National Seasonal Assessment Workshop

Western States and Alaska

Boulder, CO
April 14-16, 2009

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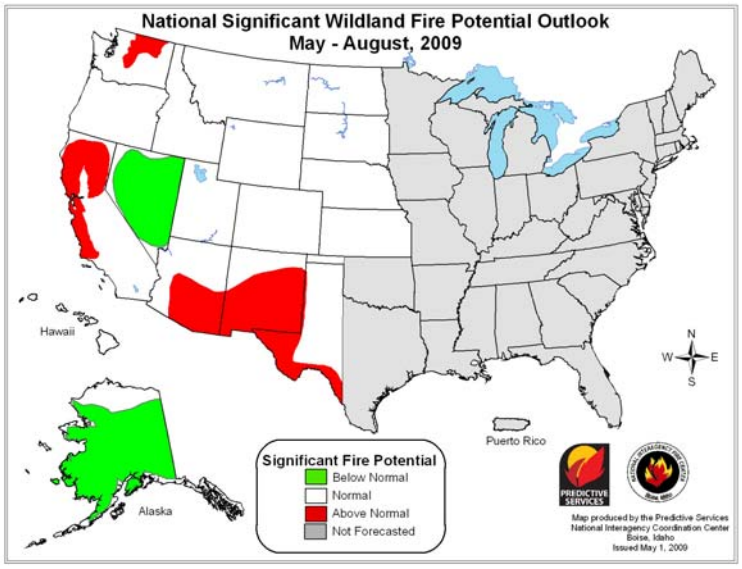
2009 National Seasonal Assessment Workshop for the Western States and Alaska

On April 14-16, 2009 fire, weather and climate specialists convened at the National Oceanic and Atmospheric Administration Earth System Research Laboratory in Boulder, Colorado for the seventh 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 2009)

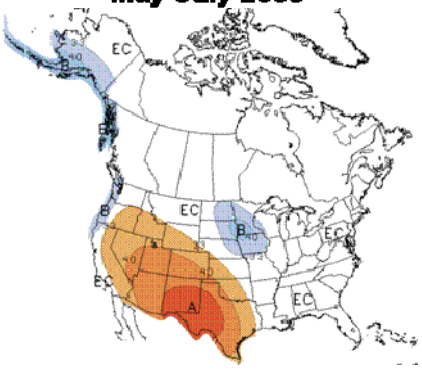
The map below shows the significant fire potential forecast for May through August 2009 across the western half of the U.S. and Alaska. Significant fire potential is defined as the likelihood that a wildland fire event will require mobilization of additional resources from outside the area in which the fire situation originates. Areas highlighted as "Above Normal" are likely to require additional external resource mobilization.



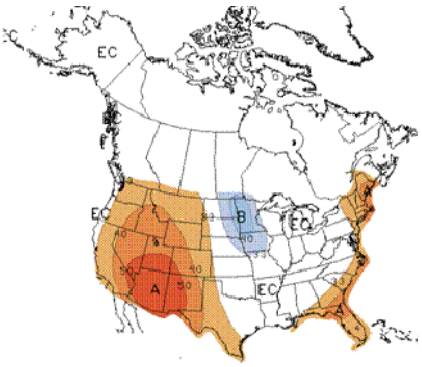
The workshop results indicate there will be above normal significant fire potential across portions of California, the Southwest, and the Northwest. Below normal significant fire potential is forecast for most of Alaska and Nevada. Elsewhere, significant fire potential is expected to be normal through August. The critical factors influencing significant fire potential for this outlook period are:

- **Drought:** Drought conditions continue to persist or intensify over portions of the West, especially in California, Nevada, and portions of Texas and New Mexico. Significant improvement has occurred over the north-central Great Plains.
- **Snowpack:** Wet fall conditions and above normal snowpack in Alaska are expected to limit fire potential. Below normal snowpack in north-central Washington and northern California along with warmer and drier than normal forecasted conditions will lead to an early snowmelt and rapid drying of fuels.
- **Grassland Fuels:** Abundant new and carryover fine fuels across southern and eastern portions of the Southwest are expected to lead to an active grassland fire season**.** Continued moisture deficits in Nevada are expected to limit fine fuel production and associated fire spread.
- **Fire Season Onset:** Dry spring conditions in northern California are expected to cause annual grasses to cure three to five weeks early. An above normal snow-pack should delay snow melt over higher elevation areas across portions of the northern Rocky Mountains, especially in northern Idaho and Montana. This will help keep fuels moist and delay the onset of fire season in these higher elevation areas.
- **Southwest Monsoon:** A robust monsoon in the Southwest should help mitigate fire potential by early July.

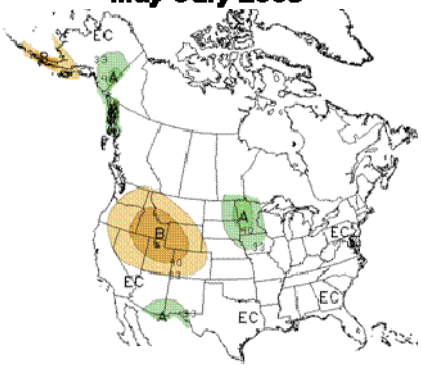
Temperature Forecasts
May-July 2009



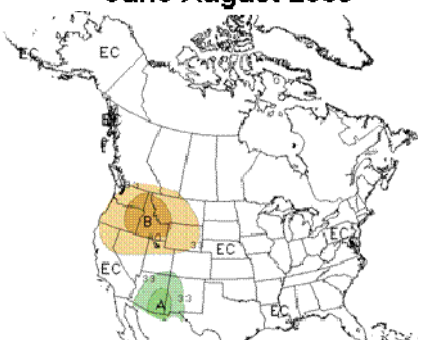
June-August 2009



Precipitation Forecasts
May-July 2009



June-August 2009



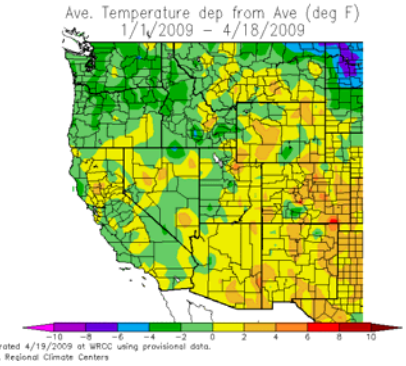
A = Above Normal
B = Below Normal
N = Normal
EC = Equal chances of above, below, or normal conditions

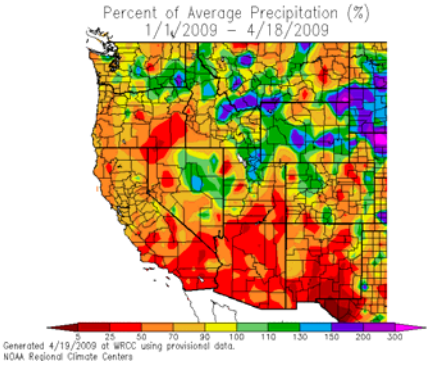
Numbers represent the probability of occurrence.

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/lead04/off_index.html

Climate Conditions and Forecasts

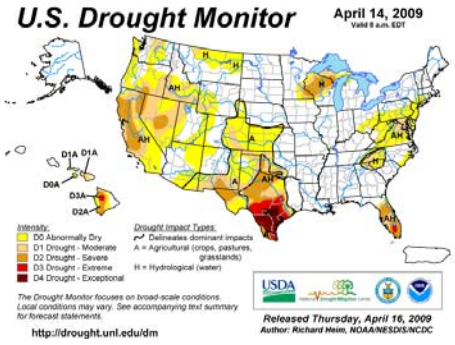
During the last 12 months, sea surface temperature (SST) anomalies have kept neutral to weak La Niña climate conditions in place. Since January 2009, there has been considerable dryness and warmth across the southern half of the West and unusual dryness in California and the Pacific Northwest (see images below). In February, a wet episode briefly interrupted the ongoing drought in southern California. In recent months La Niña shows signs of fading again, and SST forecast models indicate that La Niña will continue to weaken into the summer. The forecast for dry summer conditions from northern California and Nevada north to the U.S./Canadian border is primarily driven by the CPC consolidated consensus and model forecasts. The CPC model guidance as well as typical fading La Niña conditions indicate a robust monsoon will occur in the Southwest. Workshop participants noted that similar past years have generated above average monsoon precipitation that was centered over the New Mexico-Texas-Chihuahua border rather than further west across southern Arizona and Sonora.

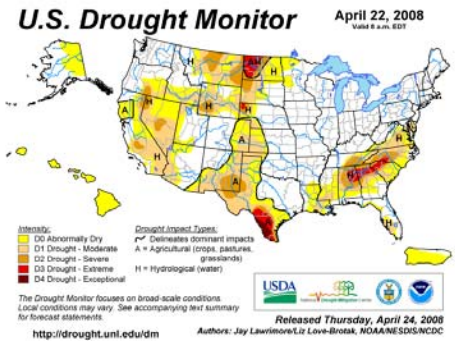




Temperature and Precipitation

Drought conditions persist over portions of the West (2009 below left). Compared to last year (below right), drought severity has intensified over much of California and Texas, and decreased across the northern Rocky Mountains, Great Plains, and Alaska.





The NOAA Climate Prediction Center (CPC) seasonal outlooks for May-July and June-August 2009 (at left) predict above average temperatures across most of the West. The greatest likelihood of above average temperatures is in New Mexico and west Texas during May-July, then Arizona and New Mexico during June-August. During May-July, CPC predicts below average temperatures for the Oregon and Washington Coast Ranges and southern Alaska. The CPC predicts drier than average conditions for the Pacific Northwest and Rocky Mountains throughout the period. Above average precipitation is forecast for southeastern Alaska through June and for parts of the Southwest during June through August. These forecasts are consistent with historical summers following fading La Niña conditions.

Geographic Area Discussions

Alaska: The combination of wet fall conditions, above normal snow-pack and anticipated cooler and wetter than normal conditions this spring and early summer are expected to create below normal significant fire potential across much of the state through August. Canadian drought code values were low across the eastern interior last fall due to wet conditions. This was followed by average to above average snow accumulation during the winter across most of the state. This has helped mitigated the abnormally dry drought conditions that were in place at this time last year. Forecasts for May through August call for near to below average temperatures and near average precipitation across portions of western and southern Alaska through the outlook period. In areas of bug-killed timber, especially on the southwestern Kenai Peninsula and portions of the western Cook Inlet, there remains an elevated risk of large fires. Historically, fire seasons following La Niña conditions tend to burn less than the average number of acres. ***Confidence in the outlook for Alaska is moderate.***

Northwest: Above normal significant fire potential is forecast in north-central Washington east of the Cascades. Elsewhere, significant fire potential is expected to be normal through August. The Northwest experienced a cooler than normal winter, and temperatures are expected to stay below seasonal normals through May. The mountainous areas in both Washington and Oregon currently have near to above normal snow-pack, except in north-central Washington where snow-pack and snow water content amounts are running 70-80 percent of normal. May is expected to be cool, followed by a warm and dry summer. The timing of snow melt will likely be normal this year for most areas, except for north-central Washington were low snow accumulations will likely melt early. Significant fire potential is expected to increase to above normal levels in north-central Washington by mid-late June as fuels cure and dry early in the fire season. Elsewhere, some spikes in large fire activity are expected during the summer fire season, especially during dry lightning events. ***Confidence in the outlook for the Northwest is moderate to high.***

California: Above normal significant fire potential is forecast for most of northern California, portions of the central coast and adjacent interior areas in southern California. In northern California, long-term drought and dry spring conditions will cause annual grasses to cure three to five weeks early. Herbaceous fuels are greening up early and should peak at below normal levels. One thousand hour fuel moistures are also drier than average for this time of year at all elevations due to below normal snowpack and winter precipitation. These factors, along with early snow melt, are expected to result in an early onset to fire season in the northern half of the state. Fire restrictions may be enacted earlier than usual as well. In southern California, fuels are drier than normal across the central coast and adjacent interior areas. Grass growth is near normal in the desert areas and a normal onset to fire season is expected. Across the state, long-term drought is expected to persist or intensify through mid-summer. Insect infestations and associated tree damage continue to present problems across many forested areas. Recently burned areas have numerous snags that may have fallen and blocked road access. The spring prescribed burning season in northern California may be locally shortened due to dry conditions. ***Confidence in the outlook for California is moderate to high.***

Northern Rockies: Normal significant fire potential is expected across the Area during the forecast period. Winter snow amounts coming into the 2009 fire season are averaging 80-110 percent of normal. June is a critical month in the Northern Rockies because of its impact on the timing of snowmelt and the curing of fine fuels. Increased chances of above normal temperatures and below normal precipitation are expected across Idaho and western Montana this summer. Normal significant fire potential is expected unless rapid snow melt in May allows fuels to dry earlier than expected and the Area experiences unusually active lightning. ***Confidence in the outlook for the Northern Rockies is moderate.***

Great Basin: Significant fire potential is expected to be below normal across most of Nevada and normal for the remainder of the Area. Snowpack at the end of April was near normal across most of the Great Basin. Drought is expected to persist or intensify across much of Nevada and southern Idaho this summer. Active fire years in Nevada typically have well above normal winter rainfall, abundant grass, and an above average snowpack, none of which are present so far this year. Consequently, Nevada is expected to have a below average fire season in terms of total acres burned. Most areas in the Eastern Great Basin received adequate winter precipitation except for portions of the southern Utah mountains. Bug kill remains a significant problem, especially in northern Utah, Idaho and western Wyoming. Heavy dead-and-down fuel loadings combined with below average precipitation in the southern Utah mountains, may create conditions favorable to lightning ignitions. The Eastern Great Basin should see normal significant fire potential this year unless there is a premature loss of snowpack followed by a very hot summer. ***Confidence in the outlook for the Great Basin is moderate to high.***

Southwest: Ongoing above normal significant fire potential across the southeast half of the area will shift north and west to central and southeast Arizona and the southwest quarter of New Mexico during late May to early June. This will occur as spring winds gradually give way to hotter and drier conditions across much of the Area. At the same time, moisture events are expected to intrude into west Texas and eastern New Mexico, which will begin to moderate fire potential there. Significant fire potential will moderate across the majority of the region by early to mid-July with the onset of a robust monsoon. Fine fuels across central and southeast Arizona, southern and eastern New Mexico and west Texas have above normal loading and continuity and are effectively cured at this time. Green-up is expected to occur across portions of this area in May, which will moderate fire potential to some degree. Any additional moisture received will cause a more widespread or prolonged green-up period which will further mitigate fire potential. Dead fuel moisture values are low across these same areas. Fine herbaceous fuels needed to support large fire activity in the southwest Arizona deserts do not exist. The combination of adequate moisture, cool temperatures, and a delayed green-up should mitigate significant fire potential across much of northern Arizona and northwest New Mexico (much of the timber regime in the Southwest Area). ***Confidence in the outlook for the Southwest is moderate to high (most uncertainty is associated with fine fuel green-up and the transitional May weather pattern).***

Rocky Mountains: Normal significant fire potential is forecast for the Rocky Mountain Area. Above normal precipitation during April alleviated early spring fire potential across eastern Colorado and Kansas with green-up expected to continue into May. Elsewhere across the Area, moisture has been near normal during the winter and early spring period in terms of precipitation and higher elevation snowpack. This has retarded the start of fire season in the higher elevation areas. As fuels begin to cure from south to north across the Area during the summer, some fire potential concerns remain. Abundant fine dead fuels remain in eastern Colorado below 9,000 feet elevation from an extensive snowfall in 2007. These fine dead fuels, combined with long term drought, may result in brief periods of above normal fire potential in June until moisture from the southwest monsoon arrives in July. Drier than average conditions in the lower elevations of southwest Colorado in early spring may result in brief periods of elevated fire potential in June as well. Most large fire potential is expected to shift into northwest Colorado, Wyoming and the Black Hills during July and August, which is normal. Climate outlooks call for warmer than normal temperatures during the outlook period with dry early summer conditions followed by a robust monsoon. ***Confidence in the outlook for the Rocky Mountains is high (with lowest confidence in western Wyoming and northwest Colorado).***

Resource Support

National mobilization for resources is expected to be moderate to high based on the breadth and severity of the projected fire season. In May and June, additional resource support is likely for the Southwest and possibly California. In July and August, fire activity should moderate in the Southwest and portions of the Rocky Mountain Area, but increase elsewhere across the West. Significant fire potential in portions of California and the Northwest is expected to increase the demand for resources to support large fire activity during mid-summer. Demand for resources in Alaska and Nevada should remain low to moderate throughout most of the outlook period.

2009 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 2009 workshop was part of the seventh 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 Group (NPSG) and the National Oceanic and Atmospheric Administration (NOAA). The fourth 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.

Participating Organizations

Bureau of Indian Affairs	NOAA Cooperative Institute for Research in Environmental Sciences
Bureau of Land Management	NOAA Earth Systems Research Laboratory
California Department of Forestry & Natural Resources	NOAA National Weather Service
CAP/Scripps Institution of Oceanography	Pacific NW Research Forestry Sciences Lab
CLIMAS / University of Arizona	Predictive Services
Desert Research Institute	Rocky Mountain Research Station
IBM Global Services	State of Alaska Division of Forestry
National Association of State Foresters	USDA Forest Service
National Park Service	U.S. Fish and Wildlife Service
Neptune and Company, Inc.	U.S. Northern Command
NOAA Climate Prediction Center	Washington Department of Natural Resources