



# National Seasonal Assessment Workshop

Western States  
and Alaska

Boulder, CO  
April 20-22, 2010

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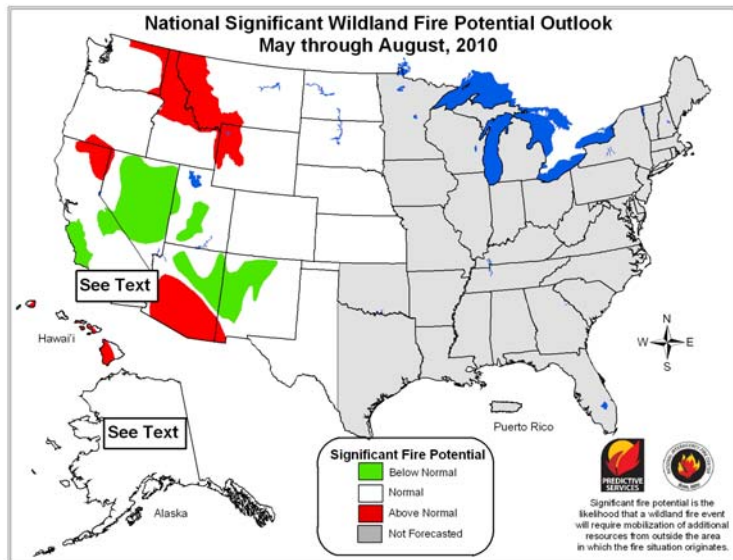


## 2010 National Seasonal Assessment Workshop for the Western States and Alaska

On April 20-22, 2010 fire, weather and climate specialists convened at the National Oceanic and Atmospheric Administration Earth System Research Laboratory in Boulder, Colorado for the eighth annual National Seasonal Assessment Workshop. A forecast of seasonal significant fire potential for the western states and Alaska was produced. This briefing document includes a description of existing climate forecasts, fuels conditions, and influences on resource requirements.

### Significant Fire Potential Forecast (May – August 2010)

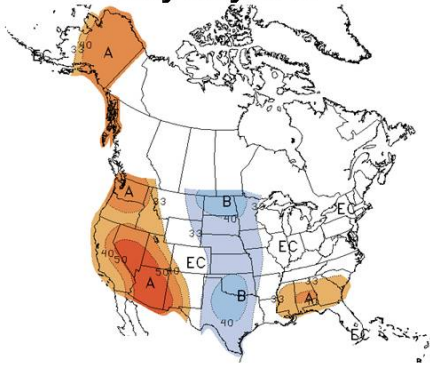
The map below shows the significant fire potential forecast for May through August 2010 across the western half of the U.S. and Alaska. Significant fire potential is defined as the likelihood that a wildland fire event will require mobilization of additional resources from outside the area in which the fire situation originates. Areas highlighted as "Above Normal" are likely to require additional external resource mobilization.



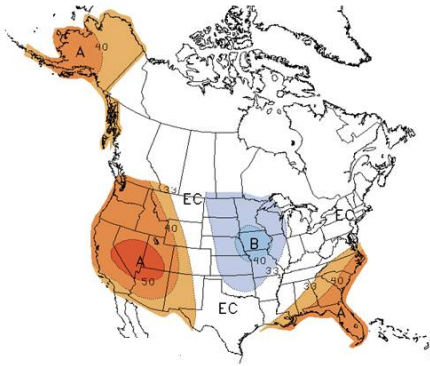
The workshop results indicate there will be above normal significant fire potential across portions of the Northwest, Northern Rockies, Rocky Mountains, northern Great Basin, northeastern California, southern Arizona and leeward side of the Hawaiian Islands. Below normal significant fire potential is forecast for portions of southern California, the Great Basin, and the Southwest. Elsewhere, significant fire potential is expected to be normal through August. The critical factors influencing significant fire potential for this outlook period are:

- **Drought:** Drought conditions continue to persist over northeast California and northwest Nevada, western Wyoming, western Montana and much of Idaho.
- **Snowpack:** Snowpack in the Southwest has been well above average, while in western Wyoming through the northern Rockies the snowpack has been well below average.
- **Grassland Fuels:** Abundant fine fuels across southern Arizona are expected to lead to an active 4-6 week grassland fire season. Fine fuels are not expected to be of concern in the Great Basin. There is an increased large fire risk over the California desert areas in June due to fine fuels, with fire potential decreasing to normal by July.
- **Fire Season Onset:** In areas with above average snowpack, fire season onset will be delayed due to a later snowpack melt.
- **Southwest Monsoon:** Early indications suggest monsoon onset will occur around the typical start date or later with associated precipitation amounts near normal for the season.

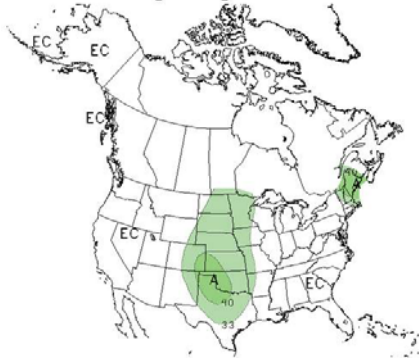
## Temperature Forecasts May-July 2010



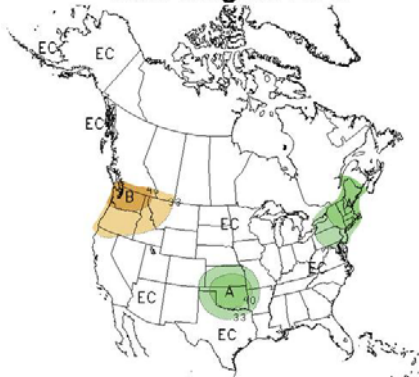
## June-August 2010



## Precipitation Forecasts May-July 2010



## June-August 2010



A = Above Normal  
 B = Below Normal  
 N = Normal  
 EC = Equal chances of above,  
 below, or normal conditions

Numbers represent the probability of occurrence.

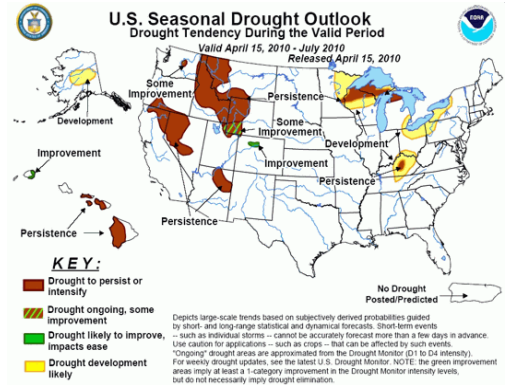
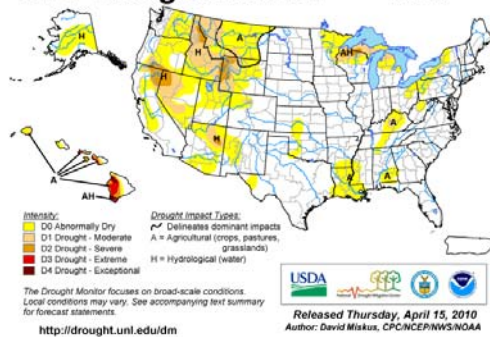
## Climate Conditions and Forecasts

A moderate to strong El Niño has been in place during the last 12 months. The January - March precipitation anomaly pattern across the West had a "classic" El Niño look with above average precipitation in the Southwest and dry in the Northwest and northern states. Consensus forecasts of sea surface temperatures suggest decreasing equatorial Pacific temperatures to neutral conditions through summer. The National Weather Service Climate Prediction Center's outlooks reflect some lingering El Niño effects through the May time-frame. Beyond May, climate outlooks are influenced by a combination of soil moisture conditions, model output, and long term climate trends.

## Temperature and Precipitation

Snowpack, roughly south of a line from Reno to Denver, has been near or above average while locations further north have been below average. Soil moisture anomalies are below average for much of the northwest quarter of the country. This pattern is reflected in the Drought Monitor.

## U.S. Drought Monitor



The NOAA Climate Prediction Center (CPC) seasonal outlooks for May through July and June through August 2010 (at left) predict above average temperatures across most of the West and Alaska. The greatest likelihood of above average temperatures is in Arizona and southern Nevada during May through July, and the Arizona / Utah / Nevada area during June through August. During May through July, CPC indicates increased chances for dryness across the Northwest, northern Idaho and western Montana during June through August.

## Geographic Area Discussions

**Alaska:** Significant fire potential is expected to start above average in May, then transition to normal by June for the remainder of the fire season. Therefore, significant fire potential is expected to be normal for the overall May through August time period. Below normal winter snowpack over much of Alaska and anticipated developing drought over the central and southern interior will contribute to lower than normal fuel moistures. Forecasts for May through August call for above normal temperatures, especially early in the season, and near normal precipitation. This will likely increase fire activity early in the fire season and perhaps bring an early start to fire season. In general, historic fire occurrence has shown that years with similar spring climate and fuels conditions, and anticipated summer climate conditions, compared to 2010 have resulted in normal fire activity for Alaska. Therefore, fire activity is anticipated to become closer to near average as the season progresses. **Confidence in the outlook for Alaska is moderate.**

**Northwest:** Above normal significant fire potential is forecast for extreme northern and eastern Washington and extreme southern Oregon. Normal significant fire potential is expected elsewhere. Snowpack across the Northwest as of late April was running on average 50-75% of normal. Most El Niño winters are followed by a warmer and drier than normal May, which is in line with the May forecast for 2010. This would lead to an earlier than normal snowmelt and accelerated drying of fuels. Fire season is anticipated to begin one to two weeks earlier than normal in the Northwest and consequently lead to a longer than average fire season. Forecasts for June through August are for warmer and drier than normal conditions. These conditions could produce active fires should sufficient ignition triggers materialize. The predicted summer climate pattern may lean towards lightning activity in Okanogan region of north-central Washington and therefore a higher likelihood of significant fire potential. Elsewhere, some spikes in large fire activity are expected during the summer fire season, especially in the drier regions of southeastern Washington and south-central Oregon. **Confidence in the outlook for the Northwest is moderate.**

**California and Hawaii:** Above normal significant fire potential is forecast for northeast California for May through August. Southern California is forecast to have above normal significant fire potential for the deserts in May into early June, then transitioning to below normal significant fire potential for portions of the central Sierra Nevada and the central coast for June through August. Above normal significant fire potential is forecast for the leeward side of the Hawaiian Islands. Normal significant fire potential is expected elsewhere. Although much of California received abundant precipitation over the winter, northeastern California continues to experience drought conditions that are forecast to persist throughout the summer. This will contribute to lower fuel moistures and fire danger indices as the season progresses. Damage to trees from winter storms will add to the downed fuel load in some locations across the state. Forecasts for May through August call for warmer than normal temperatures and near normal precipitation, except possibly drier than normal in extreme northern California. Winter and spring precipitation has resulted in copious fine fuels across the deserts of southern California. This area will likely see above normal significant fire potential early in the fire season. In general across southern California, fire season is expected to begin on time at the lower elevations (below 3,000 feet) and late across elevations above 5,000 feet. Below normal risk of large fires is anticipated over the central coast and portions of the central Sierra Nevada where persistent winter and spring weather patterns have brought plentiful precipitation. Long term drought is expected to persist along the leeward side of the Hawaiian Islands through the summer. **Confidence in the outlook for California and Hawaii is moderate to high.**

**Northern Rockies:** Above normal significant fire potential is expected west of the Great Divide with normal significant fire potential expected elsewhere. Moderate to severe drought has developed west of the Divide due to below normal fall precipitation and winter snowpack. Drought is forecast to persist across this area with anticipated warmer and drier than normal summer conditions. However, unlike recent years with active fire seasons across the Northern Rockies, the current drought is short term beginning last December. Snowmelt is anticipated to occur early this year due to low snowpack levels and above normal May temperatures. This will likely lead to an accelerated drying of fuels and a possible early start to the fire season. Fires will likely become active in mid-July and continue at an above normal level through September. **Confidence in the outlook for the Northern Rockies is high.**

**Great Basin:** Significant fire potential is expected to be below normal across most of Nevada and south-central Utah. Above normal potential is predicted for central Idaho and northwestern Wyoming. The region of above normal potential is due to the combination of below average winter snowpack, persistent drought, predictions for above average temperatures, insect-killed forests in northwestern Wyoming, and frost-killed brush in west-central Idaho. Western Great Basin is expected to have below normal fire potential, due to a lack of abundant and dense fuel growth (in contrast to a major fire year, like 2005). Nevada high fire years typically have well above normal winter rainfall, abundant grass and an above average snowpack, most of which is lacking as of early April, 2010. If several days of extraordinary lightning occur this summer, Nevada could experience a near normal number of acres burned. Southern and south-central Utah mountains are expected to have a delayed green up, due to late spring storm activity and above average snowpack. Fine fuel growth across much of southern and western Utah has been stunted, due to a cool early spring. Thus, below normal potential is forecasted for this part of the Area. **Confidence in the outlook for the Great Basin is moderate to high.**



**Southwest:** The seasonal significant fire potential forecast for the Southwest Area predicts a range from above normal to below normal fire potential, based on fuels and elevation gradients. Above normal fire potential is forecast for relatively low elevations of the Sonoran Desert in southwestern Arizona, where abundant winter precipitation has increased fine fuel loads. In this part of the Area, green-up began early and is expected to be prolonged; moreover, fine fuel growth has been vigorous across southern Arizona into southwestern New Mexico. Reports from Tonto National Forest in central Arizona indicate new fine fuel growth up to one foot high. In contrast, well above average snowpack and winter-spring precipitation at higher elevations on the Colorado Plateau in northeastern Arizona and northwestern New Mexico has substantially decreased fire potential, especially in forest areas; thus, the forecast is for below normal fire potential in these regions. In the more northern parts of the Area, fine fuels have been compacted by winter snow, further reducing fire concerns. The main concern for the region is the time period from the end of the growing season until the onset of the monsoon. Thus June, a reliably warm, dry month, is seen as the most critical time period for above average fire potential in southwestern Arizona – during which fine fuels may cure rapidly, leading to a vigorous and intensive 4-6 week season until the onset of the monsoon. The key climate factors are focused on the transition from El Niño to neutral or La Niña conditions, and the effect of that transition on monsoon onset. Monsoon climate forecasts are ambiguous, though none of the forecasts indicate an early monsoon onset in Arizona. ***Confidence in the outlook for the Southwest is high for most of the Area, but only low-to-moderate for southern Arizona (most uncertainty is associated with the timing of fine fuel curing and monsoon onset).***

**Rocky Mountains:** Normal significant fire potential is forecast for most of the Rocky Mountain Area. Above normal potential is forecast for northwestern Wyoming, centered on the Shoshone National Forest and Wind River Range, pertaining primarily to the mid-July through August time frame. During the last 6 months, most of the Area received above average precipitation, which alleviated early spring fire potential across eastern Colorado and Kansas. Much of western Wyoming and northwest Colorado are areas of concern for above average fire potential in early to mid-July. Winter snowpack and precipitation were below average in this part of the Area, and there are concerns about fuels conditions, such as in insect-damaged areas. Some fuels-related fire potential concerns remain, such as: grasses and shrubs in eastern Colorado and southwestern Kansas, and areas of insect-related tree mortality in north-central Colorado, the panhandle of Nebraska, and the Black Hills region of South Dakota. This forecast indicates good opportunities for prescribed burns in southwestern Colorado, due to average snowpack and above average precipitation during the last 6 months. Weather forecasts predict abundant precipitation from mid-April to early May, which will help alleviate short-term concerns in parts of the Area. Climate outlooks call for warmer than normal temperatures during the outlook period. ***Confidence in the outlook for the Rocky Mountains is moderate-to-high, with the highest confidence for the region of above-normal potential in northwestern Wyoming.***

## Resource Support

National mobilization of resources is expected to be moderate to high based on the breadth and severity of the projected fire season. In May, additional resource support is likely for Alaska and possibly southern California. In June and July, significant fire potential in portions of the Northern Rockies, Northwest, Northern California and southern Arizona is expected to increase the demand for resources to support large fire activity during mid-summer. The demand for resources is likely to continue across Northern California, the Northwest and Northern Rockies through August. Demand for resources in much of the southern Great Basin and portions of the Southwest should remain low to moderate throughout most of the outlook period.

## 2010 National Seasonal Assessment Workshop Summary

The main objective of the Seventh Annual National Seasonal Assessment Workshop is to improve information available to fire management decision makers. Other objectives include:

- Improving communication and cooperation between fire professionals and climate scientists
- Improving interagency and inter-government (state, federal) information flow
- Fostering the exchange of ideas and techniques for assessing fire potential and applying climate forecasts and products to meet fire management needs

These annual assessments are designed to inform decision makers for proactive wildland and prescribed fire management, thus better protecting lives and property, reducing firefighting costs and improving firefighting efficiency.

Workshop participants, in consultation with other specialists unable to attend the workshop, considered a variety of factors when making their assessments. Significant fire potential outlooks are primarily based on interactions between climate factors, fuel types and conditions, long-range predictions for climate and fire and the persistence of disturbance factors,

such as drought and insect-induced forest mortality. The main product of the workshop was a map forecasting significant fire potential for the western United States and Alaska.

The 2010 workshop was part of the eighth national assessment organized by the National Predictive Services Group (NSPG), the Climate Assessment for the Southwest (CLIMAS) at the University of Arizona, and the Program for Climate, Ecosystem and Fire Applications (CEFA) at the Desert Research Institute. Workshop funding was provided by the National Predictive Services Subcommittee (NPSS) and the National Oceanic and Atmospheric Administration (NOAA). The fifth North American Seasonal Assessment Workshop, which included participants from Mexico and Canada, was held in conjunction with this workshop. Other participating agencies are listed below.

<b>Participating Agencies</b>	
Alaska Coordination Center	NOAA National Weather Service
Boise State University	NOAA Earth Systems Research Laboratory
Bureau of Indian Affairs	NOAA Cooperative Institute for Research in Environmental Sciences
Bureau of Land Management	Northern California Coordination Center
California Department of Forestry & Natural Resources	Northern Rockies Coordination Center
CLIMAS / University of Arizona	Northwest Coordination Center
CNAP / Scripps Institution of Oceanography	Oregon Department of Forestry
Department of Agriculture	Pacific NW Research Forestry Sciences Lab
Department of Interior	Rocky Mountain Coordination Center
Desert Research Institute	Servicio Meteorological Nacional
Eastern Great Basin Coordination Center	South Dakota School of Mines and Technology
National Association of State Foresters	Southern California Coordination Center
National Interagency Coordination Center	Southwest Coordination Center
National Oceanic and Atmospheric Administration	USDA Forest Service
National Park Service	U.S. Fish and Wildlife Service
Natural Resources Canada	U.S. Northern Command
NOAA Climate Prediction Center	Western Great Basin Coordination Center

