



# North American Seasonal Assessment Workshop

Canada, Mexico and United States

Boulder, CO  
April 22-24, 2008

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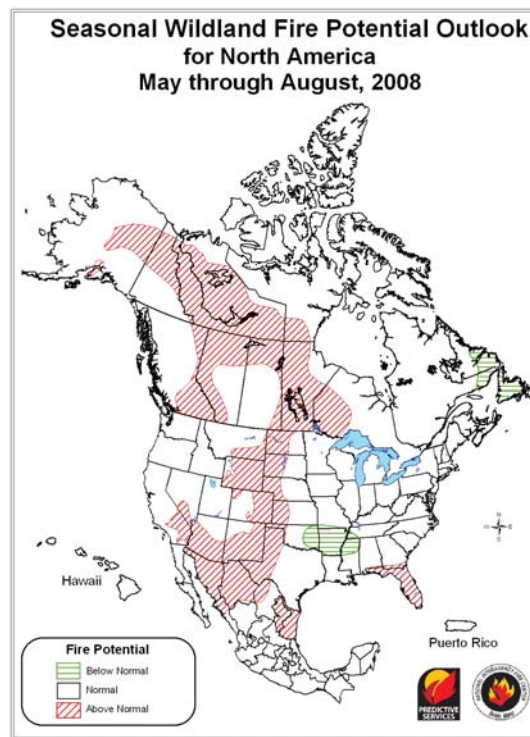


## North American Seasonal Assessment Workshop (NASAW) Report: 2008

On April 22-24, 2008, fire, weather, and climate specialists convened at the National Oceanic and Atmospheric Administration Earth System Research Laboratory in Boulder, Colorado for the third annual North American Seasonal Assessment Workshop. Participants produced a seasonal significant fire potential forecast for western North America. This briefing document includes a description of existing climate forecasts, fuels conditions, and the influence on resource requirements.

### Fire Potential Forecast (May – August 2008)

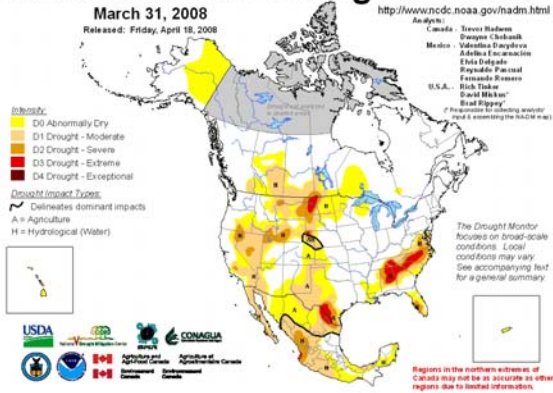
The map below shows the fire potential forecast for May through August 2008 across the western half of North America (Note: for México, the forecast only pertains to states near the border). Fire potential for this product is defined as the likelihood that an area will see an above normal number of wildland 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 western Canada; central Rocky Mountains, Central Plains and southwestern United States; northwestern and northeastern México. Below normal fire potential is predicted for portions of Quebec, Labrador and Newfoundland. Elsewhere, fire potential is expected to be normal through August. The critical factors influencing significant fire potential for this outlook period are:

- **Drought: Recent** expansion and intensification of drought across large portions of Alaska, western Canada, the U.S. Southwest, and northwestern México.
- **Delayed High Elevation Fire Season Onset:** Above normal snowpack and cooler than average temperatures this spring are expected to delay snow melt over most of the higher elevations in the Western U.S. This will help keep fuels moist and delay the onset of fire season in many higher elevation areas.
- **Active Grassland Fire Season:** Abundant new and carryover (from 2007) fine fuels across much of the Southwest, and the western U.S. Plains are expected to lead to an active and prolonged grassland fire season.

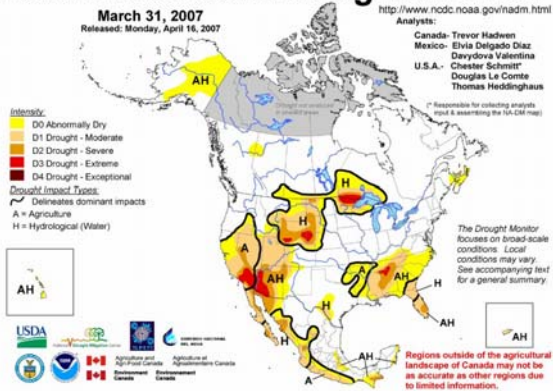
## North American Drought Monitor



## Climate Conditions and Drought

Sea surface temperatures (SSTs) in the equatorial Pacific currently indicate La Niña conditions will persist and continue for several months as a weak to moderate La Niña event. Most of the statistical and dynamical forecast models are projecting the slow decay of La Niña conditions during the summer, transitioning into neutral conditions by later in the year. Neutral SSTs in the equatorial Pacific lead to considerable forecast uncertainty. La Niña summers are associated with a tendency for an early onset of the North American monsoon, accompanied by a more northward extension of the monsoon into the United States, with increased chances of below-normal precipitation in the southern Canadian Rockies. Enhanced probabilities of above-normal numbers of tropical cyclones in the North Atlantic and below-normal numbers of tropical cyclones in the East Pacific are also associated with La Niña summers.

## North American Drought Monitor



Drought conditions in 2008 (top left graphic) are found over the southern Canadian Prairies, southeast and interior west in the U.S., and over much of México. Compared to March 2007 (bottom left graphic), the drought may have eased a little in its intensity but remains in generally the same locations except for some expansion in México and the Southern Plains of the U.S. Dry conditions are expected to persist across interior Alaska.

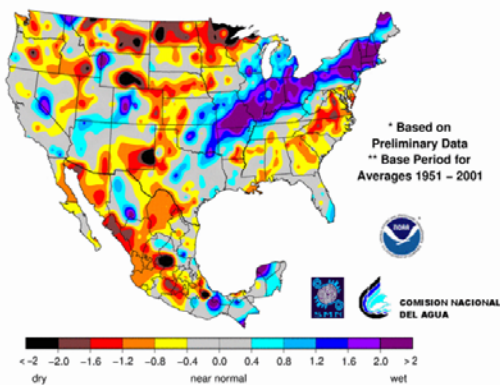
## Temperature and Precipitation

Precipitation for January-March (bottom graphics) has been generally below normal over much of the interior of Alaska, western Ontario and Canada, portions of the U.S. and most of México. It has been much wetter than normal over southern Quebec, the Mississippi River Valley and northeast U.S. and the Yucatan Peninsula.

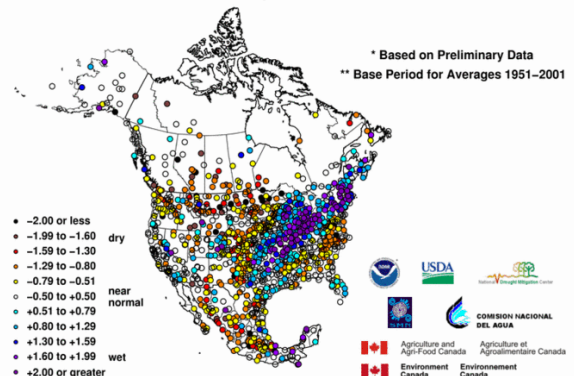
The outlook for May through August favors generally warmer than normal temperatures for western Canada, the western U.S. and northern México, with near normal temperatures elsewhere. Drier than normal weather is expected in the following areas:

- **Canada** - eastern British Columbia, Manitoba, western Ontario, and portions of the NWT and Yukon.
- **United States** – Pacific Northwest, Great Basin, central Rockies, western Plains and southern Texas.
- **México** – Sonora and much of the north in May, but turning wetter than normal in July and August.

3-Month Standardized Precipitation Index  
January - March 2008



3-Month Standardized Precipitation Index  
January - March 2008



## Contributing Factors

**Canada:** Above-average fire potential is predicted for May-August 2008 for much of Western Canada including parts of the Yukon, Northwest Territories, southeastern British Columbia, Alberta, northern Saskatchewan, southern Manitoba, and western Ontario. Below average fire potential is predicted for May-August 2008 for southeastern Quebec, southeastern Labrador, and Newfoundland. Forecast confidence is greatest for British Columbia and eastern Canada. 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:

- High fall drought code values throughout much of Western Canada and the Territories, with the highest values in Northeastern Alberta and the Yukon;
- Below-normal winter precipitation in western Ontario, much of western Canada and the Mackenzie Delta region;
- Above-normal winter temperatures in the Mackenzie Delta region;
- Spring snowfalls in much of Canada resulting in a late start of the fire season.

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

- Below-normal precipitation predicted for southern British Columbia and Alberta in the early summer, followed by below-normal summer precipitation through most of Canada except for a band along the 60<sup>th</sup> latitude;
- Above-normal early summer temperatures in Manitoba and Eastern Canada followed by above-normal temperatures throughout Canada in the late summer;
- Mountain pine beetle infestation is still a significant problem in British Columbia – however, moist conditions in northern and coastal British Columbia preclude significant wildland fire concerns.

Fire potential is predicted to increase during June and July in nearly all of Canada, with the exception of northern BC and the Maritimes during the late spring and early summer. Years with climate patterns similar to 2007-2008, resulted in substantial fire management challenges in western Canada.

**United States:** Above-average fire potential is predicted for May-August 2008 for east central Alaska and portions of the Kenai Peninsula, the western plains, front ranges of the Rocky Mountains, the low Western desert areas, and Florida. Below normal fire potential is expected across Arkansas, eastern Oklahoma and western Mississippi during May. Normal fire potential is expected elsewhere in the western United States. Forecast confidence is greatest for Southern California, the Southwest, and for the central Rocky Mountains during the month of May. 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:

- Below-average winter precipitation across eastern New Mexico and western Texas;
- Low snow pack across the eastern interior of Alaska;
- Persistent drought across the western plains and Wyoming, with particularly severe drought conditions in western North Dakota, eastern Montana, and the Nebraska Panhandle;
- Normal to above normal fine fuel loading east of the Continental divide in and throughout the Sonora and Mojave deserts increase the continuity of fuels and the likelihood of fire spread given an ignition;
- Above-average precipitation and snowpack, in combination with cooler than average temperatures, is expected to delay the onset of the fire season in the higher elevation areas of the West;
- Current spring fire activity in Colorado and the Southwest

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

- Consistently above-average temperatures predicted for the West and southwestern Alaska during the late spring and summer;
- Below-average late spring and summer precipitation forecasted for the central Rocky Mountains and parts of the western Plains;

Significantly increased fire potential is predicted for May-June in the Southwest and eastern Colorado. The likelihood for above average fire potential will increase after May and through the summer in the Western Great Basin, southern Alaska, and Southern California. Years with climate patterns similar to 2007-2008, resulted in lower than average area burned in Alaska, and early monsoon onset in the Southwest.



**México:** Above-average fire potential is predicted for May-August 2008 for parts of northern México, however fire activity typically peaks during the month of April. México's fire season reliably ends 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:

- Below-average precipitation in northwestern and northeastern México during the last 90 days;
- Dry conditions and drought across all of the northern México border states, including severe and extreme drought in Tamaulipas and Nuevo León;
- Low-to-very low live fuel moisture across the northwestern and north-central México border states;
- Above normal fire activity has already been reported in north-central México

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

- Substantially below-average May precipitation across most of Sonora;
- Average-to-below average precipitation in northeastern México, particularly Tamaulipas, for May-July;
- Much above-average summer maximum temperatures predicted for most of the border states, particularly across the Sierra Madre Occidental and northern Coahuila;
- Much above-average June precipitation across most of the northern México border states, with the exception of Tamaulipas, but only average-to-below average July precipitation predicted for southern Sonora and northeastern México

Substantially increased fire potential is predicted for May in nearly all of north-central México until the onset of the monsoon; concerns about above-average fire potential in northeastern México will linger until the expected above-average post-La Niña tropical storm season in the Gulf of México.

## **2008 North American Seasonal Assessment Workshop Summary**

The main objective of the Third Annual 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 main product of the workshop was a map forecasting fire potential for western North America.

The third North American Seasonal Assessment Workshop (NASAW) held in 2008 was held in conjunction with the sixth National Seasonal Assessment Workshop (NSAW) 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

Alaska Center for Climate Assessment and Policy  
Alaska Coordination Center  
Bureau of Indian Affairs  
Bureau of Land Management  
California Department of Forestry & Natural Resources  
Canadian Forest Service  
Carnegie Mellon University  
CLIMAS / University of Arizona  
Cooperative Institute for Research in Environmental Sciences  
Department of Interior  
Desert Research Institute  
Earth Resources Observation Systems  
Eastern Great Basin Coordination Center  
National Aeronautics and Space Administration  
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  
Northern California Coordination Center  
Northern Rockies Coordination Center  
Northwest Coordination Center  
Orange County Fire Authority  
Pacific NW Research Forestry Sciences Lab  
Rocky Mountain Coordination Center  
Scripps Institute of Oceanography  
Servicio Meteorológico Nacional  
South Dakota School of Mines and Technology  
Southern California Coordination Center  
Southwest Coordination Center  
USDA Forest Service  
U.S. Fish & Wildlife Service  
U.S. Northern Command  
Washington Department of Natural Resources  
Western Great Basin Coordination Center  
Western Water Assessment



**CLIMAS**  
Climate Assessment for the Southwest Project  
The University of Arizona

