National Seasonal Assessment Workshop

Eastern, Southern, & Southwest Geographic Areas

Shepherdstown, WV
January 23–24, 2007

For more information, contact:

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

Tim Brown
Desert Research Institute
(775) 674-7090

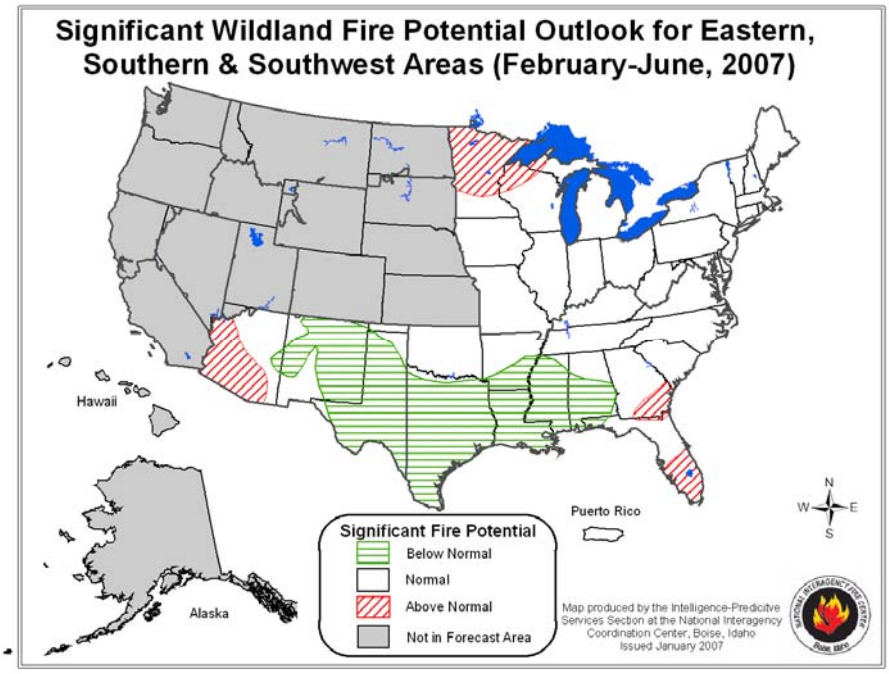
Gregg Garfin
Climate Assessment for the Southwest
(520) 622-9016

2007 National Seasonal Assessment Workshop for the Eastern, Southern, & Southwest Areas

On January 24, 2007, fire, weather, and climate specialists convened at the U.S. Fish and Wildlife Service National Conservation Training Center in Shepherdstown, West Virginia for the fifth annual National Seasonal Assessment Workshop. A preliminary fire potential forecast for the Eastern, Southern, and Southwest Geographic Areas was produced. This briefing document includes a description of existing climate forecasts, fuels conditions, and potential resource impacts.

Significant Fire Potential Forecast (February – June 2007)

The map below shows the significant fire potential forecast for the Eastern, Southern and Southwest Geographic Areas. 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 at some point during the forecast period of February through June, 2007.



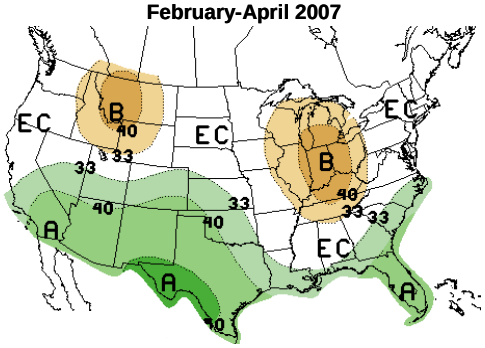
The workshop results indicate there is above normal significant fire potential in western Arizona, the northern portions of Minnesota, Wisconsin and the Upper Peninsula of Michigan, as well as the southern Florida peninsula and southeast Georgia. Below normal fire potential is predicted for much of the south-central U.S. The critical factors influencing fire potential for this outlook period are:

- **El Niño is predicted to bring wet conditions and associated below normal fire potential to south-central portions of the country through early spring.**
- **Current drought conditions across portions of the northwestern Great Lakes, Southeast and Arizona are predicted to persist and elevate fire potential.**
- **Low snowpack over much of the East is likely to result in an earlier than usual onset of spring fire season.**
- **Fire season is predicted to start late in the Southwest Area with above normal fire potential confined mainly to lower elevation grass and brush regimes in Arizona due to abundant fine fuels.**
- **Current drought and fuel conditions in Oklahoma and Texas are much improved compared to last season; thus, normal to below normal fire potential is predicted.**

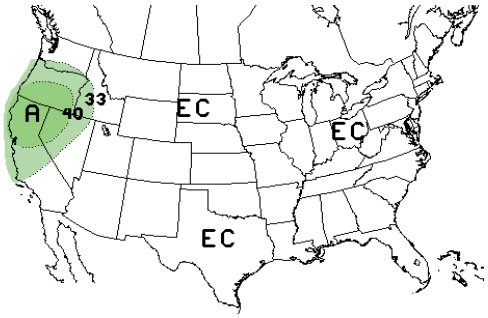
Climate Conditions and Forecasts

Precipitation Forecasts

February-April 2007

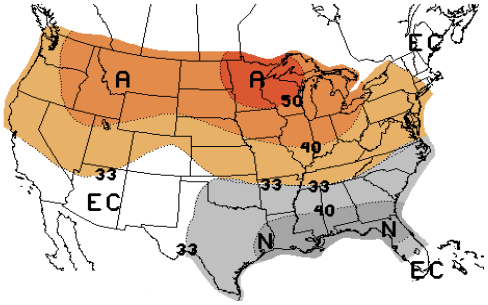


May-July 2007

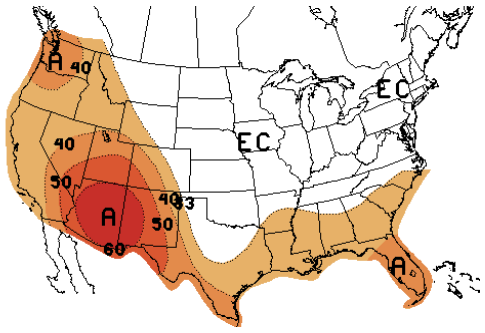


Temperature Forecasts

February-April 2007



May-July 2007



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

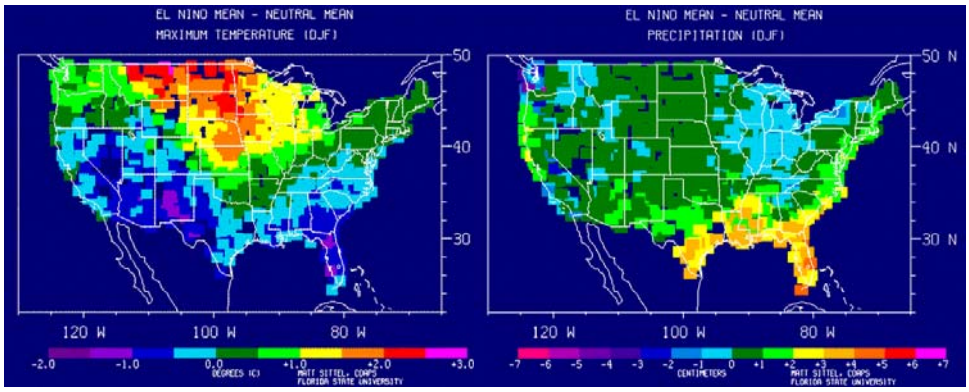
Numbers represent the probability of occurrence.

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

A weak to moderate El Niño developed in mid-2006, driven by warmer than normal sea surface temperatures across much of the equatorial Pacific. These warmer than normal ocean temperatures alter storm tracks. During the winter and early spring, El Niño typically brings wetter than normal conditions to the southern tier of the U.S., drier weather to the Ohio River valley and warm temperatures to the northern tier of the U.S. (see El Niño image below). In late spring El Niño tends to focus wetter than average conditions over the Southeast and Southern Plains, with slightly cooler than normal temperatures in the Southern Plains. Through January, the 2006-07 El Niño has not delivered above-average precipitation to much of California, Arizona and portions of the Southeast.

El Niño's maximum influence on U.S. climate and weather often occurs during the later winter and spring months. However, El Niño is currently weakening more rapidly than previously projected. Forecasts project decreasing ocean temperatures and fading El Niño strength through early spring, with little impact on temperature and precipitation across the country by late spring.

El Niño Winter Temperature and Precipitation Anomalies



http://www.pmel.noaa.gov/tao/elnino/impacts.html#part1

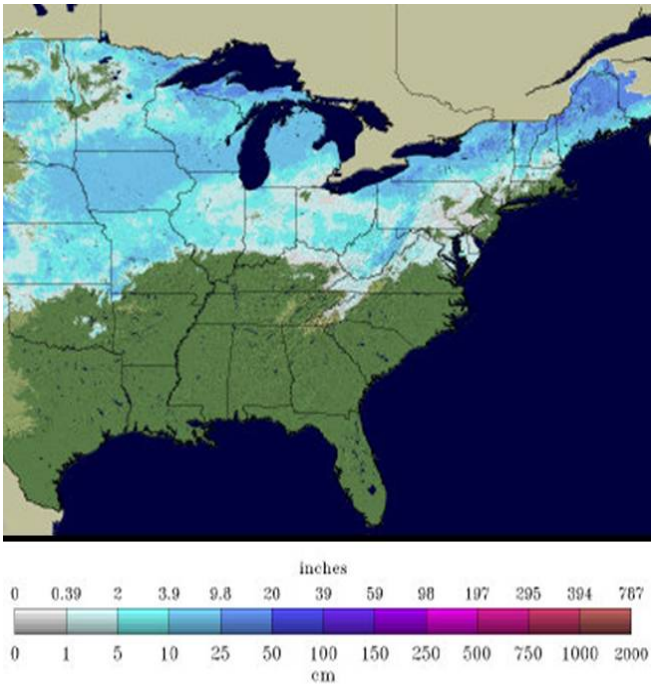
Temperature and Precipitation

Over the past three months, conditions have been persistently dry over the western Great Lakes, particularly northern Minnesota. Dry conditions have also been present in central and southern Florida, the Appalachians and Arizona. Thus far, winter snow cover has been notably below average in the northern Plains, western Great Lakes states, Mid-Atlantic States and northern Arizona. Winter temperatures have been warmer than normal across much of the East and South, especially over the northeastern quarter of the country.

Temperature and precipitation outlooks February through May (see images at left) are heavily influenced by the weather patterns generated by El Niño. Despite a weakening El Niño, below normal precipitation is predicted for the Great Lakes into the Ohio River and Tennessee Valleys. Much of the south-central and southeastern U.S. is predicted to be wetter than normal over the next several weeks. However, this pattern is not expected to persist long enough to mitigate concerns about fire potential in southern Florida and southeast Georgia.

Spring temperatures are predicted to be above normal across much of the northern half of the country. Agreement among NOAA Climate Prediction Center models and statistical analyses point to high confidence in above normal temperatures over the Great Lakes States. Above-average temperatures are predicted across the southern tier of the U.S. during late spring and early summer with the highest confidence centered in Arizona. Warmer temperatures for the West are chiefly due to a long-term climate trend.

Snow Depth Analysis 1/26/2007



http://www.nohrsc.noaa.gov/nsa/#snow_reports

Fuels Assessment

Eastern Area: Very dry fuels across the northern half of Minnesota, northern Wisconsin and portions of the Upper Peninsula of Michigan remain a concern. Herbaceous fuel moistures set 25-year record lows most of last summer, and many fire danger indices set periodic record highs from mid-July through late fall. The lack of precipitation, winter snowpack (see image at left) and warmer than normal winter temperatures threaten to cause drought conditions to persist in this area. This will increase the likelihood of an early onset to fire season, stressed vegetation, insect infestations and impacts to forest health.

Specific issues include the following:

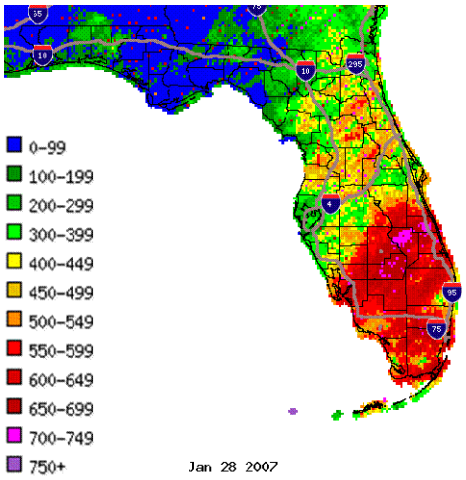
- Fires that burn deeper and more persistently.
- Forest insects and disease are contributing to increased dead fuel loads. In 2006, spruce budworm defoliated approximately 287,000 acres of balsam fir mainly in northeastern Minnesota. Jack Pine budworm has killed over 70,000 acres of Jack Pine across northern Minnesota.
- Blowdown fuels in the northern Minnesota's Boundary Water Canoe Wilderness Area from 1999 continue to pose a fire hazard.
- Moisture deficits in portions of Missouri, West Virginia, Ohio and Pennsylvania could cause problematic fires should dry conditions persist into the spring.

Southern Area: Fuel conditions over the southern half of the Florida peninsula have worsened since late fall. Recent Keetch-Byram Drought Indices exceed 600 in some areas south of Interstate 4 (see image below). The lack of winter frost conditions have helped to mitigate fire potential in this area by keeping fuels green thus far this winter. However, fire potential could rapidly increase with extended periods of dry or freezing weather.

Drier than normal fuels in southeastern portions of Georgia, which extend down to the Okefenokee Refuge, could increase the probability of escaped or underground fires. Cool and moist conditions along with several heavy rain events have significantly improved drought conditions in Texas and Oklahoma.

Above normal significant fire potential could develop in portions of North Carolina, Tennessee and Kentucky during extended dry periods this spring. Current rainfall deficits in southeastern Puerto Rico could elevate fire potential if dry conditions persist.

Keetch-Byram Drought Index



http://flame.fl-dof.com/fire_weather/KBDI/4km_main.html

Southwest Area: Abundant fine carryover fuels in lower elevation areas, primarily in Arizona, are expected to present the greatest fire risk this season. However, robust green-up and an extended growing period may delay the onset of fire season until late May. A shorter than normal dry period between spring and summer rains will reduce fire potential in the higher elevation fuel regimes of New Mexico and east-central Arizona.

Resource Concerns

Eastern Area: An earlier than normal start to fire season is likely in portions of the Eastern Area due to the lack of snowpack. If fire season begins before frozen lakes have thawed, aerial support from amphibious aircraft and helicopter bucket operations may be limited. Low water levels due to prolonged drought may cause fires to burn into the peat layers, tying up suppression resources longer than normal. Prescribed fire operations will be limited in lowland areas as a result of moisture deficits in peat soils.

Southern Area: Continued warm and dry conditions from winter into spring will likely result in fires that require additional suppression resources in southeastern Georgia and central and southern Florida.

Southwest Area: Since much of the Area is predicted to have below normal fire potential, the need for additional firefighting resources from outside the Area is expected to be near normal this season.

2007 National Seasonal Assessment Workshop Summary

The main objective of the Fifth 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 eastern, southern and southwestern United States.

Discussions regarding forecast tools, fuel conditions and climate impacts contributed to the success of the 2007 National Seasonal Assessment Workshop. Climate forecast discussions, led by Mike Halpert, NOAA Climate Prediction Center Head of Forecast Operations, increased awareness of the potential impacts of various climate patterns on the upcoming season. Discussions of forest and range considerations, lead by a team of participants from each Geographic Area, improved understanding of the current fuels concerns and conditions.

The 2007 workshop was part of the fifth 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 below.

An assessment workshop for the western United States and Alaska will be held in April 2007. For more information, contact the workshop organizers.

Participating Agencies

Allegheny National Forest
Bureau of Indian Affairs
Bureau of Land Management
CLIMAS/University of Arizona
Department of Interior
Desert Research Institute
Eastern Area Coordination Center
Florida Division of Forestry
Georgia Forestry Commission
Mark Twain National Forest
Minnesota Department of Natural Resources
National Association of State Foresters
National Interagency Coordination Center
National Park Service
New York State Forest Rangers
NOAA Climate Prediction Center
North Carolina Division of Forest Resources
Southern Area Coordination Center
Southern Regional Climate Center
Southwest Area Coordination Center
U.S. Fish & Wildlife Service
USDA-Forest Service