National Seasonal Assessment Workshop

Eastern, Southern & Southwest Geographic Areas

Shepherdstown, WV
January 27-29, 2009

Rick Ochoa
Tom Wordell
Predictive Services, NICC
(208)387-5400

Tim Brown
Desert Research Institute
(775)674-7090

David Brown
Louisiana State University
(225)578-0476

2009 National Seasonal Assessment Workshop for the Eastern & Southern Geographic Areas

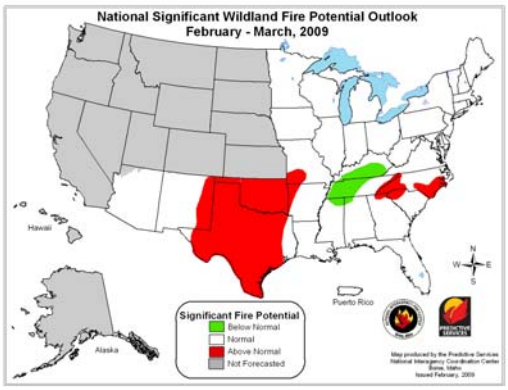
On January 27-29, 2009, wildland fire, weather, and climate specialists convened at the U.S. Fish and Wildlife Service National Conservation Training Center in Shepherdstown, West Virginia for the sixth annual National Seasonal Assessment Workshop for the eastern United States. Two fire potential forecasts for the Eastern, Southern and Southwest Geographic Areas were produced; one for February-March and another for April-June. This briefing document includes a description of existing climate forecasts, fuels conditions, and potential resource impacts.

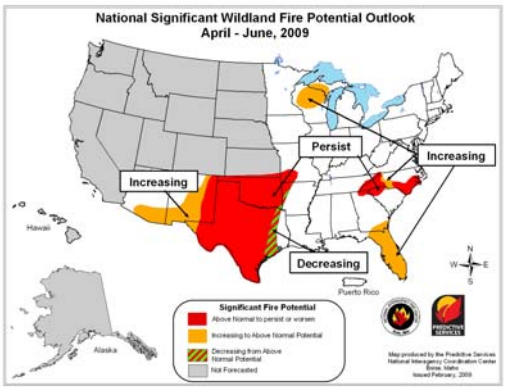
Significant Fire Potential Forecasts

(February–March and April–June, 2009)

The left map below shows the significant fire potential forecast for the Eastern, Southern and Southwest Geographic Areas for February through March. 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 resources mobilized to augment local capability at some point during the forecast period.

The right map below shows the trend forecast for significant fire potential during April through June for the Eastern, Southern and Southwest Geographic Areas based on the February through March outlook. Significant fire potential areas highlighted in red or orange are expected to either persist or increase to above normal. The area highlighted in green and red stripes is expected to improve during the forecast period.





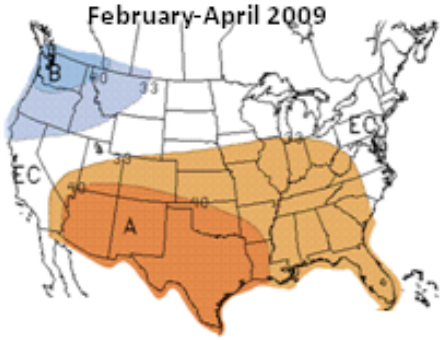
Note: Outlook map images (jpg files) are embedded and linked in this document.

The results of the workshop indicate there will be above normal significant fire potential in nearly all of Texas and Oklahoma, portions of Arkansas and Missouri, and portions of North and South Carolina. Below normal significant fire potential is expected across parts of Tennessee and Kentucky during February and March. Fire potential is expected to increase in parts of Arizona, New Mexico, Texas, Florida, Georgia, North Carolina, Wisconsin and Michigan during April through May. The critical factors influencing fire potential for this outlook period are:

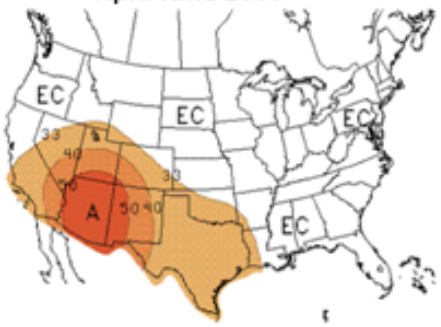
- **Drought:** Expansion and intensification of drought across southern and central Texas and Oklahoma, as well as continued dry conditions across much of Florida and portions of eastern New Mexico, the Carolinas and Wisconsin.
- **Fuels:** Live fuel moisture in juniper and live oak are sufficiently low to readily support torching with crown runs in south-central and southern Texas.
- **Ice Storm:** Damage from ice storm events over the past several winters is producing areas of high fuel loading in Oklahoma**.**
- **Surface Moisture:** Low stream flows and soil moistures are increasing risk for substantial ground fires along the North Carolina-South Carolina border.

Temperature Forecasts

February-April 2009

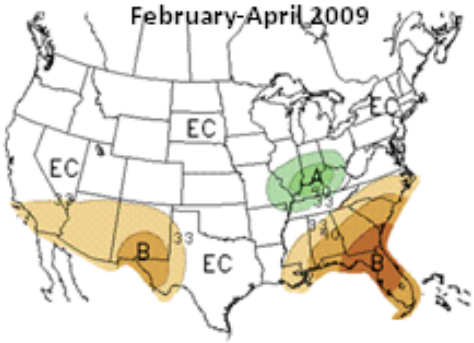


April-June 2009

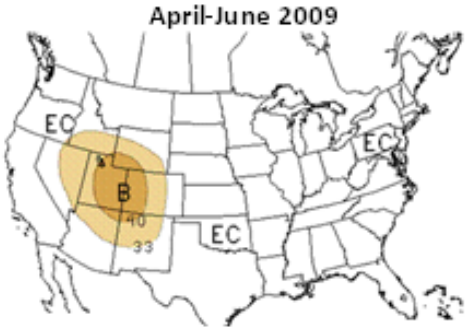


Precipitation Forecasts

February-April 2009



April-June 2009



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

Numbers represent the probability of occurrence.

www.cpc.ncep.noaa.gov/products/predictions/90day/

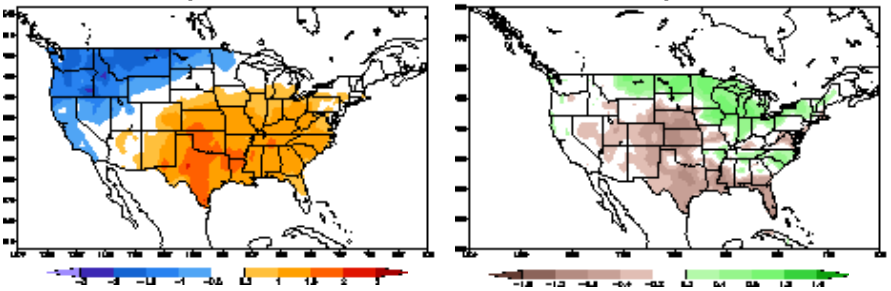
Climate Conditions and Forecasts

La Niña conditions (i.e. cooler than normal sea surface temperatures in the tropical Pacific) have redeveloped this winter. However, this event is currently weaker than the 2007-2008 episode. La Niña can alter storm tracks such that winters and early springs are typically wetter than normal in the Pacific Northwest and Ohio River/Tennessee Valleys, with warm and dry weather along the southern tier of the U.S. Precipitation this winter has been generally consistent with these historic La Niña patterns.

La Niña's maximum influence on U.S. climate and weather often occurs during the winter and spring months. Weak La Niña conditions are expected to persist into the spring with the event likely dissipating during the summer.

La Niña Spring Anomalies

Temperature **Precipitation**



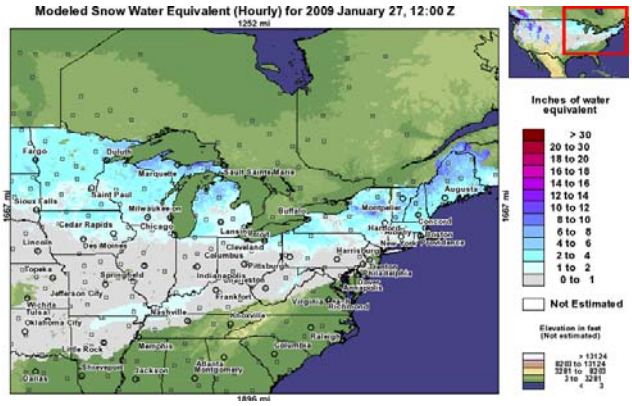
http://www.cpc.ncep.noaa.gov/products/predictions/90day/tools/briefing/

Temperature and Precipitation

Over the past three months, conditions have been very dry over the southern Plains causing drought conditions to worsen, especially over south-central Texas. San Antonio has set a new record for the driest September through January on record with total rainfall amounts 19 inches below normal in 2008. The Gulf Coast, Florida and the coastal sections of Georgia and South Carolina have also been quite dry with Keetch-Byram Drought Index (KDBI) values exceeding 700 over portions of the Florida Peninsula. Dryness was also noted from northern Georgia extending into western Virginia. The Southwest has been wetter than usual except for dry conditions east of the Continental Divide. Since November, temperatures have been generally warmer than normal in the Southwest and southern Plains, and cooler than normal in the eastern half of the country. Snowpack amounts are near average in the Great Lakes region and normal to above normal in the northern portions of Arizona and New Mexico.

Temperature and precipitation outlooks through spring (see images at left) are heavily influenced by the characteristic weather patterns of historic La Niña episodes. Below normal precipitation is predicted in the spring for the Southwest and Southeast, with wetter than normal conditions in the Ohio River Valley. Spring temperatures are expected to be warmer than normal over much of the country with the warmth contracting to the Southwest Area by summer. Drought conditions are expected to persist or expand over the southern Plains and Florida with some improvement possible over the Appalachians.

Fuels Assessment



Eastern Area: Most areas in the Eastern Area have received near to slightly above normal snow and precipitation this winter (see graphic at right). However, soil moisture values across much of Wisconsin are below average due to extended drought conditions. The availability of dry fuels this spring, as the snowpack decreases and spring temperatures warm, is expected to lead to above normal significant fire potential in portions of Wisconsin and Michigan. Short term drought exists across the southwestern portions of Missouri and this area is forecast to remain drier than normal though spring.

Specific fuel issues include:

- Insect damage: Gypsy moth defoliation continues in the mid-Atlantic and eastern portions of Minnesota and spruce budworm outbreaks continue across portions of Minnesota. However, these conditions are not expected to significantly influence the spring 2009 fire season.

Southern Area: Texas and Oklahoma have already experienced significant fire activity in January due to persistent drought conditions. Despite the current drought conditions, abundant fine fuels exist across portions of these two states. Fuels are expected to dry in Florida and the Carolinas increasing the significant fire potential in those areas.

Specific fuel issues include:

- Texas
  - Live fuel moisture in juniper and live oak are low enough to readily support torching with crown runs.
  - Juniper needle duff currently supports open flame and surface fire, and will smolder 5-6 days post fire.
  - All heavy fuels are consuming, and have been seen burning 5-6 days post fire.
  - Hardwood leaf litter is carrying surface fire deep into wooded canyons.
  - Frost killed vegetation and little to no significant rain is producing high levels of initial attack.
  - Blow down and heavy dead fuel loadings in and around Hurricane Ike's track over the northeast coasts have caused increased surface fuel in these areas.

- Oklahoma - Past and recent ice storms have increased downed woody fuel loadings.

- North Carolina
  - Long term soil moisture deficits (departures ranging from 12 to 20 inches) are causing fires to burn deep into peat and duff layers. Problems from prescribed fire operations have already occurred.
  - Additional mop up efforts will be required to control fires and mitigate residual smoke impacts.
  - There are no large bug kill or forest storm damage areas of continuous fuels.

Southwest Area: The eastern and far southern portions of the Southwest are expected to remain mostly dry, especially during March through May, and above normal significant fire potential is expected to expand across most of eastern and southern New Mexico into southern Arizona. Elsewhere, average to above average snowpack amounts in central/northern Arizona and northern New Mexico are expected to keep fuels moist through most of the spring with normal fire potential through early summer.

Specific fuel issues include:

- New Mexico and southern Arizona
  - Overall, grass fuel loadings are slightly above average except where grazed (primarily on private lands and ranches in western Texas and eastern New Mexico).
  - Most Federal, State, and other areas with less grazing generally have above to well above average grass fuel loadings (grass heights between 1.5 to 3 feet are rather common).
  - Occasional dry and windy weather patterns this spring are expected to result in rapid fire spread in grass fuels, given an ignition.

Resource Concerns

Eastern Area: Normal movement of resources is expected in response to fire activity across the majority of the Eastern Area.

Southern Area: There is a high probability of simultaneous multi-state demand for resources, which is likely to require resource deployments from outside the Geographic Area.

Southwest Area: The Southwest Area is expected to meet most resource needs internally by shifting available resources within the region. The greatest fire potential will exist in the lighter fuels of eastern and southern New Mexico as well as southern Arizona, which generally results in short duration fires.

Fire Potential Forecast Confidence and Bias

Eastern Area: There is moderate confidence in the Eastern Area fire potential forecast. This is due to the fact that the fire potential forecast is highly dependent on spring storm tracks, which are difficult to forecast accurately. Also, a wet spring will mitigate the current drought in Wisconsin, reducing significant fire potential.

Southern Area: There is high confidence in the above normal fire potential forecast for portions of Texas, Oklahoma, Florida and North Carolina due to strong climate signals. If La Niña persists into spring as current strength or stronger, dryness, warming and continued or even increasing fire potential would continue in these areas.

Southwest Area: There is a moderate to high confidence in above normal fire potential in eastern and southern New Mexico. While the fuels will be receptive, ignition sources are difficult to predict during spring and early summer.

2009 National Seasonal Assessment Workshop Summary

The main objective of the Sixth Annual National Seasonal Assessment Workshop for the Eastern, Southern and Southwest United States 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 products of the workshop are maps forecasting significant fire potential for the eastern, southern and southwestern United States.

The 2009 workshop was part of the sixth national assessment organized by the National Predictive Services Group (NSPG), the Climate Assessment for the Southwest (CLIMAS) at the University of Arizona, the Program for Climate, Ecosystem and Fire Applications (CEFA) at the Desert Research Institute and the California Applications Program (CAP) at the Scripps Institution of Oceanography. Other participating agencies are listed.

Participating Agencies

Bureau of Land Management
CAP/Scripps Institution of Oceanography
CLIMAS/University of Arizona
Department of Interior
Desert Research Institute
Eastern Area Coordination Center
Florida Division of Forestry
Georgia Forestry Commission
Minnesota Department of Natural Resources
National Association of State Foresters
National Interagency Coordination Center
National Park Service
National Oceanic and Atmospheric Administration
New Jersey Forest Fire Service
North Carolina Division of Forest Resources
SCIPP/Louisiana State University
Southern Area Coordination Center
Southwest Coordination Center
State of Vermont
U.S. Fish & Wildlife Service
USDA-Forest Service

An assessment workshop for the western United States and Alaska will be held in April 2009. For more information, contact the workshop organizers.