Forest, could expand through the summer due to expected drier and breezier conditions. Currently, no drought is expected to develop across the rest of the Great Basin heading into the peak fire season.

Fuels are in various stages of curing across the Great Basin. Fuels are cured in southern areas, and fine fuels are cured at most lower elevation locations elsewhere across the Great Basin. For heavier dead woody fuels in the 100- and 1000-hour time lag classes, fuel moisture has dropped significantly in all areas due to the hot and dry weather in June, resulting in Energy Release Components (ERCs) in the 85th-95th percentile across much of southern and eastern Nevada, western Utah, and into eastern Idaho, Wyoming, and the Sierra Front. Most areas are seeing dead fuel moisture below normal for this time of year. Live fuel moistures are generally nearer normal seasonal levels but are now quickly drying. Some areas of western Nevada are seeing sagebrush fuel moisture at very low and critical levels. The rest of northern Nevada, northern Utah, Idaho, and Wyoming are seeing below normal sagebrush fuel moisture, but many areas have not yet reached critical levels. All fuel moisture should continue to rapidly dry through mid-July. Fine fuel loading over portions of northern and western Nevada, southern Idaho, and northwest Utah, and in smaller areas of southern Nevada and southwest Utah is above normal due to all the factors mentioned above and will be a main driver of fire spread. Due to the rapid melting of the snowpack across the Great Basin due to the hot and dry June, timber areas will likely dry out a bit earlier than normal, and much earlier than last year. The most critical areas in the higher elevations are expected to be in central Idaho and Wyoming due to the below normal snowpack much of the winter and spring season.

Fire activity is increasing in the Great Basin, with a few large fires emerging in June in Utah, Nevada, and Idaho, and smaller fires are now popping up daily. Prescribed fire activity is still ongoing in parts of the higher elevations of the north but will quickly be winding down. Sagebrush in western Nevada has been fully consumed during fires that have occurred in June, which is earlier than normal. The potential for growth and large fire will increase through July in all areas, especially in the lower elevations where fine fuel loading and continuity is more significant. The higher elevations of Idaho and Wyoming will likely see increasing fire activity later in July, throughout August, and possibly into September.

Fire potential will continue to pick up over the southern areas of Nevada into southwest Utah in July, as the monsoon moisture is largely expected to be east into much of Utah. The Red Rock area and Spring Mountains in southern Nevada and into southern Lincoln County and southwest Utah are reporting above normal fine fuels that are consistent with higher fire years. Due to the recent push of moisture into southern and eastern Utah, fire potential has decreased in those areas. The forecast monsoon moisture through July is expected to continue to target southern and eastern Utah. Therefore, fire potential may remain on the lower side in those areas of Utah through the fire season.

Farther north, fire potential will continue to increase in the lower to mid-elevations in northern and western Nevada, southern Idaho, and northern Utah through July due to the above normal fine fuel loading and the rapidly drying brush. The above normal fire potential was also expanded slightly to include the Sierra Front due to fine fuel continuity and already critically low sagebrush fuel moisture. These areas of above normal potential in July will likely continue into August and possibly into September with drier conditions forecast later in the summer as well. The monsoon

is expected to be delayed or weaker than normal across central and western areas of the Great Basin, which will allow fuels to rapidly dry and remain drier later in the summer.

With cooling and troughs still possible along the West Coast, this will increase the likelihood of windy periods for the Great Basin heading through the summer, especially over western and northern areas. This will also increase the potential for dry lightning with upper-level features embedded in the southwest flow moving across the Great Basin, and limited monsoon moisture. Most of the fire potential concerns will be in the lower elevations; however, the higher elevations of central Idaho and Wyoming may be a concern later this summer with the below normal snowpack and warmer and drier weather forecast later in the season. Therefore, portions of central Idaho were added to the above normal fire potential for August and September, but confidence is lower that monsoon moisture will affect Wyoming, so that area will remain in normal fire potential.

Southwest
Between June 15-20 an advantageous weather pattern allowed elevated moisture into the region. Despite some generally brief periods of fluctuating moisture levels, this trend is expected to continue through the first few weeks of July, acting to suppress the large fire season. As a result, normal significant fire potential is expected for many areas of the region for July. However, by around mid-July, a drier pattern is expected to begin to take shape. Areas of above normal significant fire potential are likely to develop and spread regionally into August and likely continue through September and even into October before the combination of decreasing burn periods 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 around central New Mexico westward across Arizona with areas across the eastern plains right around normal for the spring period. In June, high temperatures have been above to well above normal and precipitation has been above normal in the Four Corners, northwestern New Mexico, areas of central and eastern New Mexico, and some sections of both southern and southwestern Arizona. An early onset of the southwest monsoon season is likely given recent events.

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

Despite the present early monsoonal onset, there is elevated potential for a slower and drier monsoon period to emerge later in July with a higher tendency for both drier and hotter than normal conditions to linger into August. Large fire season very well could reemerge by late July and early August then linger much longer than usual, especially along and east of the Divide region, but possibly 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 fall.

Rocky Mountain
Above normal significant fire potential is still forecast across southeast Colorado and into southwestern Kansas in July and August.

By mid-June, summer conditions developed with strong high pressure bringing very hot temperatures. Most of the RMA saw temperatures soar into the mid to upper 90s and into the

triple digits. The high pressure also limited chances for precipitation. Much of the RMA saw below normal precipitation in June; however, there were a couple of exceptions to the dryness. First, some wetter thunderstorms on the central Plains through the month resulted in scattered areas of above normal precipitation across South Dakota, Nebraska, and Kansas. The other area of above normal precipitation was across southwestern Colorado, where moisture from the Pacific and Gulf of Mexico brought heavy rain and well above normal precipitation. Drought conditions remained largely unchanged, with Kansas seeing some minor improvements, while Wyoming east of the Rockies had slightly worse conditions.

Fine fuels, due to the increasing stress from the hotter temperatures, began to cure in June at lower elevations. With the increasing stresses from higher temperatures and less moisture, the cheat grass below 6,000 feet, especially on the West Slope and into Wyoming, started to cure. This resulted in fuels that are much more receptive to large fire growth. Even the large diameter woody fuels started drying out more than typical but are not to critical levels. High carryover fuel loading in eastern Colorado and Wyoming, and western South Dakota, Nebraska, and Kansas remains a concern.

Most of the fires arising in June remained small and were contained within one operational period. A few larger fires occurred in the latter half of the month as fuels cured and the temperatures climbed. The two largest fires were in grass and brush, with one near the Colorado-Utah state line and the other in the Nebraska Panhandle.

Through July and August, hot and dry conditions will continue across the RMA. There are still indications that the monsoon may be on the weaker side, potentially only impacting areas to the west of the Continental Divide. There is some uncertainty with the evolution of the monsoon, considering the recent surge in moisture. La Niña development is favored July through September and is likely by August through October. September and October continue to look warmer and drier than normal, although the strength of the heat and dryness will be likely decreasing.

With fuels already starting to cure and the current expectations for the monsoon, above normal large significant potential is still expected across southeast Colorado and potentially into southwestern Kansas for July and August. Elsewhere is forecast remain normal. Moving into September and October, with the decreasing strength of the heat and dryness and the developing La Niña, normal significant fire potential is expected across the Rocky Mountain Area.

Eastern Area

Normal fire potential is forecast across the majority of the Eastern Area through October 2024. The greatest 30-to-60-day negative precipitation anomalies were indicated across portions of the southern Mid-Atlantic States and the Ohio Valley. These areas may experience periods of above normal fire potential in July if forecast warmer and drier trends come to fruition.

The El Niño Southern Oscillation (ENSO) continues to transition from a neutral regime to a La Niña sea surface temperature regime heading into late summer and early fall. Other sea surface temperature regimes also contribute to global weather patterns adding to some uncertainty in long term weather forecasts. With the lingering effects of the El Niño earlier this year expected to extend into July, much of the Eastern Area is expected to experience above normal temperatures through the summer. Precipitation trends are more uncertain but drier than normal areas may persist over the southeastern tier of the Eastern Area into July with wetter than normal conditions continuing over the northwestern tier.

Predictive Services precipitation outlooks forecast above normal precipitation is likely across the northwestern tier of the Eastern Area in July. Drier than normal precipitation is forecast over the Ohio Valley, the Mid-Atlantic states, and New York in July. Wetter than normal conditions are expected across the western and central Great Lakes into northern Illinois, Indiana, and Ohio in August with drier than normal conditions likely over the New England Metro region. Below normal

precipitation is likely in the Ohio Valley, north central Mid-Atlantic states, and New York in September, with wetter than normal conditions across the Mississippi Valley and Wisconsin. Below normal precipitation may occur over the Mid-Mississippi and Lower Ohio Valleys heading into October. NOAA's Climate Prediction Center forecasts below normal precipitation across the Ohio Valley heading into July as well.

Both Predictive Service and Climate Prediction Center temperature outlooks forecast above normal temperature trends across the majority of the Eastern Area through September with the greatest anomalies over the eastern tier of the region.

With climate patterns in transition and June having significant precipitation in the northern parts of the Great Lakes states, normal fire activity is forecast for the summer months in this area. The concern for periodic days of significant fire potential still exists in more southern parts of the western tier where a combination of hot, dry, and windy days quickly reduces live fuel moistures with enough dead fuel loading to increase ignition and spread potential. New England and the Mid-Atlantic states are of the most concern for increased fire potential due to above normal temperature and normal to below normal precipitation forecasts 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.

Shorter term precipitation deficits developed through the early summer season over parts of the Ohio Valley into portions of the Mid-Atlantic states and combined with well above normal temperatures through the latter part of June. If these areas experience the forecast below normal precipitation and above normal temperatures through the mid-summer 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 into the fall outside of any prolonged dry and windy periods.

Southern Area

Flash drought has developed across much of the Southeast in recent weeks due to periods of record heat and consistently below normal rainfall. A pattern change that began at the end of June looks to bring some significant increases in soil moisture to coastal areas from the Carolinas to as far west as the Mississippi River Delta, but inland areas with moderate to locally severe drought may see conditions continue to deteriorate in the coming weeks. After a wet spring, rainfall has quickly tapered off across much of Texas and Oklahoma into the Mississippi Valley, while significant drought remains in place across Texas from the western Hill Country to the Trans Pecos. June began with record high Keetch-Byram Drought Index (KBDI) values throughout central and southern Florida, but drought quickly ended there and migrated into northern parts of the state to close out the month. Hurricane and other storm debris, pine mortality and depleted soil moisture from the drought of 2023, along with conditions typically observed during the expected transition to La Niña are the main drivers of enhanced wildfire risks in this outlook.

The greatest degree of uncertainty through the outlook period lies in the potential for tropical storms and hurricanes to impact the region. While a hyperactive season is nearly a given at this point, not all analog years featured landfalling storms in the Southern Area. Areas with recent or expected drought development could see conditions change rapidly this summer into the early fall if one or more tropical cyclones moves inland, but there is little to no confidence in where the preferred tracks will be this year or how far inland beneficial rainfall will spread. Model guidance is in poor agreement on the overall pattern and has generally performed poorly of late, which drives uncertainty in where the hottest and driest conditions will continue from July through October.

Above normal significant fire potential is forecast for July across much of Alabama into central and southern Mississippi and the Florida Parishes in eastern Louisiana. Notable pine mortality has been observed in these areas due to the combination of the 2023 drought and the southern pine beetle, as reported by the US Forest Service Forest Health Protection group. Hurricane Ida in 2021 also left considerable debris that may become increasingly burnable in these areas. Weather conditions have recently turned drier and hotter, and a lengthy period of accelerated drying appears likely to continue into July, especially inland. Various soil moisture indices also are indicative of insufficient recovery during the winter across portions of the region. Note that a repeat of last summer's historic drought is not currently forecasted, but the surplus of down and dead fuels will contribute to increasing fire potential where drying continues. Should tropical systems fail to bring rainfall, the period of above normal risk may continue into the typically drier months of August and September, potentially expanding into areas farther west in Louisiana and far eastern Texas as well.

Above normal significant fire potential is also forecast in July across much of Virginia into portions of the Carolinas, particularly for the Sandhills. Extensive drought late in 2023 abated during winter but has re-emerged recently across Virginia. The long-term composite drought blend from the National Drought Mitigation Center shows concerning dryness in the Virginia mountains, and ground fires could increasingly come into play should this dryness worsen. Shading in areas with a dense hardwood canopy will help to mitigate the type of wildfires typically seen in the dormant season, but extended hot and dry periods combined with gusty downslope winds will be of concern. Areas of storm damage and lingering debris, along with curing of roadside grasses due to the flash drought are the main concerns in the short term for these eastern states. Above normal significant fire potential was considered for the coastal Carolinas, where soil moisture deficits are always of concern as lightning-caused wildfires become more prevalent in July, but a wetter pattern to start the month should help alleviate some of the dryness that developed in May and June.

A wet spring in grass-dominant areas of North Texas into portions of Oklahoma has left abundant grasses in its wake. Curing of cool-season grasses has been reported in the region in recent weeks, and drought-curing of warm-season grasses will be possible as summer progresses, especially on either side of the Red River. Drought risks may increase deeper into Texas with time, but there is too much uncertainty in weather trends across the Hill Country and adjacent areas near and east of the I-35 corridor, where normal conditions are forecast. Initial attack activity will likely increase in the Plains the next few weeks as hot and dry conditions typically seen this time of year overspread the area, and developing or worsening drought should lead to growing significant fire potential by August and September across most of the Cross Timbers and Rolling Plains of Texas into central and western Oklahoma. Areas farther south and east in Texas into eastern Oklahoma are currently expected to see more variable temperatures and better chances for occasional rainfall, especially if tropical systems or their remnants impact the area. Grass loading from last year could still be of concern in the High Plains, but monsoonal moisture and thunderstorm complexes moving in off the Rockies should generally mitigate risks there into most of West Texas for the next few months.

The start of the fall fire season has the potential to be like last year across the higher terrain of Kentucky and Virginia, especially if drought continues to worsen this summer. Although leaf off will be unlikely for most areas outside of the mountains in October unless exceptional drought develops, windier conditions associated with fall frontal passages and potential near misses from tropical systems will be of growing concern. Prior falls featuring a strengthening La Niña tend to be warm and dry across most of the Appalachians, but model guidance and other long-range outlooks are mixed as to what we can expect this year. There are some eerie similarities to 2016 that should not be ignored as we head into the rest of the fall season, but it is far too soon to say whether similar impacts occur this year.

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