



National Significant Wildland Fire Potential Outlook

Predictive Services
National Interagency Fire Center

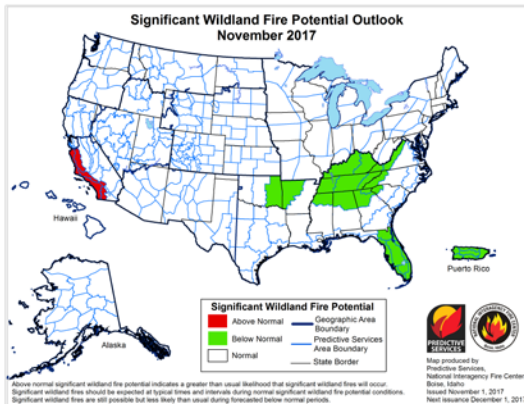


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Outlook Period – November, December and January through February 2018

Executive Summary

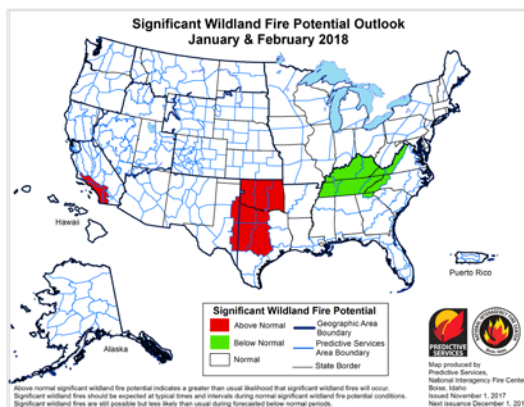
The significant wildland fire potential forecasts included in this outlook represent the cumulative forecasts of the ten Geographic Area Predictive Services units and the National Predictive Services unit.



Warm and dry conditions continued across California and the Southwest in October. Several easterly, multi-day wind events coupled with high heat and very low humidity values contributed to significant bursts of fire activity California mid-month. A passing front at the end of the third week of the month brought much needed moisture to the dry fuels across the northern half of the state. The southern half of the Great Basin also saw an increase in grass fire activity during the month due to the warm, dry, and occasionally breezy conditions. Looking elsewhere, most of the rest of the nation exited the core fire season though occasional activity was observed along the Rocky Mountain Front in Montana and Wyoming. The autumn fire season in the Southeast was much quieter than the previous year due to the passage of several wet cold fronts that brought timely and occasionally abundant moisture.



Temperatures across the East, Southwest, and California were generally above average for the month with some locations along both the East and West Coasts reaching as much as fifteen degrees above average at points. The Pacific Northwest, Northern Rockies, northern Great Basin, and central Rockies generally experienced cooler-than-average conditions though a warming trend developed near month's end. Alaska was generally colder and wetter than average. Precipitation departures from average showed significant dryness across the southwestern quarter of the nation and across much of Texas. Significantly wet conditions were observed across the Northwestern quarter of the country as several very wet systems impacted the region during the middle to latter half of the month. Another wet signal for the month was observed across the Great Lakes Region and the Ohio and Tennessee River Valleys.



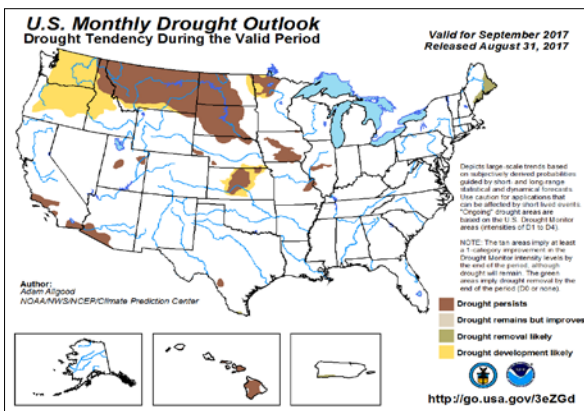
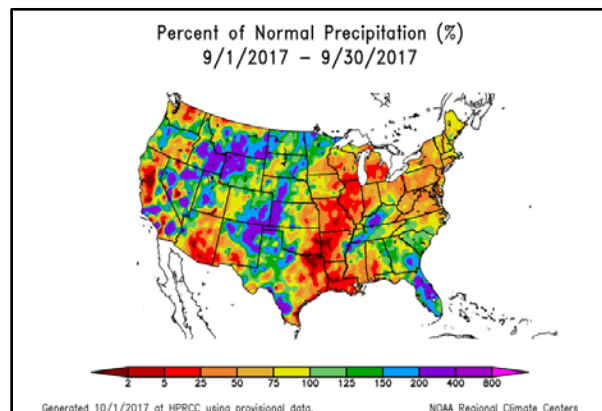
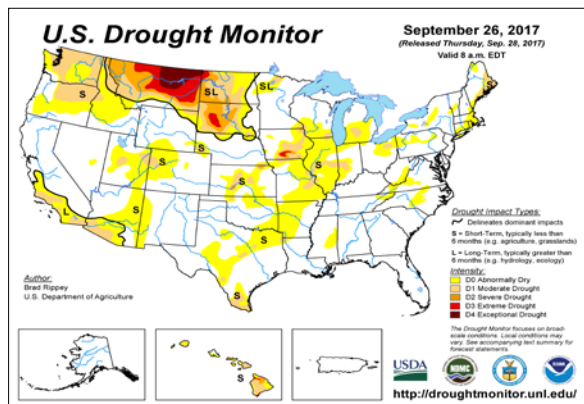
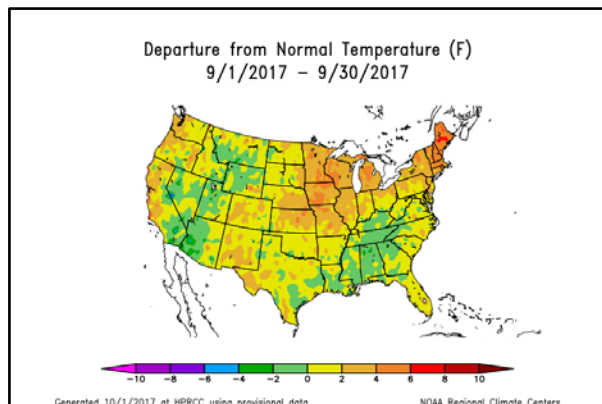
Latest forecast data suggests that California will remain the focus of periodic bursts in fire activity through November and possibly into December. Portions of the Deep South may also exhibit increased activity in between precipitation events as

well. By February, the focus will shift to the southern Great Plains as the antecedent dry conditions begin to take its toll.

Past Weather and Drought

Temperatures trends across the West varied throughout the month. Western states, excluding California, Arizona and New Mexico, were generally two to six degrees below average for the first half of the month and two to six degrees above average for the second half of the month. California, Arizona, and New Mexico were above average for nearly the entire month and fell under the influence of periodic Foehn Wind events (Santa Ana, Mono, and North winds). Across the eastern states, temperatures were five to ten degrees above average during the first half of the month. A pattern shift occurred mid-month as a persistent trough of low pressure developed over the East. This produced temperatures that were below average for most of the remainder of the month. Precipitation trends fluctuated less. Very dry conditions persisted across central California, the southern Great Basin, Arizona, and western New Mexico throughout the month. Texas and the Lower Mississippi River Valley also experience drier than average conditions. Overall wet conditions were evident across the central Great Plains through the Great Lakes and Tennessee River Valley. The Pacific Northwest, Northern Rockies, and northern Great Plains began the month under drier than average conditions, but the onset of a wetter westerly flow pattern during the third week of the month provided some relief. Overall, the states along the East Coast were wetter than average in October.

The northwestern portion of the country remained under varying degrees of drought. As a whole, the severity of the conditions was less than what was observed in previous months. However, portions of northeastern Montana and western South Dakota were still experiencing extreme drought conditions. Pockets of Moderate Drought conditions were observed across portions of Southern California, Arizona, and the Mississippi and Ohio River Valleys.



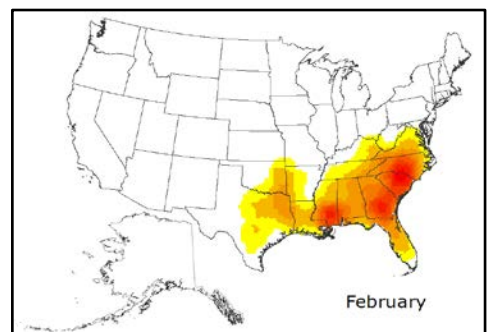
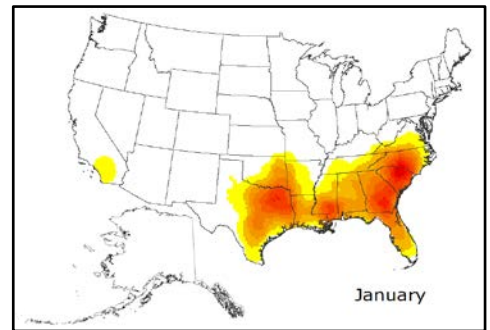
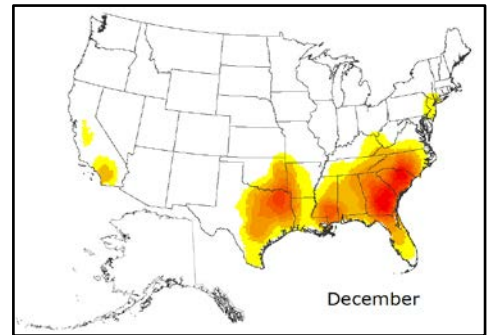
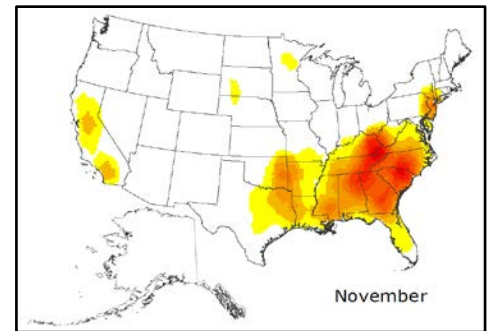
Left: Departure from Normal Temperature (top) and Percent of Normal Precipitation (bottom) (from High Plains Regional Climate Center). Right: U.S. Drought Monitor (top) and Drought Outlook (bottom) (from National Drought Mitigation Center and the Climate Prediction Center)

Weather and Climate Outlooks

El Niño-Southern Oscillation (ENSO) sea surface temperature data plots continue to show cooler than average conditions across the equatorial Pacific Ocean. Forecast data suggests these conditions will continue through the winter months and could develop into a very weak La Niña.

For November, wetter-than-average conditions are expected to continue across the northwestern portion of the nation while drier-than-average conditions are expected to linger across much of California, the Southwest, and the Great Plains. The dry conditions could extend into the Southeast. To the north, wetter-than-average conditions are expected across the Great Lakes region and the Northeast. Alaska can expect colder but drier-than-average conditions across southern portions of the state. Temperatures should remain warmer-than-average across the West Coast States, Southwest, and southern Great Basin. Across the Intermountain West, central through southern Great Plains, and the Deep South, near-average temperatures are expected. Colder-than-average temperatures are forecasted across the eastern Great Plains and the Northeast.

The extended periods, December through February, should feature an overall blocking pattern which focuses a series of high pressure ridges over the Great Plains and troughs of low pressure along both coasts. This suggests overall cold and moist conditions in both the West and East, except for California and the Southwest which are expected to remain warmer and drier-than-average. Overall conditions across the Great Plains should be warmer and drier-than-average.



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)

Geographic Area Forecasts

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

The U.S. Drought Monitor is no longer showing any drought or abnormally dry areas in Alaska. October brought the start of the winter snowpack in most of mainland Alaska. Southeast and parts of southern Alaska are not yet snow covered.

The long range outlook data continues to indicate that warmer than average conditions are likely for most of the state moving into November, with the biggest chance for warm weather over the southwestern Interior at the start of the month moving to the North Slope and near normal temperatures from south central to the panhandle. Precipitation forecasts show increased potential for above average precipitation over the southwest Interior for the first week of November and then above average only along the North Slope for the remainder of the month. The outlook data out into February continues the warmer and wetter-than-average potential over the North Slope and west coast with a transition to cooler-than-average from south central Alaska to the Panhandle in to February.

Calculations of the Canadian Forest Fire Danger Rating system are being stopped due to freeze up and the end of the season. As of the end of calculations there was still an area of notable high DC in the central Upper Yukon Valley though the Duff Moisture Codes (DMCs) were low indicating that the upper layers of duff are quite moist.

Northwest: Normal significant wildland fire potential is expected for the Pacific Northwest through the outlook period.

October's weather varied between dry and wet as alternating weather patterns passed over the region. Ample precipitation, including snow at higher elevations, accumulated at above average rates for the month in many locations. Overall, temperatures were below normal across the region in October. The latest monthly and seasonal climate outlooks suggest that temperatures are most likely to stay near normal or warmer than normal through New Years before reverting to cooler-than-average for the first couple of months of the new year. There is no definitive trend forecast for precipitation for November and December; however, data shows above average precipitation is expected in January and February.

Fire danger became too low for naturally ignited large fires in the geographic area during October. Fire danger is unlikely to rise again to critical levels until June or July of 2018.

Northern California and Hawaii: Normal significant fire potential is expected in all areas for the outlook period.

Enough wetting rain has fallen in far northern California to alleviate significant fire concerns, and areas along and east of the Cascade-Sierra Crest have cooled down enough to be considered "out of fire season". The remainder of the region finished October very dry with warmer than average temperatures, and elevated large fire potential continued through the end of the month. However, occasional weather systems bearing wetting rainfall and mountain snowfall are forecast to reach the entire region during the first full week of November. November is expected to be warmer than normal with below normal precipitation. However considering the long cool nights, precipitation early in the month will have a long-lasting effect – it takes longer stretches of dry breezy weather to elevate significant fire potential back to Above Normal during the outlook period once precipitation occurs. The outlook for December through February is for above average precipitation and near to slightly warmer than average temperatures. Therefore, all areas can expect Normal Significant Fire Potential from November through February.

Sea Surface temperatures continue to be above average throughout the region, leading to above average temperatures throughout the Hawai'ian Islands. This pattern is expected to continue through February. Although abnormally dry and drought conditions continued to increase throughout the Hawai'ian Islands through mid-October, rainfall in late October began to alleviate the threat of large fires. November is typically the start of the Hawai'ian rainy season, and near average rainfall is expected across the region for the month with the trend continuing through February. This should begin to help eliminate the drought conditions and reduce the potential of large fires. All areas are expected to drop back to Normal significant fire potential from November through February.

Southern California: Above Normal significant fire potential is expected for all coastal areas in November and for the coast of Southern California in December. Elsewhere expect Normal potential.

A strong ridge of high pressure over the eastern Pacific established a blocking pattern off the coast, keeping the storm track centered well north of the district. As a result, much hotter and drier than normal conditions continued to impact the area. Several troughs deepened over the Great Basin and northern Rockies, which resulting in frequent rounds of offshore flow, compounding the heat and lack of moisture. At the time of this writing, Southern California is in the midst of an offshore wind episode, the 4th significant one of the season which is a well above normal number of occurrences for late October.

All signs point toward a continuation of hotter and drier weather for several more weeks as long wave weather patterns over the eastern Pacific and CONUS have assumed a pattern consistent with a La Niña ENSO condition. Although current ENSO conditions are only slightly negative, all model guidance is trending toward a strengthening of a La Niña and it is likely to be a dominant player in the weather this coming rainy season.

Due to the heat, lack of rain and low relative humidity, dead fuel moisture is at record low readings for most coastal and intermediate valley areas. Only the highest elevations of the Sierras from Yosemite National Park northward have seen any significant precipitation this season. The remainder of the area has not

seen any significant precipitation so far this autumn. Live fuel moisture is critically dry and all fuel types are available for burning during peak heating hours or during windy conditions. The combination of dry fuels and the expectation of drier, warmer weather the rest of the fall into the first part of winter will keep large fire potential well above normal for several more weeks along the central coast and possibly through the end of the year over Southern California.

Northern Rockies: Normal significant large fire potential is expected for the outlook period as the region remains mostly out of season.

Most of the region remains under varying degrees of drought with severe to extreme conditions persisting from northwestern Montana east to the North Dakota border. Extreme drought conditions are still present across northeastern Montana. Precipitation over the region in October was well below average over most of the region, with the exceptions being part of northern Idaho, and north central Montana. Almost all of North Dakota had less than 25% of average precipitation in October. Temperatures have been below average across northern Idaho and western-central Montana, near-average in eastern Montana, and well above in North Dakota.

Warmer than average temperatures and periodic wind episodes have allowed for 1000 and 100 hour fuel moistures to dry to below average levels for this time of year across central Montana and North Dakota which has allowed for some fire activity to continue. Fine fuel moisture levels on dry windy days there are quite low as well, 4-8%. Fuel moistures in the Western PSAs are higher, showing typical "out of season" values.

Expected impacts from ENSO suggest near to below average temperatures and near average precipitation should occur. Temperature and precipitation outlooks for the November through January period depict the likelihood of near-average temperatures, but with near to above average precipitation, especially over North Idaho and Montana.

Long-range forecast models show the large-scale weather pattern evolving into a northwesterly flow, which would favor the eastern half of the region with cooler than average temperatures, and periods of light snow. This would help to reduce grass and brushfire potential in the eastern PSAs back to average levels by early November. Given also that near average temperatures, and near to above-average precipitation may occur through November and December, this potential should remain at average levels.

Great Basin: Normal Significant large fire potential is expected in all areas for the outlook period.

A prolonged warm and dry period over the last three to five weeks across the southern half of the region has occurred due to a persistent high pressure ridge over the eastern Pacific Ocean. Short term model projections are for this ridge to amplify and maintain the warm and dry weather into early November. The next large scale storm system to impact the region is expected by the end of the first week in November, with a period of significant cooling and moistening across the region expected. There is a concern that strong winds with initially low humidity ahead of this storm could occur, mainly across Nevada, southern Utah and the Arizona Strip. Looking beyond mid-month, warmer and drier-than-average conditions will resume across the southern half of the region and persist into early winter. Further north, near average temperatures and precipitation is expected. Northern areas will begin to trend colder and wetter-than average by January and February with these effects being observed as far south as northern Utah and northern Nevada.

Entering November, fuels across much of the southern third of the region have dried significantly. 100-hr fuel moisture levels in lower elevations are near early September average levels. Fire activity has been increasing in these areas with fires of up to several hundred acres being reported recently, especially during brief wind events. There is a short term concern for a brief spike in fire activity as fuels continue to dry in early November, especially if a wind event occurs as expected early in the month. Anticipated post frontal precipitation and cooler temperatures should diminish the fire potential in southern areas as the month progresses leading the region into the off season.

Southwest: Normal significant fire potential is expected for most areas from November through February. Much of the eastern plains of New Mexico into West Texas will see Above Normal potential in February.

Over the past month temperatures have been near to slightly above average across most of the region. The warmest areas were across the Continental Divide of eastern Arizona/western New Mexico into central Arizona. The cooler parts of the region were far northwestern Arizona and eastern New Mexico into west Texas where temperatures were one to four degrees below average. Over the past month and a half, the western portion of the region has been much drier-than-average while the eastern half of the wetter-than-average. However, over the past few weeks a trend toward dry conditions has developed.

A very wet period gripped much of eastern/central New Mexico during October while Arizona remained generally dry and quite mild. Precipitation totals for period east of the divide earlier in October were quite impressive and in some cases record-breaking. However, the overall expectation is for much of the fall to be warmer and drier-than-average...although northern sections of the region will experience temperature cool downs as storm systems swing eastward to the north as fall progresses. Confidence in this overall outlook is Above Average. As the autumn progresses into winter, expect temperatures to generally remain warmer-than-average area-wide, although by January/February northeastern sections of the region will likely be back in the normal range with areas of below average precipitation anticipated across eastern New Mexico/West Texas by December/January/February and could combine with Above Normal fuel loadings to begin a period of elevated large fire potential for these areas. Downslope flow conditions ahead of cold frontal passages typically lead to one-two day large fire events east of the New Mexico central mountains with high temperatures above to well above average and RH values quite low.

Rocky Mountain: Normal significant large fire potential is expected for the outlook period in all areas.

Warmer-than-average conditions emerged mainly over the eastern plains in October, while cooler-than-average conditions continued from northwestern Colorado into Wyoming. October precipitation was well below average or non-existent across southwestern Colorado and southwestern Wyoming, and deficits were also evident across southeastern Colorado/northwestern Kansas, north-central Wyoming, and northwestern South Dakota. Long range precipitation deficits (the last 90 days) were most significant across southwestern Colorado with patches of less than 50% of average observed.

Fuels available to burn this time of year are primarily categorized by dry grass and/or brush in the lower elevations. Mountain snow-pack has gotten off to an early start so far this fall over northern Colorado and northern/western Wyoming. As a result of the early season snowfall, compaction of fine fuels is likely in northern Colorado and western/northern Wyoming, and to a lesser extent across southern Colorado and the Black Hills where significant snow occurred earlier in the fall.

Short term model forecast precipitation into early November is reflective of a cool and active upper level northwest flow with embedded frontal systems generating snow at times, especially in the Colorado Front Range; while less precipitation is likely across the northern plains in a cool and breezy regime. Progressing further into the early portion of November, model forecasts reflect a westerly storm track focusing snowfall at times west of the Continental Divide, with less precipitation and breezy conditions from southeastern Colorado into Kansas. An anticipated weak La-Nina is influencing long range outlooks with a cooler and wetter bias overall during the fall and winter for northwest portions of the RMA, with values closer to average or drier and warmer-than-average for southern portions of the geographic area.

As the region moves into the typically slowest portion of the year in terms of large fire activity, forecast weather patterns and early fall trends so far are indicating average large fire risk this fall and winter. However, far southern portions of the area appear to be most susceptible to short duration wind driven grass fires during the remainder of the fall into the winter as a result of recent warm and dry conditions in combination with average to warmer and drier than average long range weather predictions.

Eastern Area: Normal significant large fire potential is expected across the Eastern Area through February.

30 day soil moisture and precipitation anomalies were below average across portions of southern Missouri, northern Minnesota, and the eastern half of New England. Well above average precipitation and soil moisture anomalies were in place much of Iowa, southern Minnesota, the LP of Michigan, northern Illinois and southwestern Wisconsin.

Colder and wetter than average conditions are forecast across the majority of the Eastern Area through the rest of the fall into the winter. The exception may be far western Iowa and Missouri where a drier trend may develop this winter.

100 and 1000 hour fuel moistures have dropped below seasonal averages across portions of northern Minnesota as well as the eastern half of New England. Elsewhere larger fuels were near seasonal averages across the majority of the Eastern Area. Regional RAWS stations showed Energy Release Component and Canadian Build-Up Indices at or below seasonal averages at month's end.

Southern Area: Below Normal significant large fire potential is expected across the Tennessee River Valley, Ohio River Valley, and the Blue Ridge Mountains during the entire outlook period. Below Normal significant large fire potential is expected across Florida, Puerto Rico, and areas surrounding the Arkansas/Oklahoma state lines in November. Below Normal significant large fire potential is expected across southern Florida in December. Above Normal significant large fire potential is expected across central Texas and Oklahoma in January and February. Elsewhere, expect Normal significant large fire potential during the outlook period.

An increase in precipitation potential is expected to return to central-northeastern portions of the region in November this pattern should persist through the remainder of the outlook period in these areas. Potential for a weakened Polar Vortex should result in periods of very cold conditions in January and February. However, unlike last year, the region is entering November without dire short/long-term drought and very dry fuel conditions.

With the exception of dry soil moisture anomalies across portions of Virginia, South Carolina, and Arkansas and their correlated minor short term drought situation, most of the region is not experiencing drought. 100 and 1000 hour fuel moistures are at or above average levels. This along with uneventful, seasonal weather patterns has produced an environment less favorable for ignition and potential as autumn progresses. However, high dead fuel loadings left behind by hurricanes Harvey, Irma, and Maria will continue to pose unique fire danger concerns for coastal Texas, Florida, and Puerto Rico.

Very cold temperature anomalies and rainfall from late October will help ease fire danger through at least mid-November. Relatively moist conditions and early month precipitation events will accelerate leaf drop and will help to keep fire potential in the Appalachian Mountains under control. Drier than average trends across mainly our southern states will at times produce higher initial attack.

Looking ahead to December, the warmer and drier-than-average conditions will continue west of the Mississippi River should result in increasingly dry fuel conditions. Texas particularly will need to be monitored for windy/low RH conditions as the greatest fire risks for the region should remain in this area. High dead fuel loadings from this year's hurricane impacts will continue to be of special concern and bear monitoring (coastal Texas/Louisiana, and Florida).

Average to Below Average large fire potential is expected in January and February as winter conditions develop bringing frequent rain and some snow events to the Ohio and Tennessee River Valleys. Elsewhere across the region, precipitation amounts could be below average due to La Nina-like conditions in the Equatorial Pacific. Large fire potential could become elevated in some areas, especially across north central Texas and Oklahoma.

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>