



National Significant Wildland Fire Potential Outlook

Predictive Services
National Interagency Fire Center

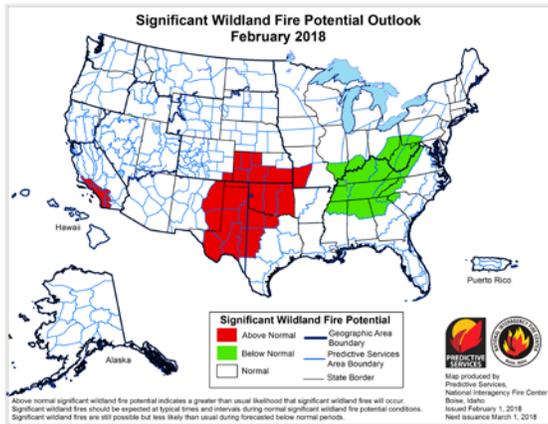


Issued: February 1, 2018
Next Issuance: March 1, 2018

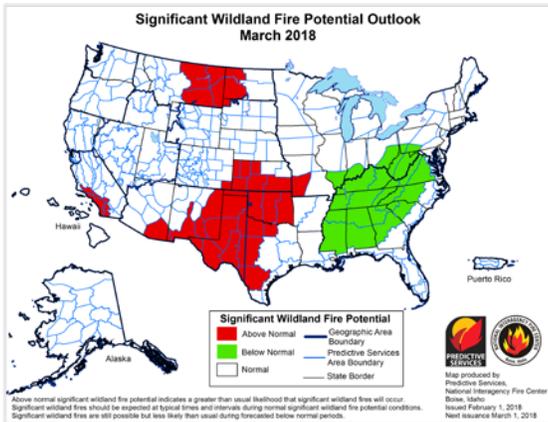
Outlook Period – February, March and April through May 2018

Executive Summary

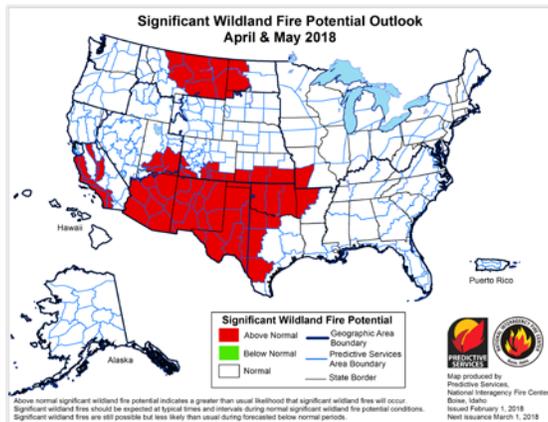
The significant wildland fire potential forecasts included in this outlook represent the cumulative forecasts of the ten Geographic Area Predictive Services units and the National Predictive Services unit.



Wildfire activity is likely to increase in February as is observed most years. During the early portions of the year it is typical for significant fires to begin to occur across the southern tier of the nation. Currently, the highest likelihood for above normal significant wildland fire potential is expected to be across portions of the central and southern Great Plains from Kansas south through Texas and west through southeastern Colorado and eastern New Mexico. Prolonged periods of dry conditions leading to drought intensification and expansion are expected to continue and lead to elevated large fire potential in these areas prior to spring greenup. Periods of special concern will be highlighted by passing weather systems that create periodic strong, westerly, downsloping winds. During such events, ignitions will be able to quickly become significant fires. Elevated large fire potential is also expected to continue across coastal portions of Southern California where preexisting dry conditions have left fuels in a very dry state.



Moving further into the outlook period, from March into May, the preexisting areas experiencing Above Normal large fire potential across the southern Plains will expand westward along the Mexican Border as drought conditions across the Southwest intensify. In addition, large fire potential across eastern Montana and western portions of the Dakotas will increase prior to greenup due to the ongoing severe drought conditions.

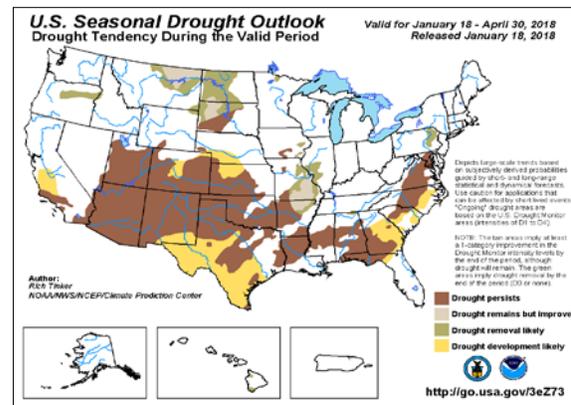
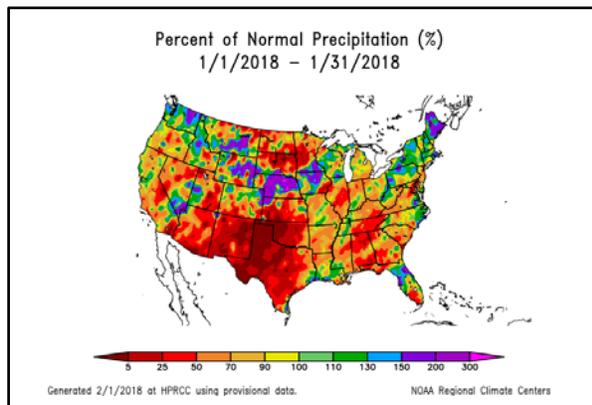
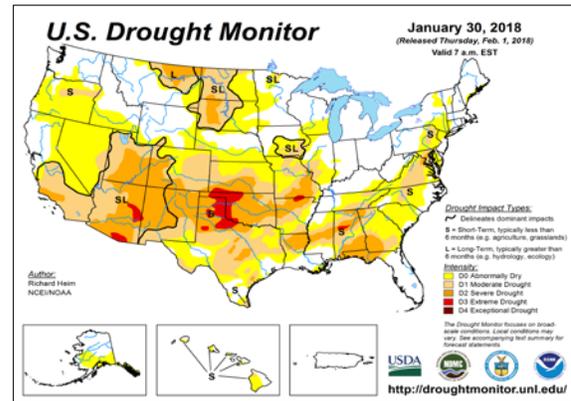
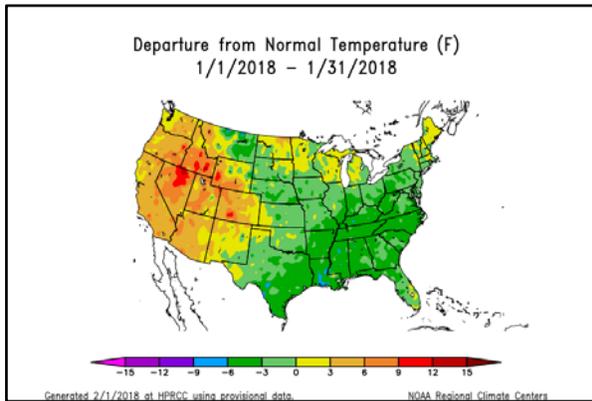


While most other regions of the country can expect Normal large fire potential, portions of the East from the Ohio River Valley south to the gulf coasts of Mississippi and Louisiana can expect Below Normal significant large fire potential through the outlook period. Heading into spring, cooler than average conditions across Alaska are expected to lead to a normal transition into fire season across the interior of the state.

Past Weather and Drought

The year began with a ridge of high pressure firmly entrenched over the West and a very deep, cold trough of low pressure over the East that allowed for several arctic cold fronts to move south in to the country from northern Canada. By January 18, all 50 states were reporting at least one location each with snow on the ground for the first time since 2010. Generally speaking, temperatures west of the Continental Divide were three to nine degrees above average for the first half of the month. East of the Divide and three to nine degrees below average east of the Divide. Temperatures moderated toward normal values during the second half of the month. Precipitation trends were less discernable. Generally, areas that experienced frequent frontal passages from the series of arctic fronts generally received precipitation amounts that were around 200 percent of normal. This included the northern Great Plains and New England. One extraordinarily wet system moved across Southern California early in the month and produced deadly debris flows near Los Angeles. The southern Great Plains remained a significant area of concern as most of the area remained very dry, receiving only 25 percent of normal precipitation (or less).

Drought change map data for January showed worsening drought conditions across the Four Corners Region, Texas, Oklahoma, and western Kansas. Developing drought conditions were being observed across Oregon and across portions of the Southeast. Preexisting drought conditions across the Dakotas did not worsen, but did not show improvement either. Significant improvement was observed across Montana, and the middle Mississippi and Red River basins. Drought outlook products suggest drought persistence in the areas above though Montana and Oregon could see some improvement. Preexisting drought conditions across the Dakotas are expected to also receive some drought relief by May.



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 show La Niña conditions in the equatorial Pacific Ocean. Latest model forecasts continue a slow trend toward neutral conditions by mid-spring.

Temperatures will generally remain above average across the southwestern states and along the West Coast through March before showing a trend toward average in April and then rising back to being above average for May. Long range data suggests that another series of cold troughs of low pressure may develop over the Great Plains and the East in February and March before yielding to patterns that would promote above average temperatures in May. Alaska should see a gradual trend from above average temperatures in late winter to below average temperatures by May. Expected precipitation trends suggest overall wetter than average conditions expected across both the northwestern states and the Great Lakes Region through the northeastern states. Overall drier than average conditions are expected across south central and southwestern portions of the Lower 48. In Alaska, near average precipitation is expected through May.

Geographic Area Forecasts

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

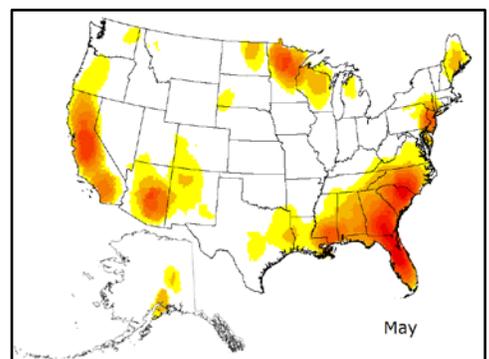
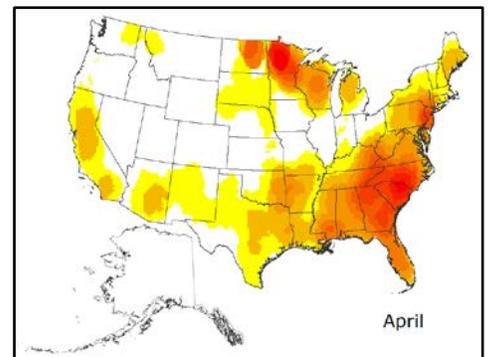
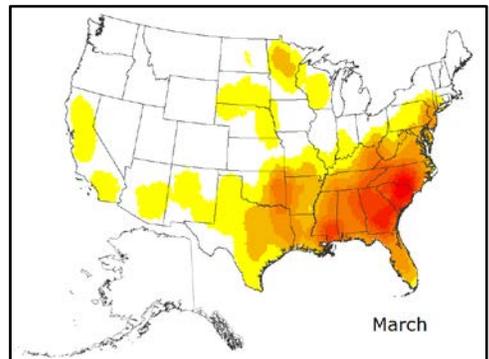
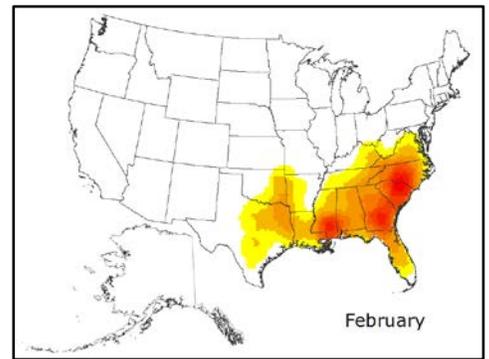
The U.S. Drought Monitor shows no drought or abnormally dry areas in Alaska. With warm weather occurring across much of Alaska through the first half of winter, only the end of January has finally brought colder temperatures. Snowfall has been near average, so most areas have their blanket of insulating snow.

Colder, more average temperatures are finally encompassing most of Alaska. The next couple of months will likely have highly variable temperatures, but with most of the state covered in snow, the spring looks like it will shape up in a normal fashion. At this time, it doesn't look as if extreme warm or cold is in the forecast through March. Based upon preexisting conditions and expected trends in the weather, Normal significant wildland fire potential is expected for this outlook period.

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

The first half of January 2018 proved to be quite warm and dry. A series of cold fronts moved across the region during the last half of the month and cooled the unusually warm temperatures and brought welcome precipitation. However, the month as a whole was warmer than average for the majority of the geographic area, especially across Oregon.

Precipitation varied across the geographic area during late January after a dry beginning to the month. Precipitation was near to above average for much of Washington and sections of northern Oregon. However, most of the remainder of Oregon accumulated less than



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)

average rainfall, particularly immediately east of the Oregon Cascades. Mountain snowpack across the region is average to slightly above average for the reporting sites in Washington but remains well below average for Oregon entering February. Most reporting basins in Oregon are reporting snow water equivalent accumulation less than half of average through month's end. Some reporting stations in Oregon are tracking near all-time minimums for late January.

Monthly and seasonal climate outlooks are mixed. The most likely scenario for February is a continuation of warmer-than-average temperatures for most of the region, especially for Oregon. For precipitation, accumulation is likely to be below average for the first half of February but closer to average March through May. Snow accumulation over Oregon is likely to remain below average, particularly near California. For Washington, snow accumulation is likely to be near average and possibly above average near the border with British Columbia

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

The region received near average precipitation in January, and temperatures were generally above average. The outlook for the period from February through April is for near to above average precipitation and above average temperatures. Precipitation is expected to drop off a bit faster than normal in May as temperatures continue to warm above seasonal values. Typically, little to no large fire activity occurs within the region during this period. Even if conditions are expected to be warmer and drier than normal in May it is expected that live fuel and soil moisture values will still be high enough to prevent large fire occurrence from increasing to Above Normal.

Sea surface temperatures (SSTs) surrounding the Hawai'ian Islands have been cooler than average, but dynamical forecast models expect SSTs to rebound to slightly above average during the outlook period. Temperatures throughout the islands are expected to be near average in February and slightly above average from March through May. Climatologists are forecasting a weak La Niña pattern through the winter months, then neutral conditions in the spring. Historical records show quite a variation in rainfall amounts during La Niña patterns. The current outlooks Hawai'ian islands is for above average precipitation through April then closer to average precipitation in May. This is a time when there is little to no occurrence of large fires throughout the Hawai'ian islands.

Southern California: Above Normal significant wildland fire potential is expected along the coastal areas and mountains of Southern California February through May and also in the foothills and mountains surrounding the San Joaquin Valley in May. Elsewhere, expect Normal significant wildland fire potential.

January saw an abrupt return to cooler, wetter weather as the ridge of high pressure weakened and departed the region. One strong storm with a strong southerly wind component brought intense rain to much of Southern California on the 8th and 9th. Unfortunately, the strong southerly winds focused the heaviest rainfall on the south aspects, some of which have denuded slopes due to recent wildfires. The most intense rain occurred over the western footprint of the Thomas burn scar. Areas near Montecito experienced major flooding and landslides which resulted in loss of life and severe property damage. After this storm, subsequent troughs brought light precipitation. There were few notable offshore wind events during the past month.

The rain caused fuel conditions to moderate from the record low dead fuel moisture readings for December. Greenup has occurred over much of Central California, but new growth across Southern California is much less currently. New growth over the central part of the state will likely be sufficient to keep large fire potential low, except over some areas of the southern Sierras where rain and snow was much lighter in January. Across Southern California, live fuel moisture has climbed above critical levels, but dead fuels – of which there is a lot of – will still be quite dry and receptive during warm, sunny days. During offshore wind events, large fire potential may be elevated due to the heavy loading of dead fuels across Southern California in February and March.

Long range models continue to indicate this winter may remain warmer and drier than normal. There is the possibility of a brief period of closer to average precipitation late this winter into early spring, similar to what occurred in 2013 and 2014. But overall, look for most areas of Southern California to remain dry through the spring. Fuels over the northern flank of the region should remain green well into the spring, especially along the Monterey County coast and the Sierras north of Yosemite National Park. But the rest of Central California will see fuels cure from south to north in late April. By May, most areas below 5,000 feet will be dry enough to support large fires during hot and windy periods. Southern California will continue to see large fire potential remain above normal throughout the entire outlook period.

Northern Rockies: Normal significant wildland fire potential is expected for the Northern Rockies through the Outlook period except across eastern Montana and western North Dakota in April when Above Normal significant wildland fire potential is expected prior to greenup.

Impacts from anticipated ENSO conditions across the region will be a tendency for near to below average temperatures and near to above average precipitation—mainly across the western half of the region during the February through April period. Mountain snowpacks have near to above normal snow to water equivalent basin averages, especially across western Montana and Yellowstone National Park. By May, warmer and drier conditions may be more likely, especially east of the Continental Divide.

Wildfire potential generally only exists for short periods during the winter and early spring east of the Continental Divide when gusty, drying southwesterly-westerly winds occur. Due to preexisting drought conditions from last spring/summer, 1000 and 100 hour fuel moistures were well below average in eastern Montana and western North Dakota heading into winter and likely remain so currently. Central Montana however, along and just east of the Front Range, has seen above average precipitation during the last few months. During wind events in the eastern areas, the drier than average, cured fuels could become easily combustible across Eastern Montana and Western North Dakota.

Northern Idaho and Western Montana are “out of season” during the outlook period, and will be depicted so on the maps. Because of the La Niña conditions expected through the winter, cooler conditions with longer periods of moist northwest or cold northerly flow should keep warm, dry windy periods shorter over the eastern half of the region in February, with a slightly lower frequency than in other winters. It is usually the case that even the Eastern PSAs remain out of season during February. As snow cover melts in March, and periods of Chinook wind flow become warmer and drier, fire potential often increases continuing into April, before green-up in May. It is worth mentioning as well that above normal precipitation in the eastern areas is not as meaningful during the winter period, due to average amount levels being very low. Weather systems moving through in winter/early spring tend to be fast-moving, and absent of significant Gulf of Mexico moisture feeds. Even a few days of warm, dry southwest and west winds there can quickly evaporate whatever snow may be in place and bring about rapid fuels drying.

Great Basin: Normal significant wildland fire potential is expected for the Great Basin through the Outlook period except across southern Utah in April and May where Above Normal significant wildland fire potential is expected.

Temperatures were above average across the Great Basin over the past month. Precipitation was well below average over the northern two thirds of Nevada, northern and eastern Utah and parts of southern Idaho. Only the central Idaho mountains and southern Nevada, the Arizona Strip and southwestern Utah saw above normal precipitation. Although precipitation was above average in the south over the last 30 days, very dry conditions continued for several months prior to January, with overall below average precipitation for the two to three month timeframe. The snowpack saw some minor rises over parts of Nevada and Utah and in southern Idaho over the last 30 days, but still remains 25-70% of average in most areas. The snowpack is near normal in the Central Idaho Mountains and over western Wyoming. Due to very dry conditions over the last few months, drought has returned to most of Utah, the Arizona Strip and is beginning to return to southern Nevada.

Fuels are predominantly dormant across the area. Carryover fuels are expected to be a concern this year over the northern half of Nevada into parts of southern Idaho and northern Utah. There was a significant grass crop in 2017 from record precipitation, and recent warm and dry conditions have limited the amount of low elevation snowfall to compact the fuels. Therefore, a significant carryover grass crop is expected.

Normal large fire potential is expected for all areas of the Great Basin through early April, which for this time of year translates to minimal large fire activity. The only exception will be in the areas of higher grass crop from 2017, after prolonged dry periods and on windy days. As May approaches, Above Normal fire potential is possible over southern Utah, especially in the higher elevations, assuming dry weather continues through the rest of the winter and much of the spring. Any snowpack has been minimal, with extremely dry conditions thus far this winter. Therefore, 100 and 1000-hr fuels are expected to be well below average by April and May. There was not a significant grass crop from 2016 and 2017 in the south, so the main threat after a dry winter would be the higher elevations. Further north, areas will remain Normal through April and May, but areas of Above Normal fire potential are likely over northern and western Nevada and possibly extending into parts of southern Idaho and northern Utah by June. This Above Normal threat may even start earlier in May, however confidence at this time is lower for the May time period.

Southwest: Normal significant wildland fire potential is expected for much of the region during February followed by expanding areas of Above Normal wildland fire potential as the late winter turns into spring. Much of the eastern plains of New Mexico into west Texas will see Above Normal potential in February and March with increasing areas of Above Normal fire potential likely across southern Arizona and southern New Mexico by March into April. Above Normal potential will likely increase further north/west by May.

Over the past month high temperatures have been generally average across most areas of the region...warmest across northwestern sections and closer to average (and even below average) across eastern-southeastern sections. Over the past month, much of the region has been drier to much drier than average with the only areas of the region receiving above average amounts of precipitation being across far northwestern Arizona.

Confidence in this overall outlook is slightly above average as La Niña-like conditions have been a factor for months in both the eastern and central tropical Pacific Ocean. However, there are now some indications that La Niña will weaken and turn into neutral conditions as early as April and May. Despite this, the expectation is for temperatures to generally remain warmer than average with drier than average conditions remaining intact overall for most areas. Periods of colder than average temperatures will be most likely from the central New Mexico east into Texas. Areas along and east of the New Mexico central mountains will experience periods of increased dryness and will combine with above average fuel loadings for increased large fire potential for these areas. Downslope flow conditions ahead of cold frontal passages typically lead to one to two day large fire events east of the New Mexico central mountains coincident with above average high temperatures and low humidity values. This threat will continue for mid-late winter along and east of the New Mexico central mountain chain although the anticipated weather pattern will more than likely not be as conducive for these types of wind events compared to years past. Areas across the southern tier of the region will begin to see Above Normal fire potential as February rolls into March as continued dryness and mild temperatures lead to an increased threat. For April into May, Above Normal fire potential will be on the increase across most of the region as continued above average temperatures combine with increased dryness. Despite this, there is some potential for some deep, wet storm systems to impact the region from March into May. If this occurs, the northern half or so of the region would be most susceptible to receiving beneficial precipitation with the southern portions of the region more than likely continuing to be dry with increased wind. Confidence is average for the deeper storm system scenario to impact the region sometime during this timeframe, If this does occur, the Above Normal fire potential forecast will be impacted significantly especially across the northern half of the region.

Rocky Mountain: Normal significant wildland fire potential is expected for the Rocky Mountain Area through April except for the southeastern corner of Colorado and Kansas (excluding northeastern Kansas) where Above Normal significant wildland fire potential is expected. For May, Above Normal significant wildland fire potential is expected across portions of southcentral and southwestern Colorado while Normal significant wildland fire potential is expected elsewhere.

Warm anomalies continued during December, but some cooling did occur east of the Continental Divide. The warmth continued through the first half of January, with the cooling becoming more pronounced. Precipitation across the southern portion of the region increased through the first half of January when compared to the last couple of months when large areas showed less than 25% of average. However, significantly below average amounts were still received across southwestern Kansas, southcentral Colorado, southwestern Wyoming, and northeastern South Dakota. Long range, 90 day precipitation deficits have intensified across southern portions of the geographic area.

Fuels available to burn this time of year are primarily categorized by dry grass and brush in the lower elevations, mainly across the eastern grasslands. Above average moisture during the 2017 spring growing season has resulted in significant fuel loading across the plains, especially in southern/western Kansas. Snow-pack deficits have emerged in the southern mountains of Colorado and to a lesser degree from northern Colorado into southern Wyoming. This has resulted in allowing for exposed fuels that are typically under snow this time of year.

Short to medium range forecasts are reflective of an active upper level pattern with embedded low pressure systems generating snow at times, with the exception of dry swaths most notably across southwestern Kansas. A continued weak La Niña is influencing long range outlooks with an average to wetter than average regime in the northern portion of the geographic area with a cooler bias as well. In the southern portion of the region, indicators favor average to above average temperatures in combination with drier than average conditions.

The region continues its typically slowest time of the year in terms of large fire activity (Dec-Feb). However, developing drought and forecast weather patterns into early February along with climatologically increasing cases of warm, dry, and windy patterns point towards above average large fire risk for the month of February across the southeastern corner of Colorado through most of Kansas (excluding the northeast). A warm/dry trend is predicted to persist during March into April, with above average large fire risk continuing over the same areas, and occasional wind driven grass/brush fires. Above average large fire potential is also predicted by March over southern Colorado, characterized by an earlier than average start to core fire season as a result of intensifying drought, limited snow-pack, and dry/warm long range forecasts.

Eastern Area: Normal significant wildland fire potential is expected for the Eastern Area through the Outlook period except across portions of the western Middle Mississippi Valley where Above Normal significant wildland fire potential is expected to continue through March across the Lower Ohio Valley where Below Normal significant wildland fire potential is expected.

Soil moisture and precipitation anomalies were below average across portions of the Upper and Mid-Mississippi Valley at the end of January 2018. Above average precipitation and soil moisture anomalies were in place over much of the Upper Peninsula and northern Lower Peninsula of Michigan, and western New York. Looking forward, below average temperatures are forecast over much of the region into March. Wetter than average conditions are forecast across much of the region through the rest of the winter and spring. Warmer than average temperature trends are then forecast across the southern tier of the Eastern Area April into May 2018. Drier than average conditions may develop over the far southwestern portion of the Eastern Area this spring.

100 and 1000 hour fuel moistures are near seasonal averages over the majority of the region entering February. Energy Release Components or Canadian Build-Up Indices are at or below averages at the majority of the RAWS entering the outlook period. The spring fire season may begin earlier than normal

across portions of the western Mid-Mississippi Valley if drier than normal conditions persist over this area.

Southern Area: Above Normal significant wildland fire potential is expected across the southern Great Plains of Oklahoma and Texas February through May. Below Normal significant wildland fire potential will continue across western Kentucky and Tennessee in February and are expected to expand south and east into southern Alabama and Mississippi as well as east into the Appalachians in March. Elsewhere, expect Normal significant wildland fire potential.

A persisting cool ENSO episode from 2017 combined with northern hemispheric patterns should produce a resurgence of colder winter weather for most of the month. This will lead to additional snow and rain events that will continue to mute wildfire risks for most of the region. For our further western states, pre and post cold frontal lower humidity and wind patterns should produce periods of continuing elevated to high fire danger as fuels/loadings are likely to remain overly dry/high with the drought situation worsening due to expected below average precipitation and above average temperatures.

March is looking to be the “wetter” of the four month outlook period. Because of this, the pattern should see a broadening of rain (yet still some snow) activity resulting in a peaking period of fire danger limiting weather and lower initial attack levels. Out in the western states of Oklahoma and Texas, expect continued warmer and drier than average weather conditions which should produce Above Normal significant fire potential in place during the month and into April. With the cool phase of this year’s ENSO pattern, there could be emerging dryness in areas along the Gulf Coast and particularly in Florida which could produce periods of higher initial attack. Will need to be monitored as the pattern evolves.

April and May will likely see a change from the much colder previous winter months where warmer than average temperatures will be more common region-wide. The cool water ENSO episode will likely begin to fade but should still allow rain activity east of the Mississippi Valley with above average rain fall being centered from the Appalachian Mountains west into eastern Kentucky and Tennessee with this area retreating northeast into Virginia May. The driest, warmest, and continued higher fire threat should remain anchored in areas of Oklahoma and Tennessee.

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>