



National Significant Wildland Fire Potential Outlook

Predictive Services
National Interagency Fire Center



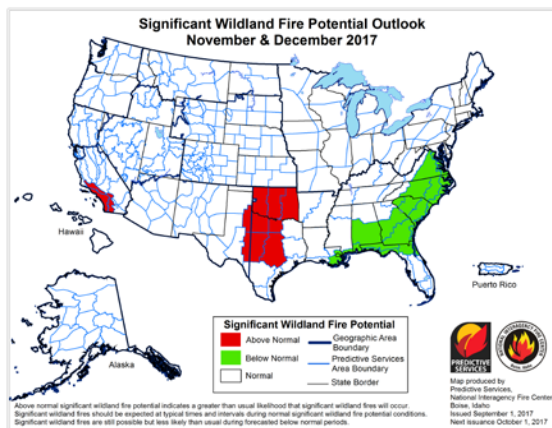
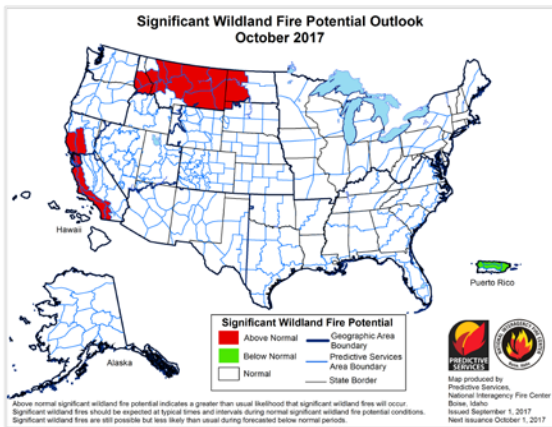
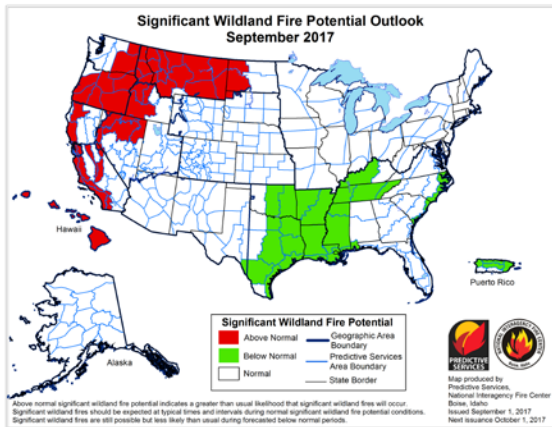
Issued: September 1, 2017

Next Issuance: October 1, 2017

Outlook Period – September, October, and November through December 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.



The Western fire season is reaching its peak for 2017 as it enters September. While an active southwestern monsoon has curtailed activity in the Southwest and across portions of the central Rockies, above normal significant fire activity continues to be observed across portions of the Pacific Northwest, Northern Rockies, northern Great Basin and northern California. Fuel moisture levels and fire danger indices in these areas are at near-record to record levels for severity. While the frequency and density of lightning occurrence has begun its seasonal decline, occasional lightning bursts are still being observed. Most of the new lightning-caused fire starts are being effectively handled with initial attack, but a few are still developing into larger incidents that require additional resources. Drier and warmer than average conditions across the central Great Basin and Southern California are allowing for the fine fuels to become more receptive to fire activity. A slight upturn in initial attack activity is being observed in both areas. Cool and wet conditions have arrived in Alaska. Its season has effectively ended.

Precipitation received was generally well below average across the Pacific Northwest, Northern Rockies, Great Basin and California in August as most areas received less than 25 percent of normal rainfall. Once exception to this was the Sierra Mountains in California where several episodes of wet convection produced rainfall amounts that were above average. Across the central Rockies and the Southwest, precipitation amounts were near average. Temperature extremes were less frequent in August than in July. For the month, average temperatures were only a few degrees above average.

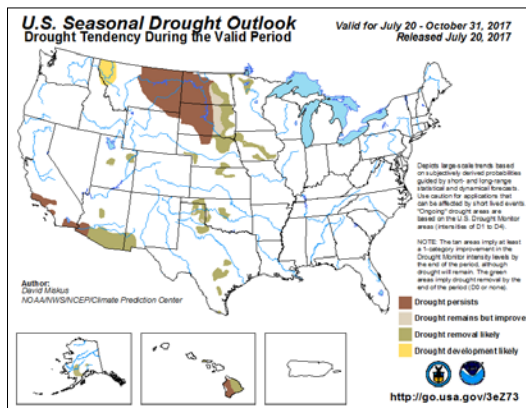
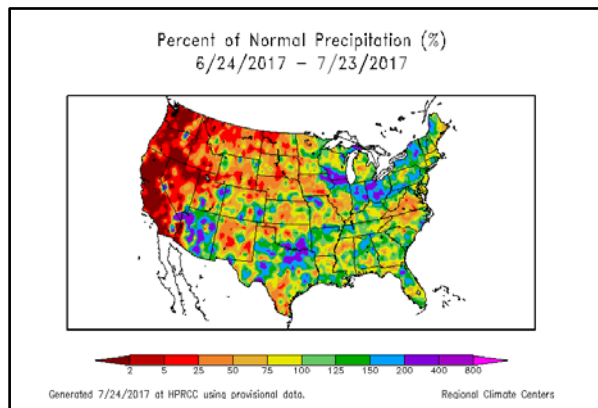
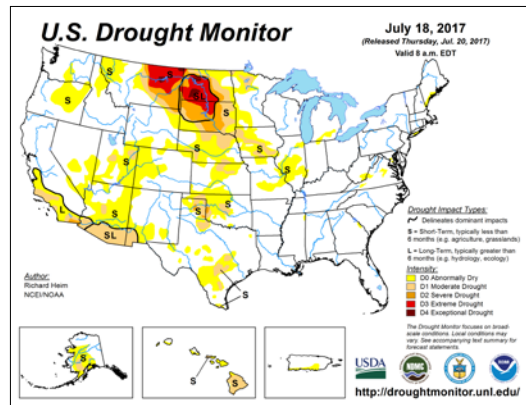
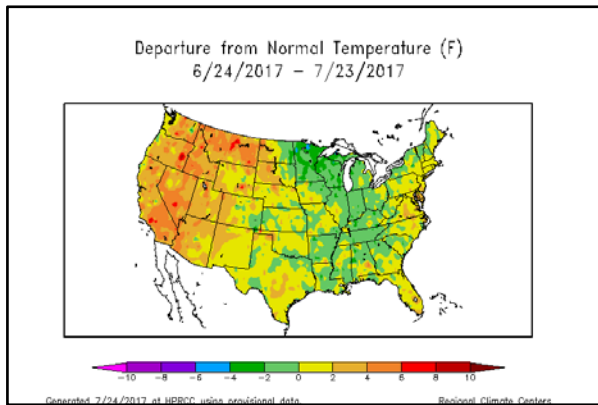
Fire season will peak by mid-September as the fuels remain much drier than average and as existing precipitation trends continue. By mid-September decreasing solar radiation received and longer nights will allow for fuel moistures to begin recovering. Should a season-slowng weather event not occur, this will be sufficient to allow for the fire activity across the northwestern states to begin to decrease significantly late in

the month. Significant large fire activity will remain possible in foehn wind-prone areas like the Rocky Mountain Front and across Southern California through November and will be event-driven should they occur.

Past Weather and Drought

Temperatures across the West averaged two to six degrees above normal during August as two significant thermal ridge events produced hot and very dry conditions that further dried and cured fuels. Wind events, while not frequent, did occur and were focused over the northwestern corner of the nation. While not severe in intensity, the winds were enough to drive fire activity. While the West was warmer than average, the remainder of the country was generally cooler than average with the coolest anomalies observed across the central Great Plains where temperatures were nearly six degrees below normal for the month. Across the western half of the nation, precipitation was well below average with many locations having received less than 25 percent of normal. Two exceptions to this were the Sierra Mountains in California, where precipitation was above average, and the Southwest where an active monsoon continued to produce rainfall amounts that were closer to average. Across the Great Plains, precipitation amounts received were well above average. In the East, amounts received were near-normal.

Drought conditions across the Pacific Northwest and the Northern Rockies worsened in August beneath the hot and dry ridge events. Extreme to exceptional drought was observed from central Montana east into western North Dakota. Drought conditions across the remainder of the Great Plains generally showed some improvement during the month. Some improvement was also observed across the Four Corners Region as the monsoon remained very active for most of the month. The remainder of the Lower 48 showed little change in drought conditions from what was observed at the end of July.



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 be in a neutral state. Latest model forecasts show the existing conditions persisting through the upcoming fall and winter.

Overall warmer than average conditions are expected across the contiguous states and Alaska in August as the presence of high pressure ridges remains the dominant feature. One exception to this could be the eastern portion of the Four Corners Region where a continued monsoonal flow is expected to persist through September before waning for the season. A moister than average flow should keep temperatures closer to normal. Looking nationally, a continuance of existing precipitation trends is expected for the remainder of the nation as the western half of the country and most of Alaska remain drier than average while the eastern half of the country remains either average or slightly wetter than average.

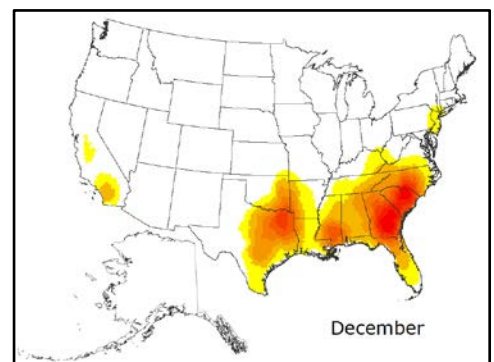
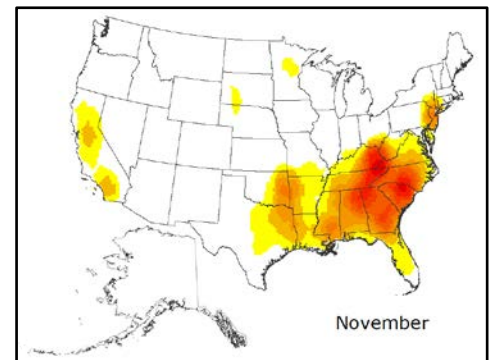
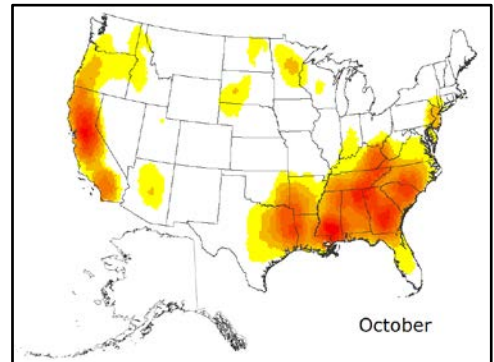
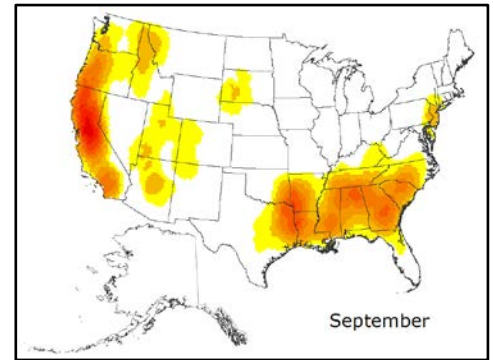
Looking beyond September, the remainder of autumn 2017 into December is expected to exhibit overall warmer than average conditions for the western states and near to below average temperatures across the central and eastern states except across Florida, Georgia and the coastal portions of the Carolinas where above average temperatures are expected. Precipitation patterns will trend toward below average across the southern half of the nation, while trends toward above average are expected across the northern tier by December. In Alaska, temperatures will trend toward below average and precipitation toward above average during the outlook period.

Geographic Area Forecasts

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

The U.S. Drought monitor is showing an area of abnormally dry over much of South Central and the Kenai Peninsula and a small area near Ft Yukon. Recent rains have alleviated dryness of fine fuels and upper duff and fire danger is low through most of the state, though deeper drying persists in the Upper Yukon Valley. August saw a switch from a warm, humid late summer pattern to a cool, showery typical August pattern with few ignitions. The central Upper Yukon Valley continues to be the driest region over the past three months with deeper drying but the recent rain has limited any chances of new fires or much fire spread.

In much of Alaska, cool and damp weather has dominated. Calculations of the Canadian Forest Fire Danger Rating system are being computed over all of Alaska but by the end of September the stations in the far north may be ended due to freeze up. Fuel dryness and fire potential are greatest in the Upper Yukon Valley with higher Drought Code (DC) values are exhibiting the deeper drying. The whole of the state has low to moderate Duff Moisture Codes (DMCs) indicating that the upper layers of duff are quite moist.



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)

Northwest: Above Normal significant large fire potential for the entirety of Oregon, except for the northwest corner, and also for eastern Washington is expected for September followed by Normal significant large fire potential. Elsewhere, expect Normal significant large fire potential.

Temperatures for the geographic area rose above average in late June and remained elevated through July and August. Precipitation since mid-June has been well below average with some stations reporting no precipitation in the last 60 days. The heaviest rain since mid-June has been near the California/Oregon and was associated with convective storms. Portland and Seattle set records for the number of consecutive days without rain in August. The latest climate outlooks indicate that temperatures for region are most likely to continue to be above average through November. For December, near-average temperatures are expected. Precipitation is likely to be below average for September and possibly above average for the remainder of the outlook period.

Fuels have been critically dry in most areas since mid-June. 1000 hour fuel moisture values have reached record low values in a number of PSAs due to the dry conditions. ERC values for those same PSAs have remained consistently above average, touching or exceeding record values in July and August. Live fuel moisture levels are below 100%.

The northwest geographic area is at the peak of fire activity in late August due to extreme fire danger from lack of rainfall. High fire danger is expected to persist into September. A decline in fire activity is expected after about the 10th of September.

Northern California and Hawaii: Above Normal significant large fire potential is expected for the northwestern mountains, Mendocino National Forest and the Hawaiian Islands for September. Elsewhere expect Normal potential. Normal significant large fire potential is expected in all areas October through December except across southwestern areas where elevated potential will linger into October before diminishing.

Hot and very dry conditions continued throughout region in August. Little change in the existing pattern is expected during September as the forecast continues to call for a continuation the preexisting conditions. Fire activity across the region continues to be very active entering fall. As a result of the existing conditions along with the forecasted weather, the area for above normal significant fire potential has been expanded to include the northwestern mountains in September. Eastern areas should see a reduction in large fire potential as lightning events tail off and as nights get colder and longer during September. In October, passing wet cold fronts will begin to affect northern areas, allowing for them to return to normal significant fire potential. Lower elevation areas farther south will still feel the effects of warm dry weather and a robust cured grass crop in October, so above normal significant fire potential will continue there. By November, the potential for large fire development and growth will return to normal levels as the transition to winter begins.

In Hawaii below normal rainfall this summer has allowed abnormally dry and drought conditions to spread throughout the Hawai'iian Islands. Little change in weather patterns is expected in September. Therefore, with drier than normal fuel conditions continuing, all areas of the state will have above normal significant fire potential in September. With ENSO-neutral conditions expected to continue, a normal start to the rainy season is expected in October. When this occurs, all areas will return to normal conditions for the remainder of the outlook period.

Southern California: Above Normal significant large fire potential is expected along coastal areas through October followed by a return to Normal potential in November and December in all areas except Santa Ana Wind prone locations. Above Normal significant large fire potential is also expected across the Sierras in September before returning to Normal potential. Then a return to Normal potential is expected.

August started off hot and dry as high pressure became centered over Northern California during the first few days of the month. A weak trough developed along the West Coast by the second week of the month and this weather feature dominated the upper air pattern for much of the remainder of the month. This

resulted in a period of unusually cool weather across the inland areas with a deep marine layer along the coast. There were several days when the marine layer spread into the lower coastal slopes which for mid-August, is rather rare. This extended period of cooler weather caused the dead fuel moisture to gradually recover to near normal, or in some areas, above normal levels from the near record low values observed at the start of August. As a result, there was a significant decrease in the overall fire activity with very few starts going beyond the initial attack stage. Thunderstorm activity was generally less than normal for the month but the Sierra did experienced isolated convection most days in August.

September will be an active month weather wise as this time of year serves as a transition period from late summer into early fall. Above average temperatures are expected for much of the month and there will likely be at least 1 or 2 more surges of subtropical moisture into the region for a threat of afternoon thunderstorms over the mountains and deserts. September also marks the start of Santa Ana season across Southern California with 1 or 2 offshore wind events possible. The remainder of the fall looks warm and dry with a near normal number of Santa Ana wind events expected. This fall, the potential for large wind driven fires will be higher than in recent years due to the abundance of grass across the southern portion of the state.

Therefore, fire potential will remain above normal across much of the region through September with a gradual return to near-normal conditions across the central portions of the state in October. November could still be active in the south if wetting rains are delayed. However by December, near normal fire activity is anticipated as shorter daylight hours and cooler weather will significantly reduce the likelihood of new ignitions.

Northern Rockies: Above Normal significant large fire potential is expected in all areas except Yellowstone National Park and eastern North Dakota in September where Normal Potential is expected. In October Above Normal significant large fire potential will continue across the southern Idaho Panhandle and across most of Montana, except the Kootenai Region and Southwest Montana. Western North Dakota will also experience elevated potential in October as well. November and December will feature Normal significant large fire potential in all areas.

Critical "flash drought" conditions persist in the western half of the region, due to warmer than average temperatures and lower than average precipitation over the past month. Long term Extreme to Exceptional Drought continues over most of eastern Montana into western North Dakota, in spite of convective moisture received during the past month.

ENSO-neutral conditions have persisted since mid-winter, and are forecast to persist through the outlook period and into the coming winter. However, anomalously strong and further northward extending high pressure ridging from the southwestern states has been persisting over the western half of the region, and is forecast to continue to linger for at least another 10-14 days before any beneficial wetting rainfall event can occur. Looking beyond mid-September, NWS long-range temperature and precipitation outlooks depict warmer than average temperatures persisting region-wide into November, but with near-average precipitation

Exceptionally dry conditions persist over the western half of the region entering September as many areas are reflecting record severe indices with Southwest Montana and Yellowstone National Park being the only exceptions. ERCs are in a similar critical status, east into central Montana. Further east, over eastern Montana and western North Dakota, fuels dryness is still very critical, but not quite as extreme. Eastern North Dakota's fuels are at more typical levels for this time of year, due to the increase in wet thunderstorm activity that has occurred there over the past month

Given the likelihood of warmer than average temperatures persisting into October, even average precipitation will not be enough to overcome the effects of the significant drought status present over most of the region. Thus above-average potential will persist through September for all of North Idaho and Montana, with the only areas of normal potential in Yellowstone National Park and Eastern North Dakota. In October, given the drought status present, grass-fire potential will be heightened in Central Montana through Western North Dakota, while lower elevations in North Idaho and Western Montana

may also hold on to well-above average potential, due to the exceptionally dry fuels. For November and December, most of the region will be “normal/out of season”, but there still may well be heightened grass-fire potential in November from Central Montana east into Western North Dakota.

Great Basin: Above Normal significant large fire potential is expected across northern and western Nevada and southwestern Idaho in September followed by a return to Normal potential for October and November. All other areas can expect Normal Significant large fire potential for the outlook period.

Hot and dry conditions will continue across the region for the first half of September as the high pressure ridge remains amplified over the West. As the month progresses, prefrontal wind events will become more common. October is expected to be more active with an increased chance for typical fall storms and wetting rains, especially across the northern areas.

Due to a record wet winter across parts of the northern half of the Great Basin, an extraordinary grass crop 200-300% of normal has been reported across the lower to mid elevations, particularly across western and northern Nevada into southern Idaho and northwest Utah. Due to warm and dry conditions across Idaho into northern and western Nevada and northwest Utah, fuels have dried significantly to critical levels. Fire Danger indices are near normal for much of the Great Basin, with slightly above normal values over the mountains of western Idaho. Near to above normal values will likely persist for the first half of September.

Due to the combination of warm, dry weather heading into September and the much above normal grass crop, above normal fire potential is expected over northern/western NV, portions of northwest Utah and western Idaho for September. As fall like storms move into the Great Basin during October and November, in combination with longer nights and cooler temperatures, the overall fire potential should decrease to near normal. There may be one exception to this forecast and that is over far western Nevada along the Sierra Front where, due to the above normal grass crop, large fires are possible during any dry, windy event.

Southwest: Normal significant large fire potential is expected region-wide from September through December.

Over the past month high temperatures have been generally near to slightly below average across much of the region. The warmest areas compared to average were across portions of southwestern New Mexico as well as southern Arizona while the cooler locations within the region ranged from northern New Mexico eastward into northeastern New Mexico and far north Texas. Over the past month areas across western and northwestern Arizona exhibited the driest conditions while areas across central Arizona experienced the wettest conditions. Further east, across the eastern half or so of New Mexico, 150-400% of average rainfall occurred.

A dry and hot June nearly area-wide took an abrupt turn into the summer thunderstorm season in early-mid July ending the large fire season across the Southwest Area with rapidly increasing humidity values. Through late August, the monsoon has brought ample rainfall to areas along and west of the divide region with drier conditions observed across the western half of New Mexico...despite these areas remaining seasonally humid. In spite of the recent dryness across parts of Arizona into the Four Corners, large fire activity is not expected to substantially increase through the remainder of the summer into the fall as the expectation is for continued monsoonal moisture well into September. Confidence in this overall outlook is slightly Above Average. As the autumn season kicks in, expect temperatures to gradually head back to warmer than average with a continued wetter than average signal well into September. By October and November, above average temperatures are expected with a return to drier overall conditions.

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

Temperature anomalies during August displayed a major shift to below average especially east of the Continental Divide. August precipitation was above average overall from the Continental Divide

eastward, while deficits west of the divide were prevalent across southwestern Colorado. Long range precipitation deficits over the past 90 days were most significant across central Kansas, western Colorado and southwestern Wyoming.

Forecast data shows subtropical moisture continuing to produce convection early in the month across the region. A northwesterly upper level flow is expected in areas west of the divide and should result in a transition to a warmer and drier than average condition in western areas while more seasonal temperatures and precipitation are expected east of the divide. Long range outlooks point towards an overall pattern of average temperatures and precipitation during the remainder of the fall into early winter.

ERC's were near-average at month's end. Live fuel indices were well above average for this time of year. Grasses and brush across most of the region was cured in the lower elevations and transitioning to cured in the higher elevations.

An overall wet and cool month in August has allowed fuel moisture values to recover from drier conditions experienced earlier in the summer. Seasonably average temperatures and periodic precipitation events are expected east of the Continental Divide during the first half of September. Conditions in September west of the divide are predicted to get off to a relatively dry, warm start but should recover later in the month. The combination of antecedent fuel conditions, near average temperatures and precipitation received should lead to overall Normal significant large fire potential in September both west and east of the divide. Average temperature and precipitation trends predicted for the remainder of the fall into early winter point towards average large fire risk as well, which typically reaches a minimum in November and December.

Eastern Area: Normal significant large fire potential is expected across the Eastern Area through December. If dry conditions stay in place over portions of the western Mississippi Valley, periods of above normal fire potential may occur into the fall.

Soil moisture and precipitation anomalies were below normal across northwestern Minnesota, southwestern Wisconsin, portions of Indiana and northwestern Ohio, as well parts of the New England Metro area towards the end of August. Well above normal precipitation and soil moisture anomalies were in place across west central and southwestern Minnesota, western Missouri, and the southeastern Mid-Atlantic States. Near normal precipitation and soil moisture anomalies were in place over the rest of the Eastern Area towards the end of August. 100 and 1000 hour fuel moisture levels were at or above seasonal averages over much of the region towards the end of June 2017. By late August, they had dipped below seasonal normals across the drier portions of the geographic area.

Cooler than average conditions are forecast across the Eastern Area into the fall. Drier than average trends may develop across the western Mississippi Valley in October. Otherwise wetter than average to near average precipitation trends are expected over the region this fall.

The 2017 fall fire season may begin earlier than normal across northwestern Minnesota, southwestern Wisconsin, parts of Indiana and northwestern Ohio, and portions of the New England Metro. However, normal activity is expected.

Southern Area: Below Normal significant large fire potential is expected across the Ark-La-Tex, southeastern Texas, Florida, the Outer Banks along the Carolina coast and Puerto Rico in September. Normal significant fire potential is expected in all areas except Puerto Rico in October where Below Normal significant fire potential is expected. In November and December, Above Normal significant large fire potential is expected across north central Texas and most of Oklahoma, and Below Normal significant large fire potential is expected across portions of the Deep South in November and December.

Drought conditions have been mitigated across most of the region over the past several months as several stalled fronts brought significant rainfall amounts to the Southern Area. Existing trends are

expected to continue as the region enters the peak of the Atlantic Basin's tropical season in early September. The preexisting ENSO neutral conditions are conducive for tropical and non-tropical development near coastal areas early in the outlook period. The combination of the potential increase in system development with the passage of periodic wet cold fronts will lead to a potential for above average precipitation received in September. Latest data suggests that following the tropical peak, a drier pattern may develop for mid-late fall across central Texas and Oklahoma. As a result, fire potential will become elevated during the seasonal transition. However, preexisting moisture received is expected to be sufficient to carry the region through a short, dry stretch. Temperatures should be near to slightly above normal for the outlook period.

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>