

National Significant Wildland Fire Potential Outlook

Predictive Services
National Interagency Fire Center

Issued: February 1, 2019
Next Issuance: March 1, 2019



Outlook Period – February, March and April through May 2019

Executive Summary

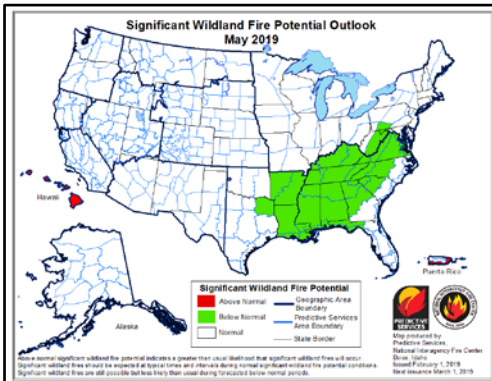
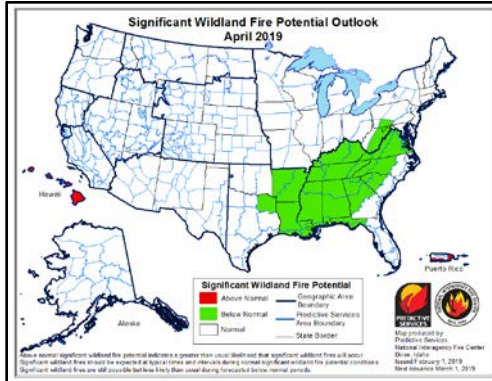
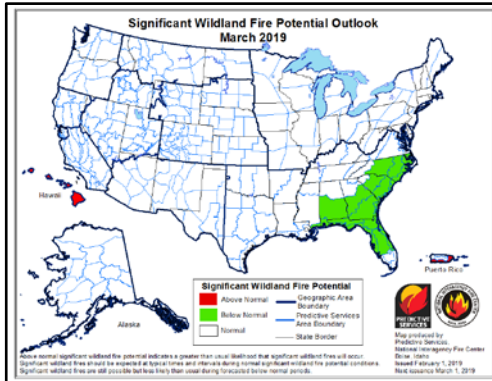
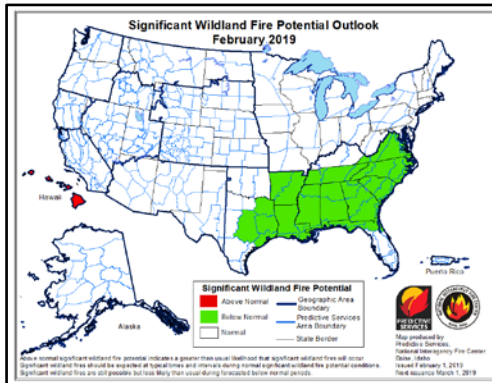
The significant wildland fire potential forecasts included in this outlook represent the cumulative forecasts of the ten Geographic Area Predictive Services units and the National Predictive Services unit.

The nation remained largely out of fire season in January. Fire activity was well below average for the month. Activity observed was minimal and limited mainly to Florida and Puerto Rico. Overall, the nation was cool and moist with some exceptions. Noteworthy weather events that occurred were an unusually strong arctic weather episode across the upper Midwest during the last week of the month. Temperatures in some areas fell to be nearly 20 degrees below average. A series of very wet systems moved across California and the Great Basin mid-month and raised mountain snowpack levels to be above average. The moisture received also reduced the drought severity across the Four Corners region.

With the exception of the late month cold snap, January's temperatures were generally 2 to 6 degrees above average across most of the country except for the Four Corners region which experienced temperatures that were 2 to 4 degrees below average. The warmest departures from average were observed across eastern Montana and along the Alabama and Georgia state lines. Precipitation patterns were a little more ambiguous. Generally speaking, amounts were between 125% and 400% of average from the eastern Great Plains to the Atlantic Coast. Exceptions to this were found across Iowa, Minnesota, and northern Wisconsin where 25% to 50% of average amounts were received. In the West, the Four Corners region was wetter than average having received 100% to 200% of average precipitation. Elsewhere, amounts were near average.

Fire activity during February is at a minimum. Critical periods and activity are of short duration and are weather event driven. Beginning late February and extending through March, fire activity begins to pick up across portions of the central and southern Great Plains. Fuel loading and dryness become an increasingly important factor until greenup begins. Moving through April, greenup takes hold in these areas and the focus of the early activity shifts further north into the northern Great Plains and west into eastern fringes of the Southwest.

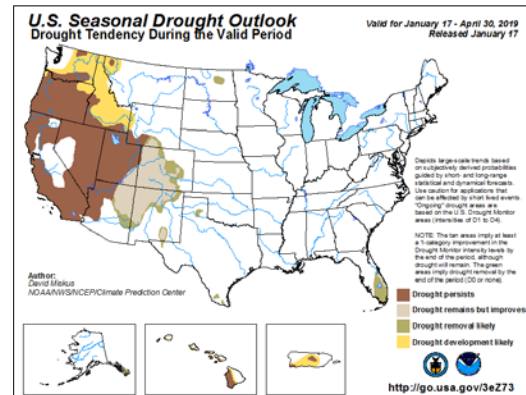
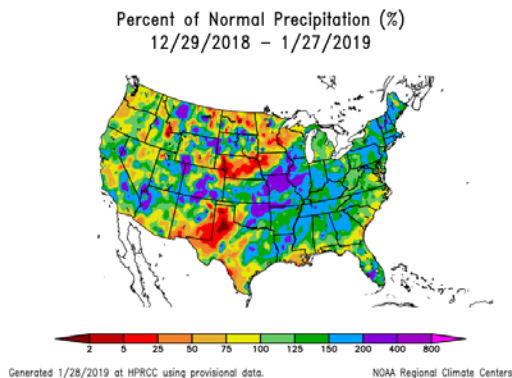
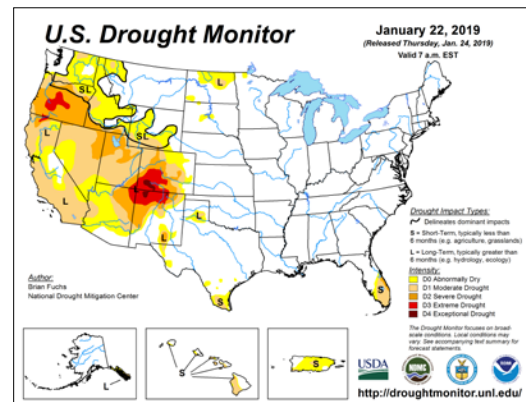
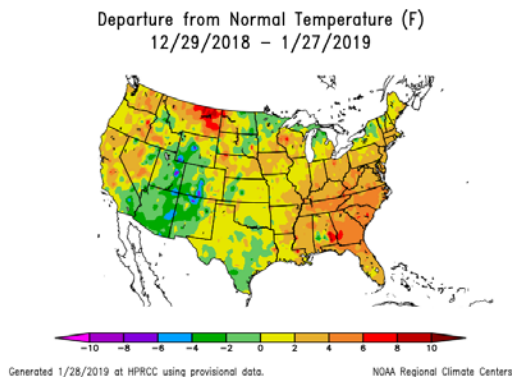
Fire activity across the southwestern states increases through May as fuels cure and dry. In the north, Alaska begins to experience fire activity across its interior as residual snowpack is lost and exposes drying fuels. Fire activity across the northern Great Plains wanes with the onset of greenup. These typical conditions for late winter and spring are expected in 2019.



Past Weather and Drought

Temperatures across the southeastern states were generally 3 to 7 degrees above average in January. Elsewhere, along the East Coast, temperatures were closer to average. Generally, the West experienced above average temperatures as well, especially across Montana and along the West Coast where values ranged between 2 and 6 degrees above average. Colder than average conditions were observed across the eastern Great Basin and the Four Corners region. A frigid, arctic airmass moved into the upper Midwest the last week of the month and brought exceptionally cold conditions that reflected large areas that experienced temperatures that were at least 15-20 degrees below average. Precipitation trends during the month showed that the eastern half of the country received between above average precipitation. The highest anomalies observed were across the Mississippi River valley where nearly 400% of average precipitation was received while values along the coast were closer to average. Precipitation amounts received across the Great Plains varied considerably. North Dakota, Nebraska, West Texas, and eastern New Mexico received less than 50% of average precipitation. South Dakota, Kansas, and most of Oklahoma received at least 150% of average precipitation. Across the West, amounts received were generally near average.

The western drought persisted in January, but there were signs of improvement in drought intensity. The overall areal coverage of the drought did not decrease. However, the severity did across Oregon, northern California, and the Four Corners region. Puerto Rico also continued to observe moderately dry conditions. By month's end, the central portion of the island had entered moderate drought. Portions of Hawaii remained under moderate drought as well. The Alaskan Panhandle saw no change in its preexisting drought conditions.



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

Latest sea surface temperature anomalies across the equatorial Pacific Ocean indicate that the weak El Niño continues but has peaked and is beginning a gradual descent toward neutral conditions. Latest model forecasts show that the event will continue through the spring before dropping into a neutral state by mid-summer. It should be noted that the past three monthly issuances of the model data have shown an overall downward trend in event intensity and thus a sooner arrival of neutral conditions.

Impacts from a fading El Niño event on late winter and spring weather conditions vary. They typically result in below average snowpack across the northwestern quarter of the nation and above average snowpack across the central portion of the West. The southern tier of the nation tends to experience wetter than average conditions, except possibly across West Texas which can be drier than average. The northern tier of the nation can be warmer than average which would promote a faster melting rate of the snowpack in the mountains across the Pacific Northwest and the Northern Rockies.

Geographic Area Forecasts

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

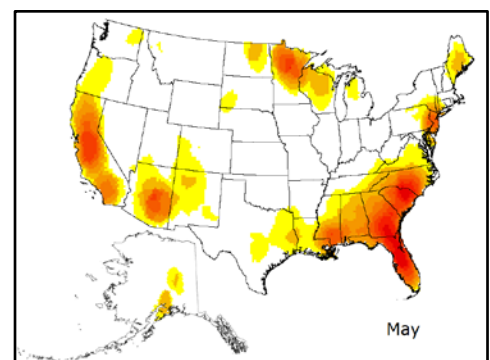
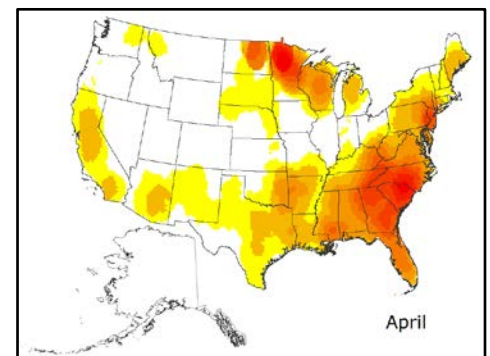
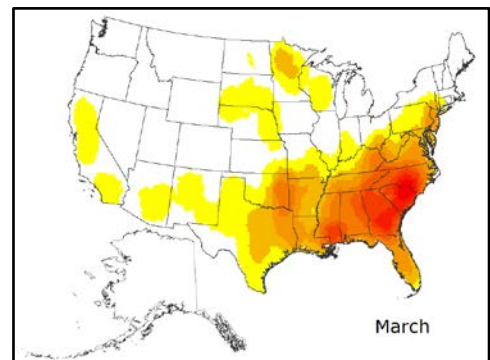
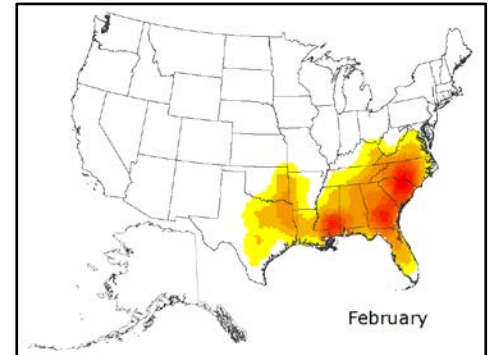
The U.S. Drought Monitor shows an area of Abnormally Dry conditions in the northern Alaska Panhandle and Severe Drought conditions in the southern Panhandle. The remainder of the state has received ample precipitation, though snowpack levels are well below average in most areas.

Warmer than average conditions are expected for all of Alaska this winter, which has been typical due to the changing climate. Long range forecasts indicate a likelihood for higher than average precipitation along much of the Gulf Coast.

Calculations of the Canadian Forest Fire Danger Rating System have all been turned off for the season as temperatures are below freezing, the ground is frozen or even snow-covered in most areas, and ignitions are unlikely. Alaska is out of fire season with little to no fire activity through the winter, which is normal.

Northwest: Normal significant large fire potential is expected across the region during the outlook period.

Most areas have been warmer than average except for persistent cool conditions over the basins and ranges of central and southeastern Oregon. Precipitation has been below average for the majority of the western half of the region this past month. Snowfall accumulation at higher elevations has been spotty. Snowpack in late January is well below average in the reporting basins of the Cascades and northeastern Oregon but is closer to average in the higher elevation basins of



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)

southeastern Oregon and northeastern Washington. Reflecting the poor accumulation of precipitation so far this wet season: All of Oregon is designated in various designations of drought and eastern Washington as well.

The latest climate outlooks suggest warmer and drier than average conditions are likely to persist over the Pacific Northwest through spring. Snow levels are likely to be generally higher than average through the period.

Fire danger is too low for naturally ignited wildfires over the region. However, during dry spells early in 2019 fire danger could rise sufficiently to raise the risk of prescribed fire escapes during strong winds coupled with low humidity. This is most likely west of the Cascades but is possible anywhere during very windy conditions. Fire management units are advised to request spot weather forecasts and check them carefully during prescribed fire projects.

Northern California and Hawaii: Normal significant large fire potential is expected across mainland portions of the region and Hawaii during the outlook period except across Hawaii where Above Normal potential will exist.

The outlook for the period from February through May is for slightly warmer and drier than average conditions, but with the potential of above average April rainfall. This outlook would lead to another spring with abundant fine fuel growth at elevations below 3500 ft. In general, considering soil and fuel moisture conditions and the expected weather, fire activity should remain minimal to non-existent during the outlook period, which is average for this time of year. The greatest threat of significant fires during the winter comes when dry windy conditions develop after two or more weeks of dry weather when ignitions occur in beds of continuous dead and dormant brush and/or cured annual grasses. These rare but not unheard of cases occur on a local scale and are only forecast accurately on a short term basis. All areas will have Normal Significant Fire Potential from through May

Sea surface temperatures (SSTs) surrounding the Hawaiian Islands continue to be near to slightly warmer than average, and temperatures throughout the Hawaiian Islands were above average in January. Average temperatures throughout the region are expected to continue slightly above average through May. El Niño events, such as the current one, tend to produce drier than average conditions during the winter and spring, which is the Hawaiian rainy season. Rainfall trended to well below average last month, and the official NOAA/NWS outlook for Hawaii follows historic correlations, calling for below average rainfall through the spring months. Fuel loading has been above average since last spring, and fire activity was above average during the drier stretches of the summer. Therefore, as dry weather continues Significant Fire Potential will be Above Average through May, and likely beyond.

Southern California: Normal significant large fire potential is expected across the region during the outlook period.

A much wetter weather pattern arrived at the beginning of the new calendar year. An active jet stream was able to scoop up significant subtropical moisture and led to moderate to heavy rainfall which favored the south and west slopes. The storms were frequent enough to generate wetting rains in all areas outside the desert. There were two windy periods in middle of the month, but they were of too short a duration to alter fuel moisture much.

Long range models indicate active weather will continue during the first week or so of February, but afterward, a pattern of deep troughing may develop over the eastern half of the country. This may result in warmer and drier than normal weather in late February in to March. But overall, most long term guidance is indicating precipitation to average near to just slightly below normal the rest of the outlook period. Temperatures are expected to be near to slightly above normal heading into spring. Offshore wind events will likely continue at a near to slightly below normal frequency through February and March.

Prior to the onset of the widespread precipitation of early January, dead fuel moisture was close to record low readings over interior areas as well as most of Southern California. However, after the rainfall (which

exceeded 7 inches across the elevated terrain), dead fuel moisture recovered quickly. At the current time, most areas are experiencing close to normal fuel moisture values. Fine live fuels, such as seasonal grasses are growing at a rapid rate. A high amount of grass growth may load the fuel beds with a significant amount of material by the spring, which may, in turn, lead to a *busy grass fire season in late May or June*. Until then, with the expectation of near normal precipitation and offshore wind event frequency, look for near normal large fire potential the next 4 months.

Northern Rockies: Normal significant large fire potential is expected across the region during the outlook period.

Late autumn and early winter brought above average precipitation east of the Continental Divide, but a stark contrast was observed west of the Divide with well below average precipitation received across north central Idaho and western Montana. That was particularly true for the month of January across southwestern Montana where 25% to 50% of average precipitation had fallen. Temperatures continued the trend of well above average across most of the Northern Rockies, especially across central and eastern Montana. Exceptions to this were along the Bitterroot Divide separating and extreme eastern North Dakota. According to the U. S. Drought Monitor, isolated pockets of moderate drought persist in the Idaho Panhandle and north central North Dakota, surrounded by larger tracts of abnormally dry conditions.

Seasonal temperature and precipitation outlooks depict above average temperatures for the entire outlook period through May, especially across the western PSAs. Likelihoods for above average temperatures decrease in April and May for eastern Montana and North Dakota, however. The outlooks don't show any strong signals one way or the other in terms of whether precipitation probabilities will favor above or below-average trends. Historically, mountain snowpack during weak El Niño winters is below average in Snow Water Equivalent (SWE) for the region by April 1, and this year is still anticipated to be about 75% of the 30-year average.

Currently fuels are snow covered across most of the Northern Rockies. For the current water year, which began October 1, snowpack along and east of the Divide is tracking near average, with 80% to 90% elsewhere, even across southwestern Montana.

Typically in February during El Niño winters, the region sees a lull in precipitation and warmer than average temperatures. This may produce an increase in fire activity; however, it is expected to remain cold and moist enough to limit significant fire potential. In March and April significant plains grass and brushfire potential may occur as was observed in 2015. That is dependent on wind events and fuel exposure and bears watching during the pregreenup season in April. May will bring greenup conditions to the fuels and keep significant wildland fire potential Normal.

Great Basin: Normal significant large fire potential is expected across the region during the outlook period.

Drier than average precipitation along with warmer than average temperatures were experienced in January across the region. Noteworthy drought conditions were observed across most of Utah and southwestern Idaho where Exceptional drought conditions persisted. Despite dryness in some areas, due to climatology and long nights, there are no concerns as the region is in the coldest, most moist period of the year.

El Niño conditions will persist through early 2019. This could result in wetter than average conditions across our southern areas from late winter into spring. This could lead to a possibility for a thicker grass crop in these areas. Conversely, northern areas should be near average wetness through May. The region is expected to remain largely out of season through May though periodic wind events could trigger some occasional, short-duration fires in prone areas.

Southwest: Normal significant large fire potential is expected across the region during the outlook period.

Given the ongoing El Niño state in the eastern-central Pacific Ocean the overall expectation is for average to above average precipitation for the region west of the central mountain chain of New Mexico through

the forecast time-frame. Confidence in this overall outlook is above average as El Niño conditions have peaked and are now beginning a slow decline. The expectation is for overall temperatures to generally remain cooler than average through the forecast period although warmer than average readings will occur during drier periods. A good snowpack is expected to be in place by early-mid spring with any noteworthy increased fire potential most likely across the finer fuel regimes during the latter part of the outlook period. One area that bears watching is eastern New Mexico and West Texas where very dry conditions have developed. A gradual increase in fire activity in this area is possible through the outlook period especially on warm, dry, and breezy days when eastward moving weather systems move east from the southern Great Basin into the central Great Plains.

Rocky Mountain: Normal significant large fire potential is expected across the region during the outlook period.

The drier than average conditions observed across Nebraska, southeastern Wyoming, and northeastern Colorado in January while wetter than average conditions were observed in most other locations. Temperatures were generally within a few degrees of average.

Fuels are dormant across the region. Fire danger indices are generally of little use during the winter months as snow cover and/or frozen precipitation limit their utility. Snowpack as of late January across the mountains was near to above average overall, except below average in southwestern Colorado.

Long term forecasts for the winter into early spring lean towards an average to warmer than average temperature regime for northern portions of the area, and near average temperatures and near to slightly above average precipitation in the south.

Short term and long range outlooks for the winter into early spring point toward an average/out of season fire regime for the Rocky Mountain Area. Fire history for the geographic area typically shows a continued drop-off in large fires during February followed by an increasing pre-green fire risk mainly east of the Continental Divide by March into April with short duration wind driven fires. Above average fuel loading across the eastern plains may increase the risk of a slightly earlier than average onset to pre-green fire activity.

Eastern Area: Near to Below Normal fire potential is expected over the majority of the Eastern Area through the remainder of the winter season. However, Above Normal potential may develop over parts of the Mississippi Valley later this winter into the early spring fire season.

30 day soil moisture anomalies were well below average across parts of the Upper Mississippi Valley towards the end of January. Above average precipitation and soil moisture 30 day anomalies were in place over much of the southern tier of the Eastern Area.

Drier and colder than average conditions are forecast to persist into February across portions of western tier of the Eastern Area as a moderate El Niño episode lingers into 2019. Drier conditions are expected to redevelop over parts of the western tier February into March. Wetter than average conditions overall are forecast to continue over the southern and eastern tiers through the rest of the winter into the early spring.

100 and 1000 hour fuel moistures as well as Energy Release Components or Canadian Build-Up Indices were near or above/below seasonal average levels respectively towards the end of January over the majority of the Eastern Area. The spring 2019 fire season may begin earlier than average across parts of the Mississippi Valley if the forecast warmer and drier conditions come to fruition.

Southern Area: Below Normal significant wildland fire potential is expected throughout the outlook period except in areas shown on the maps above where Normal significant wildland fire potential is expected.

Overall wetter and warmer than average conditions persisted through January. An intrusion of cold air from the Great Plains brought pockets of snow to the region late month. Exceptions to this were southern Florida, and the western portions of Texas and Oklahoma. The overall wetter locations, which represent a

majority of the region, should lead to below average large fire potential through early spring as the El Niño event continues. However, the drier locations mentioned above will need to be closely monitored, especially during wind events that are typically brought on by the passage of dry cold fronts. For Puerto Rico, precipitation has been below average. This could produce additional drying that could lead to additional drying of the fuels during the late winter and early spring.

Generally speaking, fuels are at noncritical levels. Most of the region is drought-free except for portions of northeastern Oklahoma and southern Florida. As a result, fire activity has been minimal and is expected to continue to be so through the outlook period in most areas except for the northwestern corner of the region, southern Florida, and possibly parts of Puerto Rico.

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>