



National Significant Wildland Fire Potential Outlook

Predictive Services
National Interagency Fire Center

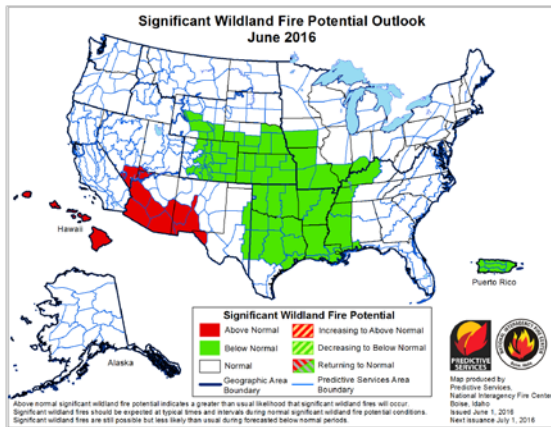


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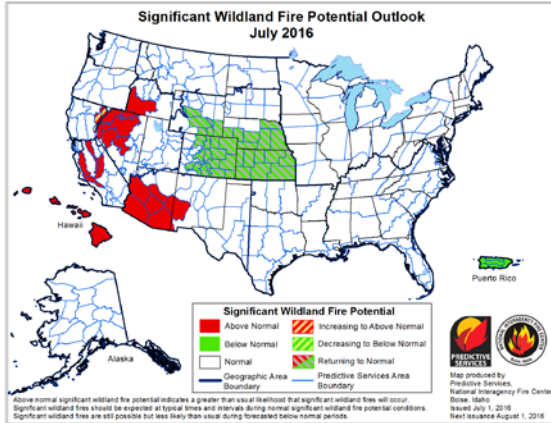
Outlook Period – June, July and August through September, 2016

Executive Summary

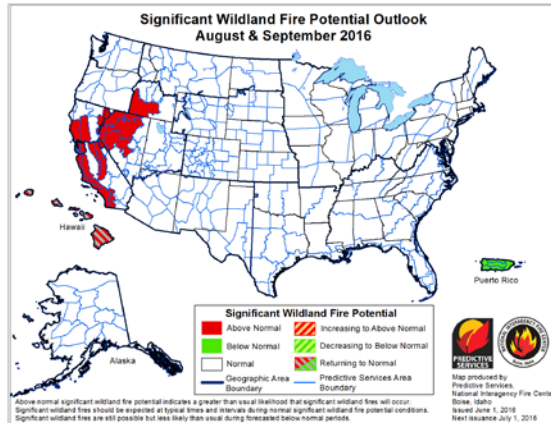
The significant wildland fire potential forecasts included in this outlook represent the cumulative forecasts of the ten Geographic Area Predictive Services units and the National Predictive Services unit.



Conditions across the Eastern States have mitigated enough thanks to timely moisture and the onset of green-up that these areas no longer present a concern for above normal significant wildland fire potential.



For June and early July two primary areas of fire activity are the focus. First, Alaska has begun to see significant fire activity. Recent moisture over the state has dried out, triggering an increase in fire activity. Some of these fires are holdover fires from the 2015 fire season. Alaska will continue to see normal levels of significant fire activity into July. Second, the Southwest Area enters its primary fire season in June and July. This area has a robust fine fuel crop; however, lingering moisture has largely kept significant fires at bay. As seasonal drying progresses south of the Mogollon Rim, expect above normal levels of significant fire potential to remain dominant through at least early July, especially in fine fuel regimes.



Heavy and continuous fine fuel loadings are expected across the Great Basin and lower elevation areas of southern and central California. Dry and windy periods will increase fire activity and the potential for fires to become large and grow rapidly. Fire activity will begin in June and July and transition northward throughout the Outlook period.

Warm conditions have depleted much of the mountain snowpack. Remaining snowpack should continue to melt off but remain long enough for a normal to slightly delayed onset of higher elevation fire activity. Nearly all higher elevation timbered areas are expected to see normal fire activity throughout the Outlook period.

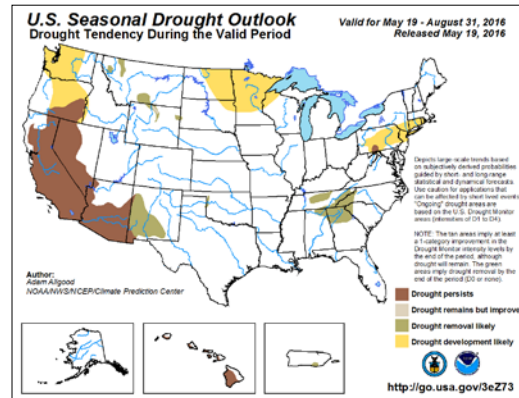
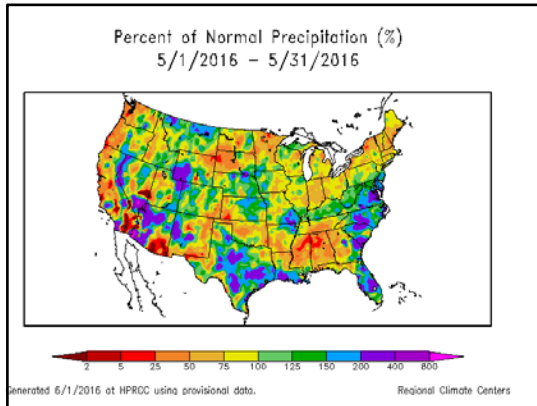
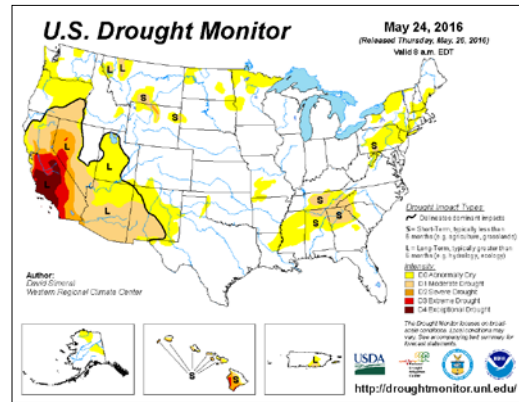
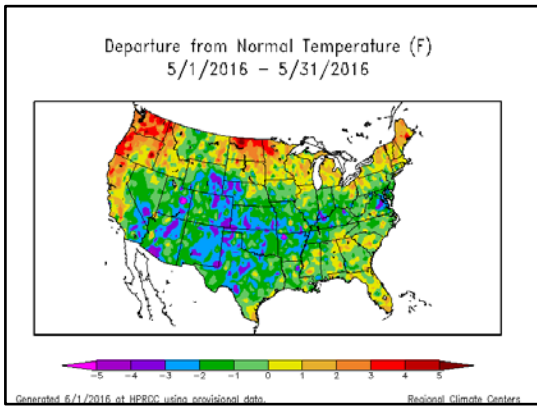
Most other areas of the U.S. are expected to see normal significant fire potential throughout the summer fire season. It is important to note that normal fire activity still represents a number of significant fires occurring and acres burned.

Past Weather and Drought

A blocked pattern kept broad troughs over either coast, allowing slow-moving upper lows to traverse the country through the month. A ridge building over Canada produced warm conditions over the Northwest while the rest of the country saw cooler conditions for May. Storms developed around the upper lows across the Southwest and the Great Basin, bringing late spring rains and some snow to the region. Strong thunderstorms and flooding rains crossed the south central States before bringing more storms to the East Coast. Warm conditions continued over Alaska.

Temperatures across the country were below normal with average readings as much four to five degrees below normal over parts of Intermountain West and the Plains. The Pacific Northwest and the northern Plains were above normal as was northern New England. Above normal precipitation was scattered as convective rains move through much of the Southwest, the central Rockies and western Gulf region. The Southeast and the Mid-Atlantic region also received above normal precipitation.

Precipitation in the southwestern states alleviated some drought concerns but severe to exception drought remains over southern and central California and western Nevada. Small pockets of short term drought were developing in the southern Appalachians.



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 conditions continue to decrease as the equatorial Pacific cools further. The latest model projections continue this trend with neutral conditions expected by early summer and an increasing chance of La Niña conditions developing by fall.

Fuel Conditions and Fire Season Timing

Fuel conditions across the eastern states have largely returned to normal and brought a reduction in the potential for significant fires as green-up is close to fully completed.

Robust fine fuel crops remain across the Southwest and Great Basin, as well as some lower elevation areas of California. These fine fuel crops are likely to lead to periods of increased fire activity in these areas throughout fire season especially when associated with dry and windy periods. Fire activity began in May across the Southwest and is likely to continue until the monsoon begins. From there a gradual transition north and west into the Great Basin, California and the Northwest will occur through June and July.

In Alaska moisture is beginning to leave the Area leading to increased fire activity. A number of holdover fires from the 2015 fire season have reemerged. Limited snowpack that melted off early and long daylight periods should lead to increased fire activity throughout June and into July.

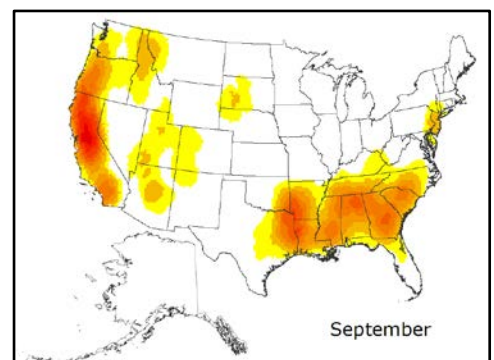
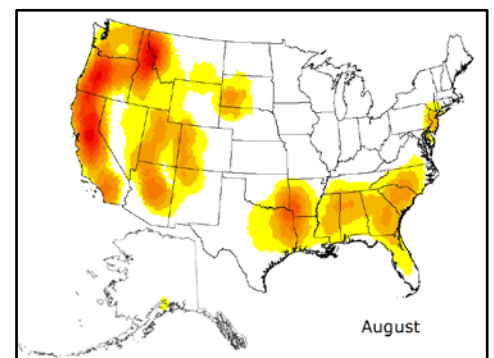
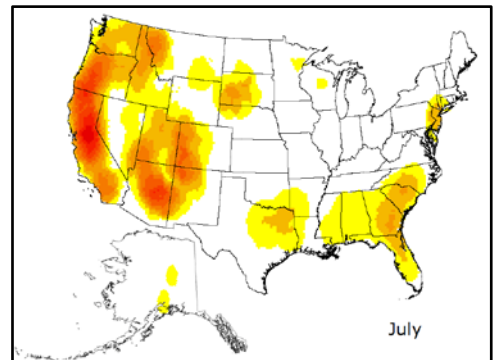
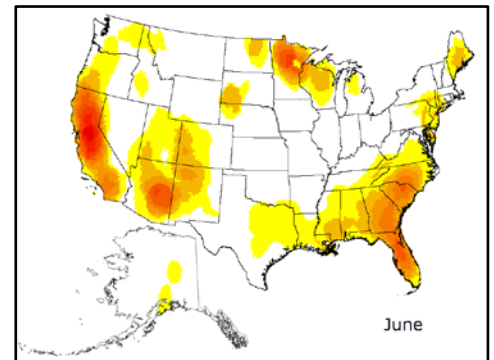
Mountain snowpack is greatly decreased across much of the West after a warm end to of April. Snowpack in these areas still provided enough moisture to produce a normal onset of fire activity in the higher elevations. Generally speaking the remainder of the U.S. has normal to below normal fuel conditions which indicates normal increases in fire activity should be expected throughout the fire season in these areas

Geographic Area Forecasts

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

Abnormally dry conditions remain across the eastern Interior along the upper Tanana Valley and in the central North Slope extending into the central Brooks Range. Through the winter, below normal snow pack across most of the Anchorage Bowl and Kenai Peninsula was the result of warm conditions producing rain rather than snow, especially at lower elevations, limiting ground water recharge this spring. The snow pack melted one to two weeks early across the state. There is still some snow in the far north but it is melting about two weeks early.

Warmer-than-normal conditions are forecast for the entire state this summer and into the fall. Above normal precipitation is expected in southwestern Alaska in June, shifting to western Alaska through the bulk of the summer and into September. The state was under a wet



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)

pattern for much of the end of May but with the increasing sunshine only a brief warm and dry spell can cause fuels to dry rapidly. Alaska has moved into fire season approximately 2 weeks early but with the early snow melt, the warmer temperatures and mild winter are bringing a rapid, early green-up.

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

The first half of May was unusually warm and dry across the Northwest. Temperatures were well above normal and only one frontal system passed across the Area. The second half of May was significantly cooler and wetter with a number of cool, showery upper troughs settling over the Area through Memorial Day weekend. Due to the sunshine and consistent warmth, snowmelt accelerated during May with nearly every reporting basin in the Area falling below average snowpack by mid-month. Many reporting stations reached zero snow up to a month ahead of schedule as a result of the warmth.

Climate outlooks suggest that generally warmer-than-normal conditions are likely through June and into July. Beyond that, indications suggest that August and September will not be unusually warm which may hinder large fire potential. Precipitation accumulation and lightning frequency during this period are unclear. Heavy fuels dried well below average in many areas during the first half of May, particularly west of the Cascades. Two significant fires were reported in western Washington. Fortunately, the extended period of cool, moist weather in the last half of the month allowed fuel moisture to return to normal levels by the beginning of June. Green-up of shrubs and grasses is well underway across the Area. Live fuels have been moistening rapidly since mid-May due to the accumulated effect of warmth and precipitation in the last half of the month. Field reports indicate curing is beginning on south facing aspects east of the Cascades and will accelerate after June 1. Rains have contributed to fuel loading and amounts look to be near normal. Fire danger is poised to increase more quickly than usual in June due to the anticipated warmth and reach normal fire season levels by late June. Fast moving fires in grassy fuels are likely on schedule in June in rangelands and areas subject to gusty winds. Heavier fuels will follow a few weeks behind.

Northern California and Hawaii: Above normal significant wildland fire potential is expected in Hawaii for most of the outlook period. Normal significant wildland fire potential is expected in Northern California through June. Significant wildland fire potential will begin to move to above normal across the lower elevations of the Sacramento Valley and the Far Eastside of the Area in July and August.

Precipitation was well above normal in May from the Cascade and Sierra ranges eastward. To the west, most locations received near or below normal precipitation. About 80 percent of Northern California has received normal or above normal precipitation since the water year began. Precipitation is expected to be near to slightly above normal through early June then diminish to normal, which is little to no rainfall from late June through the remainder of the summer.

There is an above normal crop of annual grasses and other perennial vegetation at lower elevations, and in the valleys and foothills east of the Cascade and Sierra crest. These fine fuels have cured in many locations, especially at the south end of the Area. Soils are still moist across the Area due to wet unsettled weather in May. Additional rounds of fine fuel growth are expected and will need to cure before these areas see significant fire potential increase. These areas are expected to have above normal fire potential outside of the agricultural areas in August and September. The fine fuel crop in the valleys and the foothills east of the Cascade-Sierra crest will likely cure during July. Significant fire potential will begin to move to above normal there by late July, and remain above normal in August and September. West of the crest, green-up is underway at mid elevations. Snow cover above 5500 feet is decreasing. These higher elevation locations are entering green-up as they become snow-free. Due to occasional precipitation through early June and the easing of longer-term drought conditions, mid and upper elevations are expected to have normal significant fire potential through September.

El Niño continued to decay during May, and precipitation began to return to the Hawai'ian islands. About half of the state received below normal precipitation and half received above. However, longer-term drought conditions continue because much of the state received well below normal rainfall during the

Hawaiian wet season. Now that the state is entering the dry season the longer-term rainfall deficit will likely persist. The Keetch-Byram Drought Index (KBDI) is well above normal for this time of year and it is at a level more typical of late August. This trend also suggests the KBDI will peak during the early fall at much drier conditions than usual. Therefore, significant fire potential is expected to be above normal for Hawai'i through July. By late August or September La Niña conditions are expected to develop and rainfall frequency and amounts are expected to increase enough to bring significant fire potential back to normal.

Southern California: Normal significant wildland fire potential is expected for June. An increase to above normal potential is expected for some of the Area by July and will expand into August and September.

Significant fire potential is expected to climb to above normal levels during the summer into the early fall. The highest potential will be over Southern California during the first part of the summer as the past rainy season only brought 50 to 70 percent of normal rainfall. As the summer progresses, above normal significant fire potential area will expand northward to include much of the Sierras and the central coast region.

During the mid to late summer months, the highest potential may be over the Sierra Foothills where a severe, multiyear drought has exacted a toll on the vegetation of the area. A pine beetle infestation along with stress from the drought has brought a high level of plant mortality to many areas of the high country in Central California. Aerial surveys indicate parts of the Sierra Foothills between 2,000 to 6,000 feet have suffered over 50 percent tree mortality, especially in Ponderosa Pines. Many stands have yet to drop their needles and thousands of acres in the Sierras will be primed for large fires from a fuels standpoint.

Sea surface temperatures are rapidly cooling along the equator. The eastern Pacific should not have nearly the potential to spin up tropical disturbances compared to last year. This year, expect an average summer monsoon season with thunderstorms fewer in number compared to last year and in 2014. Temperatures this summer should continue to average a few degrees above normal. Significant fire potential is expected to remain above normal into the fall and perhaps the early portions of winter.

Northern Rockies: Normal significant wildland fire potential is expected for the Northern Rockies Geographic Area for the Outlook period.

May featured a very warm start to the month. However, with the onset of the wet pattern temperatures during the latter third of the month fell to well below normal. Springs rains across the region were above normal for most areas. High elevation locations along the Divide picked up one to three feet of additional snow fall during the last week of May.

Historically transitions out of El Niño conditions in late spring-early summer tend to be wetter-than-normal. Current trends and the latest models indicate above normal precipitation will continue for early summer. Longer range data for the second half of the summer, mid-July to early September shows near average precipitation expected. There is general agreement that temperatures should be average to slightly above average over the next four months.

A robust green-up is currently occurring across the Northern Rockies. Fuels in most locations are now much wetter than average. An extended green-up period is likely. As a result, there is a chance that some areas across the western half of the region could see below normal significant fire potential this season. That said, a normal start to the fire season is expected. The development of large fires may be delayed due to the longer time that it will take for fuels to become critically dry.

Great Basin: Significant wildland fire potential is expected to be above normal for the southwestern portions of the Great Basin in June. While these areas will return to normal in July, northwestern portions of the Area will become above normal in July and August.

Wet May conditions will likely continue into early June. This should prevent most areas over the northern half of the Great Basin from rapidly jumping into significant fire activity. However, southern Nevada, southern Utah and the Arizona Strip have been much drier and will experience increasing fire activity by early June. By late June through August a good grass crop should increase fire danger for areas of northwestern Nevada and southern Idaho that typically get only brief monsoonal effects. Warmer and drier conditions are expected to develop across the Great Basin by mid to late June, with a more rapid curing of the fuels in the low to mid elevations and decreasing live fuel moisture, along with more rapid high elevation snow melt. A normal onset of the summertime monsoon is expected, and will most likely target far southern Nevada, the Arizona Strip and Utah.

Above normal precipitation across much of Nevada and Utah into far southern Idaho has produced an above average grass crop. The grasses have cured out over far southern areas of the Great Basin, which has been much drier in recent weeks and will remain drier in the weeks to come. Farther north, the curing process is beginning, especially in the lower elevations and on south facing slopes. However, live fuel moisture still remains above normal. Timbered higher elevations have seen mainly normal snowpack, except below normal across higher terrain of southern Nevada and the Arizona strip. Cooler storm systems have brought some snow to the higher elevations recently and this has delayed the melting across Nevada and Utah.

Above normal fire potential is expected in June in southern Nevada, the Arizona Strip and southwestern Utah as lower elevation fuels are mostly cured and will cure rapidly in higher elevations through early to mid-June, especially in areas that have more grass than in recent years. Normal fire potential is expected in June across the rest of the Great Basin, however fuels will see an acceleration to the curing process from mid to late month as warmer and drier conditions return. Some areas of the western Snake River Plain, which have not seen as much precipitation in recent months, may be shadowed from precipitation in the coming weeks and those fuels may cure out early. By July, southern Nevada, the Arizona Strip and most of Utah should transition to moist, monsoonal conditions, with the above normal fire potential focus shifting to drier areas of the Great Basin which have two to three times more grass than in recent years. These areas include western and northern Nevada into parts of southwestern and southern Idaho. The higher elevations may have more of a delay in fire activity until later in July and August once the snow melts and fuel moisture decreases. Fire potential may return to normal later in September.

Southwest: Normal significant wildland fire potential is expected for much of the Southwest for June, July, August and September. However, an area of above normal significant fire potential is expected during June and early July across many of the lower elevation areas south of the Mogollon Rim of southern Arizona into southern New Mexico.

A generally cooler and wetter weather pattern has significantly eased the recent concerns associated with mild and dry conditions that might have led to increased pre-season fire activity. Over the past 30 days much of Arizona received above average precipitation as did much of New Mexico and the far eastern plains. Drier-than-normal areas remained in many of the southern desert areas of Arizona and into southwestern New Mexico. Also, many areas from the New Mexico central mountain chain eastward to around the Texas state line were drier-than-normal, with a focus on southeastern New Mexico into adjacent areas of West Texas.

For June, the weather pattern is expected to remain active with regular storm systems crossing the Southwest. However, mid-upper level ridging is expected to gradually take control. The expected overall pattern will produce a definitive tilt towards cooler across the eastern plains to eastern half of New Mexico and warmer across the western half of the Area. This will likely allow gradual increases of moisture westward which points towards frequent lightning outbreaks farther west near the divide region. By later June into July, expect areas of above normal significant fire potential to expand north into the adjacent Mogollon Rim areas, across parts of western Arizona and into New Mexico. In addition, fire potential will gradually move from the finer fuel regimes into the heavier fuels as June moves on and July arrives. Uncertainty remains regarding the strength and extent of the monsoon. The onset may be at least slightly delayed this summer and could eventually be more focused west of the divide. The northern half or so of New Mexico could be receive below average moisture by the end of August. There are

increasing signs of a significantly drier period gradually taking shape by late summer into the fall Area-wide as the presently unfolding La Niña strengthens. Normal significant fire potential is expected during both August and September; however, a weaker-than-normal monsoon for many portions of the Area will likely combine with a developing area of dryness by fall to produce increasing drought conditions across many areas of the Southwest.

Rocky Mountain: Below normal significant wildland fire potential is expected much of the Rocky Mountain Area for June, which will return to normal in July. The remainder of the Area will see normal significant fire potential throughout the Outlook period.

Most of the Rocky Mountain Area experienced above average precipitation and below average temperatures during May, with the exception of drier and slightly warmer-than-average conditions across northwestern South Dakota into the northern Black Hills and far northwestern Wyoming. Mountain snowpack deficits have developed as of late May across northern Wyoming, although snowpack typically this time of year is well below its seasonal peak which occurs in April. Conversely, snowpack was well above average across the southern half of Wyoming into Colorado as of late May. Drought indices improved from last month with most of the Area not included in long term drought.

Short term forecasts for the early portion of June indicate mild temperatures with opportunities for precipitation mostly east of the Continental Divide. Long range outlooks for June maintain an average to wetter and cooler than average environment, except near average precipitation and temperatures across far northern and northeastern parts. For July, an average temperature and precipitation regime is predicted, with August-September predictors pointing towards average to warmer and drier-than-normal conditions. In the longer term a drier-than-normal fall is possible.

Lower elevation green-up is expected to progress during early June across the Area, with some of the grass fuel regimes becoming cured by mid-month. An abundant dead grass fuel component remains in place in the lower elevations from previous growing seasons and is expected to increase this summer as grasses from a wet spring and early summer cure out. Higher elevation fuel regimes are expected to begin their green-up phase during June, although more of these higher elevations are under snow cover than in an average year.

Eastern Area: Below normal significant wildland fire potential is expected over the Southwestern portions of the Area in June, while generally normal conditions will be present throughout the remainder of the Area through the Outlook period.

Soil moisture and precipitation anomalies were drier-than-normal across portions of the northern Great Lakes and New England towards the end of May. Above normal precipitation and soil moisture anomalies were in place over the southern tier of the Eastern Area. Warmer-than-normal conditions overall are forecast over much of the Eastern Area through the summer. Near to above normal precipitation trends are expected into August. Drier-than-normal conditions may develop in September over the eastern states. Fuel moistures were well below normal over portions of the northwestern third of the Great Lakes towards the end of May as medium range drying occurred along with periods of well below normal relative humidity. The spring fire season is forecast to end across much of the northern tier as green-up occurs.

Southern Area: Below normal significant wildland fire potential will be widespread across the western portions of the Area, and Puerto Rico through June before returning to normal for the remainder of the Outlook period.

A short term drought area has emerged from the Tennessee Valley south into northern Alabama and Georgia. This is a likely indicator of the drier trend that will eventually become more apparent within the Southern Area into summer and then into fall. While the summer months are expected to produce a mosaic of typical wetter areas across the South, there will be areas that will trend drier. Fuel moistures have responded the increase in rain activity since last month with green-up wrapping up in the mid-Atlantic and Appalachian states. Expect fuel moistures to respond rapidly to four to five day periods of

drying but overall, trend above critical thresholds. As we have seen in past years, any prolonged or especially intense drying from tropical subsidence during the tropical storm season could produce a small regional area of enhanced fire potential. Puerto Rico will likely remain in moist conditions as an elevated Atlantic tropic development pattern will likely influence northeastern Caribbean weather.

Expect a mosaic of wetter and drier-than-normal rain anomalies that should keep wildfire risks at least predominantly average over the summer. From late summer into the fall is when the below average rain trend is expected to emerge, and with it periods of higher fire potential. The threat for a much more active tropical storm season is much higher this year. Any landfalls or coastal approaches would alter the fuel moisture mosaic across the Area. Expect to see continued overall low to average fire potential and mostly light daily fire activity through the summer.

Outlook Objectives

The National Significant Wildland Fire Potential Outlook is intended as a decision support tool for wildland fire managers, providing an assessment of current weather and fuels conditions and how these will evolve in the next four months. The objective is to assist fire managers in making proactive decisions that will improve protection of life, property and natural resources, increase fire fighter safety and effectiveness, and reduce firefighting costs.

For questions about this outlook, please contact the National Interagency Fire Center at (208) 387-505 or contact your local Geographic Area Predictive Services unit.

Note: Additional Geographic Area assessments may be available at the specific GACC websites. The GACC websites can also be accessed through the NICC webpage at: <http://www.nifc.gov/nicc/predictive/outlooks/outlooks.htm>