



National Significant Wildland Fire Potential Outlook

Predictive Services
National Interagency Fire Center

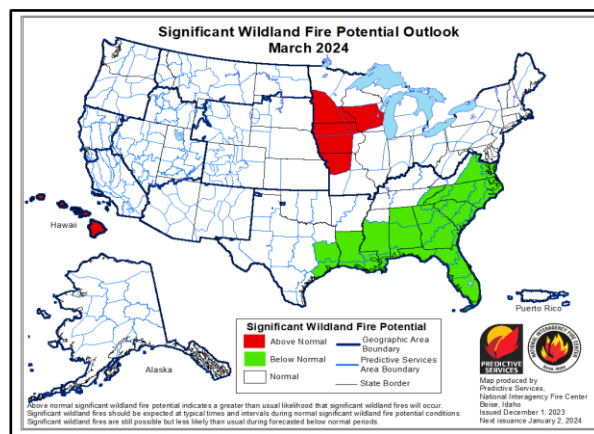
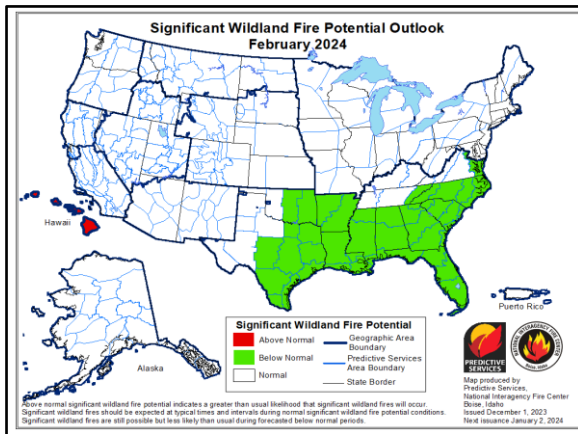
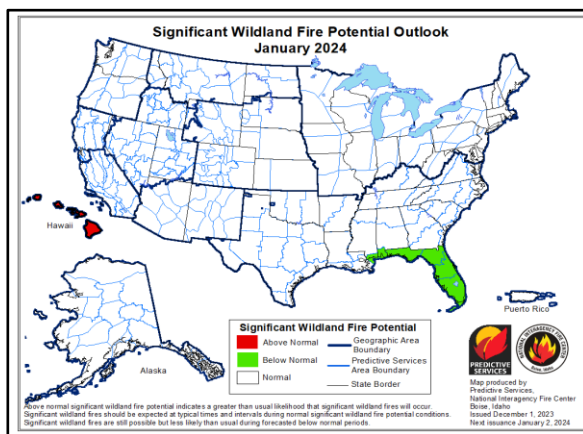
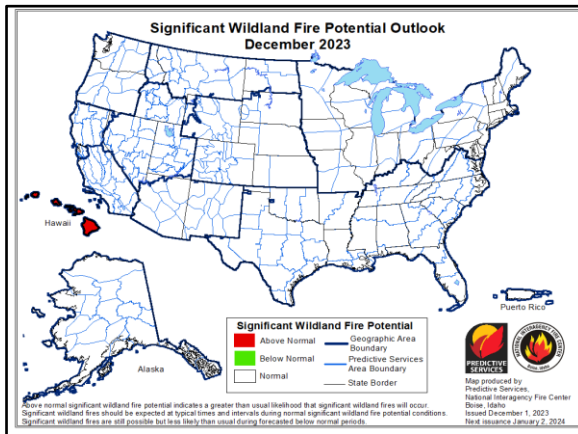


Issued: December 1, 2023
Next Issuance: January 2, 2024

Outlook Period – December 2023 through March 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 in Southern Area during November, with the geographic area increasing to preparedness level three in early November before returning to preparedness level two the last week of November. Large fires were reported in every state of Southern Area during the month and multiple complex incident management teams were assigned, with fire activity increasing in Eastern Area near the Southern Area boundary. Otherwise, fire activity was at normal to below normal levels across the rest of the US. Year-to-date acres burned for the US remains well below the 10-year average at just over 38%, with a near average number of fires as well.

Most of the CONUS received below normal precipitation in November, with Southern and Eastern Areas increasing in fire activity due to the multiple passages of dry cold fronts followed by periods of post-frontal dry and breezy conditions. Temperatures were generally near to above normal for most of the West, Plains, Midwest, and Southeast, with the Northeast and south Texas at near to below normal temperatures for the month. Periodic dry, offshore downslope winds occurred in

California, and enhanced trade winds amid dry airmasses increased fire activity and potential at times, especially in early November, on the Hawai'ian Islands. Extreme to exceptional drought persist in Louisiana and Mississippi with other areas in Iowa, Nebraska, and New Mexico. Drought mostly improved in the northwestern US and Texas, but worsened in the Four Corners, Mid-Mississippi Valley, and southern and central Appalachians into the Mid-Atlantic.

Climate Prediction Center and Predictive Services December outlooks depict above normal temperatures for most of the US, with above normal precipitation for portions of the West Coast and Southeast into the Mid-Atlantic. The outlooks for January through March show a more classic El Niño pattern emerging, with near to below normal precipitation for the northwestern US and parts of the Great Lakes into the Northeast. However, above normal precipitation is forecast for California into the Southwest and across much of the Southeast extending into the Mid-Atlantic. Above normal temperatures are likely for the northern tier of the CONUS, while near to below normal temperatures are likely for the southern US.

Above normal significant fire potential is forecast across Hawai'i into March, but recent rainfall from a Kona Low will reduce fire potential through early and probably mid-December. Southern Area will transition from above normal potential and activity in November to near normal potential during December, then below normal potential likely starting in Florida for January. The below normal potential is forecast encompass most of Southern Area, from Interstate-35 eastward through the Carolinas, in February and remaining there in March except for Oklahoma and most of Texas which return to normal. Above normal potential may emerge in portions of the Midwest, mostly from Missouri into the Upper Mississippi Valley, during March.

Past Weather and Drought

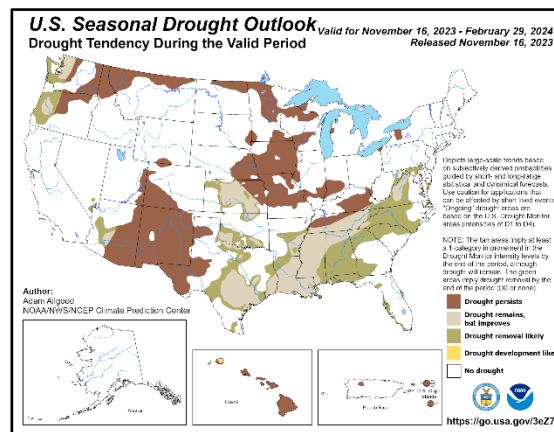
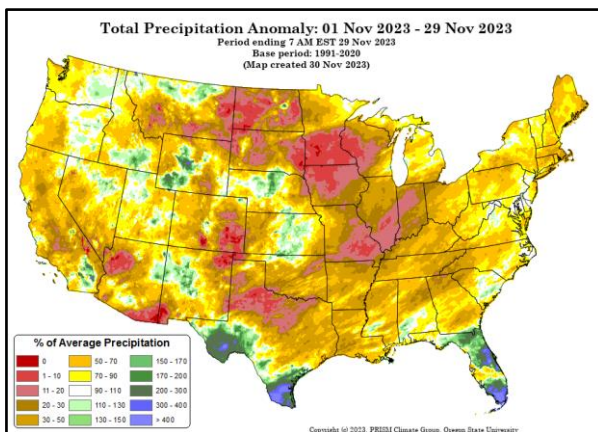
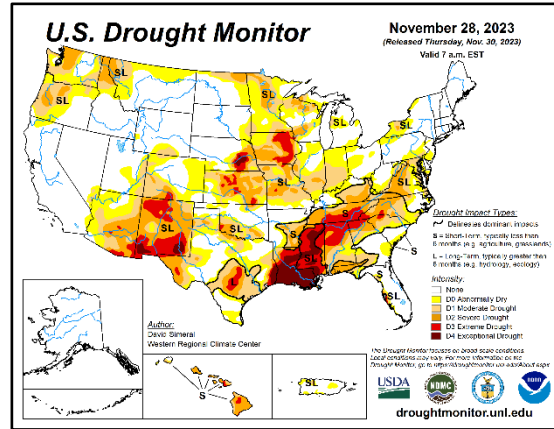
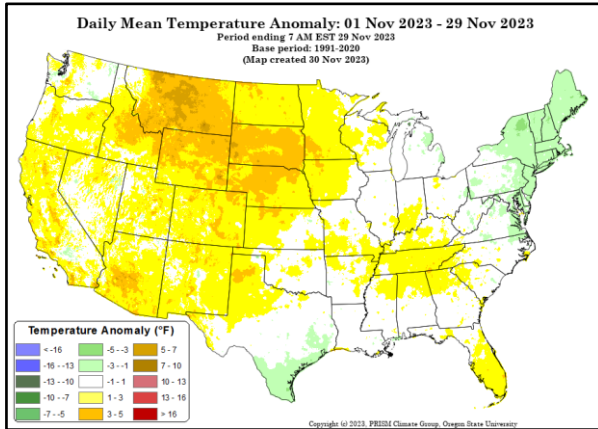
Near to above normal temperatures were observed across much of the West, Plains, Midwest, and Southeast, while below normal temperatures were in the Northeast and south Texas. Much of the CONUS had below normal precipitation during November, with the greatest anomalies on the northern Plains into the Midwest, Mid-Mississippi Valley, and portions of the southern and central High Plains into the Southwest. Portions of southwest and south Texas, the Florida Peninsula, central Plains, and Intermountain had near to above normal precipitation.

Much of the Southern and Eastern Areas was very dry and had multiple mostly dry cold frontal passages through mid-November. This led to increased fire activity across both geographic areas, including complex incident management team deployments in Southern Area, and the issuance of a Fuels and Fire Behavior Advisory. However, wetting rain fell across much of both geographic areas Thanksgiving Week, with more rain at the end of November to help significantly reduce fire activity and potential. Rainfall up to 10 inches fell in South Florida due to a slow-moving surface low in the Gulf of Mexico mid-month as well.

Multiple periods of offshore, downslope winds occurred in California, and occasional dry and windy episodes also developed in portions of the Desert Southwest and on the southern and central Plains. However, fire activity remained mostly below normal levels across these areas. Atmospheric rivers brought heavy precipitation to portions of the West Coast and northern Intermountain West in early November and at the end of November. The Hawai'ian Islands had multiple periods of enhanced trade winds with dry airmasses, including in early November when fire activity increased. However, a strong Kona Low brought widespread heavy rainfall to the islands the last week of November.

Drought improved in portions of the northwestern US and much of Texas. However, drought developed or worsened in portions of the Four Corners, Mississippi Valley, Midwest, and the southern and central Appalachians into the Mid-Atlantic. Extreme and exceptional drought still covers most of Louisiana and Mississippi. Areas of extreme and exceptional drought are also in

portions of the Southwest, central Plains, and Mississippi Valley. California remains drought free, but drought persists on all the Hawaiian Islands.

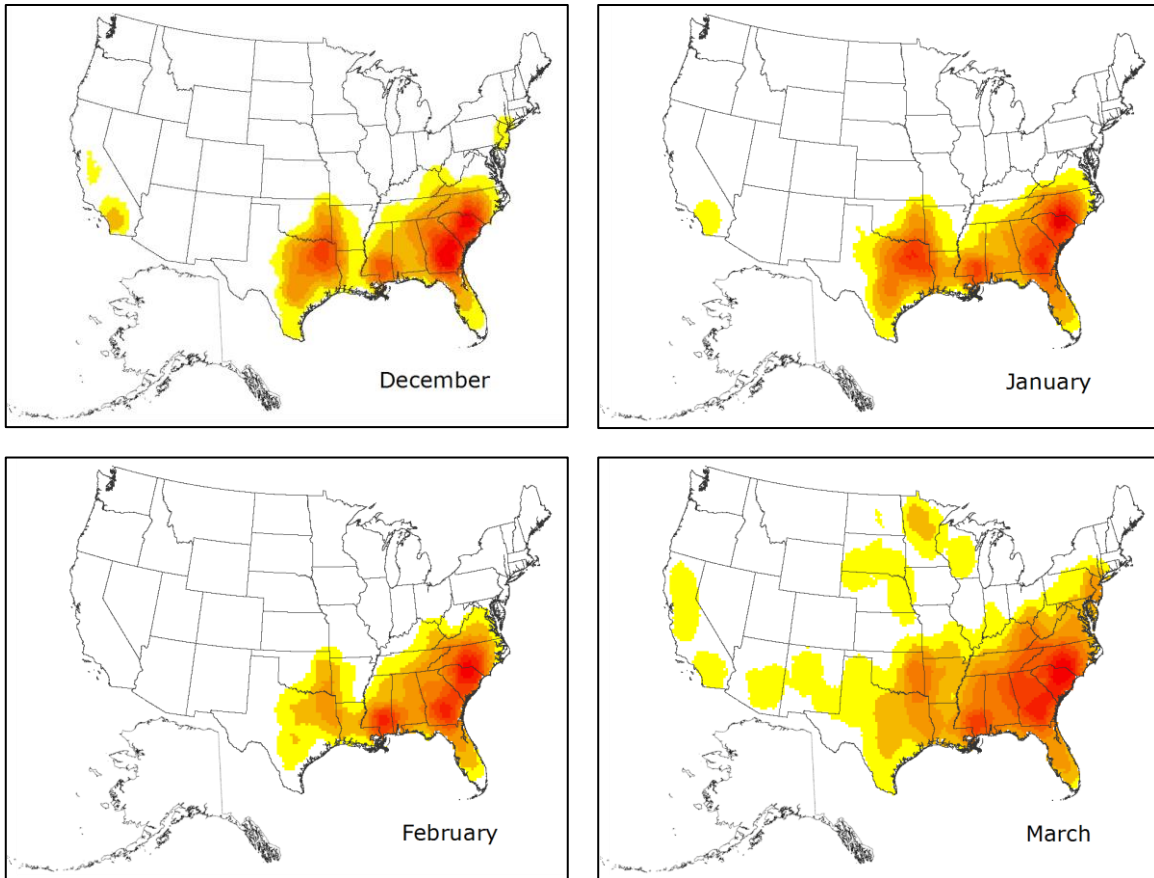


Left: Departure from Normal Temperature (top) and Percent of Normal Precipitation (bottom) (from PRISM Climate Group, Oregon State University). Right: U.S. Drought Monitor (top) and Drought Outlook (bottom) (from National Drought Mitigation Center and the Climate Prediction Center).

Weather and Climate Outlooks

El Niño continues in the equatorial Pacific Ocean, with the warmest sea surface temperature (SST) anomalies in the eastern equatorial Pacific Ocean. However, forecast guidance indicates this could shift more to the central equatorial Pacific Ocean in the coming weeks to months, and warming has already started to increase here. SSTs are consistent with a borderline strong El Niño, and the Climate Prediction Center (CPC) forecasts that a strong El Niño will likely develop, including a 55% chance of it persisting through the January – March period. CPC forecasts El Niño conditions continuing through spring, with a 62% chance it persists into the April – June period. A lack of previous analogs exists due to this El Niño occurring coincident with other teleconnection patterns that do not normally happen. The Madden Julian Oscillation (MJO), Pacific Decadal Oscillation, Pacific-North American Pattern, and Arctic Oscillation are likely to influence weather and climate during the outlook period, but El Niño will be the main driver.

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

Typical wildfire potential is expected for Alaska December through March, a time of year when minimal activity is normal, and the winter snowpack prevents significant wildfire activity. Alaska is out of fire season.

No areas of Alaska are in drought status. Much of the Interior and south-central Alaska have established a respectable snowpack by the end of November. As is typical for the first half of winter, the depth of snow was much lower and even discontinuous across southwest and southeast Alaska, especially at the lowest elevations and along the coast.

Alaska is out of fire season, and no wildfires are being tracked as of late November. Fuels across the state are unburnable and are expected to remain so through the end of March.

The prominent El Niño now in place suggests a tendency for warm weather through the winter for the entire state, with this tendency maximized over northern and western Alaska. The signal regarding precipitation is less clear, with a slight signal for above-normal precipitation over the North Slope, below-normal chances over southwest Alaska, and equal chances across the remainder of the state. The vital factor to watch over the coming months is the phase of precipitation, especially over southwest and south-central Alaska. If the proportion of precipitation falling as rain is unusually high, an early start to the 2024 wildfire season will be possible even if the overall amount of precipitation received through the winter finishes at or above normal.

No meaningful wildfire activity is expected for the next four months. Small local fires are possible in areas with minimal or no snowpack, such areas are typically along the coastline in western and southern Alaska. Any such fires will be confined to the surface and near-surface fuels, with no potential to involve the deeper duff layers.

Northwest

No significant fire activity occurred during November, with a minimal number of ignitions. The Northwest Geographic Area significant fire potential is expected to remain normal, with minimal activity through winter.

An active weather pattern began in early November, but the second half of the month was dominated by high pressure affecting the Northwest. Mean daily temperatures across the geographic area were near normal and favored slightly above normal. Much of eastern Oregon was 3-5 degrees above normal. Higher than normal precipitation for the first half of the month gradually diminished through the third week. The final week of November remained dry except for the last 24 hours. Several frontal systems brought moderate to heavy amounts for the Cascades and westward for the first couple weeks of November. But by the end of the month, amounts finished at 60-90 percent of normal and were driest over the central and southern Cascades and the north slopes of the Olympics. Most areas east of the Cascades benefitted from the early storms and finished at 110 to 140 percent of normal, despite the drier second half of the month.

About two-thirds of the geographic area remained in some form of drought, however, conditions continue to improve. The remaining areas of extreme drought for western Oregon and Washington were downgraded to severe status. The remaining area of severe drought has shrunk as well. Far southwest Oregon and portions of east central Oregon have been removed from drought status altogether. Southeast Oregon and a portion of northeast Washington remain free of any designation as was the case last month. There was minimal fire activity for November across the Northwest Geographic Area.

The recent period of relatively dry weather has brought 100-hour dead fuel moistures well below end of November normal for most PSAs. 1000-hour dead fuel moistures have also seen notable drops. However, these trends are expected to reverse as active weather and precipitation returns for the first half of December. Some areas of western Washington and Oregon remain in higher drought intensities, but fuel conditions should ease with expected and continued active precipitation periods. East of the Cascades cured low elevation rangeland fuels remain flammable and will exhibit increased potential rates of spread when aligned with strong winds.

NOAA outlooks covering the Pacific Northwest for the entire month of December show no dominant signals toward above, near, or below normal conditions. The first 14 days, however, lean toward above normal temperatures and above normal precipitation under an active weather pattern. January through March indicate up to a 50-60 percent chance of above normal temperatures. Again, there are no dominant precipitation signals for the region except for a 33 to 40 percent chance of below normal precipitation amounts covering northeast Oregon and eastern Washington.

Normal significant fire risk is expected through the winter months. A typical moderate to strong El Niño winter will produce one to two week-long drying episodes. These episodes then have the potential to dry 100-hour and lighter fuels to a point of carrying fire for multiple burn periods under supportive wind and low humidity conditions. Given the low predictability for these events on a seasonal scale, normal fire conditions are thus indicated.

Northern California and Hawai'i

Significant fire potential is projected to be near average from December through March. From December through March all PSAs average less than one large fire per month. Hawaii's significant fire potential is forecast to be above normal December through March.

The weather pattern during November was split between upper-level ridging and troughing.

Precipitation events occurred throughout the month, with the most robust wetting period occurring November 12-19 due to a slow-moving low pressure system. Precipitation anomalies were mixed with some pockets of above normal but mainly near to below normal values. Average temperatures were generally above normal but more near normal across far eastern portions of North Ops. Lightning was observed on six separate days totaling nearly 1300 strikes. The 2012-2022 November lightning strike average is a little over 200. Three sets of noticeable north-northeast and easterly wind periods combined with low to marginally low humidity occurred during November with the strongest occurring between the overnights of the November 19-20 and November 20-21. The strongest southerly wind event occurred November 4-6, but humidity readings were elevated.

Dead fuel moistures experienced both significant moistening and drying trends during November. There were no critically dry periods across the heavier fuel types, although there were some unusually dry periods tied to the offshore wind events that created some flammable fine fuels. Shrub and canopy fuels were generally flammable, especially within the Chamise and Manzanita fuel types, although sampling indicated near to above normal values for the time of year across most elevations and aspects. Herbaceous fuels remained in a mixed state during November, with dormant grasses found across the mid and upper elevations while various phases of green-up were found across the lowest elevations. The least amount of green-up was found across the Greater Bay Area and portions of the Sacramento Valley while the most advanced was found across the north and mid coast. There were no drought designations for northern California.

Fire business was comparable between November and October. One small lightning ignition was reported from the November 18 lightning activity and the largest human start was 19 acres located near Winters on November 24. The average daily ignition count was 5. Fuel conditions moistened enough to limit the amount of large broadcast burns, but many pile burns were implemented so prescribed burning remained quite active.

There will be several strong oceanic-atmospheric teleconnections during the next four months, which will either constructively or destructively interfere with each other making for an interesting and dynamic outlook. Therefore, expect some wild fluctuations in the atmospheric patterns as they shift between cool-moist and warm-dry periods. With that being said, the weather outlook for December and January calls for near to above normal precipitation and above normal temperatures. January has been showing a wet signal for the past few months, so confidence is higher. Precipitation for February and March appears to be less conclusive, although timely moisture intrusions should occur leading to less dryness overall. Temperatures should be above normal during February and March. Winter herbaceous green-up should be robust, especially below 2000 feet, due to the moist and warmer than normal environment. The standing dead fuel from the previous growing season should also noticeably lessen with each passing month thus reducing the ability for fires to spread significantly in the oak savannah fuel type. Significant or extended flammable fuel periods and drought conditions are not anticipated during the next four months, therefore, normal significant fire potential has been designated for northern California from December through March.

Sea surface temperature (SST) anomalies surrounding the Hawai'ian Islands were generally near to above normal. Near to above average SST anomalies are expected to remain the next four months with the warmer signal across the north. Average temperature anomalies observed during November were generally near to above normal, and precipitation anomalies were mixed. Heavier rain impacted mainly the windward sides from the November 14-16 and November 19-22, while a Kona Low brought more widespread heavy rain and high elevation snow to the island chain late in the month. Drought conditions remained with both improvements and intensification between late October to November 28, although drought intensities will likely improve due to the Kona Low going into early December. Red Flag Warnings were issued by the National Weather Service for the November 4-5, and November 14 due to strong trade winds and a dry airmass.

El Niño will peak during the outlook period and likely be moderate to strong. Precipitation during

the wet season is likely to be below normal during the next four months, and average temperatures should be near to above normal. Several fire growth enhancing ingredients will impact the island chain during the outlook period. These include abundant carryover herbaceous fuels from the previous growing season, a drought stricken flammable fuel bed, and a heavy dead and down component induced by the August 7-9 windstorm. Some herbaceous green-up will occur along the leeward sides due to the heavier rainfall observed during November 29-30 and help to provide some fire spread mitigation going forward. There should also be periods of stronger westerly and easterly winds prompting some Red Flag Warnings from the National Weather Service. Above normal significant fire potential is forecast for the island chain from December through March.

Southern California

November was warmer and drier for most of the South Ops. This was primarily attributed to persistent low pressure off the California coast, with high pressure over the Great Basin. This overall synoptic pattern favors offshore winds as wind blows from high pressure to low pressure.

The latest US Drought Monitor shows zero areas currently in drought status currently across southern California. The only thing to note here is the eastern deserts are abnormally dry, however this is not yet drought status. Live fuel moistures remain above normal for this time of the year and 1000-hr dead fuel moisture currently remains above normal in 12/16 Predictive Services Areas (PSAs). The only PSAs that have below normal 1000-hr dead fuel moisture are the Eastern Sierra and Central Valley. However, the odds show a moderate tilt towards a wetter than normal early December, which supports a moistening of both the live and dead fuels. Thus, the odds tilt in favor of above normal live and dead fuel moisture persisting for most of the December – March period given the likely wet start to December and the overall El Niño pattern expected this winter.

Latest sea surface temperature (SST) anomalies show El Niño conditions across the equatorial Pacific. The latest SST anomaly pattern represents a traditional East Pacific El Niño as the warmest SST anomalies remain in the eastern Equatorial Pacific. Climate models show a gradual transition from a traditional East Pacific El Niño to a Central Pacific El Niño Modoki during the 4-month DJFM period. This means the core of the warm SST anomalies in the equatorial Pacific will move from the East Pacific to the Central Pacific.

Comparing the current pattern to various analog years, the odds show a slight to moderate tilt towards above normal precipitation for southern California. Climate models support this solution, but one member of the North American Multi-Model Ensemble (NMME) shows a moderate tilt in the odds towards a wetter than normal December – March period. Forecast guidance also suggests the best chance for intermittent dry spells to be in the first half of the 4-month period as this solution shows a greater chance for high pressure over the northern Rockies in December and January than in February and March.

In conclusion, the odds tilt in favor of large-fire potential to remain near normal for all 16 PSAs with the climatological normal for large fires near zero across all 16 PSAs for this time of the year. The combination of above normal fuel moisture for larger dead fuels and live fuels coupled with the El Niño pattern and absence of drought support this tilt in the odds for the December 2023 – March 2024 4-month period.

Northern Rockies

Significant wildland fire potential in the Northern Rockies Geographic Area (NRGA) December through March is expected to be normal. This period sees little fire activity in the NRGA except for fires associated with extreme wind events in the lee of the Continental Divide. While El Niño is expected to bring warmer and drier than normal conditions this winter, it is not expected to support a significant departure from expected fire activity.

Most of November had above normal temperatures and below normal moisture, but these departures have not significantly changed the drought outlook in the NRGAs. North Idaho and northwest Montana continue to have moderate to severe drought, with moderate drought extending along the northern part of the NRGAs along the Montana/Idaho and Canadian border. The rest of the NRGAs is reporting no drought. The expected weather pattern for the last part of November will be cool with slight amounts of precipitation, which will not materially change the current drought conditions.

Energy release component (ERC) values have trended around normal values for this time of year, which are in the 30th percentile or less annually. Snow cover is below normal for this time of year but will expand due to light snow expected over the last week of November. Persistent inversion activity is preventing rapid drying in the valleys and mid-slopes, while most higher elevations have snow cover. Over the month of November, minimal initial attack was recorded, with prescribed burning largely limited to pile burning.

All PSAs are expected to have normal significant wildland fire potential December through March. The progress of snowpack and winter temperatures will be monitored for possible changes in the March outlook in subsequent months.

Great Basin

Fire activity remains low in the Great Basin, due to time of year with shorter daytime hours, along with several cold frontal passages bringing much cooler temperatures, higher humidity, and some precipitation, especially across the northern half of the Great Basin. Fire activity is expected to remain low and normal for the time of year through February. There may be a few upticks in fire potential on windy days in areas that have prolonged dryness and above normal grass crops at the lower elevations, depending on weather conditions. However, these instances would be localized and limited to a burning period or two.

Temperatures over the last 30 days have been warmer than normal across the eastern half of the Great Basin and cooler than normal over western areas. Although, a few cold fronts have moved through the region in November bringing cold, dry, and windy conditions for short periods to all areas. Parts of southern Idaho and northern Utah have seen just above normal precipitation over the last 30 days, but all other areas have been below normal, with precipitation over the southern half of the geographic area well below normal. The Great Basin is generally absent of drought, except for far southern Nevada, the Arizona Strip, and far eastern Utah where abnormally dry to moderate drought conditions exist. These areas will likely see improvements to the drought through the winter as El Niño potentially brings more precipitation to the southern Great Basin.

Fuel moisture will continue to increase through the winter. We will need to monitor the areas of eastern Utah, southern Idaho, and northern Nevada that have above normal fine fuel loading for windy conditions after prolonged dry periods through December or early January that may increase fire potential for a burning period or two, as grasses will be transitioning into dormancy. Fire activity remains low across the Great Basin, although prescribed burning activity continues at the higher elevations of central Idaho and northern and central Utah.

Normal significant fire potential is expected through March, which is low for the Great Basin. Despite areas of significant carry-over fuels in parts of northern Nevada and southern Idaho, the pattern of cold fronts moving through the Great Basin is expected to continue through the winter keeping fire potential low. The only areas to watch will be parts of eastern Utah, northern Nevada, and southern Idaho if prolonged dry periods occur and followed by strong winds. This may increase fire potential at times temporarily for a burning period or two in December and January.

Southwest

Normal significant fire potential is expected December into March for the Southwest Area (SWA).

The forecast of a weaker than normal monsoon this past summer with above normal temperatures was quite accurate and lingered well into the fall. Over the past three months, precipitation has been below normal overall, with some above normal areas across both the far western and eastern portions of the SWA, while temperatures were above normal, although a bit closer to normal across northwestern Arizona.

The ongoing El Niño conditions and further intensification through the early winter months will continue to have a strong influence on the weather and climate for the forecast period. Although there have been some cooler and wetter periods recently, the weather pattern will likely continue to remain milder and drier overall through mid-December, with more frequent cold air intrusions and areas of precipitation interspersed more regularly thereafter. The pattern will likely become more regularly active as winter arrives, with January and February likely being wetter than average for at least some areas focused along and west of the Continental Divide region. Expect high temperatures to be close to and even below average for many periods during the forecast timeframe. Much of this expectation is based on the ongoing El Niño and the likely peaking of this event in early 2024. The near normal to wetter than normal pattern is likely to continue into the spring of 2024, especially from the Continental Divide region eastward into the plains states as this is traditionally a wetter than normal area of the country during an El Niño. As a result, significant fire potential is expected to remain near normal during the forecast period.

Rocky Mountain

The Rocky Mountain Area (RMA) is expecting normal significant fire potential through the outlook period. The El Niño pattern has continued to keep temperatures above normal through the month. A couple of storms brought snow to the mountains but it was mostly dry across the RMA. Drought conditions have continued with little changes through the month.

November was largely warm and dry, with only a few storm systems that brought some moisture. A late month storm system brought some much-needed precipitation but was not enough to offset the dryness the rest of the month for the RMA. There were spotty areas of near to above normal precipitation. However, the areas that were below normal, almost all of South Dakota and the southeastern parts of Colorado and Wyoming, were well below normal, between 25 and 50 percent of normal. Temperatures across the RMA were well above normal through much of the month. The late month storm brought much colder air, bringing monthly average temperatures down to a degree or two above normal. The overall dry and warm conditions only resulted in some minor drought degradation in western Colorado and south-central Wyoming. The San Luis Valley has seen drought become extreme over the last month.

Everywhere across the RMA has seen a hard freeze, so fuels across the area have gone into winter dormancy. With that and the warm, dry conditions, fuels have continued to carry fire without much difficulty. Fuel loading remains high across much of the RMA due to a wet spring. However, through the month, initial attack activity remained light, with most fires remaining less than an acre.

El Niño will continue to be a major driving force in the overall weather pattern through the outlook period. However, this El Niño is expected to shift from a traditional eastern Pacific focused event towards the central Pacific. This will likely shift the warm temperatures farther to the west going into the late winter and early spring. There will be more variability in the locations of the warm and dry versus cool and wet conditions between months. This will overall result in normal fire potential through the outlook for December through March. There will be periods of elevated fire potential that may last for several weeks. The greatest factor in elevating the fire potential during the winter months is strong wind events, which are much more short-lived and highly variable events. The outlook for the RMA anticipates normal significant fire potential through March.

Eastern Area

Near normal significant fire potential is forecast across the Eastern Area December 2023 into February 2024. Above normal fire potential may develop across the Upper Mississippi Valley in March 2024.

Negative precipitation anomalies at 14 to 30 days were indicated across much of the Upper Mississippi Valley towards the end of November. Longer term drought remained in place across portions of the western Mississippi Valley and the southeastern Mid-Atlantic States.

The El Niño Southern Oscillation (ENSO) transitioned from a three-year episode of La Niña conditions (cooler than normal Pacific Ocean sea surface temperatures (SSTs) off the western coast of South America) to increasingly warmer than normal SSTs depicting an El Niño regime through the spring and into the summer of 2023. This transition has led to some uncertainty in the longer-term weather computer model forecasts for winter. Historical or analog climate trend comparisons are also limited to very few past similar ENSO transitions on record, making longer term weather trend forecasts challenging. Other SST regimes also contribute to global weather patterns adding to the uncertainty in long term weather forecasts. Despite these uncertainties, the north-central portions of the CONUS has typically experienced above normal temperature trends in past moderate to strong El Niño episodes during winter.

The Predictive Services precipitation outlooks forecast below normal precipitation across the northern Great Lakes in December and across the northeastern quarter of the Eastern Area January into February. The Climate Prediction Center seasonal precipitation forecast indicates drier than normal conditions likely across the northern and eastern Great Lakes down into the Lower Ohio Valley December into February 2024.

According to the Predictive Service temperature outlooks, above normal temperatures are forecast across much of the Eastern Area in December. Near to below normal temperatures are expected January into February of 2024. Above normal temperatures may develop over the western Great Lakes progressing into March. The Climate Prediction Center forecasts above normal temperatures across the Eastern Area December into February.

Drought Codes from the Canadian Forest Fire Danger Rating System (CFFDRS) that represent drying deep into the soil are still showing areas of high indices in Minnesota. A large portion of the Eastern Area also shows negative precipitation departures for the past month going into winter where monthly precipitation is less or in the form of snow. Snowpack amount and density will be a big determinate in fire potential during the outlook period and beyond. Below normal precipitation probabilities forecast on top of areas of drought may lead to above normal fire potential and an early start to fire season in spring of 2024.

Longer term drought and negative soil moisture anomalies remained in place across the Upper Mississippi Valley and the central Great Lakes towards the end of November. If these areas receive below normal precipitation through the winter season resulting in below average snowpack, these areas may experience periods of above normal fire potential heading into the spring of 2024 season. However, normal fire potential is forecast for the Eastern Area December through February.

Southern Area

Although a recent turn towards a wetter pattern has alleviated fuel dryness across most of the Southern Area, drought remains widespread and significant. This is particularly true from the Lower Mississippi Valley into portions of the Appalachian states, where extreme to exceptional drought continued to expand until late November. Areas of severe to extreme drought are also impacting the western Florida Peninsula, the Texas Hill Country, the Red River Valley in Texas and Oklahoma, in addition to portions of the Trans Pecos. Severe drought continues for St.

Thomas, while improvement has occurred the past one to two months over the remainder of the Caribbean islands.

Annual rainfall deficits of one to two feet are in place along portions of the Gulf Coast, including coastal Texas, much of Louisiana, parts of Mississippi, and the western Florida Peninsula. Deficits are near or exceeding three feet in southern Louisiana and the western Florida Peninsula, both due to a combination of prolonged drier than normal conditions and a lack of significant tropical activity this year. Meanwhile, the remainder of the geographic area is a mosaic pattern of above normal, near normal, and below normal precipitation. Areas with long-term drought will have to be monitored closely through the winter months since any lingering drought will have significant impacts on our spring fire season.

Above normal grass loading on the High Plains of Texas and western Oklahoma may come into play if extended periods of dry, warm, and windy weather develop in late winter or early spring. Meanwhile, leaf drop is at or near completion in hardwood dominant forests. Fresh leaf litter could still be a factor in fire activity until multiple rounds of significant precipitation occur, especially where severe to exceptional drought is resulting in abnormally dry organic soils.

Wildfire activity across the majority of the Southern Area typically sees a downtrend in December due to diminished evaporative demand, which results from a combination of cooler temperatures, increasing precipitation, and the longest nights of the year. One exception here is across the Florida Peninsula, which often sees the start of an uptick in wildfire potential as the dry season sets in. The risk for large fires increases more rapidly over Florida by January and quickly expands along the Gulf Coast into portions of the Plains states. February sees a relative maximum in activity across Florida and along the Gulf Coast, but March is generally the peak of spring season for most of the geographic area, including the Caribbean islands.

El Niño is the main driving force for expected weather conditions throughout the forecast period and appears likely to bring significant drought relief the next several months. Sea surface temperatures in the central and eastern tropical Pacific have recently warmed further, well into strong El Niño territory and flirting with historically warm conditions. NOAA estimates a 35% chance for a Super El Niño for the November-to-January period, similar to what occurred in the winters of 1997-1998 and 2015-2016. El Niño is strongly favored to continue through spring, before neutral conditions develop by next summer. Long-lived El Niños are historically rare, and the pendulum has the potential to swing towards La Niña conditions by late 2024.

Most long-range weather and climate models agree with the historical El Niño analogs, and above normal precipitation is likely as a result through March along much of the Gulf Coast and East Coast. Stronger El Niños have a wetter than normal signal across most of the geographic area, though some years feature drier than normal conditions from northern Mississippi into portions of Arkansas, Tennessee, and especially Kentucky. A potential sharp gradient in below normal and above normal precipitation may occur in the vicinity of Kentucky, which makes the north-central portion of the geographic area less certain than areas farther south and east. Confidence in precipitation trends is somewhat below average for the Rio Grande Valley and West Texas, which could allow for drought to persist in these areas. Meanwhile, above normal snowfall is favored because of this year's El Niño from the southern end of the Appalachians and Piedmont into most of central and eastern Virginia, with February expected to be the coldest and snowiest month of the outlook period. This may act to diminish or delay risks during the spring fire season in these areas. Should the coldest forecasts verify, spring green-up will be delayed as compared to 2023 for most of the Southern Area.

The Caribbean's dry season has begun and may allow for increasing drought heading through winter and early spring. NOAA currently favors drought persistence in the portions of Puerto Rico and the U.S. Virgin Islands experiencing moderate to severe drought.

Normal significant fire potential is forecast for December throughout the geographic area; however, the High Plains and portions of the Appalachians should be monitored if an extended period of dry and warm weather develops. Abnormally wet weather in the first few days of the month should largely mitigate any risks in areas experiencing drought along and inland from the Gulf Coast. No changes have been made to the previous forecast for January, with below normal significant fire potential likely across Florida, coastal Alabama, and coastal Mississippi. Normal conditions are expected elsewhere.

Widespread below normal significant fire potential is forecast for February due to expectations for continued wetter than normal weather, along with an increased likelihood for persistent below normal temperatures that would act to reduce evaporative demand. The risk for significant wildfires could increase for the High Plains due to above normal grass loading, but the potential for wintry precipitation complicates things and leads to lower confidence there for the time being.

Normal to below normal significant fire potential is forecast to continue into March, with a quiet start to the spring season likely to continue along most of the Gulf Coast and East Coast. Portions of Kentucky, Arkansas, and Tennessee could potentially see trends in either direction depending on what materializes the next several months. Puerto Rico and the U.S. Virgin Islands have the potential to see above normal significant potential by March in subsequent outlooks if drought does indeed persist or expand over the Caribbean.

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>