

# NOAA Climate Science & Services

## Monthly Climate Update

A look back at January and Winter-to-Date

A preview of March-May



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NOAA's National Climatic Data Center

**Deke Arndt**

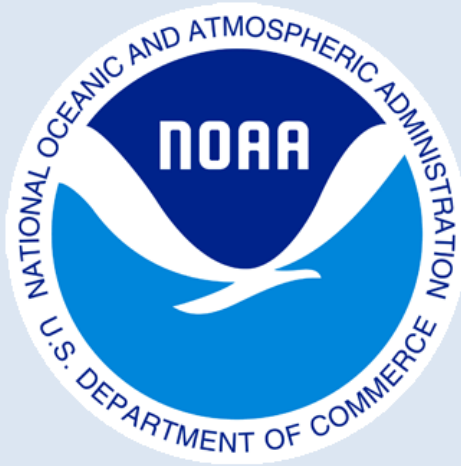
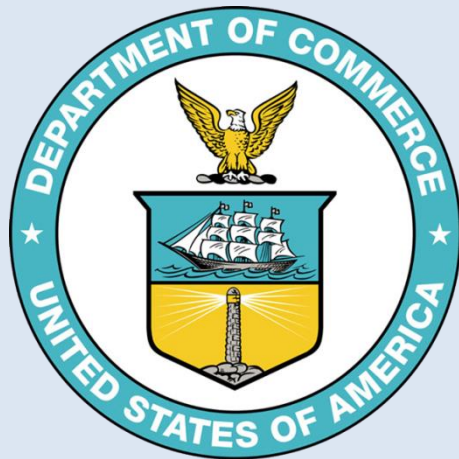
Chief, Climate Monitoring Branch

NOAA's National Climatic Data Center

**Dan Collins**

Research Meteorologist

NOAA's Climate Prediction Center

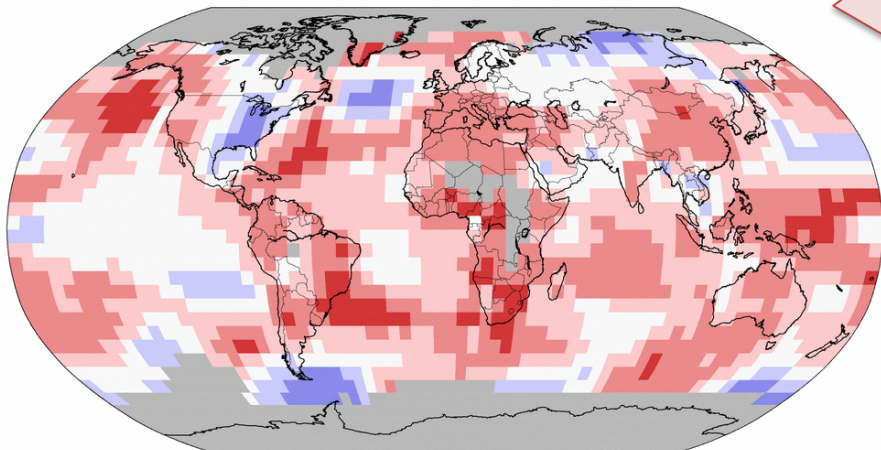


# Global Climate Highlights

## Land & Ocean Temperature Percentiles Jan 2014

NOAA's National Climatic Data Center

Data Source: GHCN-M version 3.2.2 & ERSST version 3b



## January 2014 Temperatures:

- 4<sup>th</sup> warmest January globally (+0.65°C/+1.17°F).
- 38<sup>th</sup> consecutive Jan. warmer than 20<sup>th</sup> C average.
- Land: 4<sup>th</sup> warmest; Ocean: 4<sup>rd</sup> warmest.
- S. Hemisphere land record warm.

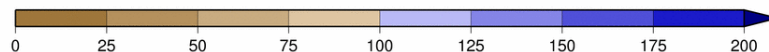
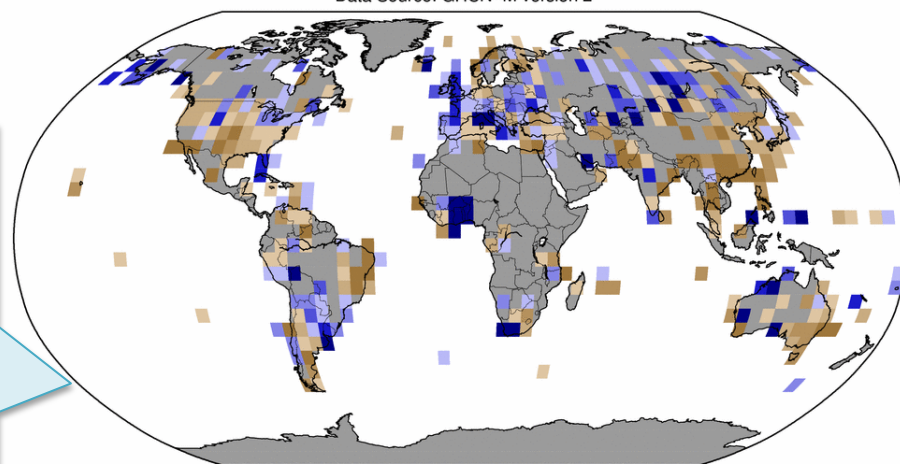
## Regional Analysis:

- France and China: 2<sup>nd</sup> warmest January.
- Alaska: 3<sup>rd</sup> warmest January.

## Land-Only Precipitation Percent of Normal Jan 2014

(with respect to a 1961–1990 base period)

Data Source: GHCN-M version 2



NOAA's National Climatic Data Center  
Thu Feb 13 07:36:16 EST 2014

Percent

Please Note: Gray areas represent missing data  
Map Projection: Robinson



Wed Feb 12 07:43:39 EST 2014

- United Kingdom.: 3<sup>rd</sup> wettest January on record. Some locations were record wet.
- Australia: Heavy precipitation in Western Australia. National-precipitation 17% above average.

**Snow Cover:** Northern Hemisphere snow cover extent below average—10<sup>th</sup> smallest in 48-year period of record. N. America: 19<sup>th</sup> smallest; Eurasia: 11<sup>th</sup> smallest



February 2014

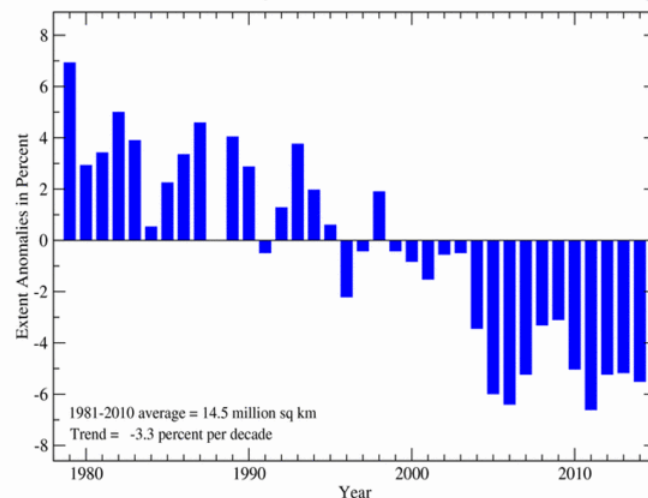
Monthly Climate Webinar

# Global Climate Highlights

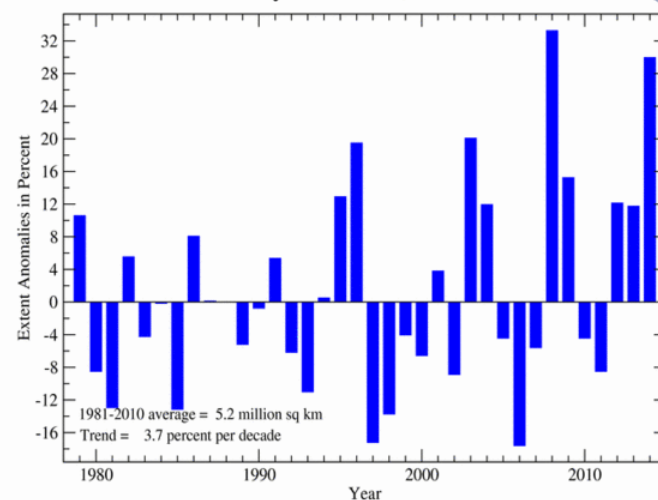
## Global Sea Ice Conditions

- Arctic sea ice extent 5.5 percent below average – the 4<sup>th</sup> smallest January extent on record.
- Antarctic sea ice extent 30.0 percent above average – the 2<sup>nd</sup> largest January extent on record, slightly smaller than January 2008.
- Ninth consecutive month with top five large Antarctic sea ice extent.
- Global sea ice was 3.8 percent above average and the 7<sup>th</sup> largest for the month. This was the largest January global sea ice extent since 2008.

Northern Hemisphere Sea Ice Extent  
January Anomalies, 1979-2014



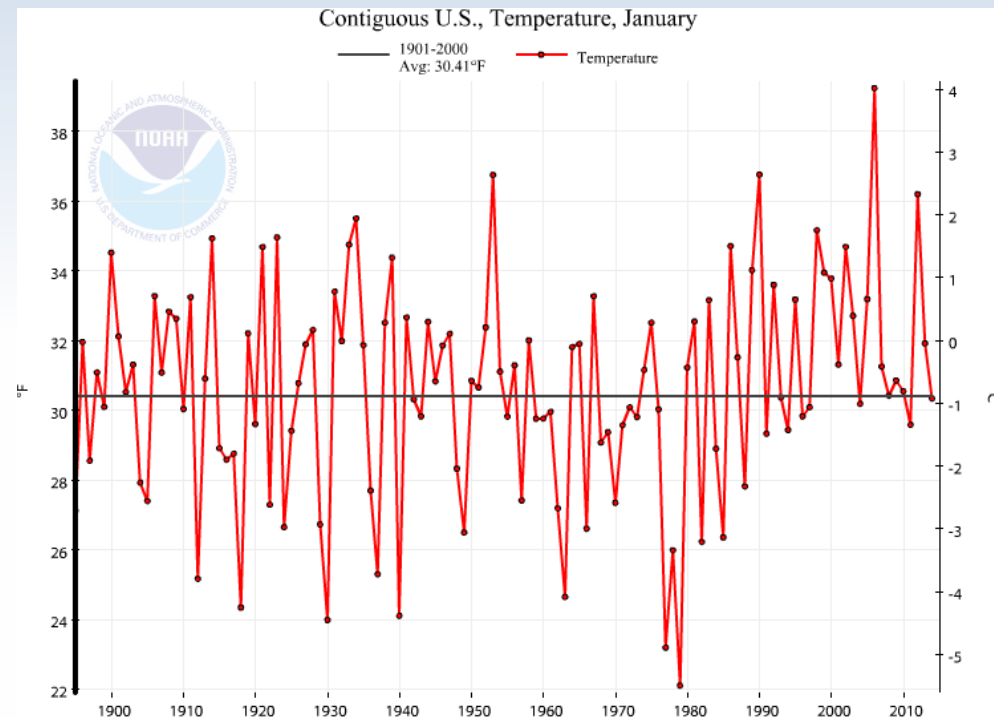
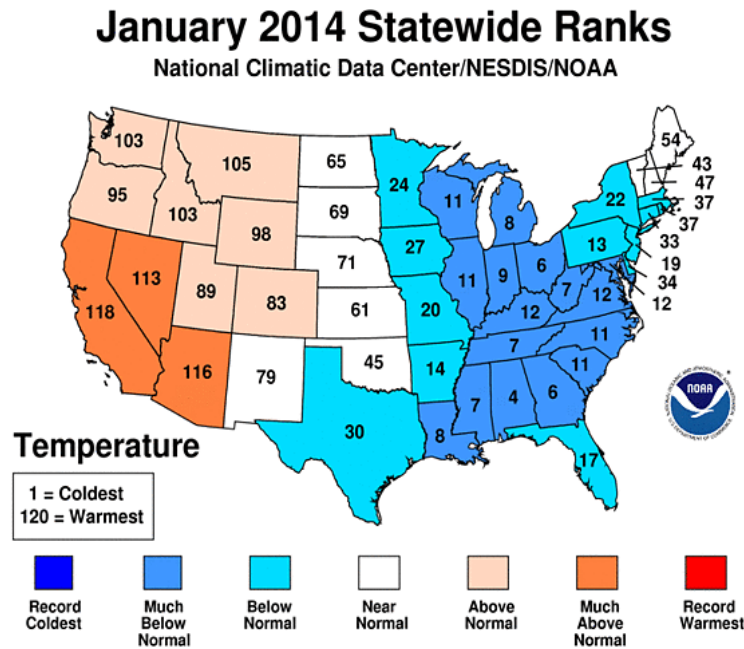
Southern Hemisphere Sea Ice Extent  
January Anomalies, 1979-2014



Data provided by the National Snow and Ice Data Center (NSIDC)

# U.S. Temperature: January 2014

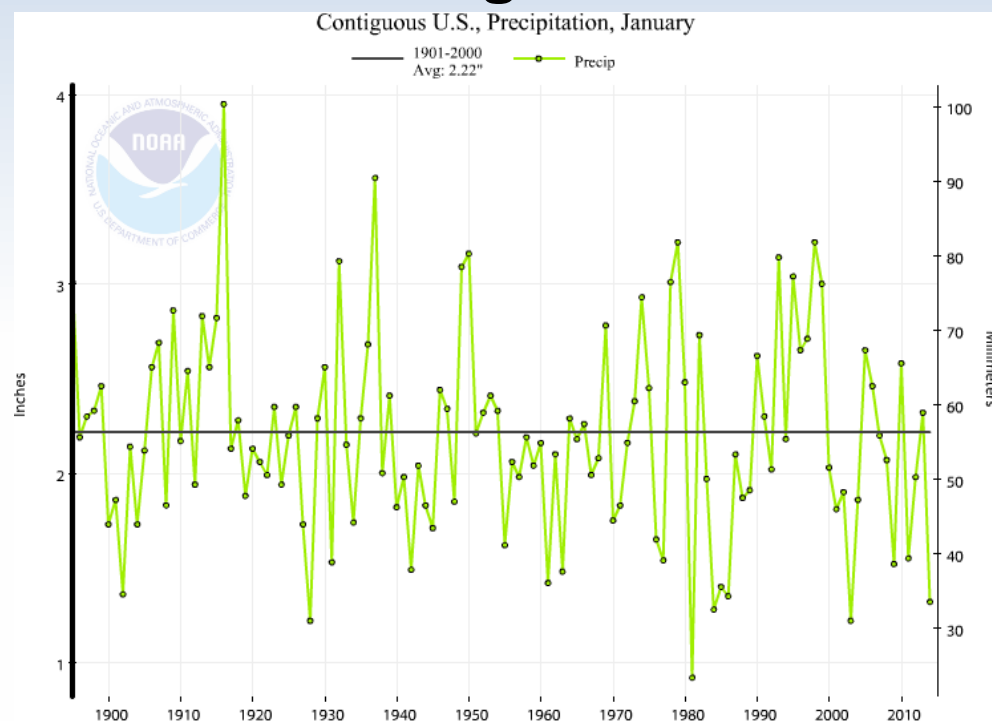
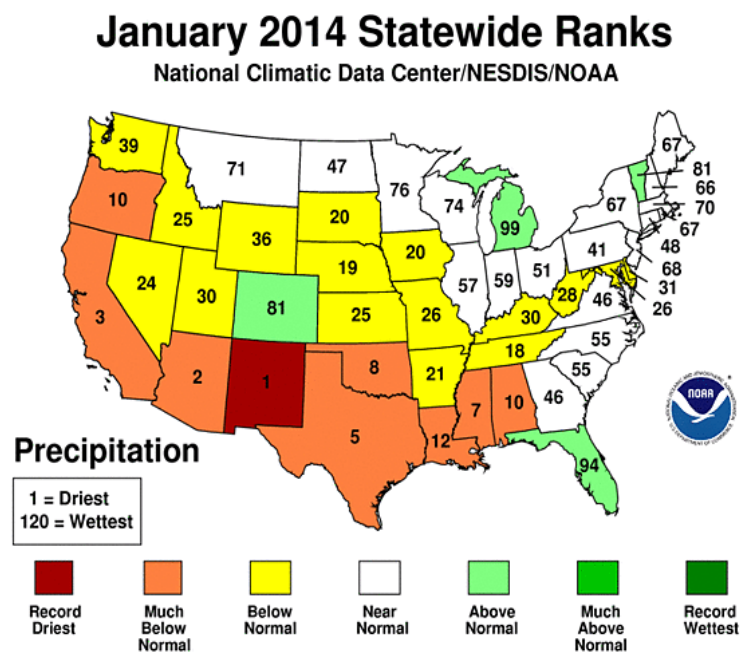
**Temperature: 30.3°F, 0.1° below 20<sup>th</sup> century average**  
**Warmth in the West balanced cold in the East**



- Several cold Arctic air outbreaks across eastern two-thirds of the country.
- Two and a half as many daily cold records as warm records. Few all-time records.
- Persistent warmth from the Rockies, westward.

# U.S. Precipitation: January 2014

**Precipitation: 1.23", 0.90" below 20<sup>th</sup> century average**  
**Fifth driest January on record for contiguous U.S.**



- This was the driest January since 2003 for the contiguous United States.
- Dry conditions for much of the country, particularly the West and South.
- Dryness in the West resulted in much-below-average snowpack across mountains.
- Despite frequent snow storms in the East, total precipitation closer to average.



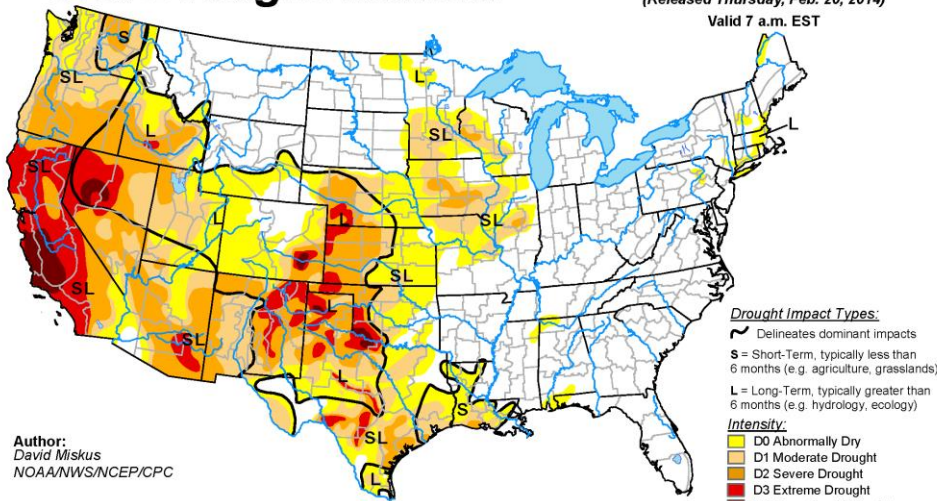
# January 2014 US Drought

## 35.7% of CONUS in drought.

- Drought intensified in West with snowpack and reservoir levels low.
- Exceptional Drought (D4) introduced in California for first time in USDM history.

### U.S. Drought Monitor

February 18, 2014  
(Released Thursday, Feb. 20, 2014)  
Valid 7 a.m. EST



Author:  
David Miskus  
NOAA/NWS/NCEP/CPC

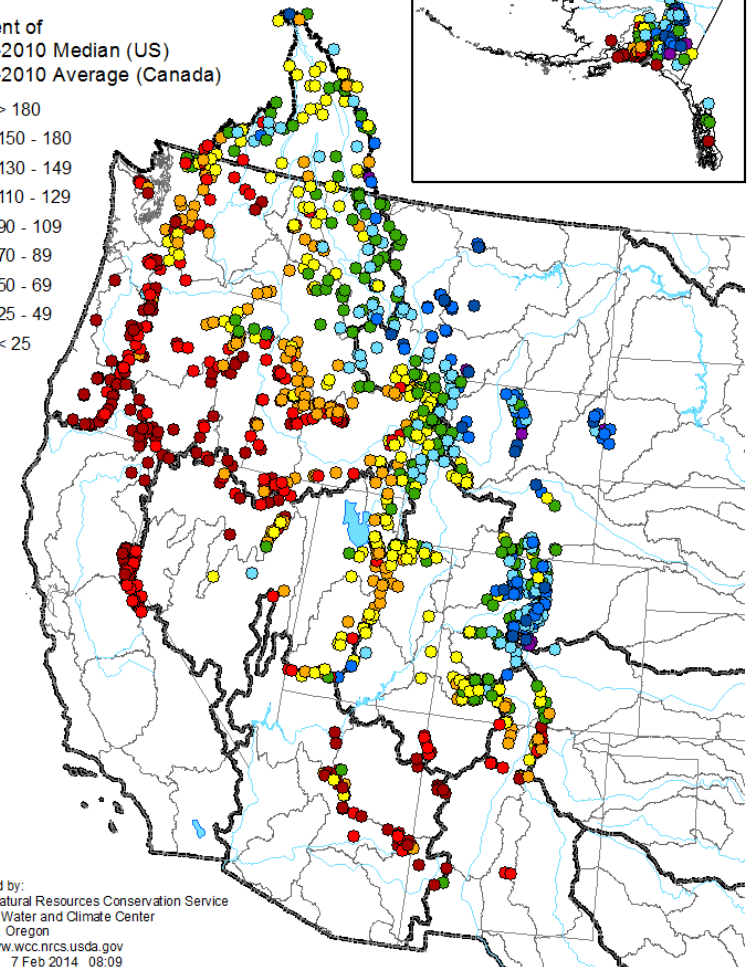


<http://droughtmonitor.unl.edu/>

### Mountain Snowpack as of February 1, 2014

Percent of  
1981-2010 Median (US)  
1981-2010 Average (Canada)

- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25

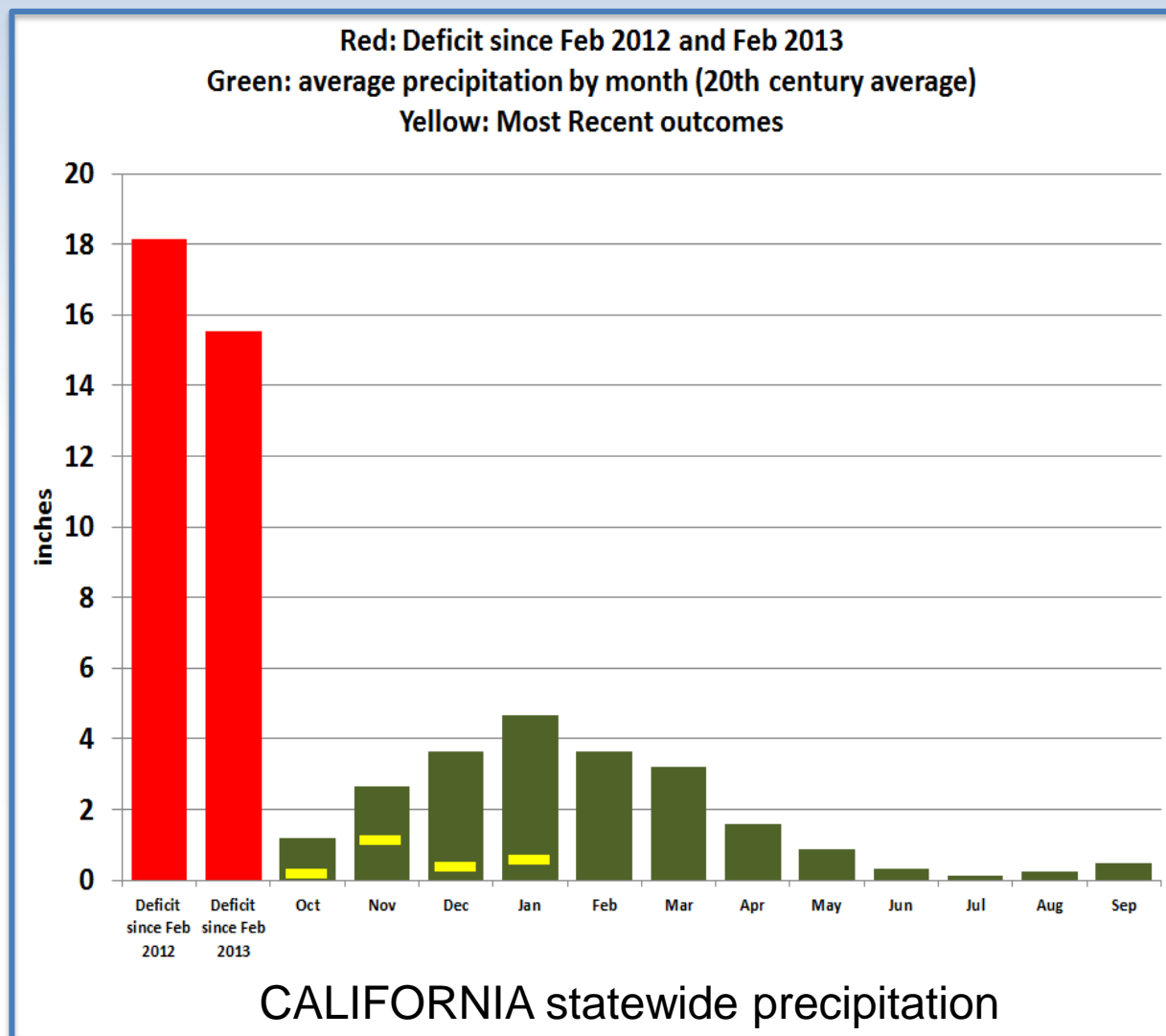


Prepared by:  
USDA Natural Resources Conservation Service  
National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>  
Created 7 Feb 2014 08:09

# Western Drought: Climate Context

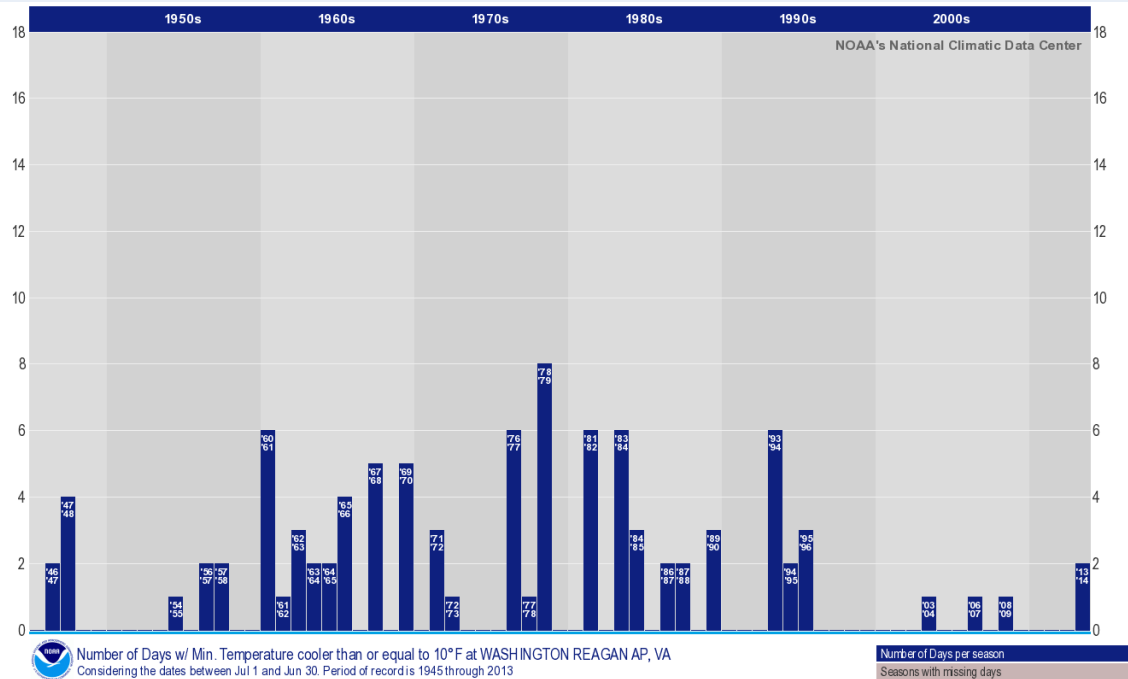
## Not just California; Not just lack of rainfall

- West sank further into drought during January
- Factors:
  - High temperatures
  - Deficient precipitation
  - Small snowpack
  - Depleted reservoirs
  - **Calendar**



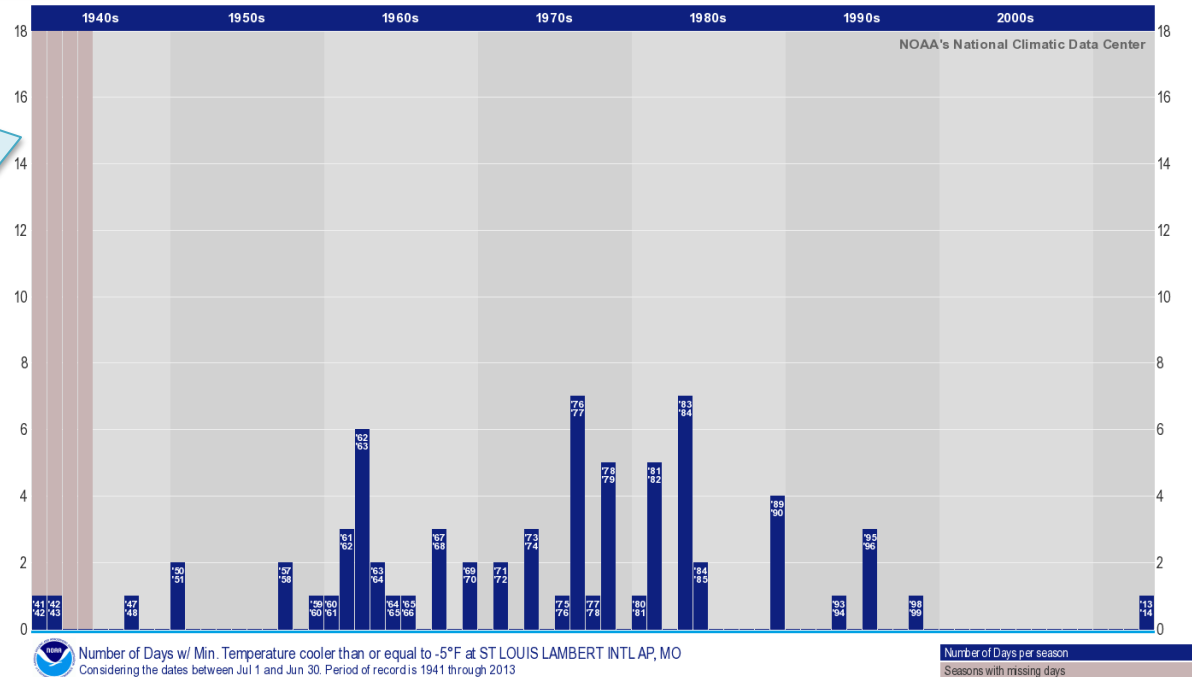
# Cold Air Outbreak: Climate Context

- Blasts of bitterly cold air during the month of January.
- These were highly unusual compared to the 21<sup>st</sup> century, but not so unusual compared to late 20<sup>th</sup> century



How did the coldest temperatures of January 2014 compare to the 20<sup>th</sup> century?

- **Top:** Days below 10°F at Washington's Reagan Nat'l Airport
- **Bottom:** Days below -5°F at St. Louis, Missouri Lambert Airport



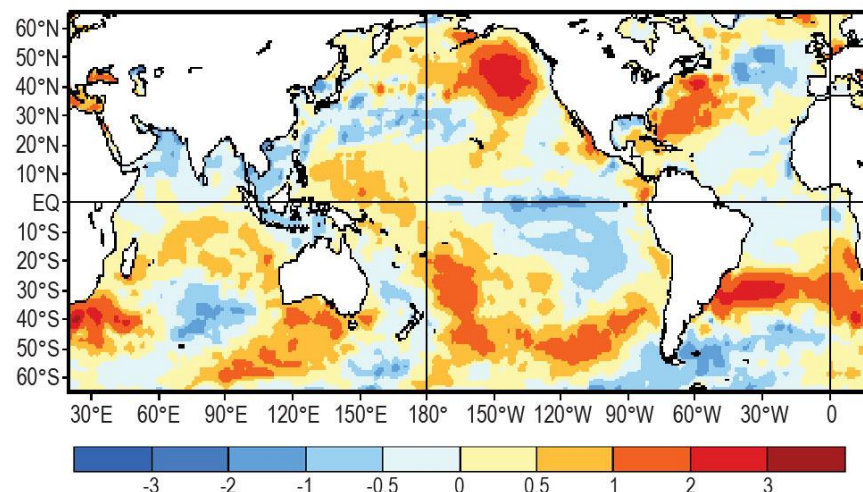


# El Niño/La Niña Southern Oscillation (ENSO)

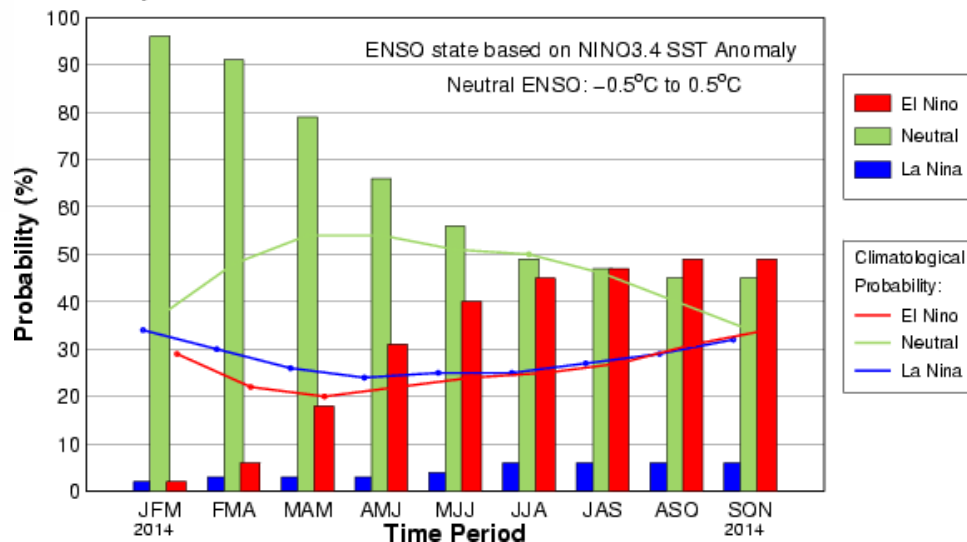
## Sea Surface Temperature Update

- ENSO neutral conditions to continue through spring.
- West-central Pacific has recently warmed while Eastern Pacific has cooled.
- Model forecasts and consensus are for an increasing chance of El Niño development.
- By late summer, there is about a 50% chance that El Niño will develop.
- La Niña is not likely to develop this year.

Average SST Anomalies  
19 JAN 2014 - 15 FEB 2014

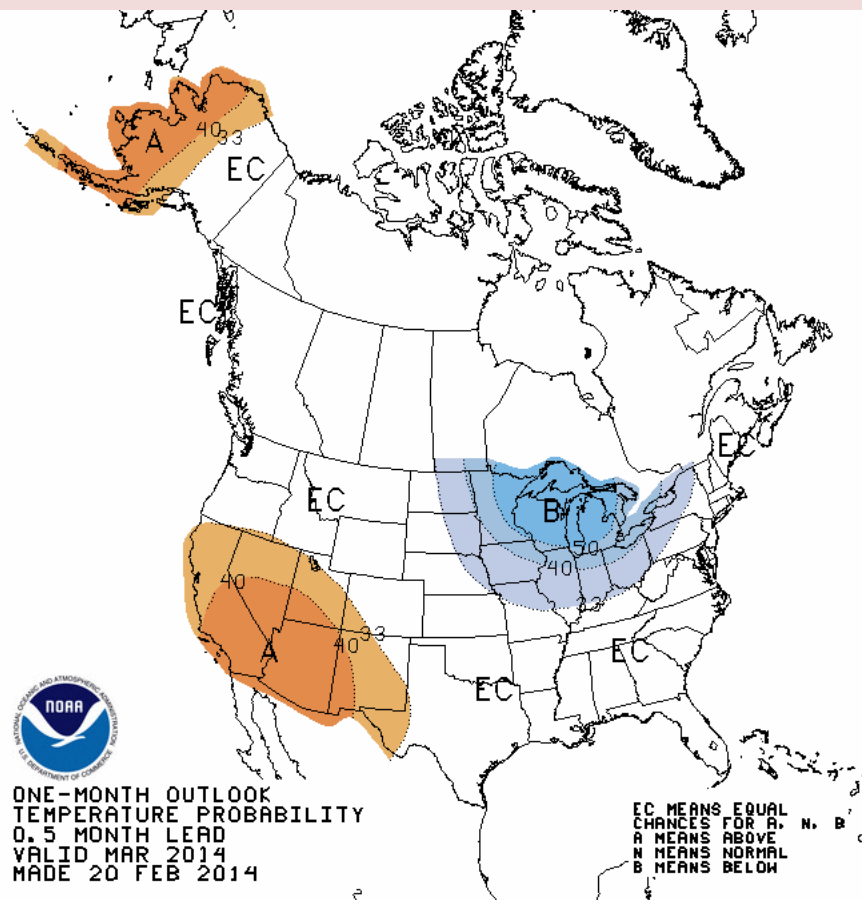


Early-Feb CPC/IRI Consensus Probabilistic ENSO Forecast

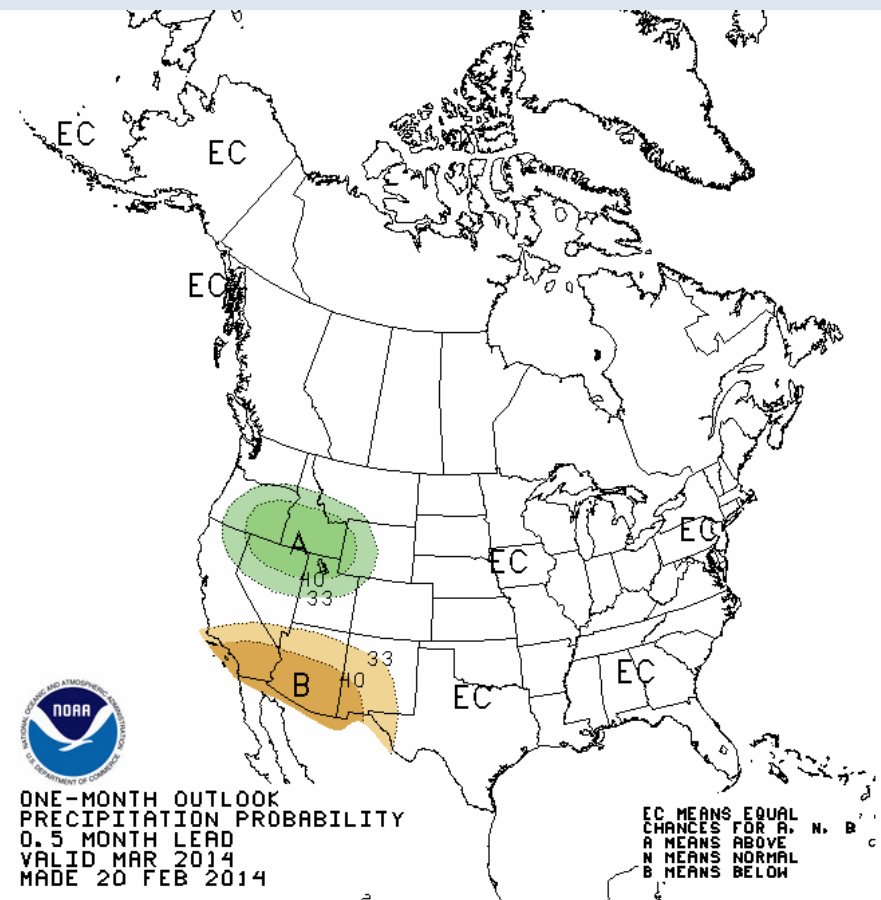


# Monthly Forecast (March)

## March Average Temperature Probability

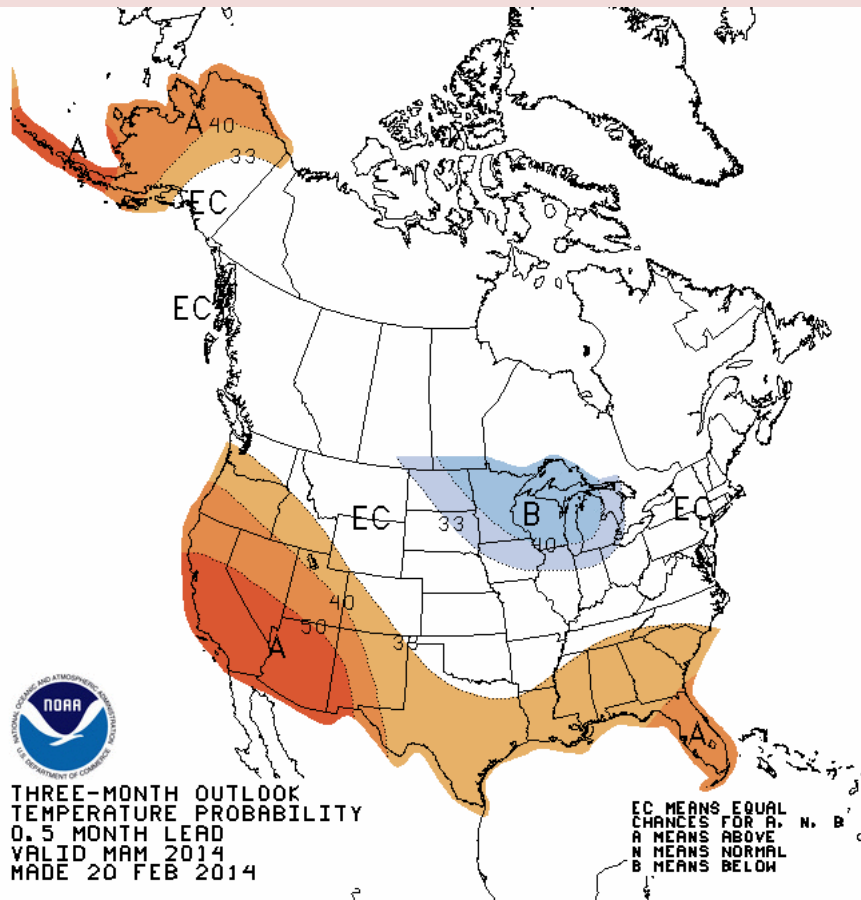


## March Total Precipitation Probability

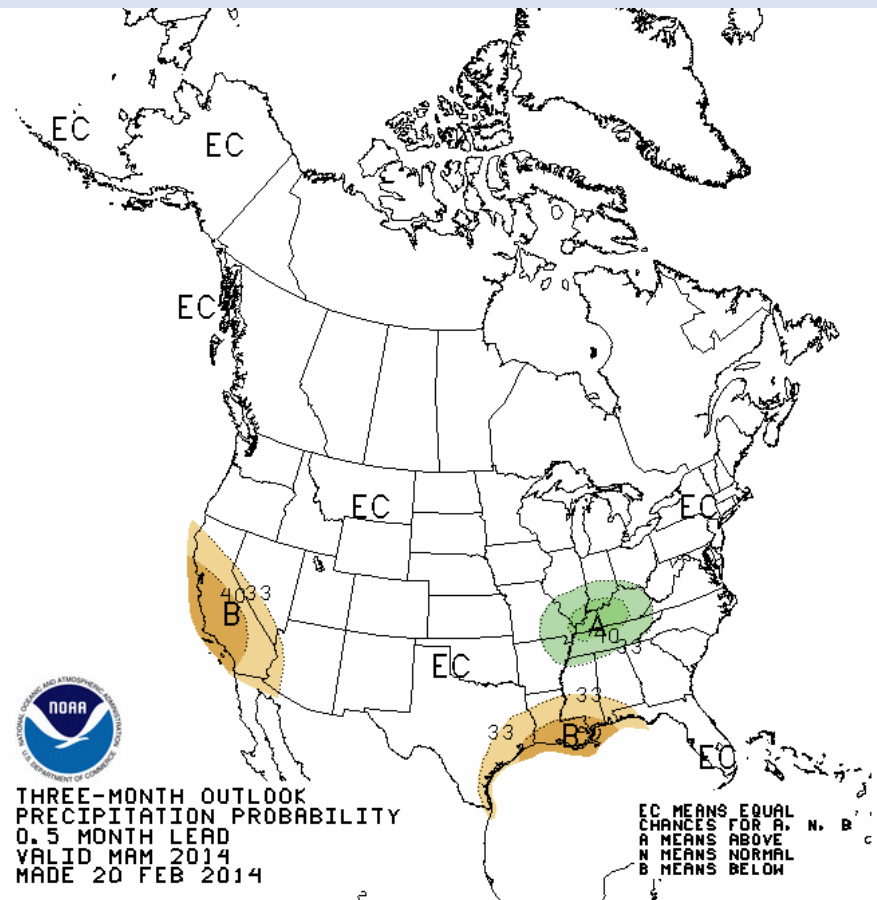


# Seasonal Forecast (March-April-May)

## March-April-May Average Temperature Probability



## March-April-May Total Precipitation Probability



# U.S. Drought Outlook

## 3-month forecast

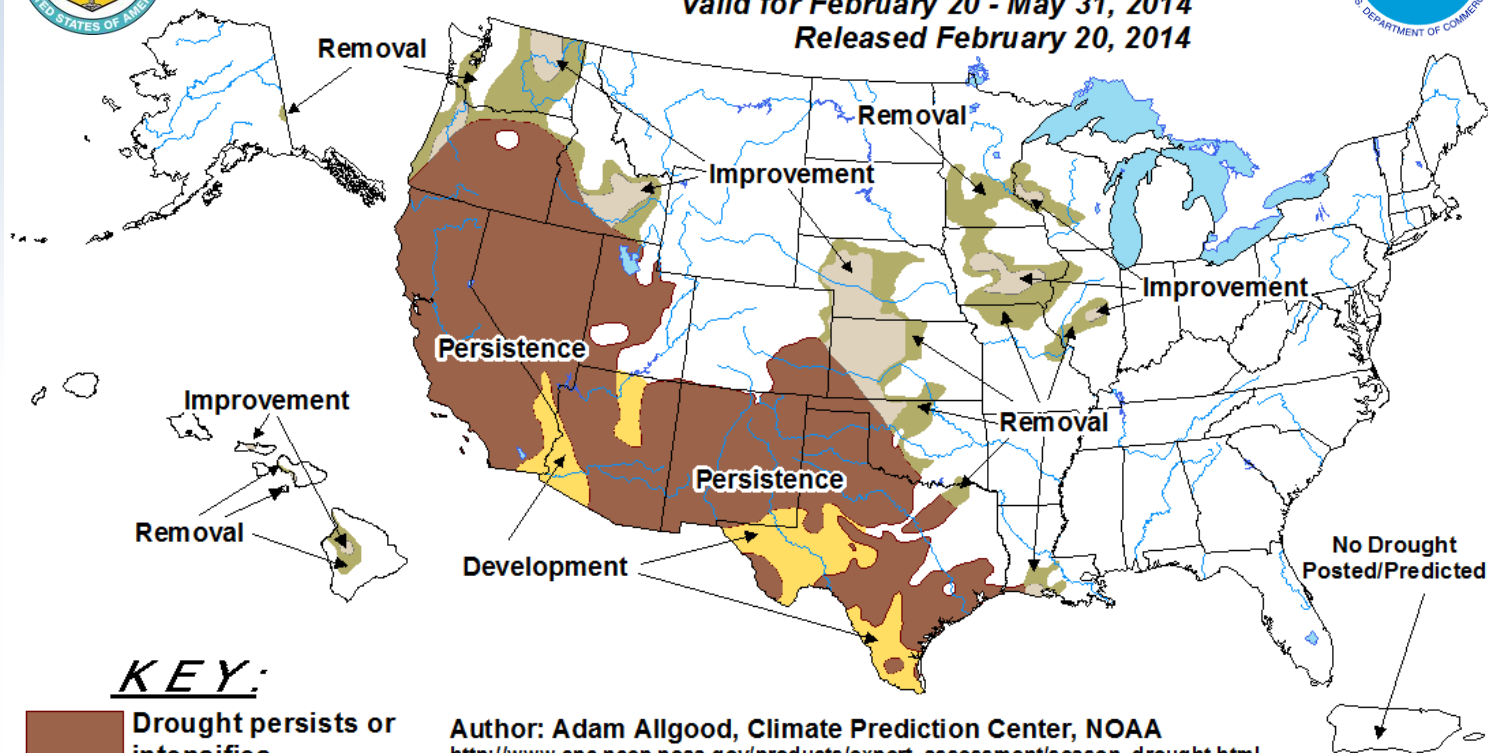


### U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for February 20 - May 31, 2014

Released February 20, 2014



#### KEY:

- Drought persists or intensifies
- Drought remains but improves
- Drought removal likely
- Drought development likely

Author: Adam Allgood, Climate Prediction Center, NOAA

[http://www.cpc.ncep.noaa.gov/products/expert\\_assessment/season\\_drought.html](http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.html)

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity).

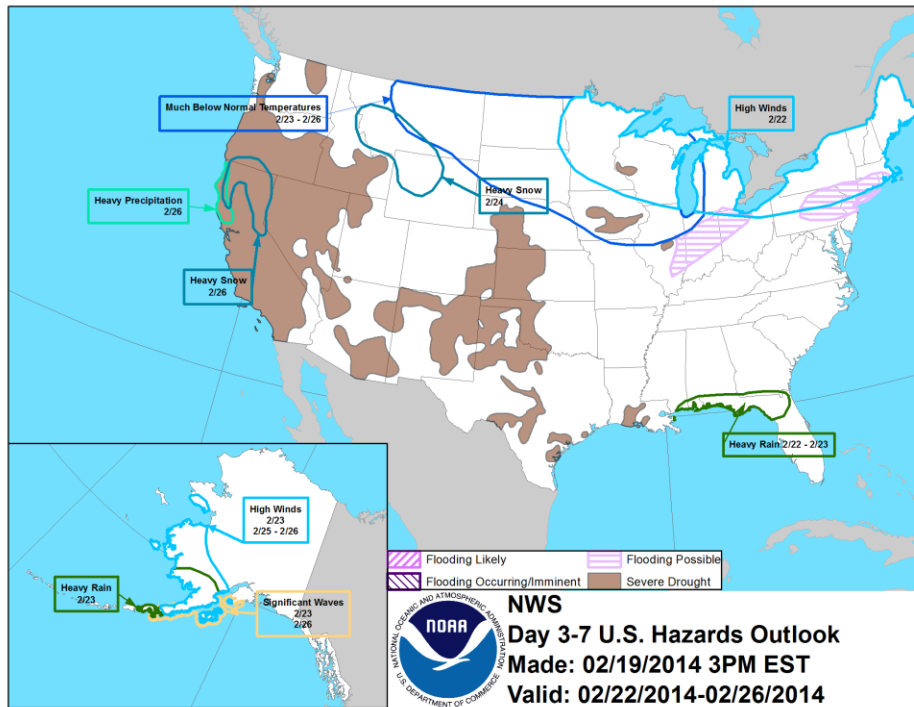
For weekly drought updates, see the latest U.S. Drought Monitor.

NOTE: The tan area areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain.

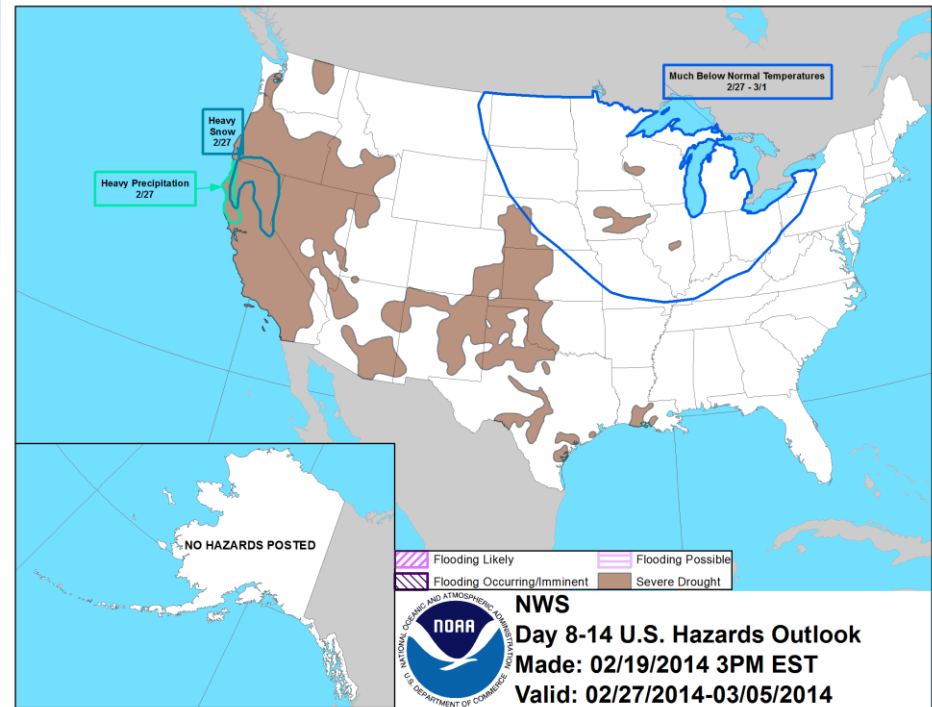
The Green areas imply drought removal by the end of the period (D0 or none)

# U.S. Hazards Outlook

## 3-7 Day Outlook



## 8-14 Day Outlook





# For More Information



## Today's Presentation:

- <http://www.ncdc.noaa.gov/sotc/briefings>

NOAA's National Climatic Data Center: [www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)

- Monthly climate reports (U.S. & Global): [www.ncdc.noaa.gov/sotc/](http://www.ncdc.noaa.gov/sotc/)
- Dates for upcoming reports: <http://www.ncdc.noaa.gov/monitoring-references/dyk/monthly-releases>

NOAA's Climate Prediction Center: [www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov)

U.S. Drought Monitor: <http://drought.gov>

Climate Portal: [www.climate.gov](http://www.climate.gov)

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