



# National Significant Wildland Fire Potential Outlook

Predictive Services  
National Interagency Fire Center

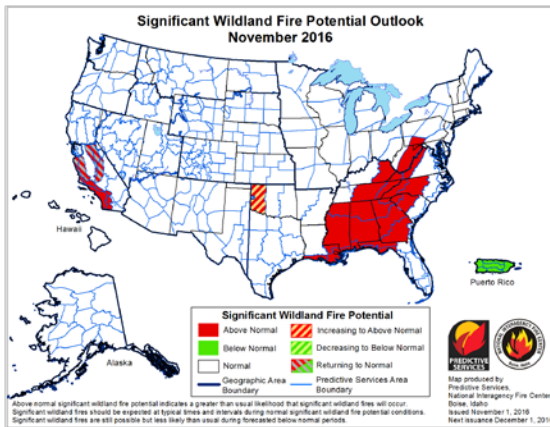


Issued: November 1, 2016  
Next Issuance: December 1, 2016

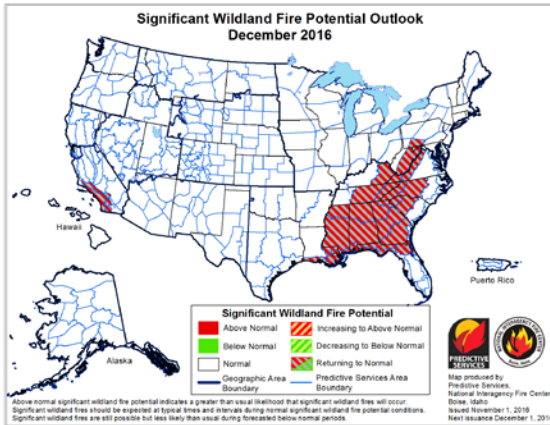
## Outlook Period – November, December and January through February 2017

### Executive Summary

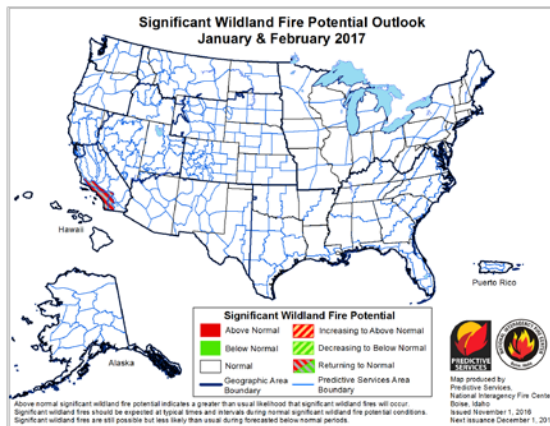
The significant wildland fire potential forecasts included in this outlook represent the cumulative forecasts of the ten Geographic Area Predictive Services units and the National Predictive Services unit.



November significant wildland fire potential is generally very minimal throughout the northern tier of the U.S. as conditions transition out of normal fire season. Areas of the Great Basin and Rocky Mountains that are currently seeing increased levels of fire activity are likely to see much of that activity diminish and transition to out of season conditions through early November.



Exceptions will continue in Southern California where long term drought is still in place. Conditions in this area will slowly transition to normal from north to south through the Outlook period. Normal implies a significant reduction in fire activity, but some fires should still be expected. Also, the southeastern U.S. will continue to see a large area of above normal significant fire potential for November and December that will slowly transition back to normal through the Outlook period as well. This condition is also largely due to long term drought that is going to be exacerbated by dry leaf litter falling on top of already dry fuels and also occasional dry and windy periods. For the southern Plains there is a plentiful grass crop that presents the potential for occasional dry and windy periods to increase fire activity.

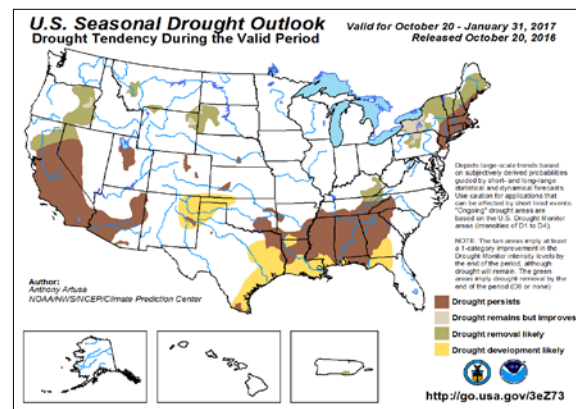
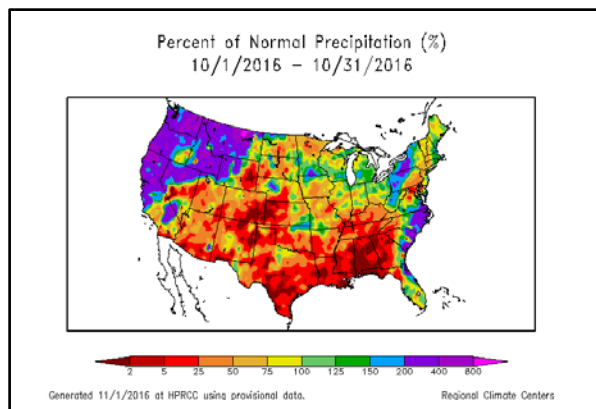
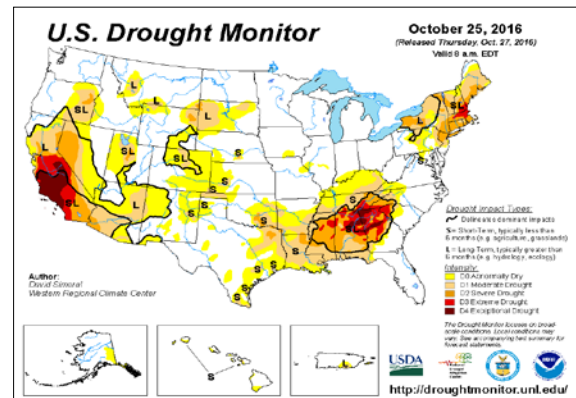
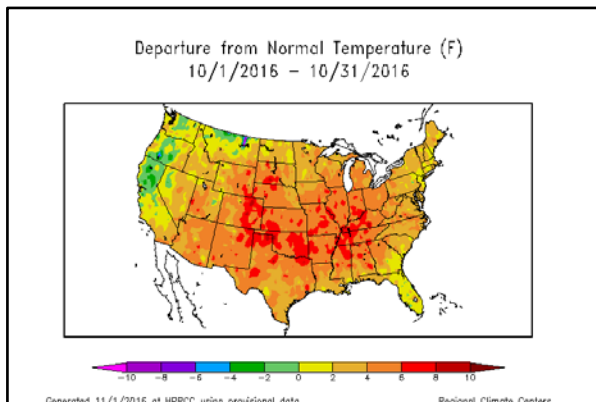


Normal winter conditions will prevail across the U.S. in January and February. There will be occasional periods of increased fire activity, but these will be infrequent and difficult to predict accurately. During this outlook period winter precipitation and snowpack development will be a critical situation to monitor as the 2017 fire season becomes the focus of many fire managers.

## Past Weather and Drought

A broad trough across the western U.S. kept fall conditions across the region for most of October. Ridging over the southern States kept warmer weather in place while weak frontal system brought brief periods of cool and sometimes wet weather to the north and east. Hurricane Matthew brought heavy rain to the Southeast and Mid-Atlantic coasts, causing extensive flooding for the Carolinas and Virginia. In the West, the northern and central mountain ranges received snow to begin the slide into winter. Near the end of the month, periods of wet weather struck the West, bringing a beneficial rains to California, especially the central and southern coasts.

Temperatures were generally warmer-than-normal across most of the central and eastern U.S. and parts of the Southwest. The West Coast and the northern Rockies were near or slightly below normal. Precipitation was concentrated in the Northwest and northern Rockies where early storms brought well above normal precipitation, much as snow, to the region. The Southeast Coast received over 200 percent of normal rainfall for the month from Hurricane Matthew in the early October. Other systems brought above normal rain to the northern Appalachians from West Virginia to western New York. Much of the country was much below normal, especially along the Gulf Coast States, the central Plains and much of the Great Basin and the Southwest.



Left: Departure from Normal Temperature (top) and Percent of Normal Precipitation (bottom) (from High Plains Regional Climate Center). 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-Southern Oscillation (ENSO) continues to hover around a weak La Niña. Latest model forecasts indicate conditions will remain near this level at least through the Northern Hemisphere winter.

Temperatures will generally be warmer-than-normal across the southern third to half of the Lower 48 with periods of colder-than-normal conditions over the northern third, mainly from the Plains to New England. Alaska will be warmer-than-normal for the period. Precipitation is likely to be below normal for much of the Southeast and Plains through the period with increased precipitation to above normal conditions developing across most of the northern third of the country later in the winter. Alaska will have a mixed winter but warmer temperatures will likely limit snowpack in some areas.

## **Fuel Conditions and Fire Season Timing**

For the most part fuels are transitioning to their winter state across the northern tier. In many areas this is a dormant condition with very low live fuel moistures, but little threat from ignitions and significant fire activity. Dead fuels are absorbing moisture prior to snowpack building and the stage is being set for early season fuel conditions in 2017.

Across the southern tier long term drought conditions continue to be dominant across portions of California and the southeastern states.

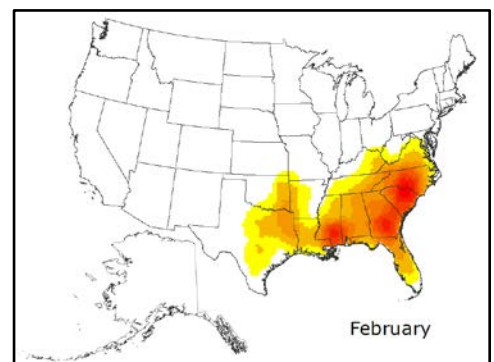
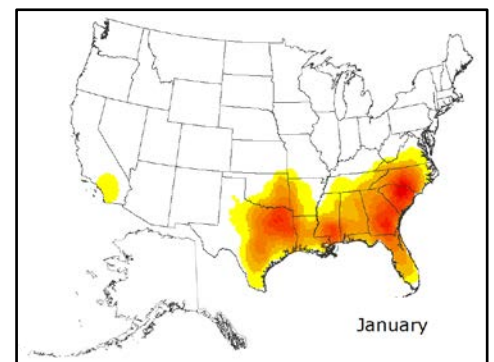
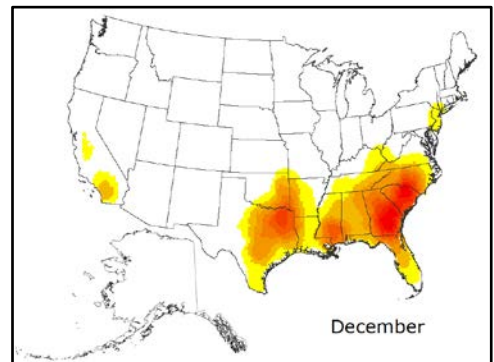
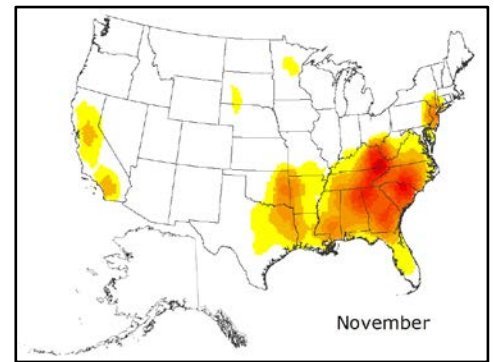
For Southern California this means that fuels continue to pose a threat for initial attack and occasional significant fire activity. Even though drought is likely to remain in place, fire activity will reduce significantly through the winter. This will however, likely establish the baseline for entering another fire season in a dry condition and fuels may become a concern earlier than usual in 2017.

Across the Southeastern states drought is also the primary concern. This concern will be exacerbated by leaf drop occurring on top of already dry fuels, creating a condition where dry surface and sub-surface fuels have an added layer of dry fuels in the short term. This condition should improve moving through the winter but in the short term, elevated levels of initial attack and significant fire activity should be expected across the south.

## **Geographic Area Forecasts**

**Alaska:** Normal significant wildland fire potential is expected for Alaska through the Outlook period.

Precipitation was below normal for much of the state during October but did not contribute to any drought concerns. Long range models indicate a continually changing pattern but warmer-than-normal conditions are consistently forecast. Calculations of the Canadian Forest Fire Danger Rating system indicate that surface fuels are fairly dry currently with absence of snow but deeper layers are fairly wet. The exception is the Upper Tanana Valley and south of Northway along the Canadian border where some indices are in the



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)

High to Very High range. Early November usually finds snow cover over most of Alaska and completely brings the state out of fire season. Warmer conditions may delay snow cover but rain in portions of southern and south-central Alaska and the Kenai Peninsula will keep fire risk low.

**Northwest:** Normal significant wildland fire potential is expected for the Northwest through the Outlook period.

October was very wet for the Northwest as a series of strong Pacific frontal systems spread heavy rain southward across the Area. Some reporting stations reported double or triple the normal accumulation of rainfall for the month. Temperatures fell across much of the Area and ended up cooler-than-normal for the month. Southeastern Oregon remained the driest area, as it was the only region not to experience unusually heavy rain in October. Slower and weaker development of La Niña conditions is keeping forecast models on the fence regarding temperatures and precipitation tendencies through February for the Northwest. Fire danger indices are well below the values for wildfire risk in early October and essentially marking the end of the 2016 fire season. Normal fire potential is expected for all PSAs through February.

**Northern California and Hawaii:** Normal significant wildland fire potential is expected for Northern California through the Outlook period.

Normal significant wildland fire potential is expected in Hawaii for the Outlook period.

Above normal temperatures and near normal precipitation are expected for Northern California through February. Light rain in early October and a series of storms mid-the month produced heavier precipitation kept conditions wet across the Area. As of late October the majority of the North Ops Area had received well above normal precipitation for the month, with the exception of parts of the central Sacramento Valley. New grass growth was also noted at lower elevations in many areas. Considering the current conditions and a persistent wet trend, the potential for large fire development in the Area will be normal through February.

Sea surface temperatures in the vicinity of Hawai'i are expected to remain slightly above normal through February. Temperatures throughout the islands are expected to remain above normal. October has been a bit drier-than-normal in many areas, but rainfall since early summer has been near to above normal across much of the region. Near normal rainfall is expected through February as the rainy season continues and a weak La Niña possibly develops. Some lee side areas may continue to receive below normal rainfall during this time. The Keetch-Byram Drought Index has been increasing in the dry October conditions, but it remains below normal for this time of year due to the wet weather since early summer. Very little fire activity occurs in Hawai'i in late fall and winter in a typical year, so a projection of normal fire activity through February implies little to no significant fire activity. Other than small local-scale lee side areas that may have periods of slightly elevated fire potential, Hawai'i has Normal significant fire potential through February.

**Southern California:** Above normal potential is expected for portions of Southern California through January. Some portions of central and southern California will return to normal in November and December, while the remainder of the Area will return to normal in January and February.

The season's first significant rainfall occurred during the third week of October as an unusually deep trough entered the Pacific Northwest. This system resulted in precipitable water content climbing to over 200 percent of normal as the storm contained remnants of a typhoon as well as abundant jet energy. While the heaviest precipitation remained north of the Area, most of Monterey County and the Sierras north of Madera County received impressive rainfall totals. In general, two to four inches of rain was recorded on south and west-facing aspects with locally higher amounts on the higher southwestern aspects. As this storm had a tropical origin, snow levels were limited to the highest peaks of the Sierras. The Sobranes Fire received heavy rain from this storm which helped bring the incident to containment. Rainfall south of Point Conception was spotty and generally limited to under a half inch. A weak to moderate offshore wind event quickly followed which caused rapid drying of fuels. Most places in

Southern California saw no long term change in fuel moisture resulting from the rainfall. At the current time, fuel moisture readings are close to record low readings in dead fuels in both heavy and light fuels across Southern California. Live fuel moisture is critically low over most of Southern California away from the coast. Fuel moisture conditions will likely remain extremely dry until the first widespread heavy rain occurs in the fall.

The pattern across the Pacific has been quite progressive the past few weeks which has resulted in frequent oscillation between ridges and troughs across the Area. This pattern will likely continue for several more weeks according to long range models, which may allow some wetting rains to reach the rest of the Area by late November or December. Therefore, the onset of seasonal rains will likely be slightly behind schedule for the southern part of the state. But most areas should see significant fire potential return to normal by the beginning of December due to shorter daylight hours and a low solar angle. Temperatures are expected to remain above normal through the period due to warmer-than-average sea surface temperatures offshore. These same pockets of warm water will likely lead to below normal precipitation this winter, especially during the January and February time period.

**Northern Rockies:** Normal significant wildland fire potential is expected for the Northern Rockies through the Outlook period.

A shift to an alternating cold trough and northwesterly flow pattern may occur. Both flow patterns are productive for snow production and are typical for November. If the predictions hold true, average conditions are expected as the Area alternates between an active westerly flow pattern and high pressure ridging. There is some thought that high pressure ridging could become more prevalent in January which would lead to overall warmer and drier than normal conditions in the mountains. Confidence in that scenario, however, remains low due to lack of consistency in the long range model data.

The Northern Rockies Area is mostly out of season. There remains a slight possibility that under the right conditions a large fire could develop across the plains of eastern Montana and the Dakotas until winter snow falls.

**Great Basin:** Normal significant wildland fire potential is expected for the Great Basin through the Outlook period.

Recent precipitation over Nevada diminished any further threat of significant fire activity across the state. Light rain and higher humidity also mitigated the threat across southern Utah and the Arizona Strip. Fuels areawide have or will soon transition to out-of-season conditions. No large scale large fire concerns exist through February.

**Southwest:** Normal significant wildland fire potential is expected for the Southwest through the Outlook period.

Over the past month temperatures were generally above normal east of the continental divide and closer to normal along and west of the divide. In general, much of the Area has been dry recently with mainly only parts of western and southwestern New Mexico into far west Texas having above normal precipitation amounts. The western third of Arizona and the northeastern sections of New Mexico and adjacent West Texas were exceptionally dry.

A continued mild trend is expected as November begins with temperatures expected to run slightly above normal during at least the first half of the month. Heading into winter, this trend will more than likely remain overall. Much of the Outlook period will end up drier-than-normal across the Area, although some areas of near normal precipitation are possible across the north. Significant fire potential is not expected to increase during period although the drier and warmer tilt will most certainly lead to increased areas of longer-term drought by mid-winter. It's possible that areas across the east will begin to see fine fuels-driven fire activity by mid-winter into early spring.

**Rocky Mountain:** Normal significant wildland fire potential is expected for the Rocky Mountain Area through the Outlook period.

October was cooler- and wetter-than-normal across much of the northwestern Rocky Mountain Area, with warm and dry conditions in the southeast. Northwestern Colorado through south-central Wyoming are suffering long-term precipitation deficits with less than 50 percent of average. An abundant dead grass fuel component remains in place in the lower elevations and foothills of the Rocky Mountain Area. ERC's as of late October showed above average values across the central to southern Colorado Front Range.

Short to medium range forecast models for the early portion of November indicate a shift from the October warm and dry weather over southeastern portions of the Area to wetter conditions. Rocky Mountain Area forecasts indicate near normal precipitation and temperatures during the fall and winter. Fire activity typically decreases significantly in November, especially after the first week. Fires are typically short duration and wind-driven in the lower elevations and grasslands of the eastern Plains. Dry grass and brush are the primary carriers and are abundant after a wet spring and early summer.

**Eastern Area:** Above normal potential is expected across a portion of West Virginia through November and return to normal through December. The remainder of the Eastern Area will see normal significant wildland fire potential for the Outlook period.

Soil moisture and precipitation anomalies were below normal across the New England Metro, the southeastern half of the Mid-Atlantic States, and portions of the Mid and Upper Mississippi Valley at the end of October. Near to above normal precipitation and soil moisture anomalies were in place over the rest of the Eastern Area. Fuel moistures were near to above normal over the majority of the Eastern Area towards the end of October.

Near to below normal temperatures overall are forecast over the majority of the Eastern Area through the first half of the winter. Drier-than-normal precipitation trends are expected over the western half of the Eastern Area in December, while wetter-than-normal conditions are expected to develop over the Eastern Area in January and February. The fall fire season may persist longer than normal across portions of the Mid-Mississippi Valley and the southeastern half of the Mid-Atlantic States. Near normal fire potential is expected over the majority of the Eastern Area through the remainder of the fall fire season. Any periods of above normal temperatures and drying may create short term fire potential through the end of the fall fire season across portions of the Mid-Mississippi Valley and the southeastern half of the Mid-Atlantic States.

**Southern Area:** An area of above normal significant fire potential will persist in November across much of the Southern Area. This above normal region will return to normal through December and be normal in January and February.

Severe to exceptional drought now covers most of the central Gulf States with the worst conditions remaining across Alabama, Georgia, Mississippi and the western Carolinas. Drought conditions continue to spread toward eastern Texas. Fuel moisture conditions across all classes remained dry with 100 hour fuels now in the 10th to 20th percentile in areas of Alabama and Georgia with 1000 hour moistures over a broader area covering Mississippi, Alabama, Georgia, and Tennessee less than the 10th percentile. While the Atlantic and southern Plains states of the Area are faring better, fine and smaller class fuels continue to dry. Existing moist conditions across Puerto Rico are expected to continue with frequent rain events.

Recent trends indicate a drier-than-normal pattern will persist through the fall. Expect the broadening drought from below average rainfall and periods of post cold frontal low humidity to produce high to critical periods of above average fire potential during November across the central and southern States and the Mid-Appalachians area. Gustier wind events associated with frontal passages will increase and accentuate risk for larger fire potential as the main timeframe for leaf drop and peak fine fuel loading develops. Expect minimal fire risks for Puerto Rico. Dry line activity and warm temperatures anticipated

for western Oklahoma show potential for some increasing fire potential due to above normal fuel loading. Fire potential is expected to return to average levels for the Southern Area in December; however, West Texas and western Oklahoma will need to be monitored closely.

### ***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) 387-505 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>