Monthly to Seasonal Fire Forecasting in the U.S.

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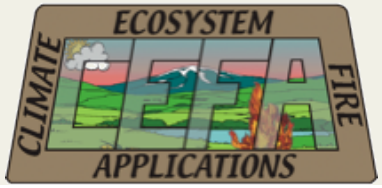
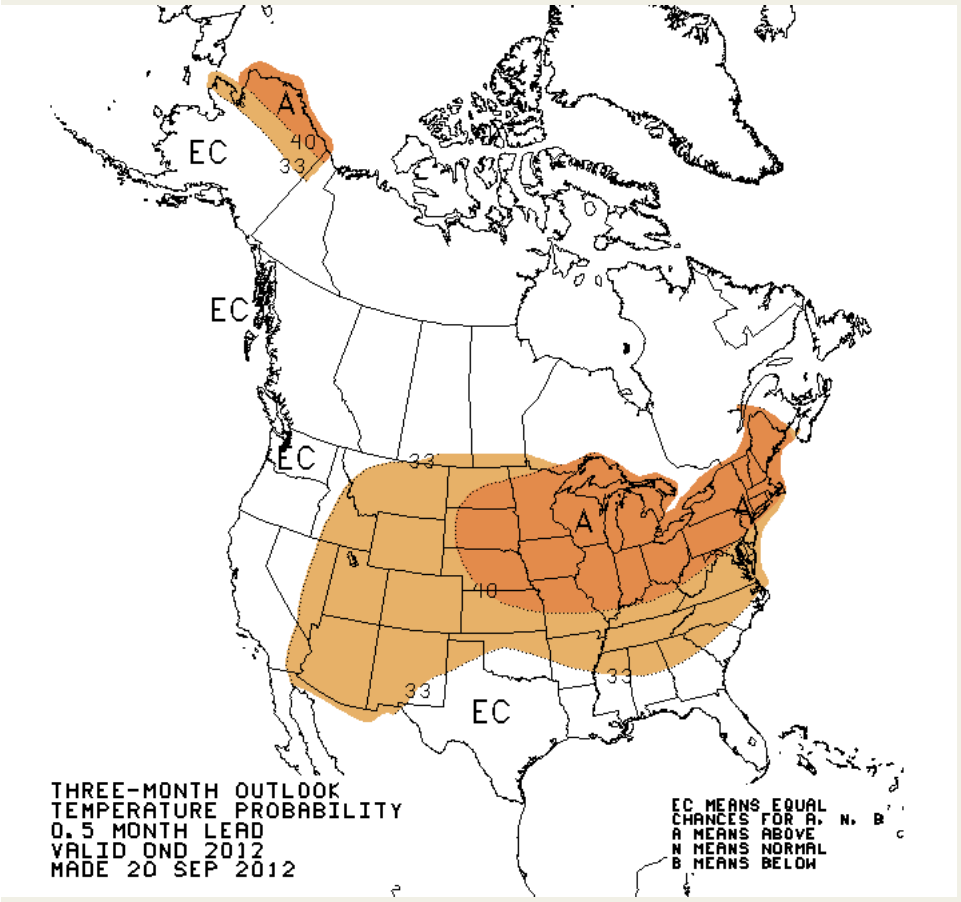
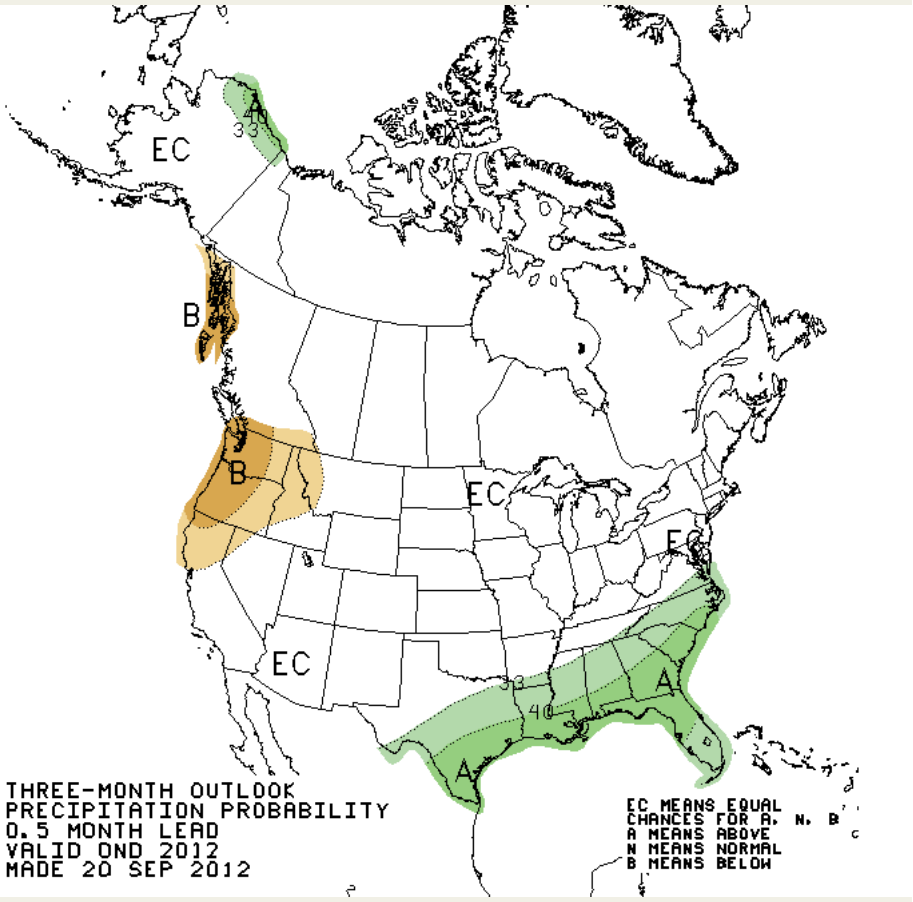
Wildland Fire Canada 2012
Kananaskis, Alberta 1-4 October 2012



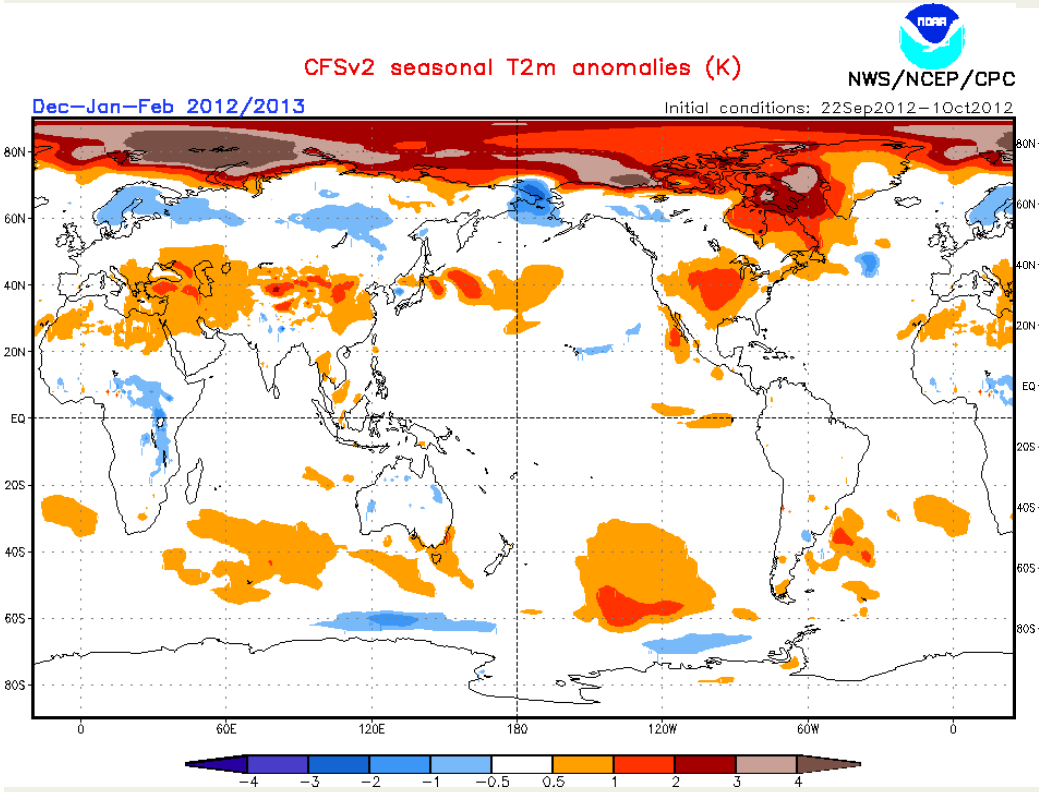
President Obama's chance of winning

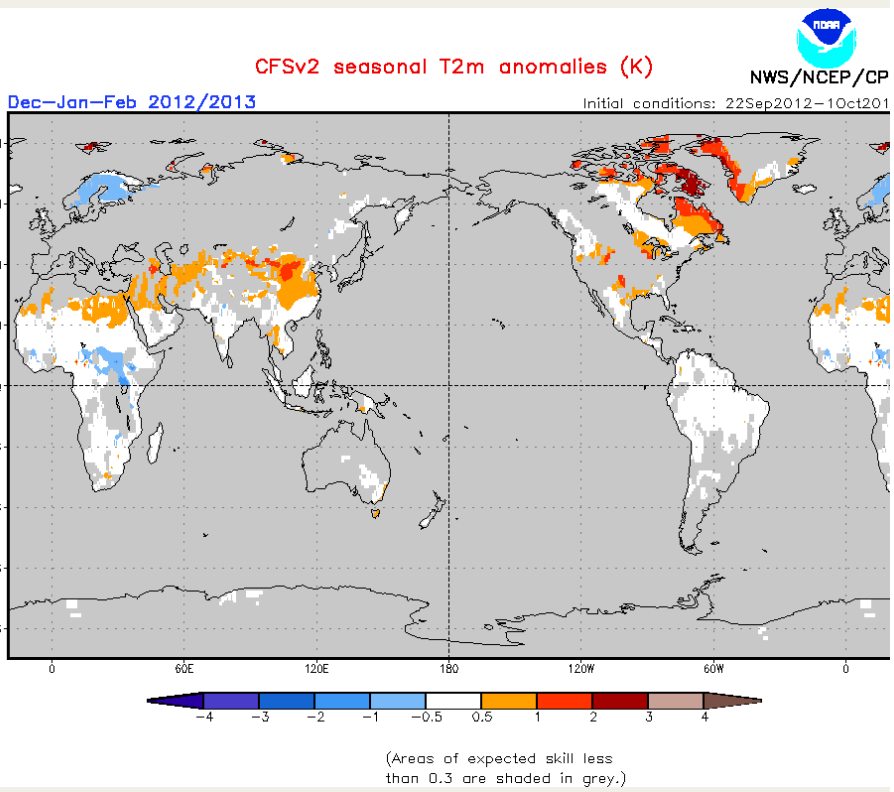
Climate Prediction Seasonal seasonal forecast





NCEP Coupled Forecast Model v2





Program for Climate, Ecosystem and Fire Applications

CFS Weekly to Seasonal Forecasts

CFSv2 Forecast Grid Initialization: 2012/09/30

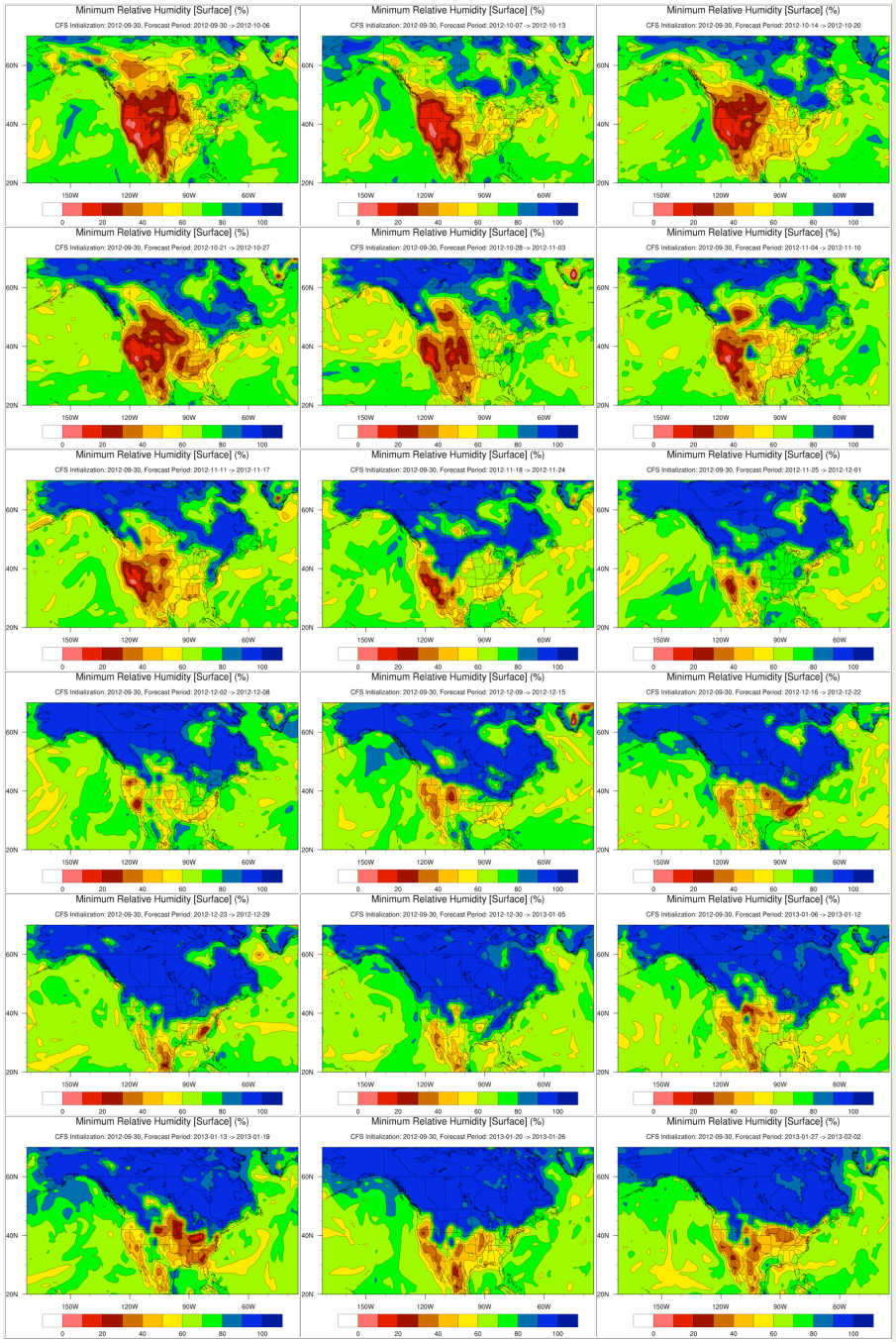
7-day Forecast Means											
Mean Wind [700-500 mb] (mph)	Loop	Grid	30Sep	07Oct	14Oct	21Oct	28Oct	04Nov	11Nov	18Nov	25Nov
			02Dec	09Dec	16Dec	23Dec	30Dec	06Jan	13Jan	20Jan	27Jan
Mean Wind [700 mb] (mph)	Loop	Grid	30Sep	07Oct	14Oct	21Oct	28Oct	04Nov	11Nov	18Nov	25Nov
			02Dec	09Dec	16Dec	23Dec	30Dec	06Jan	13Jan	20Jan	27Jan
Mean/Anom Geopotential Height [500 mb] (dam)	Loop	Grid	30Sep	07Oct	14Oct	21Oct	28Oct	04Nov	11Nov	18Nov	25Nov
			02Dec	09Dec	16Dec	23Dec	30Dec	06Jan	13Jan	20Jan	27Jan
Mean Relative Humidity [700-300 mb] (%)	Loop	Grid	30Sep	07Oct	14Oct	21Oct	28Oct	04Nov	11Nov	18Nov	25Nov
			02Dec	09Dec	16Dec	23Dec	30Dec	06Jan	13Jan	20Jan	27Jan
Mean Relative Humidity [Surface] (%)	Loop	Grid	30Sep	07Oct	14Oct	21Oct	28Oct	04Nov	11Nov	18Nov	25Nov
			02Dec	09Dec	16Dec	23Dec	30Dec	06Jan	13Jan	20Jan	27Jan
Max Relative Humidity [Surface] (%)	Loop	Grid	30Sep	07Oct	14Oct	21Oct	28Oct	04Nov	11Nov	18Nov	25Nov
			02Dec	09Dec	16Dec	23Dec	30Dec	06Jan	13Jan	20Jan	27Jan
Min Relative Humidity [Surface] (%)	Loop	Grid	30Sep	07Oct	14Oct	21Oct	28Oct	04Nov	11Nov	18Nov	25Nov
			02Dec	09Dec	16Dec	23Dec	30Dec	06Jan	13Jan	20Jan	27Jan
Accumulated Precipitation (in)	Loop	Grid	30Sep	07Oct	14Oct	21Oct	28Oct	04Nov	11Nov	18Nov	25Nov
			02Dec	09Dec	16Dec	23Dec	30Dec	06Jan	13Jan	20Jan	27Jan

This product has been developed to support Predictive Services wildland fire weekly to seasonal forecasts. Means, min/max relative humidity, and accumulated precipitation have been derived from the Climate Forecast System Version 2.0 (CFSv2) model single runs. Means represent the average at 00Z over 7 days; min/max relative humidity represents the average min/max at 00Z over 7 days; and accumulated precipitation represents the total over all daily times steps (00/06/12/18 Z) over 7 days. Geopotential height represents a special case where 7-day mean CFSv2 values are contoured with their corresponding anomalies. Anomalies are derived using a 30-year daily climatology [1981-2010] computed from the North American Regional Reanalysis (NARR) dataset. Vector maps show values for every other grid cell. This product is updated on each Sunday of the month.

CFSv2 information and seasonal climate forecasts

Program for Climate, Ecosystem and Fire Applications

CFSv2 Forecast Grid Initialization: 2012/09/30



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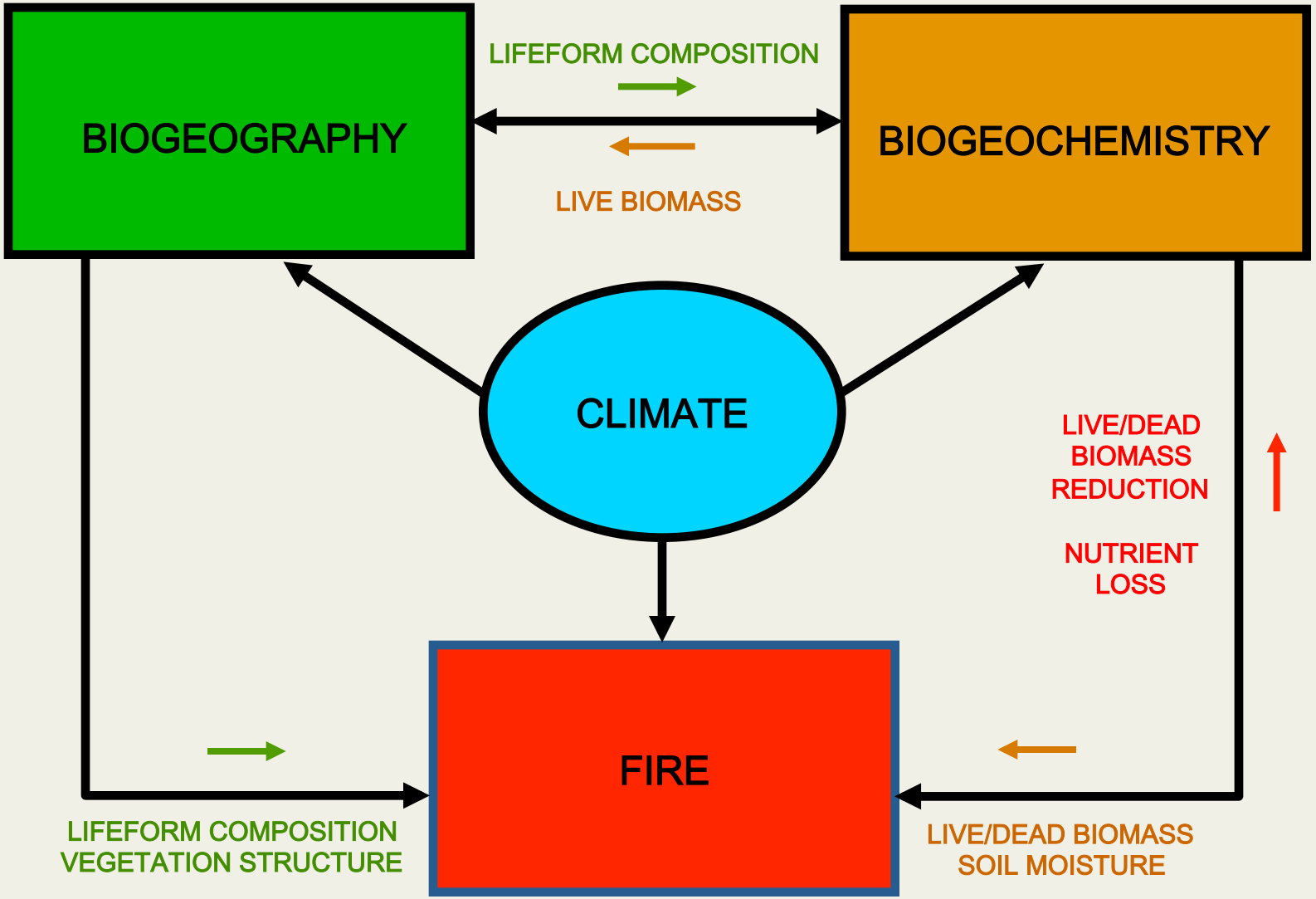
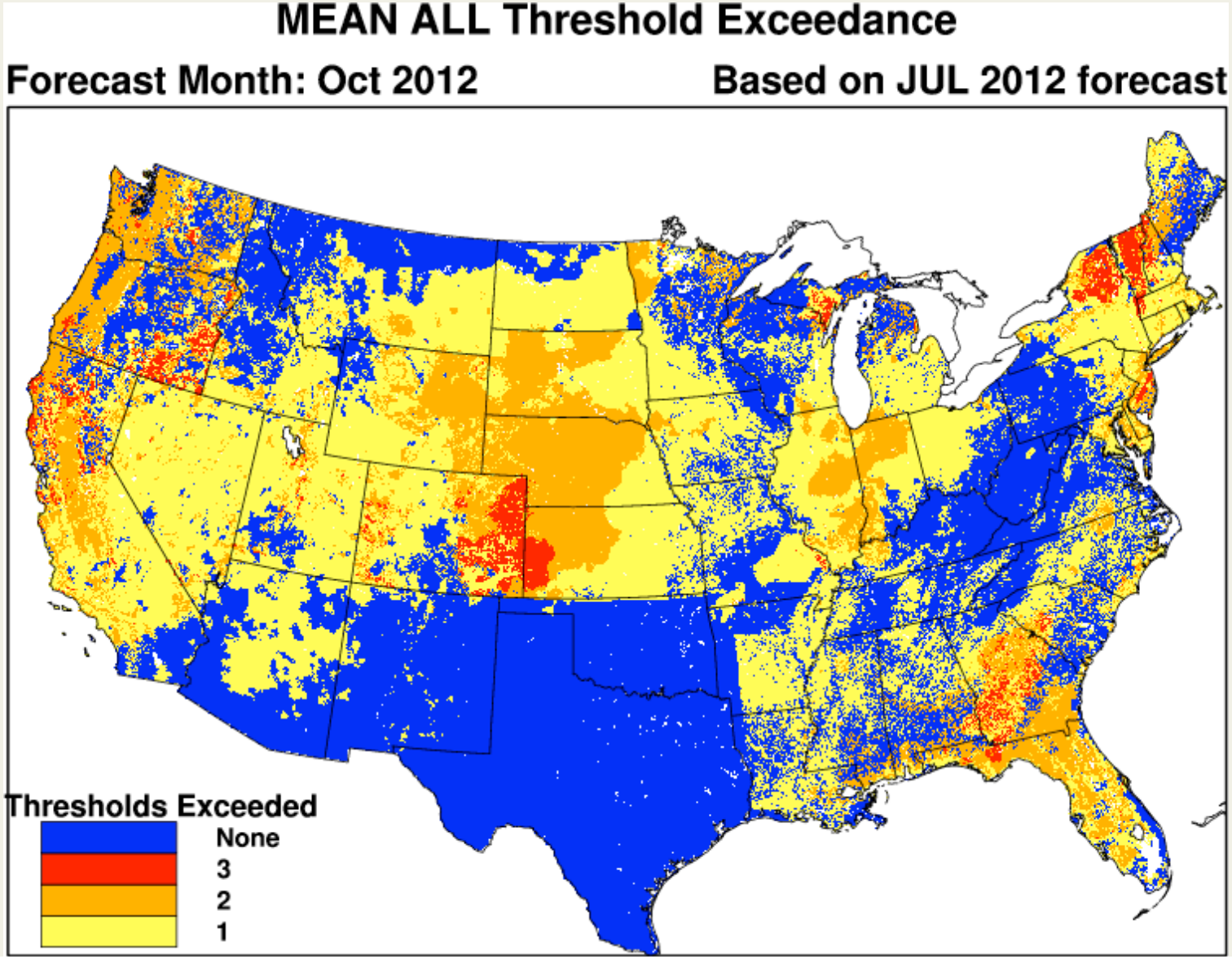
MC1 DGVM



J. Lenihan 2008

Forecasts for fuels management



Global FWI Monthly Forecast

CFSv2 Forecast Grid Initialization: 2012/09/30

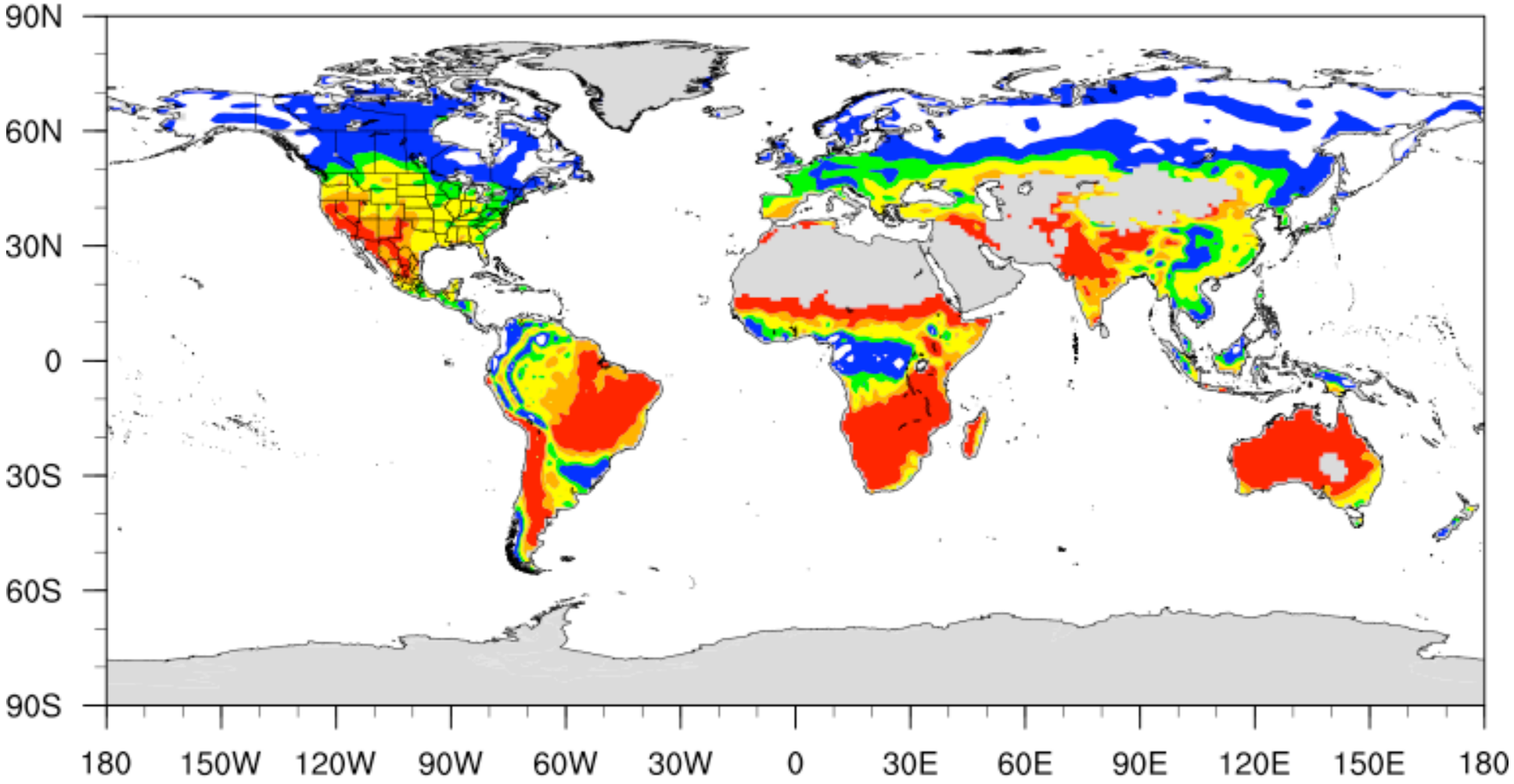
30-day Forecast Means											
Fire Weather Index	Loop	Grid	30Sep	30Oct	29Nov	29Dec	28Jan	27Feb	29Mar	28Apr	28May

This product supports the GOFC-GOLD Global Early Warning System for Wildland Fires. Mean values of the Canadian Fire Weather Index (FWI) have been derived from the Climate Forecast System Version 2.0 (CFSv2) model single runs. 30-day mean values of FWI are computed in the following manner: 4x daily data (of temperature, relative humidity, wind speed, and precipitation) are first interpolated to hourly; local noon values and rainfall accumulation are then used to derive daily values of FWI using equations from Van Wagner (1985); daily values of FWI are then averaged over a 30-day period. This product is updated on each Sunday of the month.

CFSv2 information and seasonal climate forecasts

Fire Weather Index

CFSv2 Initialization: 2012-09-29, Forecast Period: 2012-09-29 -> 2012-10-29

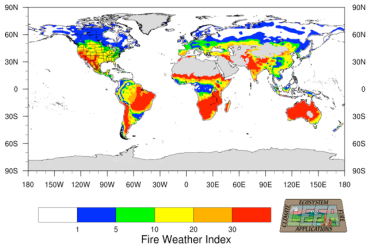


Global Fire Weather Index

CFSv2 Forecast Grid Initialization: 2012/09/30

Fire Weather Index

CFSv2 Initialization: 2012-09-29, Forecast Period: 2012-09-29 -> 2012-10-29



Fire Weather Index

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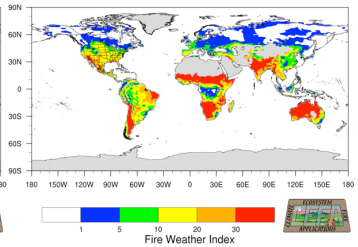

Fire Weather Index

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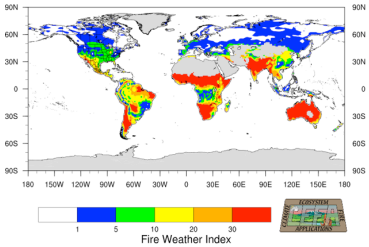

Fire Weather Index

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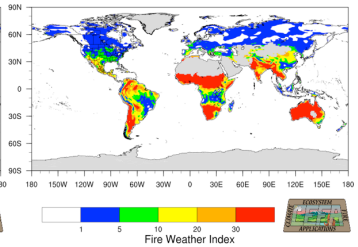

Fire Weather Index

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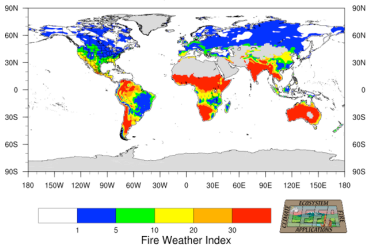

Fire Weather Index

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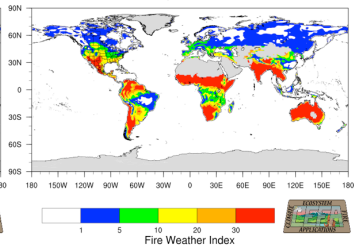

Fire Weather Index

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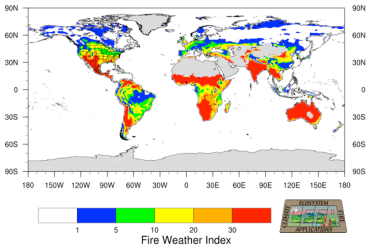

Fire Weather Index

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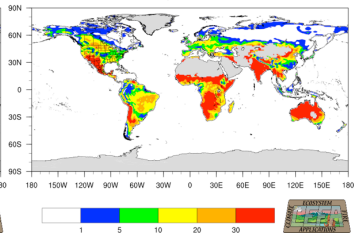
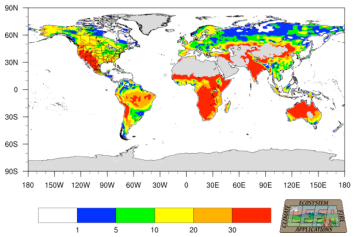


Fire Weather Index

CFSv2 Initialization: 2012-09-29, Forecast Period: 2013-05-27 -> 2013-06-26



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National Wildland Significant Fire Potential Outlook

National Interagency Fire Center
Predictive Services

Issued: October 1, 2012

Next Issue: November 1, 2012

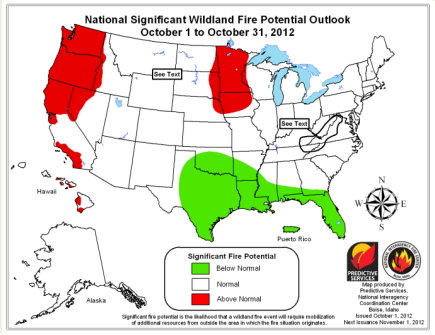
Wildland Fire Outlook – October 2012 through January 2013

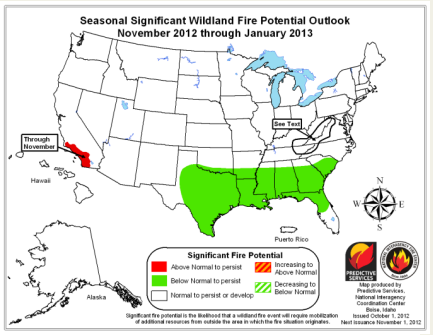
The October 2012 through January 2013 significant fire potential outlooks are shown below. The primary factors influencing these outlooks are:

- **El Niño/Southern Oscillation (ENSO):** Equatorial Pacific sea surface temperatures continue to edge toward weak El Niño conditions.

- **Drought:** Above normal rainfall fell across much of the Ohio Valley and the mid and lower Mississippi Valley as well as parts of the Southwest and southern Great Basin. The rest of the country largely experienced precipitation deficits in September with the worst deficits over the West Coast, the Northwest, the northern Rockies and the northern Plains. Severe or worse drought conditions remained over the central U.S. from the Front Range of the Rockies to the mid-Mississippi Valley.

- **Fuel Conditions:** Through September lack of significant precipitation inputs have led to above normal Energy Release Components (ERCs) and below normal live and dead fuel moistures across most of the northern half of the U.S. as well as California. Normally during this time of year fuels conditions would decline fairly rapidly across the northern tier. This season is seeing a very slow decline in nearly all fire danger indices, with that decline coming mostly in response to longer and colder nights. In order for any significant improvement in fuel conditions to take place a sustained input of moisture would need to occur. This seems unlikely at least through the middle of October. Portions of the Hawaiian Islands also continue to see elevated fire danger indices. The southeastern U.S. will continue to see periodic precipitation events increasing fuel moistures and reducing fire potential. As the fall leaf drop season develops the potential exists for a return to above normal significant fire potential across portions of the eastern U.S. depending on fall precipitation that would moisten leaf litter as it drops into the surface fuel layer.





Note: 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.

Past Weather and Drought

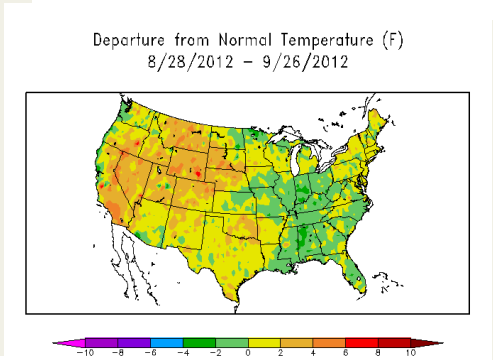
September weather patterns continued where August left off with a persistent ridge in the West and a trough in the East. Warm and dry conditions remained firmly in place across the western half of the nation with only occasional surges of moisture and wetting rains into the Southwest. In the East, several fronts dropped down into the mid and lower Mississippi Valley, bringing wetter and cooler conditions to much of the East. A brief pattern shift toward the end of the month brought cooler conditions to the interior west as well scattered precipitation and even some snow to the central Rockies.

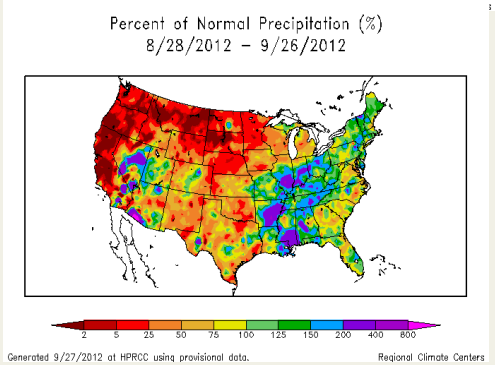
Temperatures were generally above normal in the western states where average readings were two to four degrees above normal. In the East, especially the Mississippi valley and parts of the southeast coast, readings were two to four degrees below normal.

The West continued very dry through the month with precipitation of less than 25 percent of normal along the west coast, across the northern Rockies and over the northern and central Plains. Much above normal precipitation, as much as 400 percent of normal, fell over the Mississippi and Ohio Valleys and into parts of New England. Parts of Nevada, Utah and Arizona also had up to 400 percent of normal rainfall.

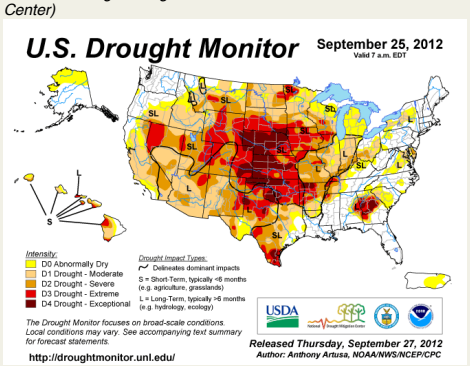
Only a few areas of the country escaped some level of drought, including the Northwest and the far northern Rockies, the Gulf Coastal region, the mid-Atlantic coast, the Appalachians and far northern New England. The rest of the nation continued in drought conditions with portions of at least 31 states in severe to exceptional drought.

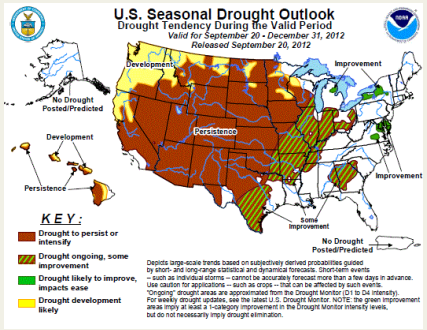
Departure from Normal Temperature (top) and Percent of Normal Precipitation (bottom) *(from High Plains Regional Climate Center)*





U.S. Drought Monitor (top) and Drought Outlook (bottom) *(from National Drought Mitigation Center and the Climate Prediction Center)*





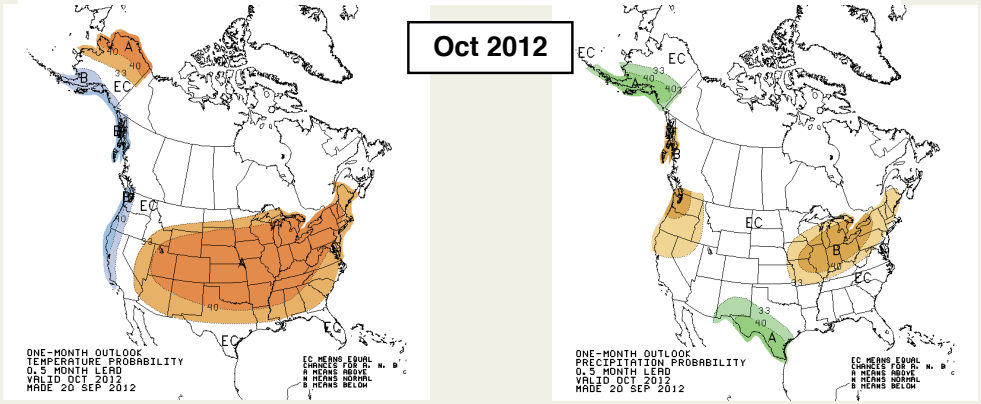
Weather and Climate Outlooks

Sea surface temperatures along the equatorial Pacific continue above normal, although there has been some weakening of the positive anomaly. Nonetheless, conditions favor a weak El Niño to take hold but it remains likely that atmospheric effects of El Niño will not be felt across the U.S. until later this fall.

Current climate projections by the Climate Prediction Center continue to trend toward a transitioning state as fall begins. For October, this suggests a high probability of above normal temperatures for most of the U.S. except along the Gulf and west coast states and the southern third of Alaska. Precipitation projections indicate a high likelihood of below median precipitation for the Northwest, the mid and upper Mississippi Valley, the Great Lakes region and parts of New England. There is a higher than normal likelihood of above median precipitation from southern New Mexico to southern Texas, and the southern third of Alaska.

For November through January, projections continue to show above normal temperatures for most of the country except the west coast states, the Gulf and Southeast coast states, and southern Alaska. Precipitation will be above median along the Gulf and Southeast coasts and below median in the Northwest and southern Alaska.

Top row: One-month (October) outlook for temperature (left) and precipitation (right). Bottom row: Three month (November-January) outlook for temperatures (left) and precipitation (right). *(from Climate Prediction Center/NOAA)*



Area Discussions

Alaska: October significant fire potential is expected to be normal statewide, with November through January significant fire potential expected to be normal as well. Alaska is considered out of fire season. The Alaska fire season has been well below normal this year, though several late September wind events caused fire starts from downed trees into power lines. Above normal temperatures are forecast in October over the northern third of the state with cooler temperatures expected along the Gulf of Alaska coast to the Panhandle. Greater than normal precipitation is expected for the southern third of Alaska. October is when most of the Interior receives its winter snow cover. November brings winter and snow cover for all of Alaska. The November through January time period is expected to have warmer than normal temperatures over most of northern Alaska and slightly below normal precipitation over the central Gulf of Alaska coast and panhandle.

Southwest: Normal significant fire potential is expected for the entire Southwest Area for October. A more fall like weather pattern will gradually evolve through the month. This will mean milder and drier periods of weather interspersed with cooler and wetter periods as a high amplitude weather pattern is likely to develop across the western half of the U.S. and the eastern Pacific Ocean. Overall, this will lead to a wetter pattern for the southeastern sections of the Area early in the month with a likely tilt towards cooler and wetter weather conditions across northern and western sections later in October.

Normal significant fire potential is also expected across the entire Southwest Area from November through January. Considerable uncertainty exists in regards to the overall weather pattern for this timeframe as the recently evolving El Niño seems to have weakened some and hasn't shown much of an impact in the overall weather and climate picture through late September. As a result, expect a considerably varied weather pattern during this timeframe with periods of colder and moister conditions interspersed with drier and milder timeframes.

Northern Rockies: Above normal significant fire potential will remain across the Northern Rockies Area until at least the middle of the month. Record setting warmth and dryness continued through the month of September. Large fires in central Idaho will continue to burn until significant rain and snow falls. With a continued weak El Niño in the forecast, anticipate October to be warm and dry for at least the first half of the month. Mid-range models continue to waver concerning the arrival of significant wetting moisture and cooling temperatures.

The Northern Rockies is usually out of fire season for the months of November, December and January. Expect a relatively dry fall and winter with below normal snowpack. Weak El Niño winters tend to produce poor snowpack for the Area. Any fire activity will be human caused. Large human caused grass fires are not unusual east of the divide and will continue until snow covers the ground.

Western Great Basin: Due to the dry fuels, significant fire potential will remain above normal over western and northern portions of the Western Great Basin until a significant amount of rain or snowfall occurs. Fire season is typically over by October across the Western Great Basin. Average temperatures over the last 30 days have been above normal over much of Nevada and very dry conditions continued over northern and western Nevada. Due to recent dry and warm weather, ERCs over western and northern Nevada increased above the 90th to 95th percentile, and even exceeded historic maximums from mid to late September. Concurrently, 100 hour fuel moistures have been trending in the 95th percentile for the driest years on record. Significant fires continued to occur in September across western and northern Nevada. After a brief period of wet and cooler weather across the Area in late September, dry and warm weather is expected through at least early October. Much of the precipitation that affected Nevada in September did not affect the western and northwest side of the state. Extreme drought conditions exist across much of western and northern Nevada, with severe and moderate drought over the remainder of the state. Expect above normal temperatures across the eastern half of Nevada with below normal precipitation over western and northern Nevada for October.

Historic and Predicted Wildland Fires and Acres Burned Data

Based on data reported year to date in 2012, nationally there were 75 percent of the average number of fires burning approximately 138 percent of the average acres. Nationally, as of September 30, the 10 year average number of fires is 64,642 and the 10 year average acres burned is 6,379,206. The following table displays 10 year historical, current and predicted information pertaining to fire statistics.

Sep Reported Year-To-Date		AVG reported for Oct	Projection for Oct YTD+Forecast	Average Reported YTD Oct	10 Yr Low YTD Oct	Year of Low	10 Yr High YTD Oct	Year of High
ALASKA								
Fires	388	6	396	514	308	2006	707	2004
Acres	266,407	40,989	271,378	1,904,609	62,647	2008	6,645,978	2004
NORTHWEST								
Fires	2,029	190	2,203	3,311	2,102	2010	4,716	2006
Acres	1,451,000	26,658	1,504,316	435,462	122,192	2004	1,099,430	2002
NORTH OPS								
Fires	3,249	319	3,491	3,763	2,731	2011	4,663	2001
Acres	813,957	18,395	850,746	201,430	22,899	2011	933,322	2008
SOUTH OPS								
Fires	3,766	365	4,124	4,124	3,310	2006	4,917	2007
Acres	81,450	106,578	116,079	327,872	84,174	2010	792,421	2007
NORTHERN ROCKIES								
Fires	2,923	93	3,028	2,736	1,712	2010	4,247	2006
Acres	1,376,327	13,196	1,402,718	398,798	37,830	2004	1,163,845	2006
EAST BASIN								
Fires	2,311	117	2,424	2,217	1,630	2008	3,151	2001
Acres	2,025,973	9,156	2,044,286	677,696	89,169	2004	2,401,187	2007
WEST BASIN								
Fires	995	-200	728	692	0	2010	1,248	2006
Acres	640,329	-198,293	610,414	353,314	0	2003	1,340,538	2006
SOUTHWEST								
Fires	2,529	143	2,619	3,849	2,400	2010	5,422	2006
Acres	537,824	14,776	541,924	671,979	147,306	2001	2,101,844	2011
ROCKY MOUNTAIN								
Fires	4,240	578	5,085	3,141	1,884	2004	6,050	2003
Acres	1,070,196	41,205	1,152,605	266,118	44,987	2004	668,079	2002
EASTERN AREA								
Fires	9,644	477	9,930	11,799	5,339	2011	14,181	2002
Acres	100,674	5,788	105,741	125,834	59,857	2005	200,033	2008
SOUTHERN AREA								
Fires	16,184	1,674	16,958	32,413	13,336	2006	44,316	2006
Acres	438,584	33,111	458,507	1,307,323	241,412	2004	3,724,893	2011
NATIONALLY								
Fires	48,258	3,990	48,367	68,632	56,036	2011	89,784	2006
Acres	8,802,721	300,686	8,516,790	6,679,893	3,172,044	2003	9,602,226	2006

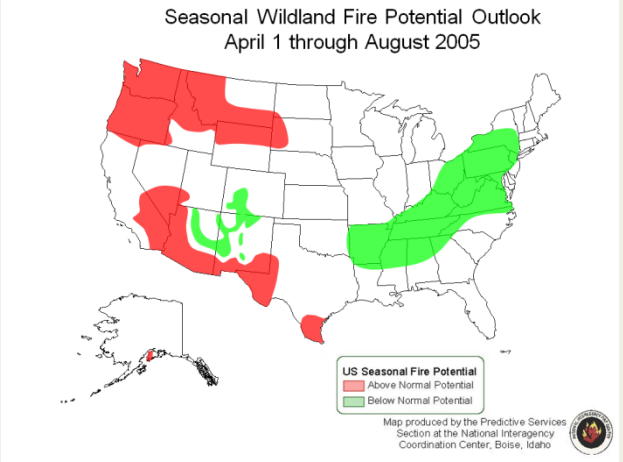
Prepared October 1, 2012 by the National Interagency Coordination Center Predictive Services Staff. The information above was obtained *primarily* from Incident Management Situation Reports from 2002-2012, however some inaccuracies and inconsistencies have been corrected. Therefore, the data may not reflect other historic records and should *not* be considered for official statistical purposes.

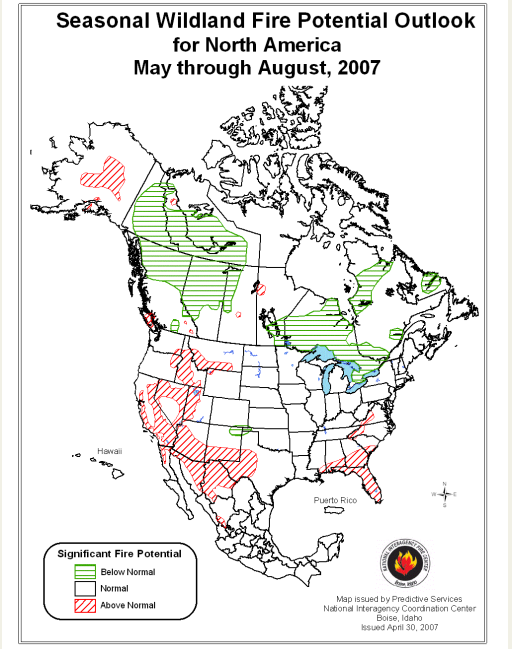
Note: This national outlook and some geographic area assessments are currently available at the NICC and GACC websites. The GACC websites can also be accessed through the NICC webpage at: **http://www.nifc.gov/nicc/predictive/outlooks/outlooks.htm**

Predictive Services Seasonal Outlooks

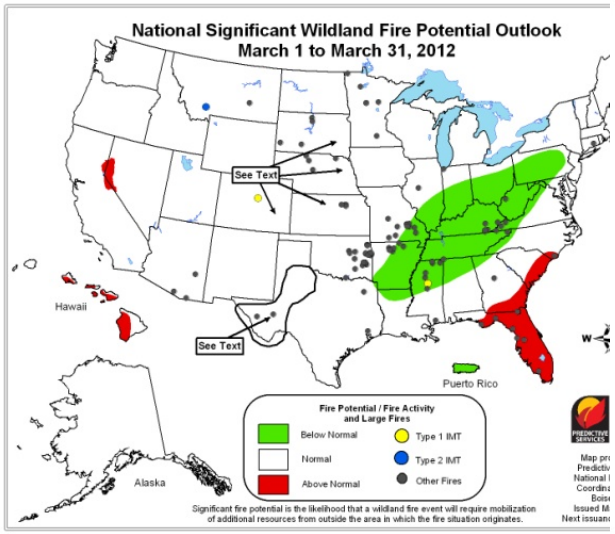
- **Formally began in 2003**
  - United States only
  - Climate experts prepared a consensus climate outlook
  - Predictive Services meteorologists and fuels specialists addressed climate impacts on fuels and fire potential.
  - Three category outlook (normal, above normal, below normal)

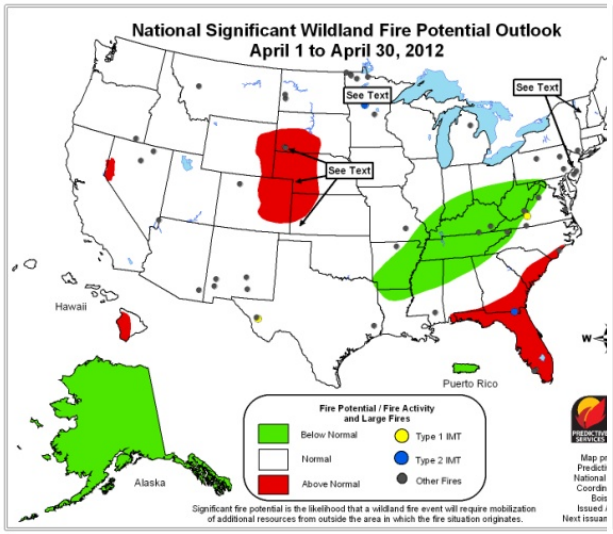
- **Canada, Mexico joined in 2006**
  - North American Seasonal Outlook
  - U.S. represented by national, regional experts
  - Canada, Mexico represented by national experts
  - Similar three category outlook

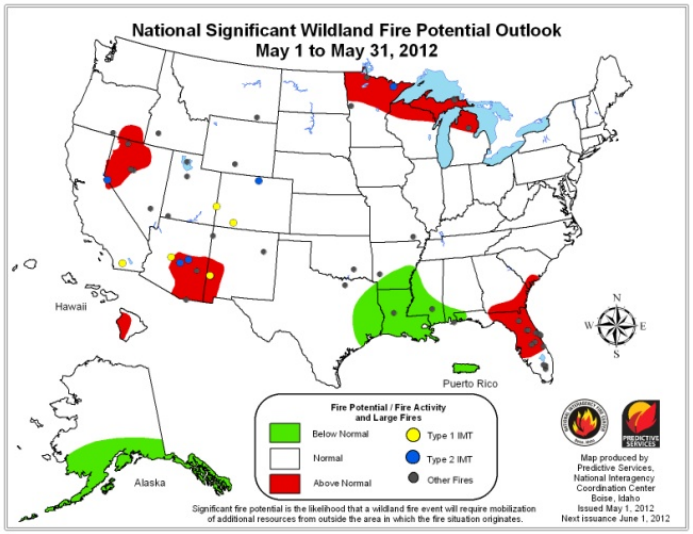


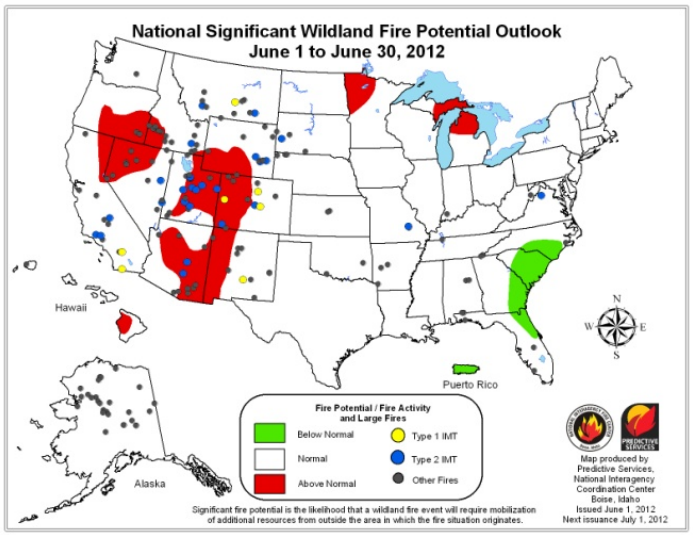


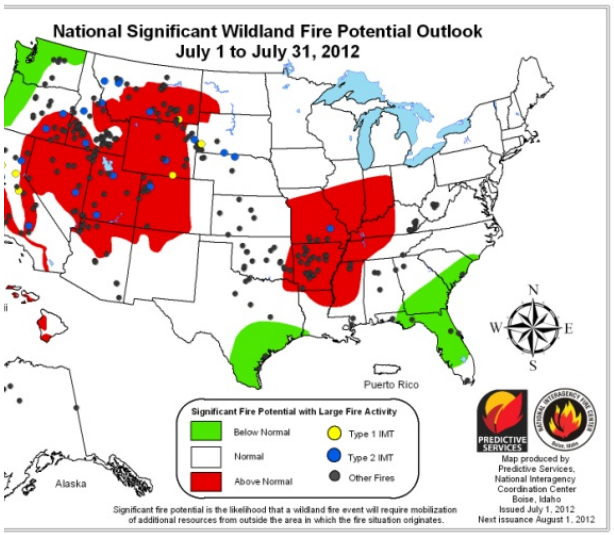
2012 Monthly Outlooks and Significant Fires

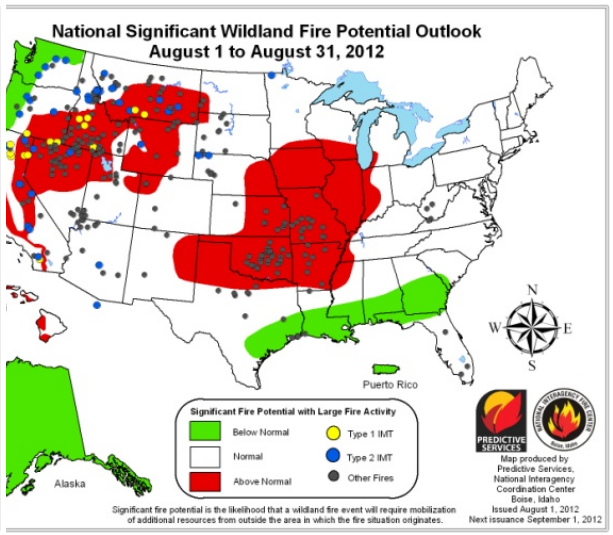












Future of Seasonal Outlooks

- **Current**
  - Eastern Seasonal Assessment
    - Eastern Area, Southern Area, Southwest, Mexico
    - Produced late January; Released 1 February
    - Covers Feb-Mar, Apr-Jun
  - Western/N.A. Seasonal Assessment
    - Alaska, Northwest, Northern Rockies, California, Great Basin, Rocky Mountain, Canada
    - Produced late April; Released 1 May
    - Covers May-Jun, Jul-Aug
  - Monthly Outlooks (U.S. only)
    - First of each month
    - Next month + 3 month

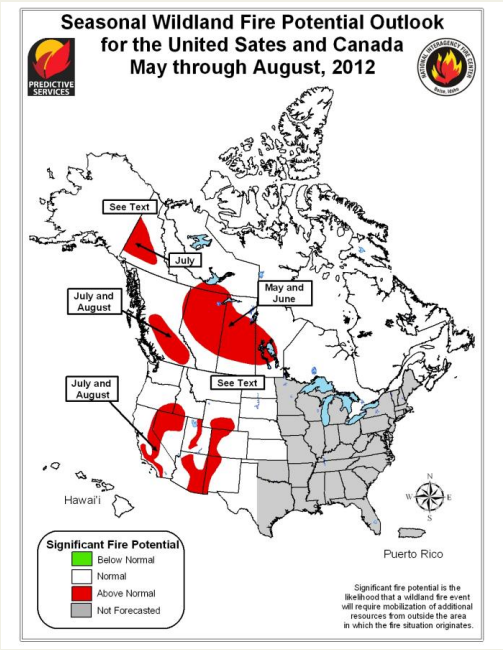
- **Planned**
  - Monthly Outlooks (U.S. only)
    - All Geographic Areas
    - Next month + 3 month
    - Emphasize areas entering fire seasons
  - North American (U.S., CAN, MEX)
    - 3-4 issuances yearly
    - Concurrent with U.S. Monthly
    - Key on start, middle of fire seasons for Canada, Mexico
    - Off-season outlook emphasizing conditions that will shape next season (precipitation, snow pack, etc.)
  - Eliminate stand-alone seasonal
    - Not usually updated
    - Coordination only once per year
    - Not in synch with season starts

2012 Western U.S. and Canadian Wildland Fire Potential Assessment

On April 17 through 19, 2012 U.S. and Canadian fire, weather and climate specialists convened virtually for the National Seasonal Assessment. A forecast of seasonal significant fire potential for the western U.S. and Canada was developed as part of this collaboration. This briefing document includes a description of existing climate forecasts, fuels conditions, and influences on resource requirements.

Significant Fire Potential Forecast (May – August 2012)

The map below shows the significant fire potential forecast for May through August 2012 across the western U.S. and Canada. 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 more than the usual number of external resource mobilizations.



Significant Fire Potential

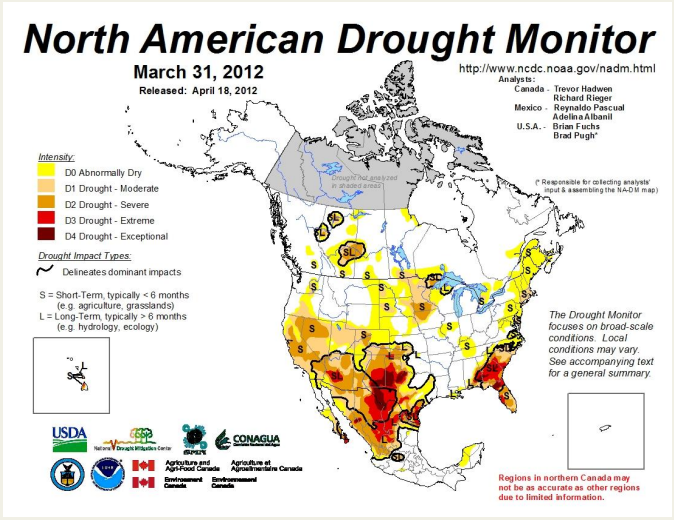
For the 2012 fire season in the U.S. expect areas of above normal significant fire potential to include portions of Arizona and western New Mexico stretching up the Rocky Mountains and encompassing portions of western Colorado and south central Wyoming. Another area of above normal significant fire potential is likely to develop from the southern California mountains and stretch northward across western Nevada and into southeastern Oregon and southwest Idaho. Other areas including the central Utah mountains and the west side of Hawaii's Big Island have the potential to develop above normal significant fire potential.

Areas outside of the western U.S. that are likely to continue or develop above normal significant fire potential include areas of the southeastern U.S. mainly focused around Florida and the south Atlantic Coast; as well as the western Great Lakes region.

The 2012 Canadian fire season is expected to have above normal significant fire potential develop in May and June across much of the interior west, including portions of Alberta, Saskatchewan, Manitoba and the Northern Territories. This will transition to the Yukon Territories and British Columbia in July. After July above normal conditions will likely diminish in the Yukon Territories but continue through August in interior British Columbia.

Drought Conditions

An abnormally dry winter has left a number of areas with some level of drought as fire season approaches. A great deal of improvement has occurred over much of central and eastern Texas, however drought continues across west Texas and has spread west and north encompassing much of the southwestern quarter of the U.S. Extreme to exceptional drought has persisted across Florida, Georgia and Alabama, with abnormally dry to severe drought conditions also occurring up most of the Atlantic Seaboard. Also an area stretching from the western Great Lakes into eastern Montana and Wyoming is experiencing dry to severe drought conditions.



Though Canada has little significant drought heading into this season, the areas of drought that are present are centered over much of Alberta and somewhat into western Saskatchewan. These drought conditions coincide with high ending Drought Codes from last year and are the primary reason this area has been forecasted for above normal potential in the late spring and early summer.

Snowpack

Winter across the west mostly produced below normal snowpacks. Across a large portion of the west stretching from Arizona to southern Idaho and Oregon, there were significantly below normal snowpacks. In some areas as low as 40 percent of normal. However, as the winter developed the majority of the Pacific Northwest did see normal to somewhat above normal snowpacks accumulate.

Snowpack across Canada is similar to what occured across the northern tier of the United States. Western Canada saw the same late season snowfall that allowed the Pacific Northwest and Alaska to reach above normal snowpacks. Eastward, into the prairie provinces, the snowpack was significantly below normal and did not provide much relief for drought conditions or compaction of fine fuels.

Fuels Conditions

La Nina conditions from last growing season that extended into the fall and winter of 2012 have had a significant effect on fuels conditions across the U.S. At this time last year abundant fine fuels across the south central U.S. stretching into New Mexico led to significant fire occurence. However, because of the drought conditions fine fuels in those areas largely have not developed for this fire season. Conversely, areas where conditions were more moist last year, such as the Great Basin and north central Plains have an abundance of fine fuels as a residual component from last year. These abundant fine fuels also mostly avoided heavy snowpacks during the winter and are not compacted leaving them a readily available source of fuel for fire growth.

Dry winter conditions in Canada have led to some concerns over fuels heading into fire season. Portions of western Canada where geological barriers kept snowpacks either normal or below normal could see some quick snow melt which would lead to an early start in drying for high terrain heavier fuels. Also, as was stated

above, fine fuels across the prairie provinces did not receive much over winter precipitation, hence they are beginning the season both dry and uncompacted making them readily available for fires.

Fire Season Onset

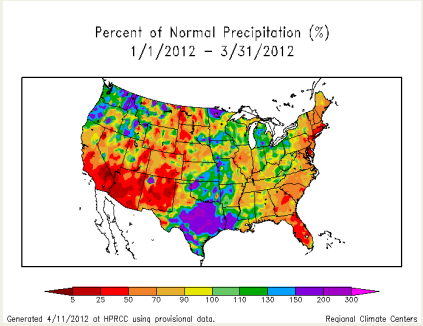
The variability in the spring weather prospects makes the onset of fire season difficult to predict. Normally, with similar fuel and drought conditions we would expect an early onset of the fire season. However, the possibility of a moist late spring pattern may mean that fire season is actually delayed as fine fuels struggle to dry from periodic rains and higher humidities.

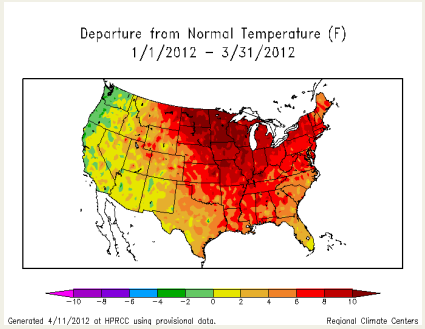
Southwest Monsoon

Early indications suggest monsoon onset may be slightly earlier and more erratic than normal. This may open the possibility of periods of increased significant fire potential both during the monsoonal period and as it recedes.

Climate Conditions and Forecasts

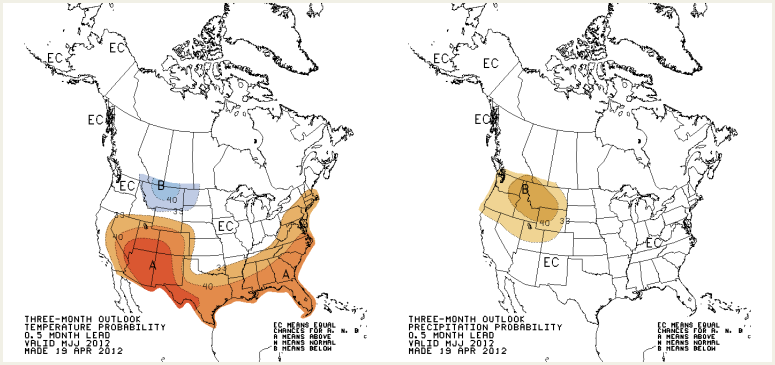
Climate patterns have been under the influence of La Niña conditions since the summer of 2010. After a brief period of El Niño/Southern Oscillation (ENSO) neutral conditions last fall, La Niña resumed during the winter. Wet early winter storms brought snow to most of the West but patterns changed to more classic La Niña conditions in the mid and late winter. Storms focused precipitation over the Northwest, Northern Rockies, and over the south central U.S. while most of the western states suffered large deficits. Conditions this spring have evolved to a more neutral pattern in the equatorial Pacific but the latest data and model projections indicate a higher probability of El Niño conditions this summer. Timing of this transition is still quite uncertain as is the strength of a potential El Niño. Historical analogs of similar years show distinctly different outcomes between a neutral pattern and an El Niño.

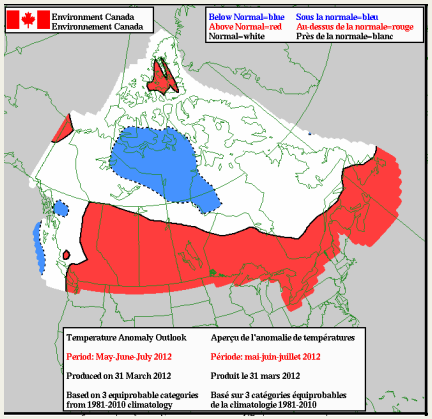


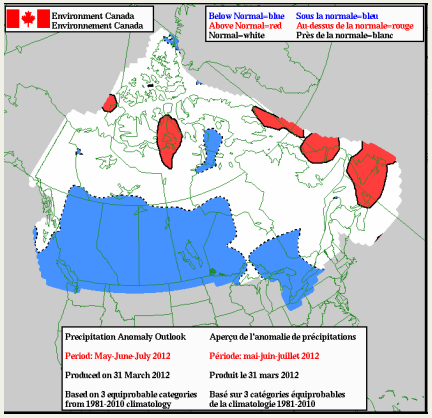


Temperature and Precipitation Forecasts

The latest climate outlooks from the National Weather Service's Climate Prediction Center are based on a neutral pattern through mid-summer. For the May to July period, this indicates above normal temperatures across the Southwest, the Great Basin, the South from Texas to Florida, and the Atlantic seaboard from Georgia to Maine. Precipitation probabilities for the same period favor below median precipitation across much of the Northwest and northern Rockies.







Canadian Forecast

As with much of the western U.S., western Canada is carrying some areas of drought from last fall that were made worse by an unusually warm winter. This is leading to a wide dispersion of high starting Drought Code values which significantly impact the forecasts for Canada, mainly increasing beginning conditions across the prairie provinces. Much of Canada is expected to see above normal temperatures as summer develops, while western Canada is expecting below normal precipitation for the rest of spring with the drier than normal conditions likely spreading through most of the east by the time summer begins. These factors will lead to above normal significant fire potential across some areas of western Canada. As summer begins much of Alberta and Saskatchewan and a portion of western Manitoba and southern Northwest Territories will see above normal significant fire potential in May and June. As these areas transition to normal potential a portion of the Yukon Territory will see above normal significant fire potential. Much like Alaska, the Yukon Territory will be significantly affected by the timing of the transition to El Niño and has the potential to develop large areas of above normal significant fire potential. Concurrently, British Columbia will likely develop above normal significant fire potential. This is especially likely in the interior regions of the province where below normal snowfall occurred over the winter. The above normal significant fire potential is expected to decrease in July in the Yukon Territory, but continue into August in British Columbia. Elsewhere in Canada expect near normal conditions. It should be noted that the potential for a significant fire season exists should the timing of the El Niño transition and the ongoing dryness match up in such a way that little or no precipitation is received across western Canada through the summer.

2012 Western U.S. and Canadian Seasonal Assessment Summary

The main objective of the seasonal assessment 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 requirements.

These 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.

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 western United States, Alaska, Hawaii, and Canada.

The 2012 assessment was organized by the Predictive Services interagency group, 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. The U.S. and Canadian Seasonal Assessment, included participants from Natural Resources Canada. Other participating agencies are listed below.

Participating Agencies / Organizations

Predictive Services
- National Interagency Coordination Center
- Eastern Area Coordination Center
- Southern Area Coordination Center
- Southwest Area Coordination Center
- Rocky Mountain Area Coordination Center
- Northern Rockies Area Coordination Center
- Eastern Great Basin Area Coordination Center
- Western great Basin Area Coordination Center
- Southern California Area Coordination Center
- Northern California Area Coordination Center
- Northwest Area Coordination Center
- Alaska Area Coordination Center

CLIMAS/University of Arizona
Desert Research Institute
CAP/Scripps Institution of Oceanography
Bureau of Land Management
National Parks Service
Bureau of Indian Affairs
US Fish and Wildlife Service
USDA Forest Service
National Oceanic and Atmospheric Administration
- National Weather Service
- Climate Prediction Center
- Storm Prediction Center
- Earth System Research Laboratory

National Association of State Foresters
- Numerous state wildfire agencies

Department of Defense
US Fire Administration
Natural Resources Canada

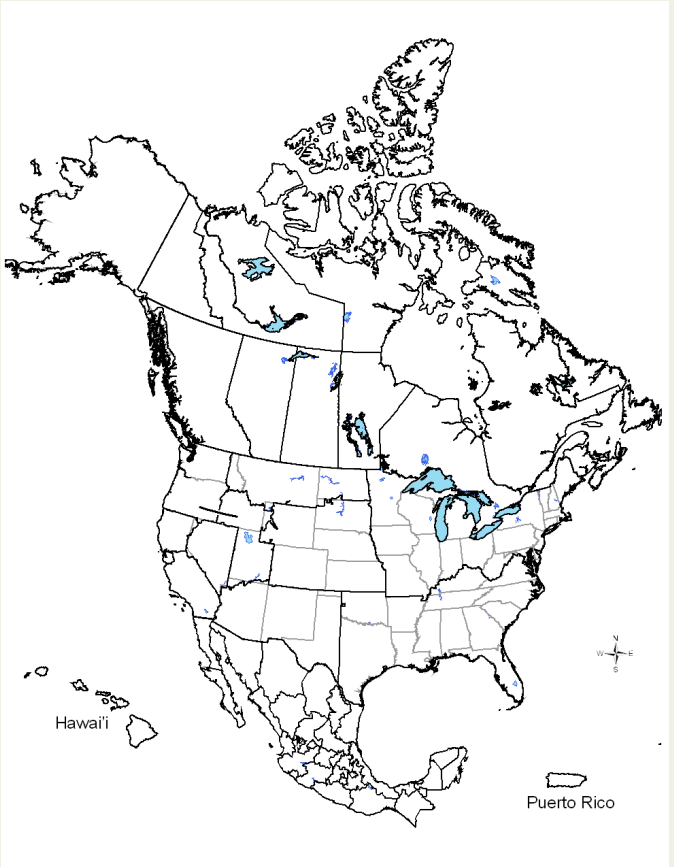
Resources Cited

US Drought Monitor: *http://droughtmonitor.unl.edu/*
Natural Resource Conservation Service, National Water and Climate Center: http://www.wcc.nrcs.usda.gov/
High Plains Regional Climate Center: *http://www.hprcc.unl.edu/*
Climate Prediction Center: *http://www.cpc.ncep.noaa.gov/*
Earth System Research Laboratory: *http://www.esrl.noaa.gov/*

For questions about this outlook please contact the National Interagency Fire Center at (208) 387-5050

Value of International Collaboration

- **Fire Operations Planning/Support**
  - Resource sharing/assistance agreements
- **Knowledge/Data Transfer**
  - Climate analysis and forecast techniques
  - Fire occurrence/fire behavior data
  - Fuels information
- **Research Opportunities**
  - Ongoing dialog with neighbors
  - Regional partnerships
    - Northwest-British Columbia
    - Northern Rockies-Alberta, Saskatchewan, Manitoba
    - Eastern Area-Manitoba, Ontario, Quebec



Cheers from Reno!

Fire near Tim's house, July 2012