

National Significant Wildland Fire Potential Outlook

Predictive Services
National Interagency Fire Center

Issued: July 1, 2013

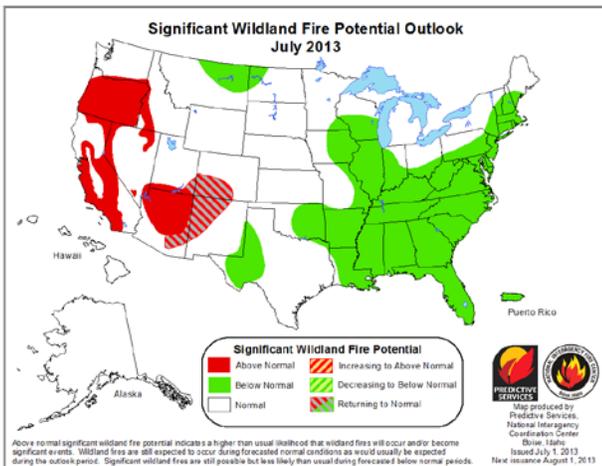
Next Issuance: August 1, 2013



Outlook Period – July, August and September through October

Executive Summary

The July, August and September through October 2013 significant wildland fire potential forecasts included in this outlook represent the cumulative forecasts of the eleven Geographic Area Predictive Services Units and the National Predictive Services Unit.

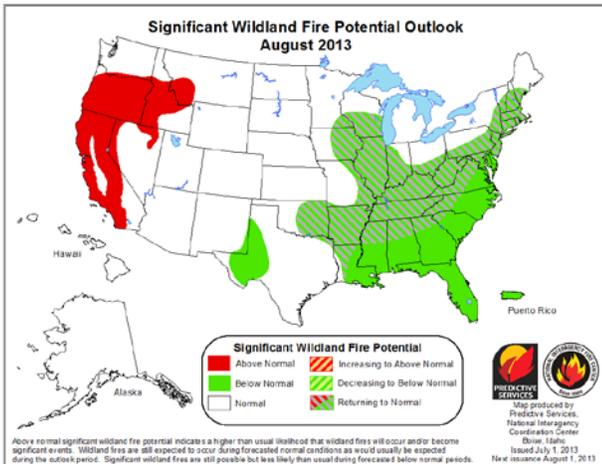


July

- Long term drought across the West coupled with hot and dry weather in early July will nullify gains from recent precipitation and raise fire potential across portions of Oregon, Idaho, Nevada, and Northern California.

- Southern California, southern Utah, Arizona, New Mexico and Colorado will continue to experience extremely dry conditions and be at risk of significant fires.

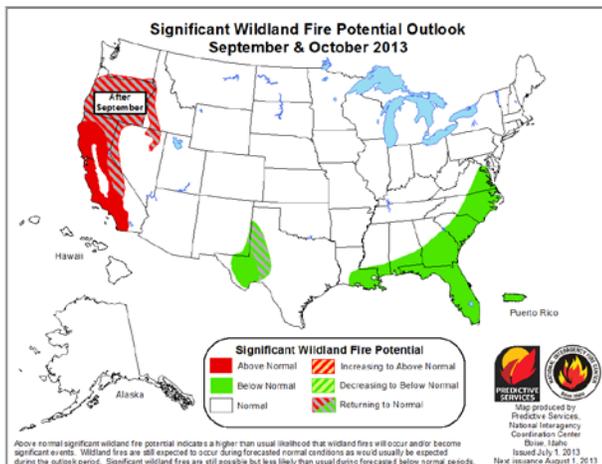
- The East will remain moist with normal to slightly below normal temperatures through July.



August

- Heat and normal summer precipitation in the West will keep above normal fire potential across most of California and Oregon, and parts of Washington, Idaho, Montana and Nevada.

- Fire potential in the East will remain below normal along the Gulf and Atlantic coasts while returning to normal in the upper and mid-Mississippi, Ohio and Tennessee Valleys.



September and October

- Above normal significant fire potential will continue for much of coastal and interior California while returning to normal by October over the Sierras, Oregon, and parts of Idaho and Nevada.

- Below normal significant fire potential will remain across the Southeast Coast from Louisiana to Virginia. Parts of West Texas will also remain below normal.

Past Weather and Drought

A series of upper lows crossed the western U.S. throughout the June, bringing mild conditions to much of the northern half of the country and stormy and wet conditions to much of the eastern third. By the end of the month, however, the pattern changed with a strong ridge of high pressure building over the West, producing record heat while keeping a broad trough over the East.

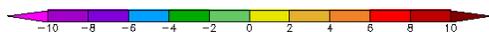
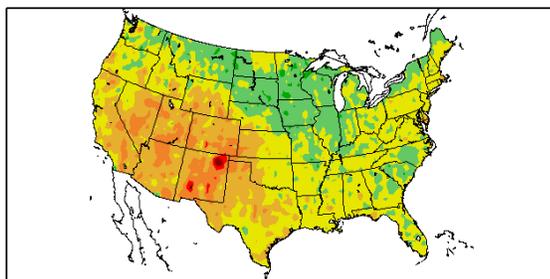
Several cold front moved through the Northwest and northern Rockies, then moved across the Plains and the East, keeping temperatures near normal to below normal. Temperatures in the Southwest and Interior West were above normal, bolstered by strong high pressure that formed the last few days of the month. Readings were four to six degrees above normal over much of the southern and central Rockies, the Great Basin and southern California.

The progressive pattern also brought above normal precipitation to parts of the Northwest and northern Rockies, including northern California. Above normal precipitation also occurred over much of the East, from the Mississippi Valley to the Coast, and the Upper Midwest. Over 200 percent of normal was observed with up to 400 percent of normal over the mid-Atlantic and New England coasts. The Southwest, Great Basin and the southern and central Rockies were well below normal, receiving less than 50 percent of normal for the month.

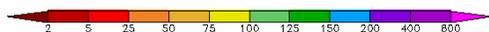
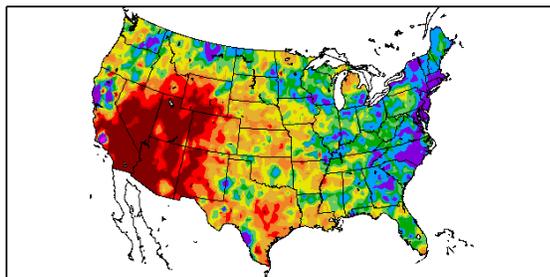
Drought continued across much of the western half of the nation with severe to exceptional drought from the central and southern Plains to the West Coast.

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)

Departure from Normal Temperature (F)
6/1/2013 – 6/30/2013

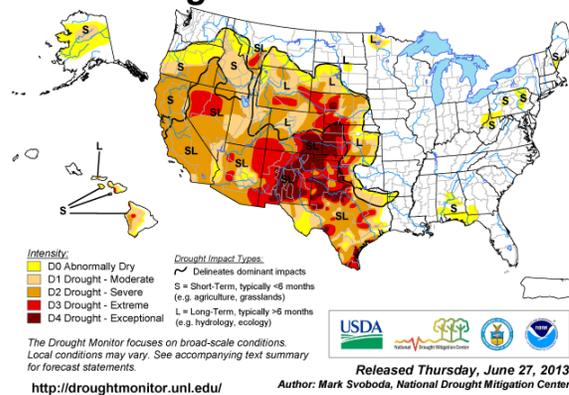


Percent of Normal Precipitation (%)
6/1/2013 – 6/30/2013

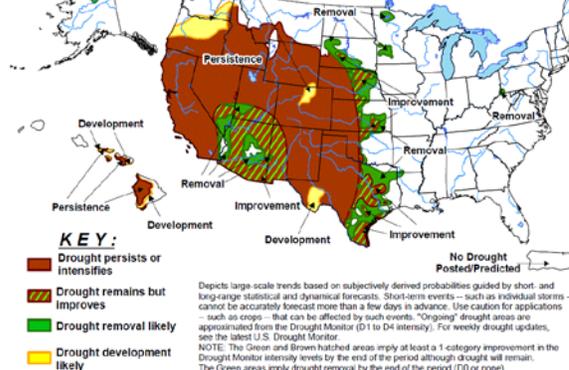


Generated 7/1/2013 at HPRCC using provisional data. Regional Climate Centers

U.S. Drought Monitor June 25, 2013



U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period



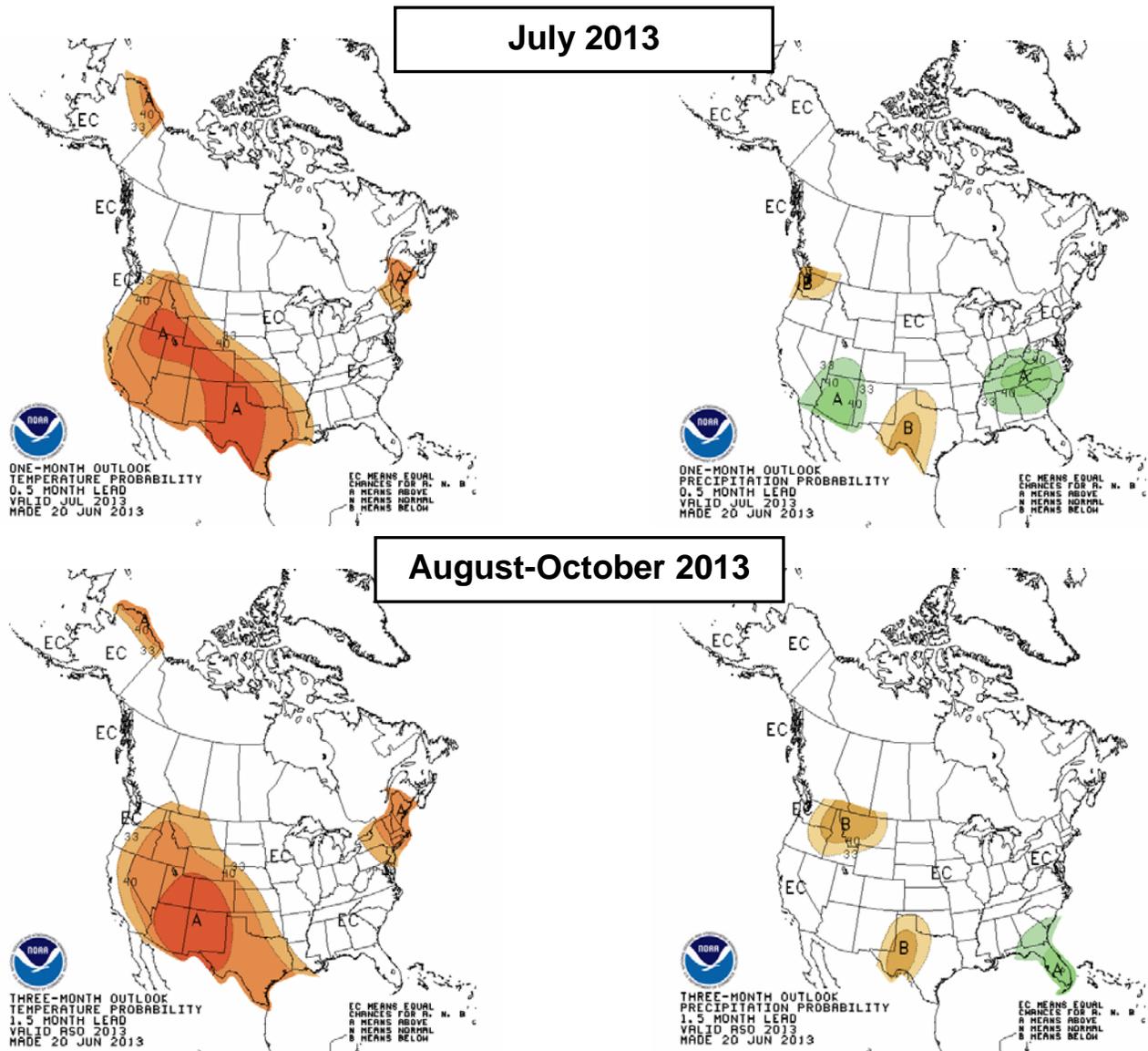
Weather and Climate Outlooks

Sea surface temperatures over the equatorial Pacific continued slightly cooler than normal but maintained a neutral ENSO pattern, offering no clear signal for long-term climate trends. Other global circulations also provide no clear indicators. The latest guidance suggests a continued wet and cool pattern across much of the eastern U.S. from the Mississippi Valley to the Southeast and mid-Atlantic coasts. The West will remain very warm with typical summertime precipitation.

Current projections for July by the Climate Prediction Center (CPC) indicate higher probabilities of warmer than normal conditions for much of the western U.S from the Rockies to the coast, northern Alaska, and northern New England. Precipitation is expected to be below median over the far Northwest and above median for the Southwest (as the monsoon sets up) and most of the Southeast.

Temperatures for August through October are expected to be above normal for most of the western and south central U.S., northern Alaska, and much of New England. Precipitation is expected to remain near median with pockets of below median precipitation over the northern Rockies and the southern Plains. Above median precipitation is expected over Florida and southern Georgia.

Top row: One-month (July) outlook for temperature (left) and precipitation (right). Bottom row: Three month (August-October) outlook for temperatures (left) and precipitation (right). (from Climate Prediction Center/NOAA)



Fuel Conditions

Extremely hot and dry weather across Alaska in June dried fuels rapidly and quickly ramped up their fire season. This sudden transition led to extreme fire behavior over the last week. Increasing precipitation early in July will help moderate fuel conditions in the western and central Interior but the eastern Interior will likely remain dangerously dry.

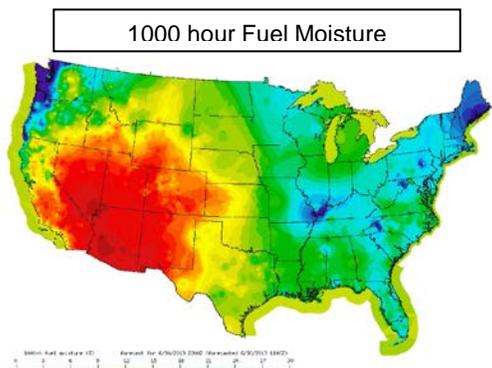
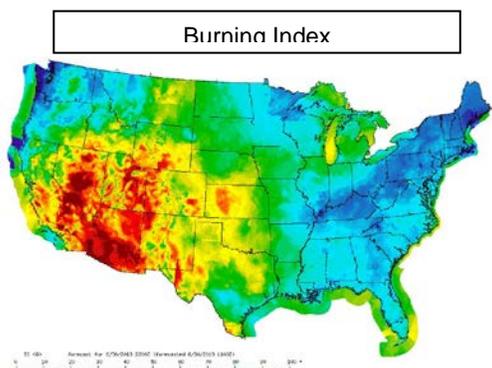
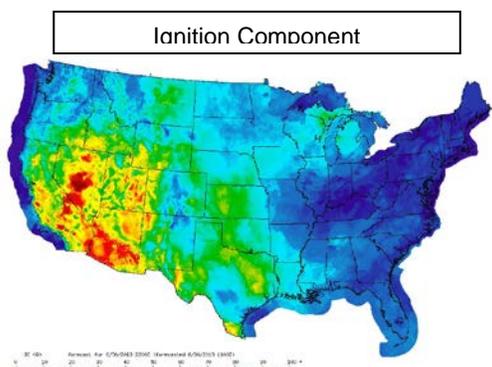
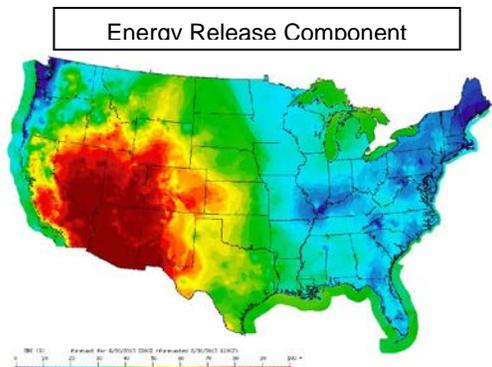
The Northwest and northern Rockies experienced periods of rain and mild temperatures through most of June. This kept fuel moisture up and in some cases, above normal. Nevertheless, hot weather in early July, coupled with long term drought is projected to rapidly dry fuels and increase fire danger. Fire danger indices are forecast to rise quickly enough to support significant fires as early as the first week of July. Very wet conditions in eastern Montana and western North Dakota raised soil moisture, delaying normal live fuels transition by at least a couple of weeks.

In northern California moderated significantly, especially in areas along and west of the Sierra crest. Fuels will quickly dry out as conditions approach normal midsummer levels by mid-July in most areas. The quickest response will be in the lower grassland elevations. Southern California continued well below normal in precipitation and fuels conditions remain very dry as a result. Most of Southern California continues to be in conditions significant enough to warrant a Fuels and Fire Behavior Advisory and is not expected to moderate in the near term.

Across the northern Great Basin fuel moistures in many areas increased early in June due to periods of wet and cooler weather. Green up was prolonged and curing of the fuels was delayed. Even though live fuel moistures were still near to just above normal, very low live fuel moistures for pinyon-juniper and 1000-hour fuels remained in place due to long term drought. Fine fuels are stunted and discontinuous in many areas, though dead fuel moisture decreased significantly at the end of June with the onset of extreme heat.

Southern and eastern portions of the Great Basin, the southern and central Rockies, and the Southwest have seen fire danger indices climbing above the 90th percentile and in many cases above the 97th percentile. Long term precipitation deficits continue. Recent fires have exhibited extreme fire behavior, especially when combined with strong winds or unstable conditions. Much of this area continues in a Fuels and Fire Behavior Advisory.

In the eastern half of the U.S. fuel moistures were near to above normal, with the exception of Texas, western Oklahoma and portions of the Great Lakes states.



Energy Release Component, Ignition Component, Burning Index and 1000 hr Fuel Moisture as of 6/30/2013 (from Wildland Fire Assessment System)

Fire Season Timing

Alaska's delayed fire season quickly changed to peak fire season conditions in late June. Expect a normal southwest flow which usually engulfs the state for a period at the end of July or beginning of August, either ending the fire season, or creating a significant break in fire activity.

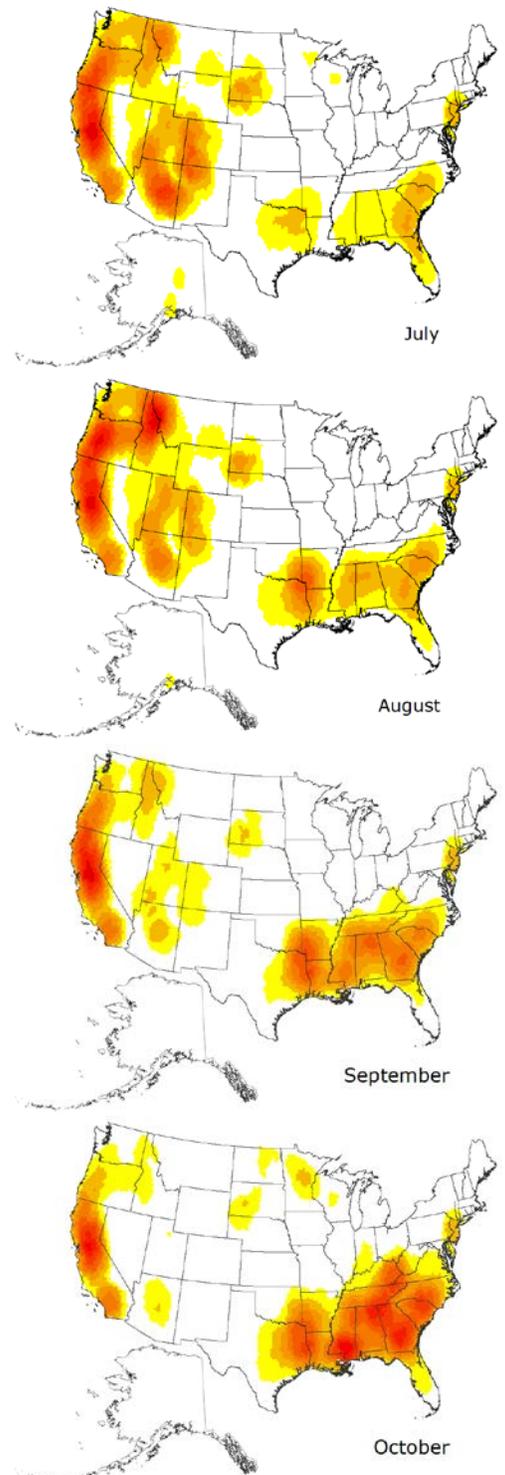
May and late June rains delayed what was expected to be an early onset of fire season across the Northwestern quarter of the country. Expect the first week of July, which is the generally normal timing, to bring the beginning of conditions capable of supporting significant fires. Given forecasts of unusually dry weather for the remainder of the summer, fire season seems likely to last well into September. Across northern Idaho, south central and southwestern Montana fire season is likely to begin in earnest by mid-July. Eastern Montana, North Dakota and the northern Idaho Panhandle will likely see a delayed start. The fire season is not expected to be unusually long and should draw to a close by mid-September.

In northern California late June precipitation created a pause in fire season. This is not expected to be long term and conditions will likely become capable of supporting significant fires again in early July. Southern California remained very dry and conditions continue to support significant fires.

Fire season in the Great Basin typically increases and peaks through July and August, then winds down in September. This summer is no exception with the eastern portions of the region coming into play in early July and western portions toward the second half of July and into August.

Across Colorado, Arizona and New Mexico fire season timing has been near average with large fires emerging during June. Overall, a near normal timing of the monsoon is expected which should bring at least a pause if not an end to fire season. It is possible with short term dry and or windy conditions to have short term fire outbreaks through the rest of the summer.

In the eastern U.S. conditions are not likely to support significant fires until the fall fire season which is likely to occur normally. Any short term hot and dry spells, especially around the fringes of tropical activity will present the potential to see short term fire activity increases.



Normal fire season progression across the contiguous U.S. and Alaska for July, August, September and October as shown by monthly fire density (number of fires per unit area). Fire size and fire severity cannot be inferred from this data. (Based on 1999-2010 FPA Data)

Geographic Area Forecasts

Alaska: Alaska will experience normal significant wildland fire potential from July through October.

Despite a cold, damp spring and late start to summer, June became extremely hot and dry with little precipitation over most of the state and two record-breaking heat waves. The extreme hot and dry conditions of late June have dried fuels significantly. The typical summer pattern of afternoon showers and thunderstorms across the Interior has yet to become prevalent, preventing the moderating effects of periodic moisture across the landscape. Forecast models indicate a pattern change in early July, bringing some moisture into the western, central and southern parts of the state. It is expected that the incoming moisture will help moderate conditions in the west. The eastern Interior will continue to be warm and dry. North of the Brooks Range, where fire activity is typically quite minimal, expect somewhat above normal temperatures. Alaska is in the heart of fire season, due to long hours of daylight and a typical blossoming of lightning activity that lasts until the middle of July.

Northwest: Expect above normal significant wildland fire potential to develop in early July across most of Oregon and portions of south central and southeastern Washington. This condition will remain in place through September and return to normal in October.

The first half of June was warm and dry for the Pacific Northwest but late June became cooler and wetter as several weather systems moved in. Accumulation of precipitation was greatest in eastern Washington and sections of northeastern Oregon. Elsewhere, rainfall for the month was near to below average. Rain in late June moistened fuels considerably across the region. Thousand-hour fuel moisture values rose to above average as a result. Temperatures in June were mixed with some areas above average for the month as a whole while others were below average. Climate outlooks for July, August, and September continue to suggest warmer and drier weather than typical for the Area. The first week of July looks particularly warm and dry. Hot weather is projected to rapidly negate the effect of the rain. Fire danger indices are forecast to increase enough to support the risk of significant fires across portions of the Area during the first week of July. The traditional beginning of fire season in the northwest is in early July and this year is expected to be no different. Given forecasts of unusually dry weather for the remainder of the summer, fire season seems likely to last well into September.

Northern California and Hawaii: Significant wildland fire potential will continue above normal across eastern and southern portions Northern California in July. By August above normal conditions will spread to encompass most of Area. Expect those conditions to persist through September. They will moderate to normal in the north and east in October, but remain above normal in southern portions of the Area through October.

June was hot and dry until the last week of the month, when an unseasonably strong low pressure system moved onshore with unusually heavy and persistent rain, over 72 hours in some areas. Rainfall amounts of a half inch to one inch of rain were common, with some areas getting over three inches of rainfall. Some areas to the far south and far northeast only received light amounts less than a quarter inch. This was the heaviest and most widespread large scale summer rainfall event in over a decade across the Area. Fuels have moderated significantly, especially areas along and west of the Sierra crest where even the 1000 hour fuels have moistened significantly due to the late June rainfall event. Normal precipitation and above normal temperatures are expected for early July, though near to slightly cooler than normal conditions for the latter half of July are expected. August and September are expected to have above normal temperatures and near to below precipitation. But again, the normal precipitation for this time of year is insignificant, and most of the Area will be in moderate to severe drought. The early July heat will help quickly dry out fuels, with conditions approaching normal midsummer levels by mid-July in most areas. The quickest response to the hot and dry weather will be in the grassier lower elevations of the Sacramento Valley and surrounding foothills as well as the East Bay Hills. By October, the Area typically begins to receive large scale,

cold season wetting rain events. After August, fire activity across far northern and eastern California drops off rapidly in most years, and this year isn't expected to be different.

Hawaii will experience normal significant wildland fire potential for July through October.

June brought another month of much wetter than normal conditions to the far northern Hawaiian Islands. Elsewhere most of the islands were closer to normal June precipitation, except for leeward areas of Molokai and The Big Island which were significantly drier than normal.

Southern California: Significant wildland fire potential will continue to be above normal in all coastal, mountain, and inland valley areas, excluding the agricultural areas of the San Joaquin Valley, through September. Northern portions of the Area, including the northern portion of the Los Padres, Sierra, and Stanislaus National Forests and Yosemite National Park may see significant wildland fire potential return to normal in October.

Near record low levels of fuel moisture along with seasonally hot weather will keep significant wildland fire potential above normal over most of the non-desert portion of the district. Persistent troughs off the West Coast served to keep much of the Area relatively cool and humid during June. A continuation of below normal temperatures and above normal humidity is not expected the rest of the summer for any sustained period of time. Current live fuel conditions more closely resemble conditions normally seen in August or September. All fuels are highly receptive to ignition, except immediate coastal regions during periods of marine layer coverage. Expect rapid rates of spread and extreme fire behavior during windy periods or during peak heating hours where fuels and terrain align favorably. Long range model guidance indicates southwest flow over the Area may help keep monsoonal moisture shunted off to the east of the state much of the summer. Thus, fewer thunderstorms are expected this year compared to last summer, but even in dry summers there are a handful of days with convective activity. These days will need to be watched carefully as the extremely dry fuels will allow for ignitions. Widespread wetting rains are not expected this summer. Seasonal rains over the northern half of the Area may allow significant fire potential to drop to near normal levels over the north regions in October, but the rest of the Area will see significant fire potential continue to be above normal until significant wetting rains occur in either November or December.

Northern Rockies: Normal significant wildland fire potential will be prevalent across the Northern Rockies throughout the outlook period. For July below normal significant wildland fire potential will be present across northeastern Montana and northwestern North Dakota, which will return to normal in August. Also in August southwestern Montana will see an increase to above normal significant wildland fire potential, which should return to normal by September.

June was largely cooler and wetter than normal across much of the Area. Large portions of eastern Montana received greater than 300 percent of normal precipitation due to heavy rain events early in the month. Mountain snowpack has come off at a slightly faster than normal rate this year, indicating increased probability for more fires and larger fires on the mountain slopes during the fire season. Live fuels are currently a couple of weeks behind normal in respect to curing. Additionally, soil moistures in many areas are nearly saturated. Exceptions included southwest Montana and central Idaho where deepening and expanding drought conditions continued. The focus of the most extreme drought conditions were observed in southwest Montana. Fuel moistures are much drier than normal in these areas. Fine fuels have begun to quickly cure. In addition, there is concern that there will be some carryover effect from last year's record dryness in southwest Montana. There is some potential for above normal potential activity in southwest Montana in late July, but confidence is not high. Northern Rockies should be in the midst of a transition into a pattern that promotes generally warmer and drier than normal conditions for July through September as a ridge of high pressure begins to build over the intermountain west. When average summertime temperatures are just 0.3 degrees Celsius above normal, data shows a one in two chance for an above normal season. Those factors increase the likelihood for an above normal fire season across the southwestern portion of the Northern Rockies Area. Climate outlooks suggest that the ridge should develop over central or

eastern Montana. Should this occur, periodic surges of monsoonal moisture in July and August would promote thunderstorm activity. At least a normal amount of lightning activity can be expected during the peak of fire season that runs from mid-July until mid-September. The fire season is not expected to be abnormally long, and should draw to a close in mid-September. Elsewhere, a delayed start to the fire season for northeastern Montana and northwestern North Dakota should translate to below normal significant wildland fire potential in July and possibly August.

Eastern Great Basin: Southern Utah will experience above normal significant wildland fire potential in July, but should return to normal as the monsoon pushes west. Portions of southwestern Idaho will see above normal significant wildland fire potential develop in July and spread north into central Idaho for August before most of the Area will return to normal in September and October.

June was a very dry month across Utah and has left fire danger indices near record levels going into July, especially across the south and east. The anticipated increase in lightning activity across Utah will create an increase in the likelihood of ignitions; this combined with the dry fuels will create above normal significant fire potential. Enough relief is expected to come to southern and eastern Utah during the second half of the month to reduce fire potential to normal. June was a fairly wet month for the western and central Idaho mountains with one and a half to three inches of rain reported during the month. The low elevations of southwest Idaho have been dry all spring until very recently. This has left sagebrush fuel moisture values below normal; therefore, fire potential is expected to be above normal in this region. Fuels across western and central Idaho, including the higher elevations, are expected to have dried sufficiently during July to produce above normal fire potential for the month of August. Early fall weather outlooks suggest a normal fall like pattern will settle into the area by mid-September for normal fire potential Area-wide.

Western Great Basin: For July above normal significant wildland fire potential will persist across southeast Nevada, Mt Charleston and the Arizona strip. As the monsoon pushes west these areas should improve by mid to late July. Portions of the Sierra Front, northern mountains and ruby mountains will see above normal significant wildland fire potential develop in July and continue through September.

Fire season is expected to pick up from mid-July through August and wind down in September. Very hot temperatures with some record breaking heat and dry conditions through early July will likely complete the curing process over western and northern areas. The main concern is the growth of new fuels from late spring rains and the mid-upper slope timber and pinyon-juniper areas due to long term drought and very dry winter and spring conditions. Another area of concern may be the Mt. Charleston area through mid-July as lightning increases due to well below normal fuel moisture and not as much compaction of fuels. Above normal potential is also expected in parts of the Sierra Front and over higher elevations in north and northeast Nevada by mid-July and August as fuels cure, soil moistures remain very low, the drought continues and chances for lightning increase. Periods of hot and dry weather are likely in July and into early August with chances for thunderstorms, but the pattern later in August is not as certain. The potential is there for a return to a progressive pattern where troughs move through the West later in August through September. This would bring cooler or wetter weather which would shorten the fire season. It is anticipated that the fire season will wind down in September, but confidence is not high yet on the end to fire season.

Southwest: Significant wildland fire potential will remain above normal across much of Arizona and northwestern New Mexico in early July and slowly return to normal across the Area from east to west as the monsoon develops. The Area will remain normal from August through October.

July will bring an end to the typical fire season weather pattern and begin the transitions to a monsoonal pattern. In July, upper level high pressure will be in place over the Great Basin to begin the month which will allow most areas east of the divide to moisten up with higher humidity and areas of scattered wet storms during the first week of July. Moisture will lead to more lightning potential into Arizona during the first week or so of July until the upper high eventually settles far enough north and east to allow moisture intrusion through all of Arizona. As usual, moisture will develop from east to

west leaving northern and northwestern Arizona the last to return to normal around mid-July or shortly thereafter. For August, some concern persists that even a few trough passages inland into the Great Basin could sweep moisture out of northern Arizona creating short term increases in fire activity. Continued dryness and heat will likely be focused from east of the New Mexico central mountain chain into west Texas through August. Little to no concern for significant wildland fire potential exists Area-wide for September and October. Confidence in this outlook is moderately high.

Rocky Mountain: Southern and western Colorado will see above normal significant wildland fire potential for July. As monsoonal moisture moves in conditions will return to normal beginning in south central Colorado and moving north and west.

Significant fire activity was above normal during June over central and southern Colorado as a result of precipitation deficits in combination with episodes of lightning, followed by hot, dry and windy periods. Overall, drought intensification occurred during June across southwest Wyoming and much of Colorado, especially in southern and central portions of the state. For July, precipitation deficiencies are expected to continue across west central to northwest sections of Colorado into southwest Wyoming; however a more moist weather regime with closer to average conditions for this time of year are predicted across southern portions of Colorado and especially locations east of the divide. Resultant fire potential for July is expected to move closer to average initially east of the continental divide in Colorado, then gradually moderating across southern Colorado as well. Otherwise, above average fire potential during July is expected to be focused across west-central portions of Colorado into southwest Wyoming. During the latter portion of the summer into fall the anticipated weather trend is for near average precipitation and temperatures across the Area. The corresponding fire potential is anticipated to remain normal. In the case of Wyoming August is the peak month for large fire occurrences and should remain largely normal.

Eastern Area: Below normal significant wildland fire potential will be prevalent across the Eastern Area for July, except in portions of the Great Lakes states where normal conditions will be present. In August expect conditions throughout the Area to return to normal and continue normal through October.

Short term drying developed across parts of the northern Great Lakes and the western half of the mid-Atlantic States through early summer. Soil moisture and precipitation anomalies were below normal at the end of June over these areas. Drier portions of the northern Great Lakes may see periods of above normal fire potential if normal precipitation does occur through the remainder of the summer. The rest of the Eastern Area experienced near to above normal precipitation through the late spring and early summer. The wettest portions of the Area include the southern Great Lakes, northern and central Big Rivers, and areas along the Atlantic coast. Wetter and cooler conditions overall are forecast across the Eastern Area through mid-summer. This will lead to near to below normal fire potential in July across much of the Area. More normal temperature and precipitation patterns are forecast through the end of summer. Fuel moistures were near to above normal across the majority of the Eastern Area at the end of June. Drier fuels were in place across parts of the northern Great Lakes. A normal start to the fall fire season is anticipated. As always, any drier portions of the Eastern Area which experience any dry, warm and windy periods of weather will see an increase of fire activity.

Southern Area: Significant wildland fire potential will persist across most of the Southern Area through July. In August and through the fall the focus of the below normal potential will be along the Atlantic and Gulf coasts as well as western Texas.

The Southern Area remains in a continuing pattern of higher humidity and recurring periods of moderate rain activity. With the exception of areas of western Oklahoma and Texas where areas of moderate drought remain, most of the Southern Area is free from drought. An active and robust rain pattern with cooler temperatures is expected to continue, especially early in a swath from Oklahoma and Arkansas northeast to the Ohio Valley in June. This could bring localized flooding. With tropical

activity both in the eastern Pacific and Caribbean continuing to mature expect much wetter conditions for Puerto Rico and across Florida and the southeastern states up into the mid-Atlantic. Summer will be wetter and more humid for the Deep South and coastal Atlantic. The return of gulf moisture and thunderstorm activity will bring much higher risks for land falling tropical activity.

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 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>