



# North American Seasonal Assessment Workshop

## Mexico, Eastern United States, and Southwest

Shepherdstown, WV  
January 27-29, 2009

For more information, contact:

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



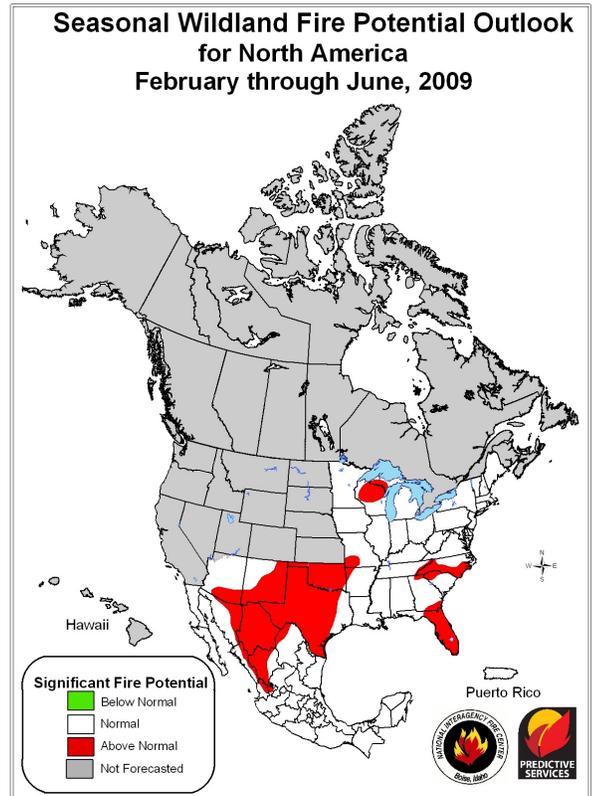
## North American Seasonal Assessment Workshop (NASAW) Eastern U.S., Southwest, and México Outlook: 2009

On January 27-29, 2009, fire, weather, and climate specialists convened at the U.S. Fish and Wildlife National Conservation Training Center in Shepherdstown, West Virginia to produce a fire potential outlook for the eastern U.S., Southwest, and México. This briefing document includes a description of existing climate forecasts, fuels conditions, and the influence on resource requirements.

### Fire Potential Forecast (February – June, 2009)

The map at right shows the fire potential forecast for February through June 2009 across the eastern half of North America including the Southwest (Note: areas not included in this forecast are grayed out on the map below). Fire potential for this product is defined as the likelihood that an area will see an above normal number of wildland fires or large wildland fire events. Areas highlighted as "Above Normal" are likely to experience above normal fire activity during the forecast period, which may increase resource demands.

Workshop participants forecast above normal fire potential across much of Oklahoma and Texas as well as portions of eastern New México, Florida, Wisconsin and the Carolinas. In addition, above normal fire potential is forecast for interior western México extending southward from the U.S. border through the states of Chihuahua and Durango. Elsewhere, fire potential is expected to be normal through June.



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

The critical factors influencing significant fire potential for this outlook period are:

- **Drought:** Expansion and intensification of drought is expected across southern and central Texas and Oklahoma, as well as continued dry conditions across much of Florida and portions of the Carolinas and Wisconsin. Significant drying is expected to increase across central and northern México.
- **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.
- **Surface Moisture:** Low stream flows and soil moistures are increasing risk for substantial ground fires along the North Carolina-South Carolina border.
- **Ice Storm:** Damage from ice storm events over the past several winters is producing areas of high fuel loading in Oklahoma

# Climate Conditions and Drought

Sea surface temperatures (SSTs) in the equatorial Pacific are currently indicative of La Niña conditions. Most of the statistical and dynamical forecast models project these conditions will persist for several months as a moderate to weak La Niña event before decaying and transitioning into neutral conditions during the summer. February-April climate anomalies consistent with historic La Niña events include warm conditions in the Southwest, portions of the Southeast and mid-Atlantic, and dry conditions in the Southwest, northern México, and portions of the Southeast including Florida.

Drought conditions in December 2008 (left graphic) are found across the western U.S., central Texas, portions of the Appalachian Mountains, and southern México. Compared to December 31, 2007 (right graphic), the drought has eased in its intensity and coverage, but remains in place across the western U.S. and portions of the southeast. Dry conditions are expected to persist or worsen across much of the southwest and portions of México.

## North American Drought Monitor

December 31, 2008

Released: Thursday, January 22, 2009

<http://www.ncdc.noaa.gov/nadm.html>

Analysts:

Canada - Trevor Hadwen  
Danyne Chobanik  
Mexico - Valentina Davydova  
Adelina Albaril  
Elvia Delgado  
Reynaldo Pascual  
Fernando Romero  
Brian Fucile  
U.S.A. - Jay Lawrence\*  
Liz Love-Brotak

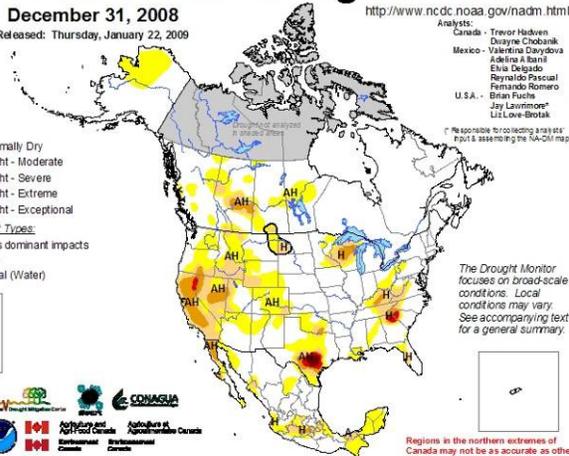
\* Responsible for collecting and analyzing the weather data used in the NADM maps

**Intensity:**  
 D0 Abnormally Dry  
 D1 Drought - Moderate  
 D2 Drought - Severe  
 D3 Drought - Extreme  
 D4 Drought - Exceptional

**Drought Impact Types:**

~ Delineates dominant impacts  
 A = Agriculture  
 H = Hydrological (Water)

D1/D3/A  
 D2/A



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text for a general summary.

Regions in the northern extremes of Canada may not be as accurate as other regions due to limited information.

## North American Drought Monitor

December 31, 2007

Released: Wednesday, January 16, 2008

<http://www.ncdc.noaa.gov/nadm.html>

Analysts:

Canada - Trevor Hadwen  
Danyne Chobanik  
Mexico - Valentina Davydova  
Adelina Albaril  
Elvia Delgado  
Reynaldo Pascual  
Fernando Romero  
Richard Hem  
U.S.A. - Jay Lawrence\*  
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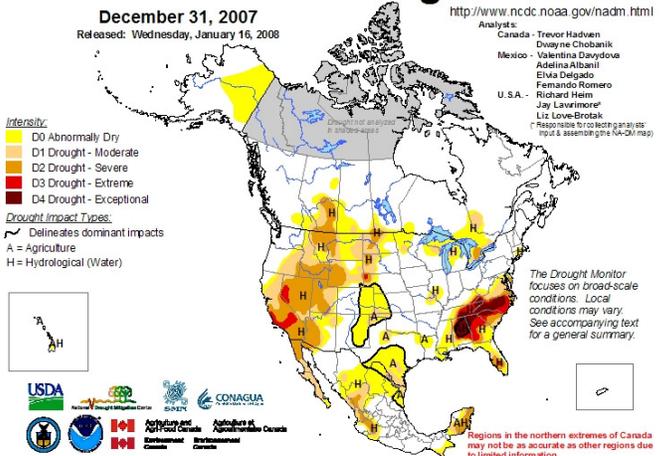
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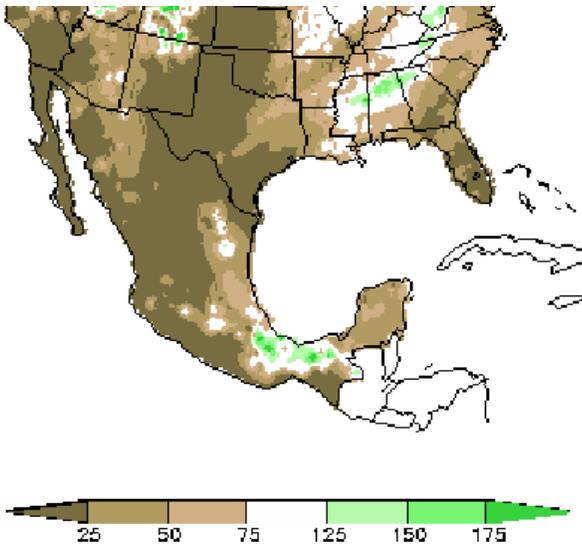
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## Temperature and Precipitation

Precipitation for October-December 2008 and the 30-day period ending January 26, 2009 (see graphics below) has been below normal over much of the southern United States and most of México. It has been wetter than normal across portions of central and northeast U.S.

30-day accumulation ending 20090126

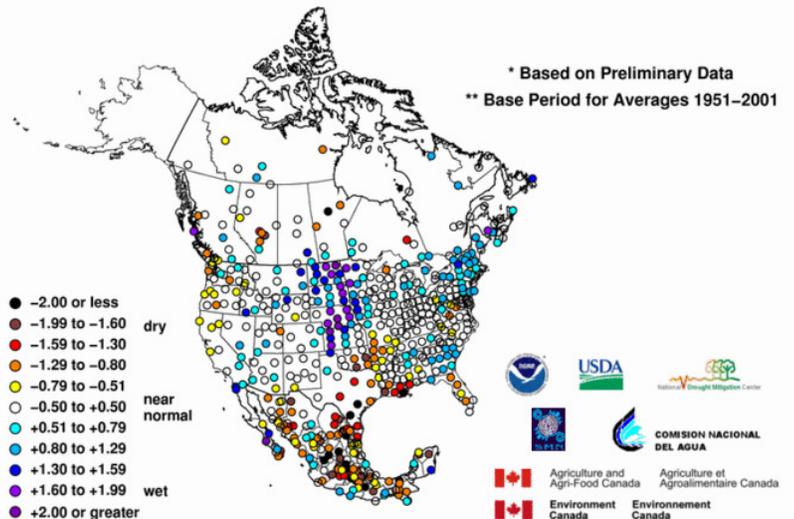


## 3-Month Standardized Precipitation Index

October - December 2008

\* Based on Preliminary Data

\*\* Base Period for Averages 1951-2001



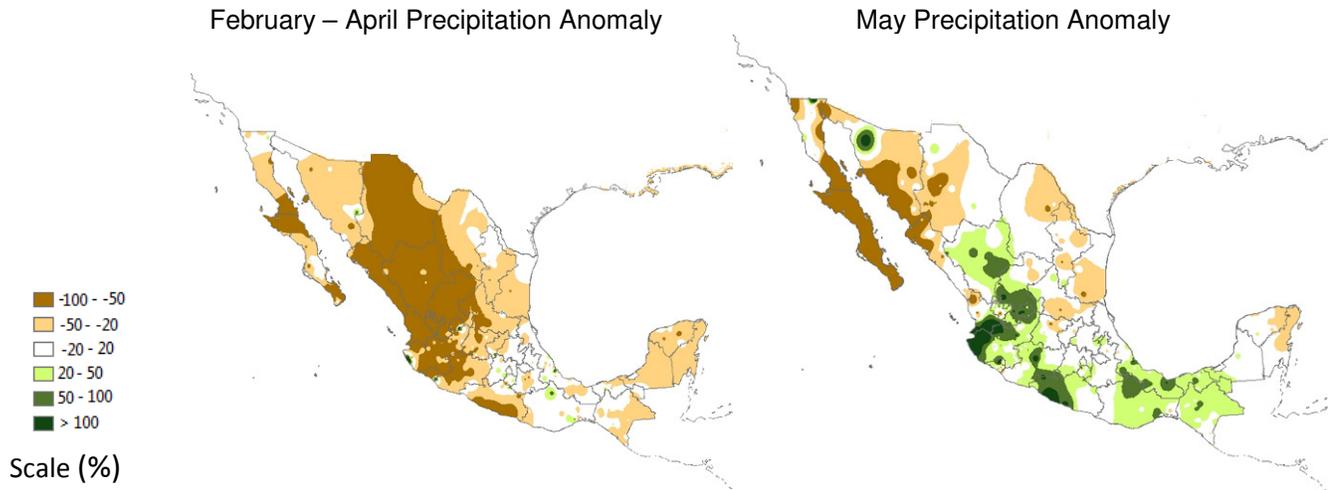
● -2.00 or less  
 ● -1.99 to -1.60  
 ● -1.59 to -1.30  
 ● -1.29 to -0.80  
 ● -0.79 to -0.51  
 ○ -0.50 to +0.50  
 ● +0.51 to +0.79  
 ● +0.80 to +1.29  
 ● +1.30 to +1.59  
 ● +1.60 to +1.99  
 ● +2.00 or greater

dry  
 near normal  
 wet



The outlook for February through early summer favors generally warmer than normal temperatures for the western U.S. and northern México, with near-normal temperatures elsewhere. Drier than normal weather is expected in the following areas:

- **United States** – Southern California, Southwest, Texas and Florida.
- **México** – Much of the country from February through April, turning wetter in the summer consistent with monsoon onset (see precipitation anomaly forecast maps for México below)



## Contributing Factors

**United States:** Above average fire potential is predicted for February-June 2009 for much of Oklahoma and Texas as well as portions of eastern New México, Florida, Wisconsin, and the Carolinas. Normal fire potential is expected elsewhere with no areas having below normal fire potential for extended periods. Forecast confidence is moderate-to-high for the southern and southwest areas and moderate for the eastern areas. The forecast is based on a combination of observed and predicted climate factors along with other fire danger and fuel information; climate analogues were also consulted.

Key *observed* factors contributing to the fire potential portrayed on the summary map include:

- Intensifying drought conditions in Texas and Oklahoma
- Low live fuel moistures in juniper and live oak across Texas
- Above average fine fuel loadings in eastern New Mexico and Texas, except where grazed.
- Significant fire activity already observed in Texas and Oklahoma
- Drought and soil moisture deficits in Florida and Wisconsin
- Low stream flows and soil moisture conditions in the Carolinas
- Problematic ground fires in North Carolina
- Damaged trees from extensive bug kill in western North Carolina have created significant amounts of heavy dead and downed material

Key *forecasted* factors contributing to the fire potential portrayed on the summary map include:

- Predicted dry and warm conditions in the Carolinas into early spring and again in May-June
- Predicted below average precipitation trend in Florida through the outlook period
- Below average precipitation for the southern tier of the U.S. through February, and for portions of the Southwest and Southeast through April
- Above normal temperatures for the southern tier of the U.S. through April, with the highest probability in Texas, Oklahoma, and the Southwest
- Occasional dry and windy weather patterns this spring are expected to result in rapid fire spread in grass fuels given an ignition.

**México:** Above average fire potential is predicted for February-June 2009 across the interior of western México extending southward from the U.S. border through the states of Chihuahua and Durango. This fire activity typically peaks during April and early May, tapering off by June and ending by August. The forecast is based on a combination of observed climate and predicted climate factors; climate analogues were also consulted.

Key *observed* factors contributing to the fire potential portrayed on the summary map include:

- Recent expansion and intensification of dryness across large portions of Sonora and north of Sinaloa
- Abundant new and carryover (from 2008) fine fuels across much of Sonora, Chihuahua, Durango, Coahuila, and north of Jalisco
- High amounts of biomass in the temperate forest of the Sierra Madre Occidental due to an abundant 2008 monsoon rainy season in Durango, Chihuahua, Nayarit, and north of Jalisco

Key *forecasted* factors contributing to the fire potential portrayed on the summary map include:

- Warm and dry conditions across north and northwest México through April due to continuing La Niña conditions
- Below average precipitation in June due to a projected delayed monsoon onset in México

## 2009 North American Seasonal Assessment Workshop Summary

The main objective of the North American 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 international 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. 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 North American Seasonal Assessment Workshop was 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). Other participating agencies are listed below.

### Participating Agencies

Bureau of Indian Affairs  
Bureau of Land Management  
CLIMAS/University of Arizona  
Climate Applications Program/Scripps Institution of Oceanography  
Department of Interior  
Desert Research Institute  
Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias  
National Association of State Foresters  
National Interagency Coordination Center  
National Oceanic and Atmospheric Administration  
National Park Service  
NOAA Climate Prediction Center  
NOAA National Weather Service  
NOAA Earth Systems Research Laboratory  
NOAA Regional Climate Centers  
Servicio Meteorológico Nacional  
SCIPP/Louisiana State University  
Southwest Coordination Center  
USDA-Forest Service  
U.S. Fish & Wildlife Service



Climate Assessment for the Southwest Project  
THE UNIVERSITY OF ARIZONA

