



National Seasonal Assessment Workshop

Eastern, Southern & Southwest Geographic Areas

Hosted virtually
January 11-13, 2011

Charlie Leonard
Jeremy Sullens
Predictive Services, NICC
(208)387-5400

Tim Brown
Desert Research Institute
(775)674-7090

Gregg Garfin
Univ. of Arizona, CLIMAS
(520)622-9016



2011 National Seasonal Assessment Workshop for the Eastern, Southern, & Southwest Geographic Areas

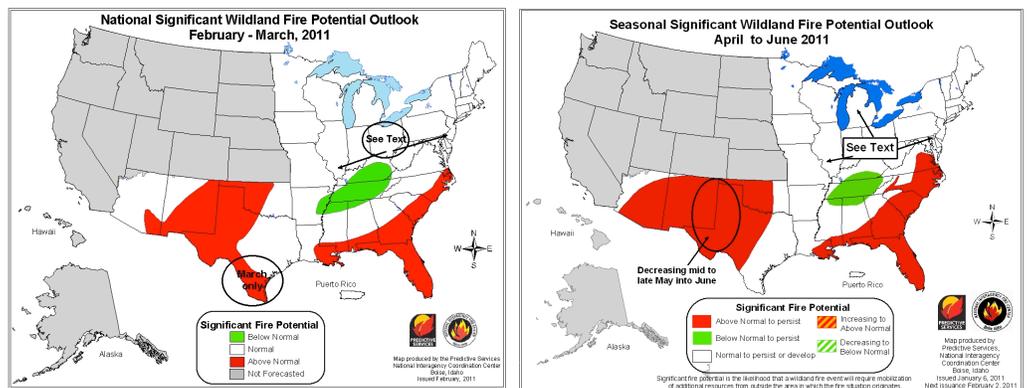
On January 11-13, 2011, wildland fire, weather, and climate met virtually for the ninth annual National Seasonal Assessment Workshop for the eastern and southern United States. Two fire potential forecasts for the Eastern, Southern and Southwest Geographic Areas were produced; one for February-March 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, 2011)

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.

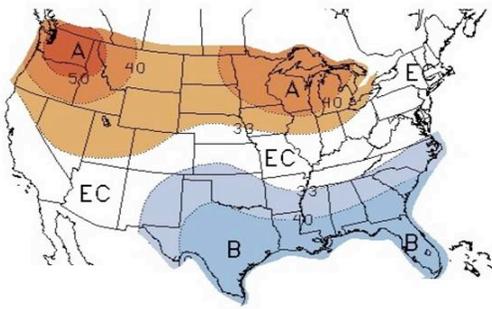
The right map below shows the trend forecast for significant fire potential during April through June for the Eastern, Southern and Southwest Geographic Areas based on the February through March outlook. Significant fire potential areas highlighted in red are expected to persist. The area highlighted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



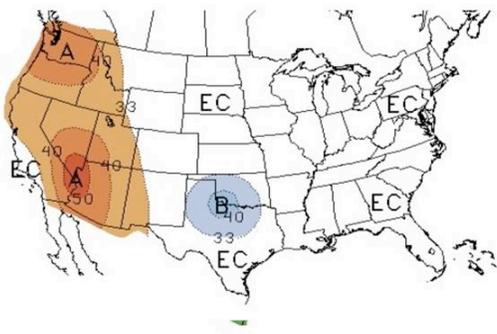
The results of the workshop indicate there will be above normal significant fire potential across portions of the Southern and Southwest Areas, including Florida and some of the southeastern states, western Texas and Oklahoma, and the eastern half of New Mexico and southeast Arizona during February and March. These areas are expected to expand further during the April through June period. An area of above normal significant fire potential centered across Tennessee is expected during the full period February through June. Elsewhere, significant fire potential is expected to be normal. The critical factors influencing fire potential for this outlook period are:

- **Precipitation:** Since October precipitation has been above normal in Minnesota and other parts of eastern area, but below normal in the Southwest, Texas, Florida and southeast.
- **Drought Conditions:** Drought is occurring across portions of Texas the southeast and Florida
- **Soil Moisture:** Soil moisture values across the southern and southeastern states are well below normal.
- **Fuels:** Fuel moistures are above average from eastern New Mexico to the eastern seaboard. However, a small area of freeze-cured fuels exists in Florida.

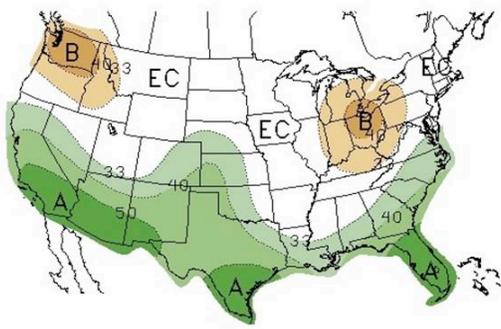
**Temperature Forecasts
February-April 2010**



April-June 2010



**Precipitation Forecasts
February-April 2010**



April-June 2010



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

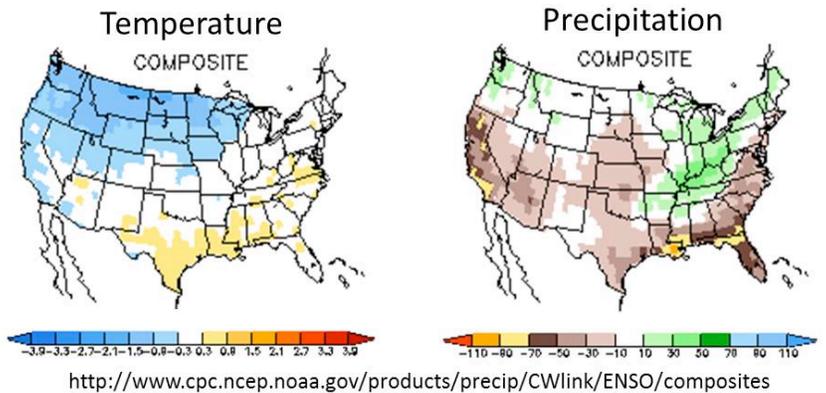
Numbers represent the probability of occurrence.

<http://www.cpc.ncep.noaa.gov/products/predictions/90day/>

Climate Conditions and Forecasts

La Niña is at its strongest level since the mid-1970s. Historically, La Niña is associated with dry precipitation anomalies from the Southwest across the southern states and into the Southeast and Florida, with wet precipitation anomalies in the Ohio Valley region and other sections of the Northeast. Above normal temperature also typically occurs across much of the South and Southeast in conjunction with La Niña, while cooler temperatures occur in Minnesota and Wisconsin. The figures below show typical spring temperature (left) and precipitation (right) patterns associated with La Niña. So far during the 2010-11 winter, the typical La Niña response pattern is being mostly observed in the Southwest, Southern and Eastern areas; however, the North Atlantic Oscillation/Arctic Oscillation is especially strong this year, bringing much cooler temperatures along the eastern seaboard down into Florida.

La Niña Spring (Feb-Apr) Anomalies



Temperature and Precipitation

Temperature and precipitation outlooks (graphics at left) through April are heavily influenced by the characteristic weather patterns of historic La Niña episodes. An increased probability of above-average temperatures is predicted across the southwestern and southern states from February through April, while below-average temperatures are more likely in the Minnesota and the western Great Lakes regions. From April to June, the increased probability of above-average temperatures continue across the Southwest and expanding throughout much of the Southeast. For precipitation, increased chances of above-average are present through April across the Ohio River Valley region and much of the Northeast, while below-average precipitation is more likely across the Southwest, southern states, Florida and the Southeast. The dry pattern is forecast to continue across the Southwest and portions of the southern states and Florida, though the area is reduced from the previous 3-month forecast and the probabilities are decreased.

Fuels Assessment

Eastern Area: Most areas within the Eastern Area received near to above normal precipitation in the months leading into the 2009-10 winter season. However, soil moisture values across much of northern Wisconsin, the western Upper Peninsula of Michigan, and far east/central Minnesota are below average due to extended drought conditions which have been in place over these areas since 2006. 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 over these areas. Precipitation deficits may also develop through the remainder of the winter season and into the early spring season across portions of the Ohio Valley. This region has shown a tendency to dry out during previous El Niño winter episodes. Fire potential and fuel moisture will need to be monitored across parts of the Ohio Valley should these drying trends develop.

Springtime fire danger will vary daily dependent on short-term weather conditions. Fires will be predominately wind-driven in fine fuels; heavier dead fuels should not have a significant effect on fire behavior until later in the spring season, dependent on the timing of spring rains.

Specific fuel issues include:

- Insect damage: Gypsy moth defoliation continues in the mid-Atlantic and spruce budworm outbreaks continue across portions of Minnesota. However, these conditions are not expected to significantly influence the spring 2010 fire season.

Southern Area: A very active southerly storm track produced recurring moderate to locally heavy precipitation since mid-2009 minimizing fire potential across most of the Area. Due to the high frequency and extensive coverage of these moderate to heavy rain and snow events, fuel moistures are well above seasonal averages as of late January 2010. No significant areas of drought are occurring and the likelihood of extensive areas of drought developing through the outlook period is minimal. The duration and magnitude of these wet events have reduced fire activity to some of the lowest levels since 2001. Consequently, the Southern Area will continue to experience below average fire potential through at least March or early April. During May-June, elevated fire potential will depend on the timing of leaf-out, and limited to periods when rainfall deficits emerge, especially across the Tennessee Valley.

In Florida, the southern third of the peninsula is experiencing drought indices that are higher than expected for an El Niño (positive ENSO) winter. If the southern part of the peninsula continues to see less precipitation than the rest of the state, there could be some concern for increased wildfire activity during the April through June period.

Specific fuel concerns here include:

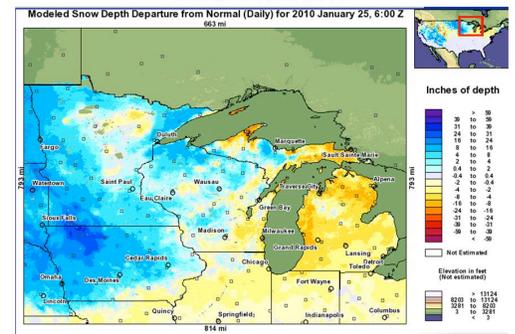
- Live woody fuel moistures at all Florida stations are showing values that are not a concern at this time for wildfire.
- Live herbaceous fuel moistures indicate that conditions are ripe for wildfire as a result of the recent 11-day period of below average temperatures and freezing conditions that extended into southern Florida. The low herbaceous fuel moistures will be cause for concern in southern Florida until temperatures begin to warm and the vegetation begins to green back up. The forecast for continued cooler than normal temperatures and moist conditions at least through March will keep any above average fire behavior from being a concern until the latter part of the fire season (April – May).

Southwest Area: The Southwest is expected to remain unusually wet into May as a result of the ongoing El Niño episode, leading to an expansion of below normal fire potential conditions from east to west across the region during the February through June time frame. Snowpack amounts area-wide are at 100% to 200% or more of normal, and are expected to remain at these levels through the spring melt-off period. Abnormally moist fuels and the prospect of a strong and prolonged spring green-up will combine to significantly delay fire season onset.

Specific fuel issues include:

- The combination of wet heavy fuels and compacted fine fuels as a result of heavy mountain snowpack make it unlikely that there will be much significant fire activity across the higher elevations.
- Windy and dry conditions necessary to drive fire in the fine fuel regimes during the late winter through spring time period are not expected to be frequent or widespread due to the moist weather pattern.
- Conditions in the spring will have to be closely monitored, as the right combination of warmth and moisture could lead to substantial growth in the fine fuels, which could lead to enhanced lowland fire activity should hot, dry conditions develop in May-June.

Current Departure from Normal
Snow Conditions



Resource Concerns

Eastern Area: Normal movement of resources is expected in response to fire activity across the majority of the Eastern Area. Northern Wisconsin may require resources from outside the local area occasionally through the 2010 spring fire season.

Southern Area: There is low probability of multi-state demands for resources through mid-spring. There is some potential for fire activity to trend upward, especially in the Tennessee Valley, from late April into May prior to green-up; however unusual demands are not expected. Fuel conditions in central and southern Florida will need to be closely monitored unless frequent rain activity helps to alleviate the dry conditions there. Lacking significant improvement, there is a slight concern that additional resources could be needed in central or southern Florida this spring.

Southwest Area: The Southwest Area is expected to have below normal resource needs, and will likely be able to meet any needs internally by shifting available resources within the region.

Fire Potential Forecast Confidence and Bias

Eastern Area: There is moderate confidence in the outlook for the Eastern Area. Fire potential outlooks are highly dependent on spring storm tracks, which are difficult to forecast accurately. Also, a wet spring could mitigate the current drought conditions in northern Wisconsin, reducing significant fire potential.

Southern Area: There is moderate to high confidence in the below normal fire potential forecast for the Southern Area through March or the early April period. Any bias, due to a moderate El Niño continuing through early spring, would be for below normal conditions to extend longer into May or even June. For the period from late April through June there is moderate confidence for average to slightly below average fire potential conditions to prevail. Seasonal timing of leaf-out and/or full green-up along with the occurrence of any significant drier periods always introduces some degree of uncertainty. However, at this time we do not see any significant signals indicating periods of high fire potential during the outlook period, except for central and southern Florida as discussed above.

Southwest Area: There is high confidence in below normal fire potential across most of the region through June. Confidence is not as high across the lower elevations of western Arizona by late May into June, given the expected wane of moist conditions at that time, and the potential for fuels in that area to dry relatively quickly. This outlook is fairly conservative with respect to the expanse of below normal fire potential conditions.

2011 National Seasonal Assessment Workshop Summary

The main objective of the Ninth 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 2011 workshop was part of the ninth national assessment organized by the National Predictive Services Subcommittee (NSPS), 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 as listed.

Participating Agencies

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

An assessment workshop for the western United States and Alaska will be held in April 2011. For more information, contact the workshop organizers.



CLIMAS
Climate Assessment for the Southwest Project
The University of Arizona

