

NOAA Climate Science & Services

Monthly Climate Update

A look back at November and a preview of Jan. through Mar.



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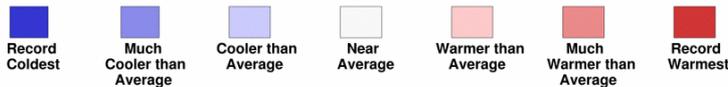
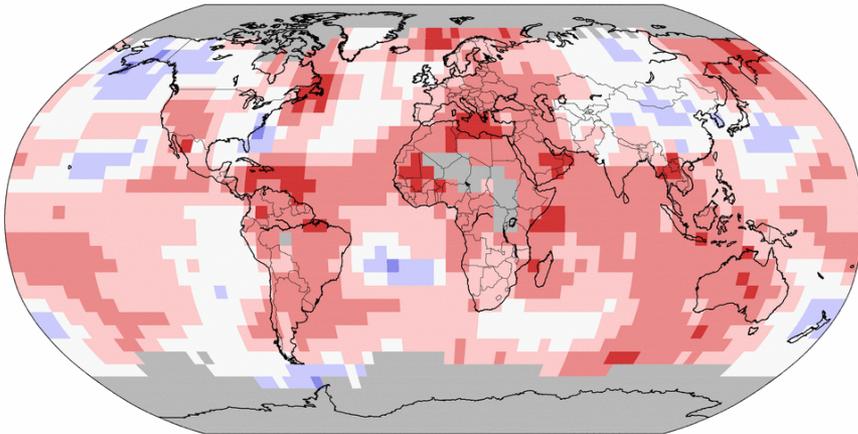
Seasonal Forecaster, Operations Branch
NOAA's Climate Prediction Center

Global Climate Highlights

Land & Ocean Temperature Percentiles Nov 2012

NOAA's National Climatic Data Center

Data Source: GHCN-M version 3.2.0 & ERSST version 3b



November 2012 Temperatures:

- 5th warmest November globally (+0.67°C / +1.21°F)
- Land: 6th warmest; Ocean: 6th warmest
- N. Hemisphere: 6th warmest November
- S. Hemisphere 3rd warmest November

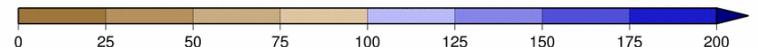
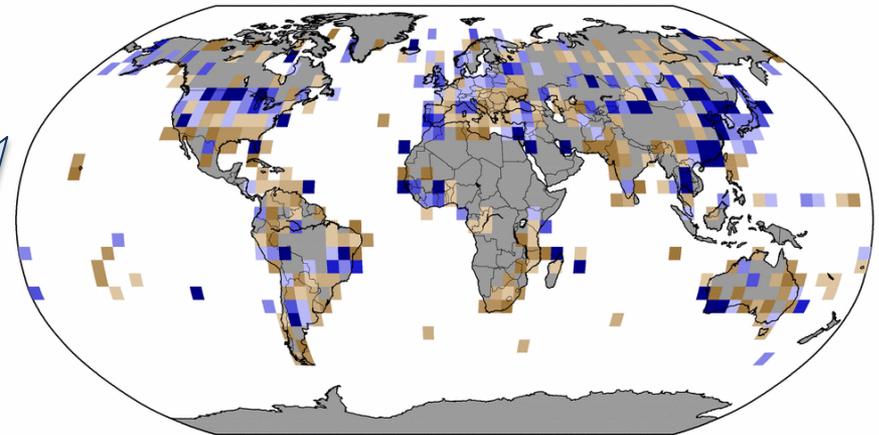
Regional Analysis:

- Australia: 4th highest max temperatures on record
- New Zealand: 0.9°C cooler than average
- Croatia: locally 2.4°C to 4.4°C above average

Land-Only Precipitation Percent of Normal Nov 2012

(with respect to a 1961–1990 base period)

Data Source: GHCN-M version 2



NOAA's National Climatic Data Center

Percent

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

November 2012 Precipitation:

- N. Hemisphere snow cover 5th largest on record
 - N. America: 12th largest; Eurasia 8th largest
- U.K. precipitation 111 percent of average.
- Spain precipitation 150 percent of average.

Dry: India, Australia, Eastern Europe, South Africa

Wet: Southeast Asia, Western Europe, West Africa

Global Climate Highlights

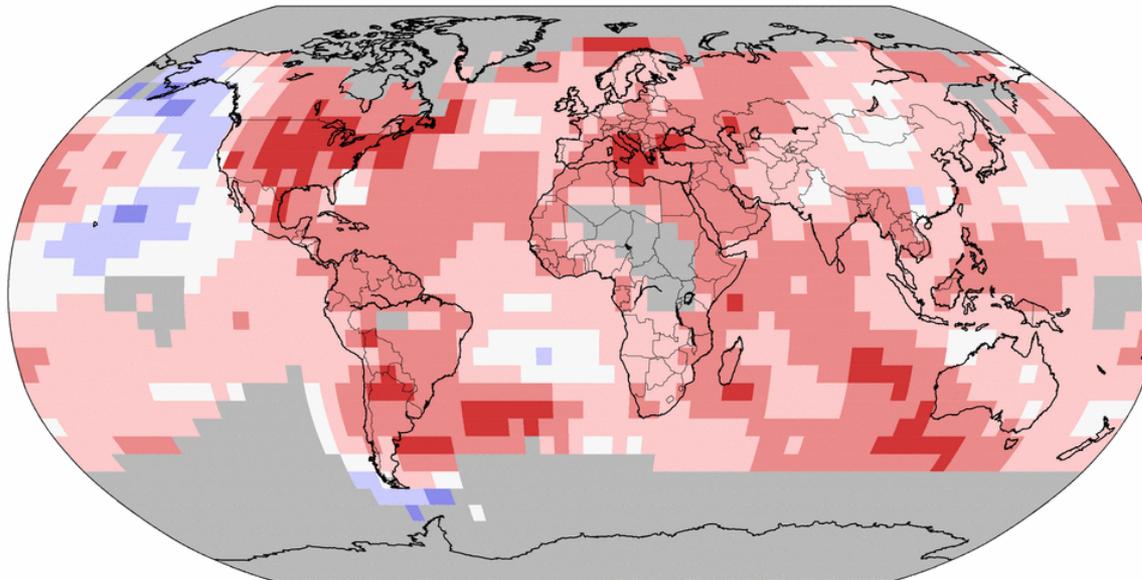
January-November 2012 Temperatures

- 8th warmest year-to-date globally (+0.59°C/1.06°F)
- Land: 5th warmest; Ocean: 9th warmest
- N. Hemisphere: 4th warmest; S. Hemisphere: 9th warmest

Land & Ocean Temperature Percentiles Jan–Nov 2012

NOAA's National Climatic Data Center

Data Source: GHCN–M version 3.2.0 & ERSST version 3b



Record Coldest

Much Cooler than Average

Cooler than Average

Near Average

Warmer than Average

Much Warmer than Average

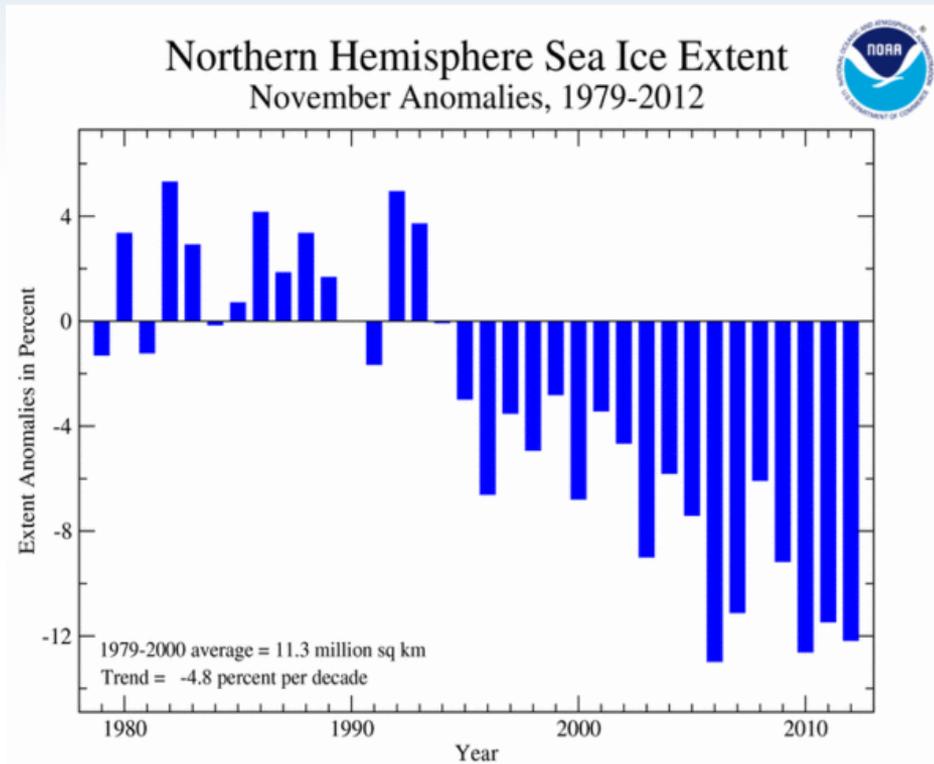
Record Warmest



Global Climate Highlights

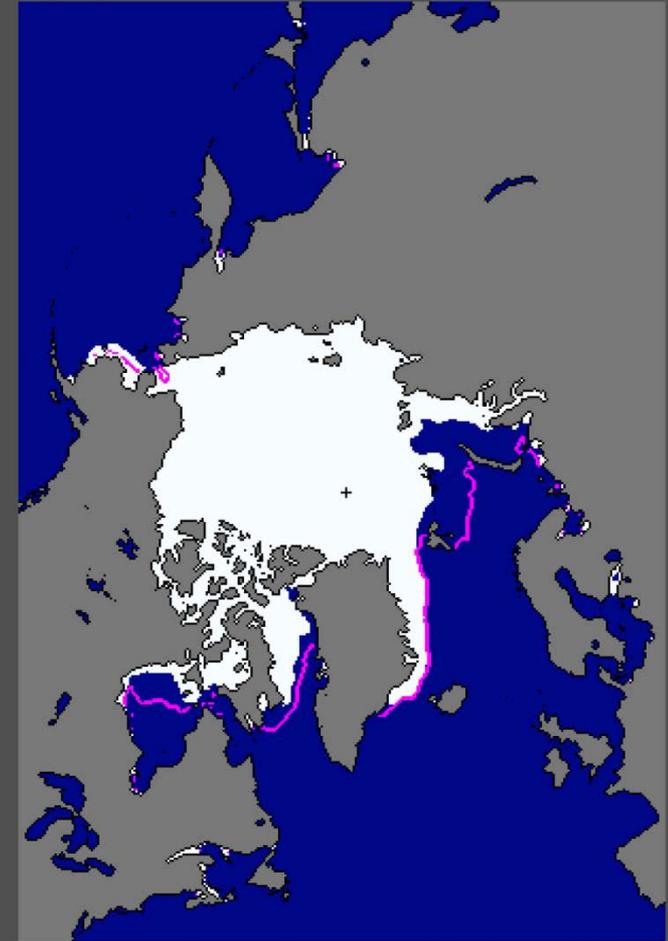
November Arctic Sea Ice: 3rd smallest on record

- Arctic sea ice expanded rapidly in November
- Below-average ice in Kara and Barents Seas
- November 2012 sea ice 12.2 percent below average



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

Sea Ice Extent
Nov 2012



Total extent = 9.9 million sq km

National Snow and Ice Data Center, Boulder, CO

U.S. Climate Highlights

Nationally: 20th warmest and 8th driest November

Drought continues for 61.8% of contiguous United States

November Temperature: 2.1°F above average

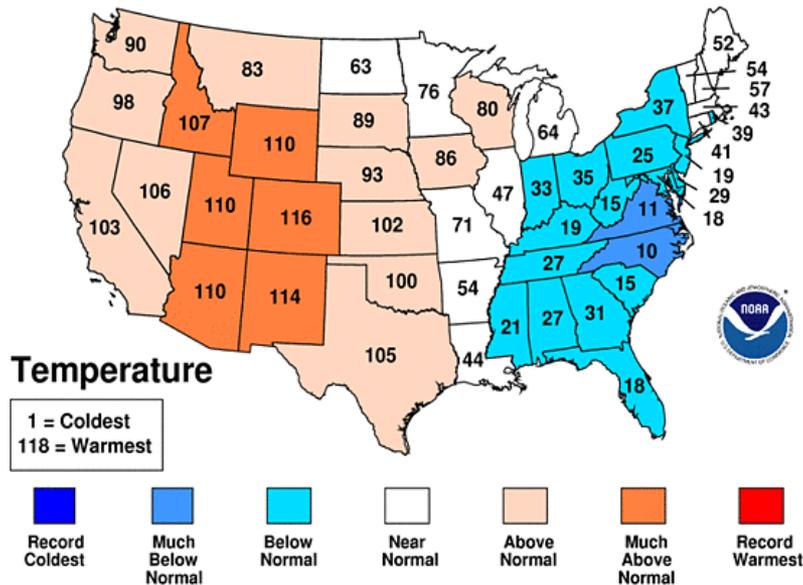
- Warm: The West. AZ, CO, NM, UT, and WY top ten warm for the month.
- Cool: The East. NC had a top ten cool month.

November Precipitation: 0.93" below average

- Wet: Pacific Northwest and Northern Plains.
- Dry: Central U.S., Midwest, and East Coast. 22 states had a top ten dry month.

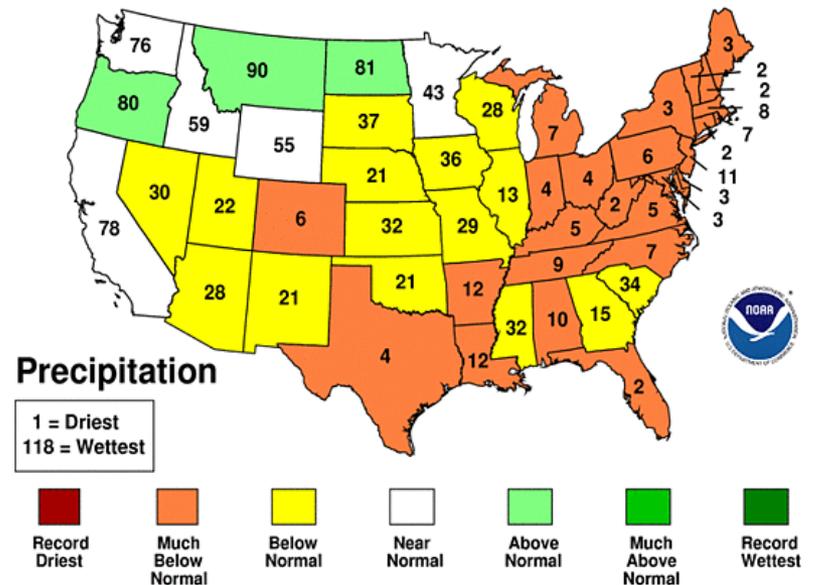
November 2012 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



November 2012 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA

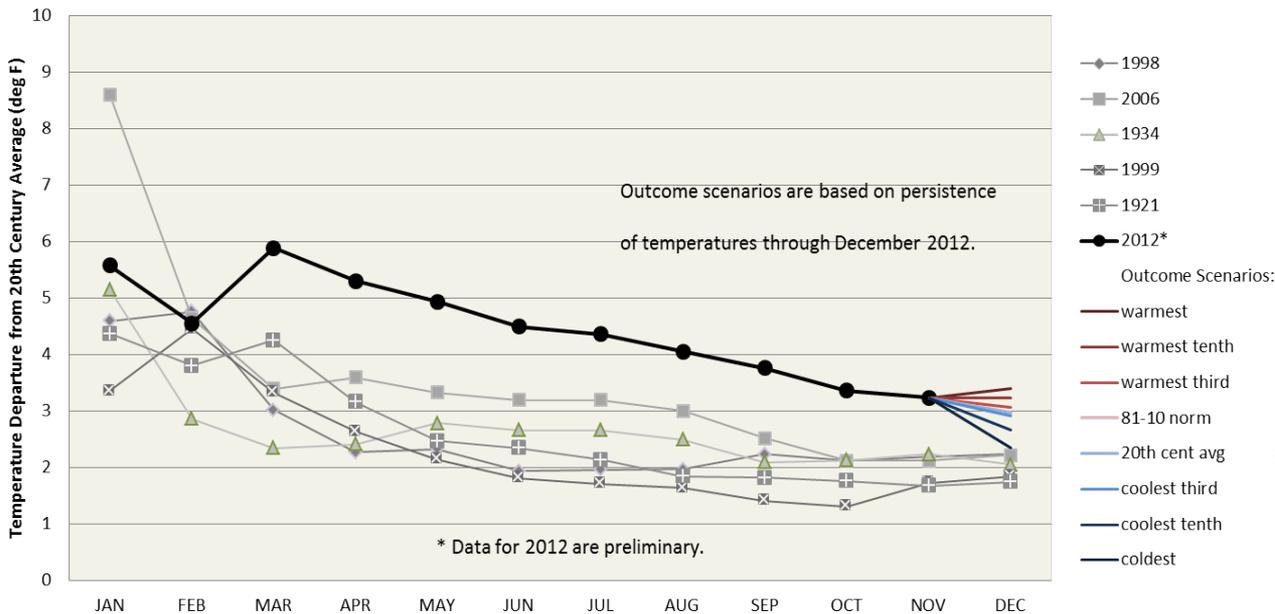


U.S. Climate Highlights

Year-to-Date Temperature Anomalies for Contiguous U.S. - 5 Warmest Years

with 2012 Outcomes Based on Historical Values

NOAA's National Climatic Data Center

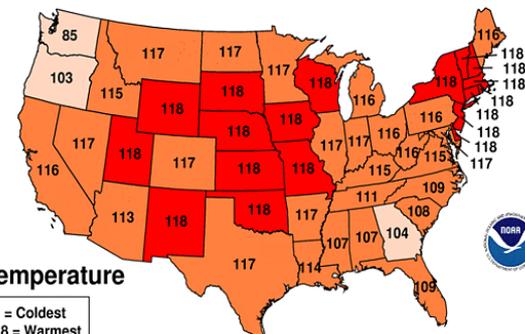


Jan to Nov: Record warm

- Jan-Nov 1.0°F warmer than previous record, 3.3°F above average
- Virtually certain that 2012 will be the warmest year on record for the nation
- Dec 2012 temperature would need to be >1.0°F than record cold December (1983)
- Previous record warm year: 1998 – 54.3°F

January–November 2012 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



Temperature

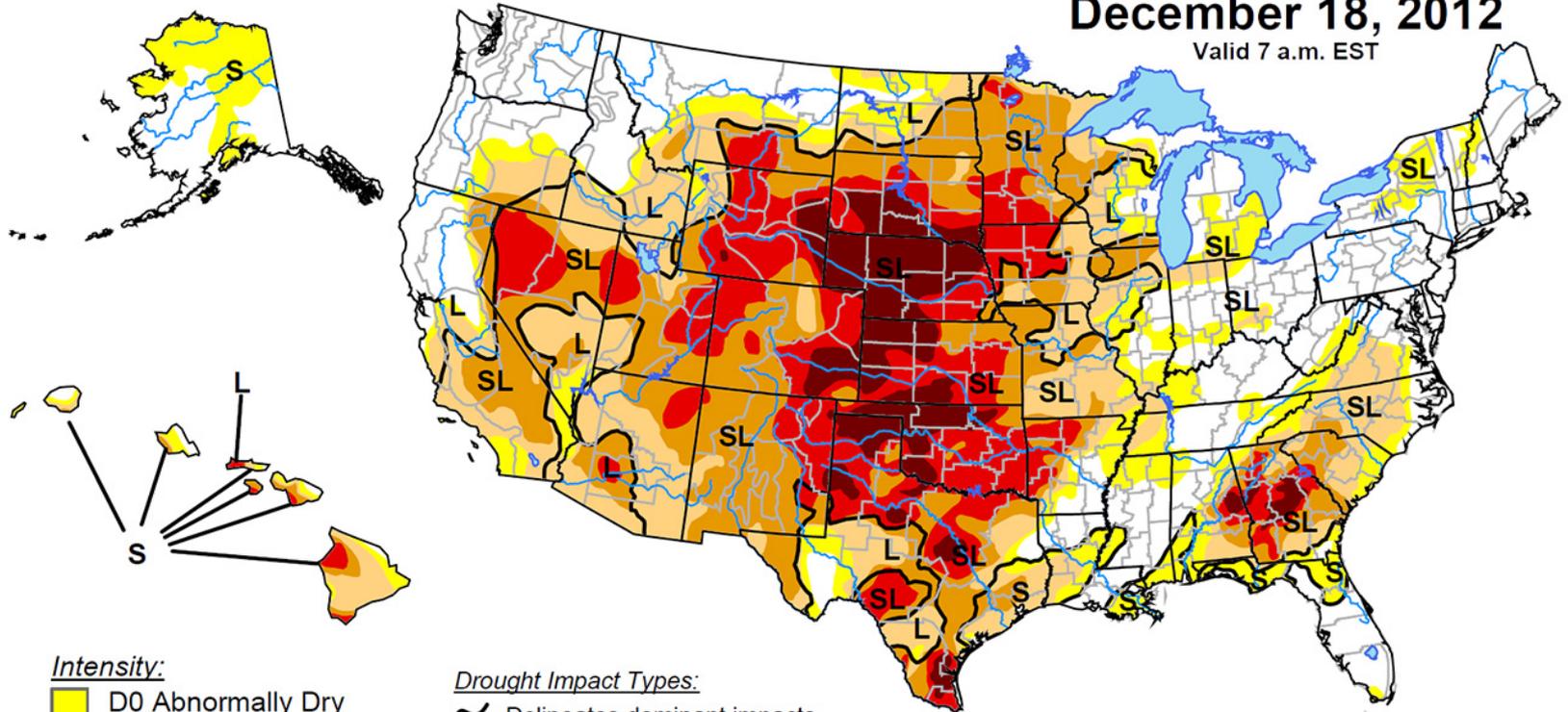
1 = Coldest
118 = Warmest



U.S. Drought Monitor

December 18, 2012

Valid 7 a.m. EST



Intensity:

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

Drought Impact Types:

- Delineates dominant impacts
- S = Short-Term, typically <6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically >6 months (e.g. hydrology, ecology)

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

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



Released Thursday, December 20, 2012

Author: Brian Fuchs, National Drought Mitigation Center



U.S. 2012 Billion-Dollar Weather/Climate Disasters

Event , Location, Dates	Brief Summary	Deaths
Southeast/Ohio Valley Tornadoes <i>March 2-3 2012</i>	Outbreak of tornadoes over the southeast and Ohio Valley (AL, GA ,IN ,OH ,KY ,TN) with 75 confirmed tornadoes including an EF-4, the deadliest single tornado of the year that struck Henryville, Ind.	42
Texas Tornadoes <i>April 2-3 2012</i>	Outbreak of 22 confirmed tornadoes across the greater Dallas-Ft. Worth metropolitan area. There was considerable hail damage to aircraft at the Dallas-Ft. Worth International Airport cancelling many flights.	0
Great Plains Tornadoes <i>April 13-14 2012</i>	Outbreak of tornadoes over the midwest (KS, OK, NE, IA) with 98 confirmed tornadoes.	6
Midwest/Ohio Valley Severe Weather <i>April 28-May 1 2012</i>	Severe storms over the midwest and Ohio Valley states (MO, IL, IN, TX, KY) with 38 confirmed tornadoes. Hail greater than four inches in diameter and straight-line winds also caused considerable damage.	1
Southern Plains/Northeast Severe Weather <i>May 25-30 2012</i>	An outbreak of 27 confirmed tornadoes and severe storms raced across the Southern Plains, Midwest and Northeast (OK, TX, KS, MN, NY, PA) killing one person. Significant damage was caused by severe hail and wind.	1
Rockies/Southwest Severe Weather <i>June 6-12 2012</i>	Severe storms and damaging hail over several states (CO, TX, NM) with 25 confirmed tornadoes. Two major hail events created widespread damage across cities in Colorado and Texas.	0

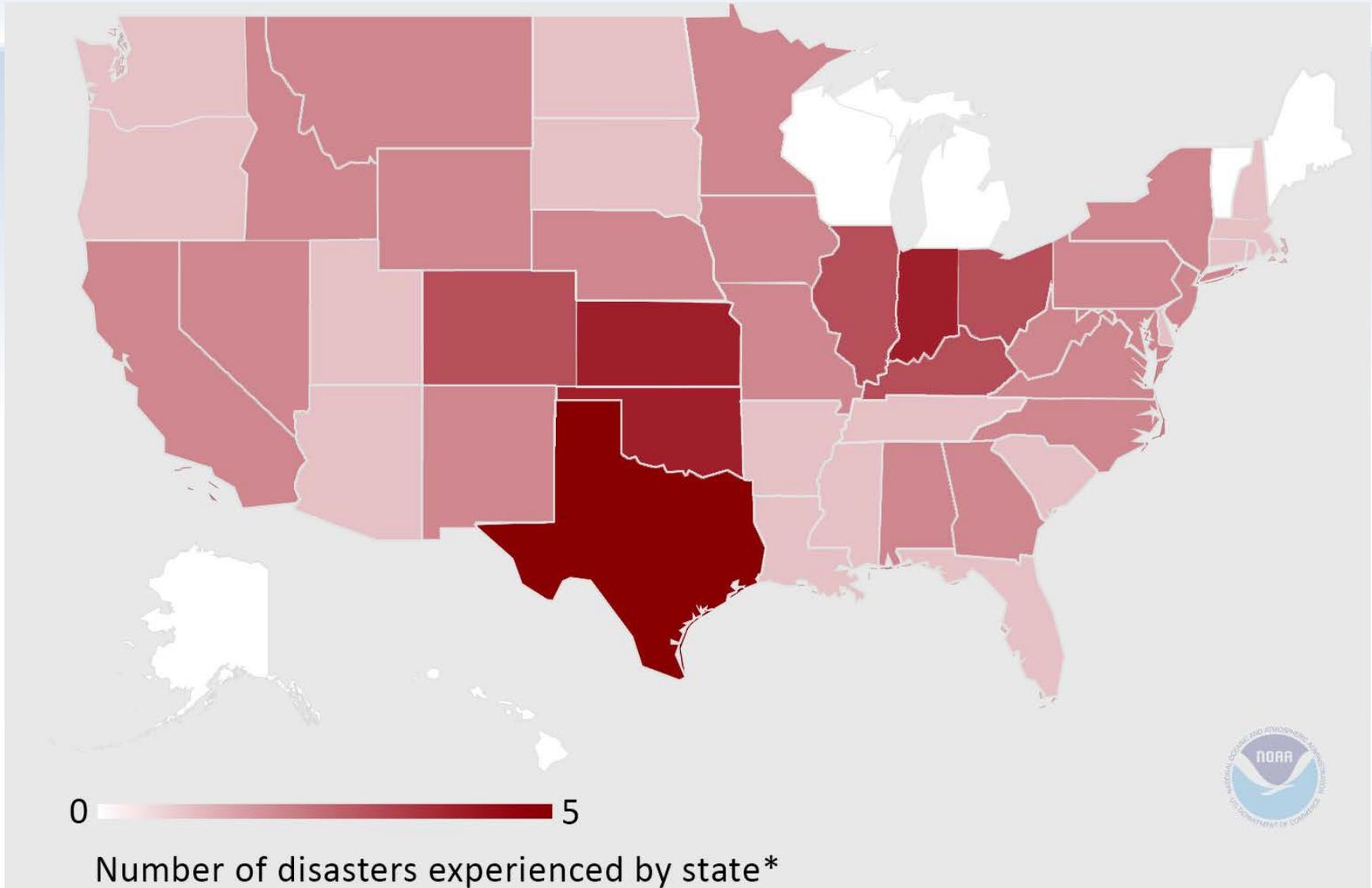


U.S. 2012 Billion-Dollar Weather/Climate Disasters

Event , Location, Dates	Brief Summary	Deaths
Plains/East/North-east Severe Weather <i>June 29-July 2 2012</i>	Sustained outbreak of thunderstorms / high winds from a strong derecho event over the central, eastern, and northeastern states (IL, IN, KY, MD, DC, NC, NJ, OH, SC, VA, WV).	28
Hurricane Isaac <i>August 2012</i>	Category 1 hurricane made landfall over Louisiana. Isaac's slow motion and large size led to a large storm surge and flooding rains. This created damage across several southeastern states (LA, MS, AL, FL).	9
Western Wildfires <i>Summer-Fall, 2012</i>	Wildfires burned over 9.1 million acres across the U.S. in 2012. This is the 2nd highest annual total since the year 2000, only exceeded by 2006 when 9.4 million acres burned. The most damaging wildfires occurred in the Western states (CO, ID, WY, MT, CA, NV, OR, WA). Colorado experienced the most costly wildfires (e.g., Waldo Canyon fire)	8
U.S. Drought/Heatwave 2012	The 2012 drought is the most extensive drought to affect the U.S. since the 1930s. Drought conditions have affected over half of the country for a majority of the year including the central agriculture states causing widespread failure of many crops and challenges to water-intensive industries and commerce.	123 (excess mortality unknown)
Sandy <i>October 2012</i>	Sandy caused devastation in several northeastern states (NJ, NY, MD, PA, MA) due to high wind and coastal storm surge. This hurricane also joined with a developing Nor'easter, which intensified the storm's strength. Sandy's impact on major population centers caused widespread interruption to critical water and electrical services and also caused 131 deaths.	131



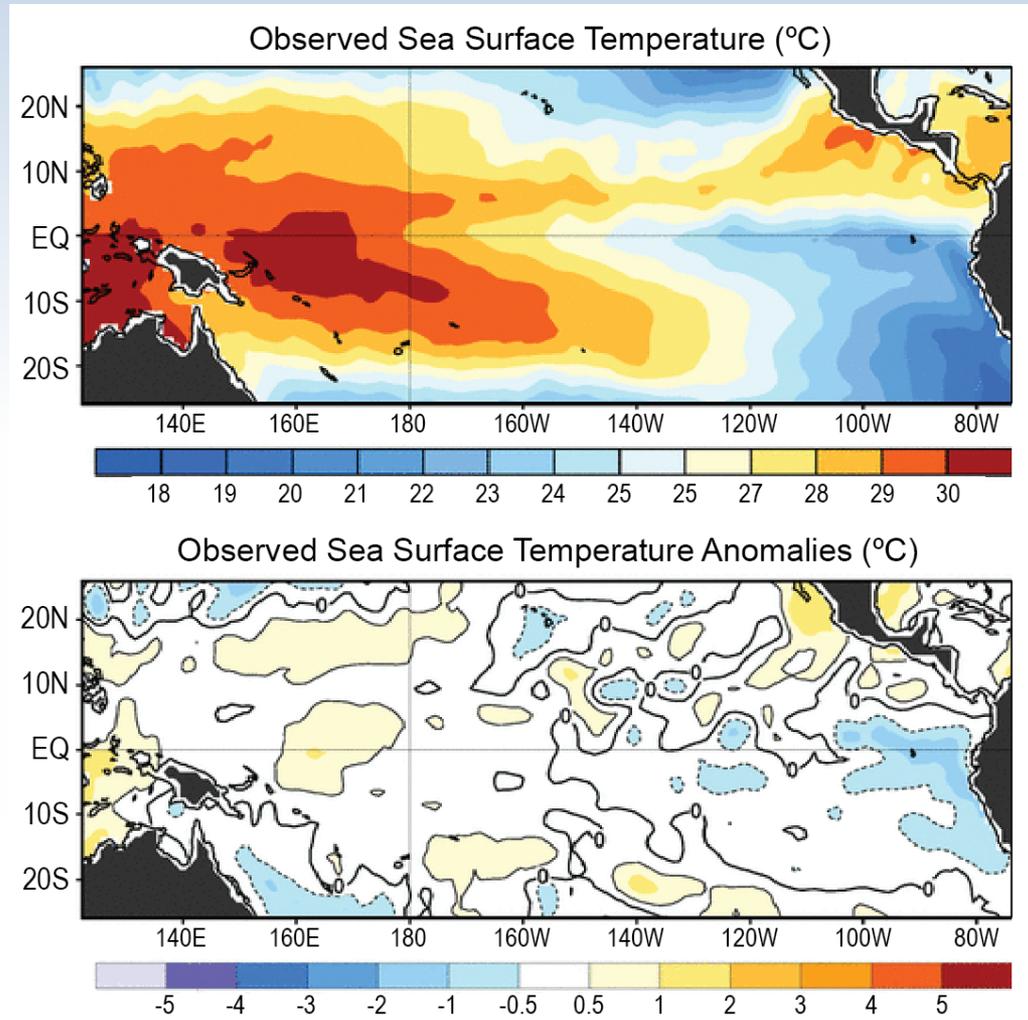
U.S. 2012 Billion-Dollar Weather/Climate Disasters



*Please note that the map reflects a summation of billion dollar events for each state affected (i.e., it does not mean that each state shown suffered at least \$1 billion in losses for each event)

El Niño/La Niña Southern Oscillation (ENSO) Sea Surface Temperature Update

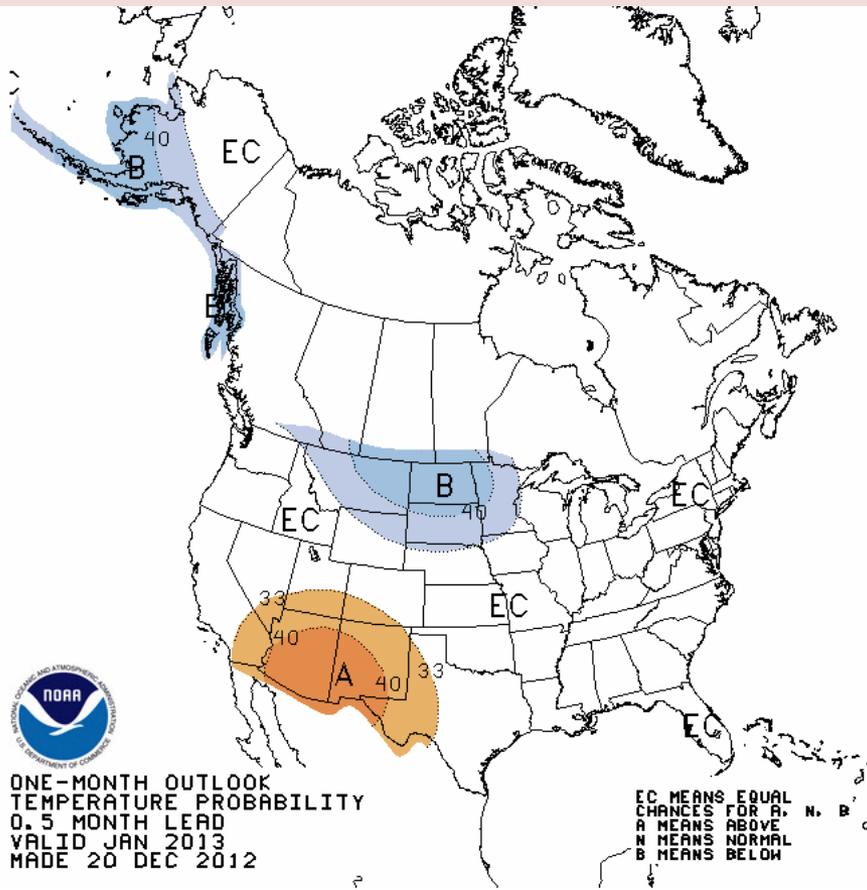
- ENSO-neutral conditions continue
- Equatorial sea surface temps. remain above average across Western and Central Pacific
- Atmospheric circulation over tropical Pacific is near average
- ENSO-neutral favored through the N. Hemisphere winter 2012-13



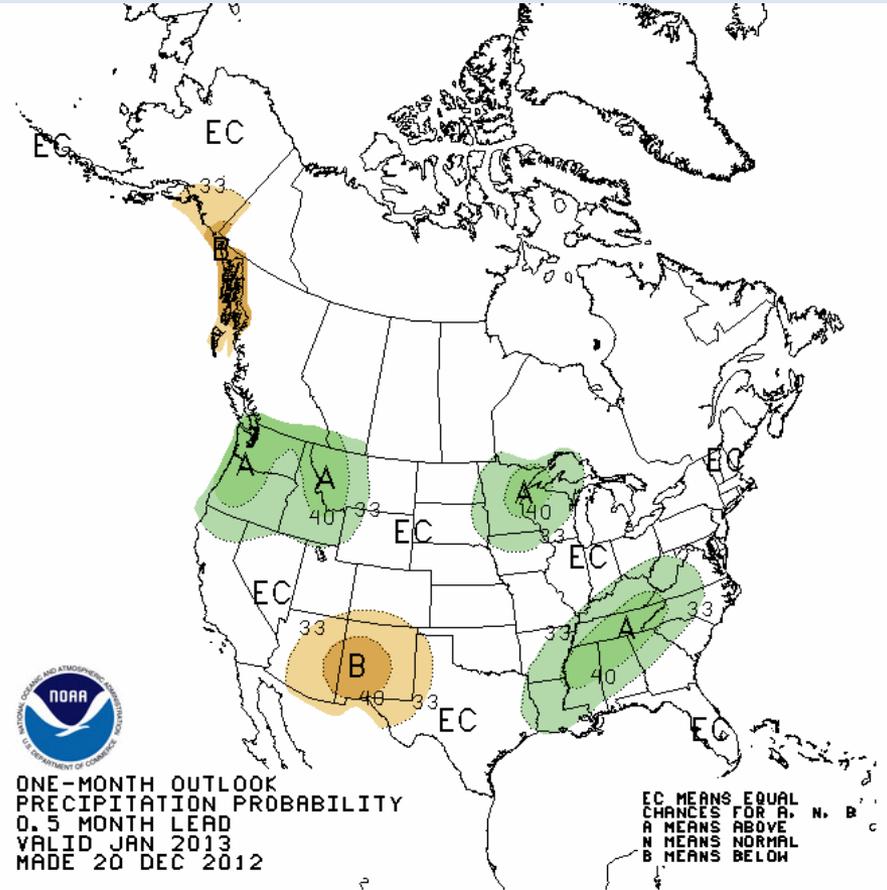
7-day Average Centered on 12 December 2012

January Monthly Forecast

January Average Temperature Probability



January Total Precipitation Probability



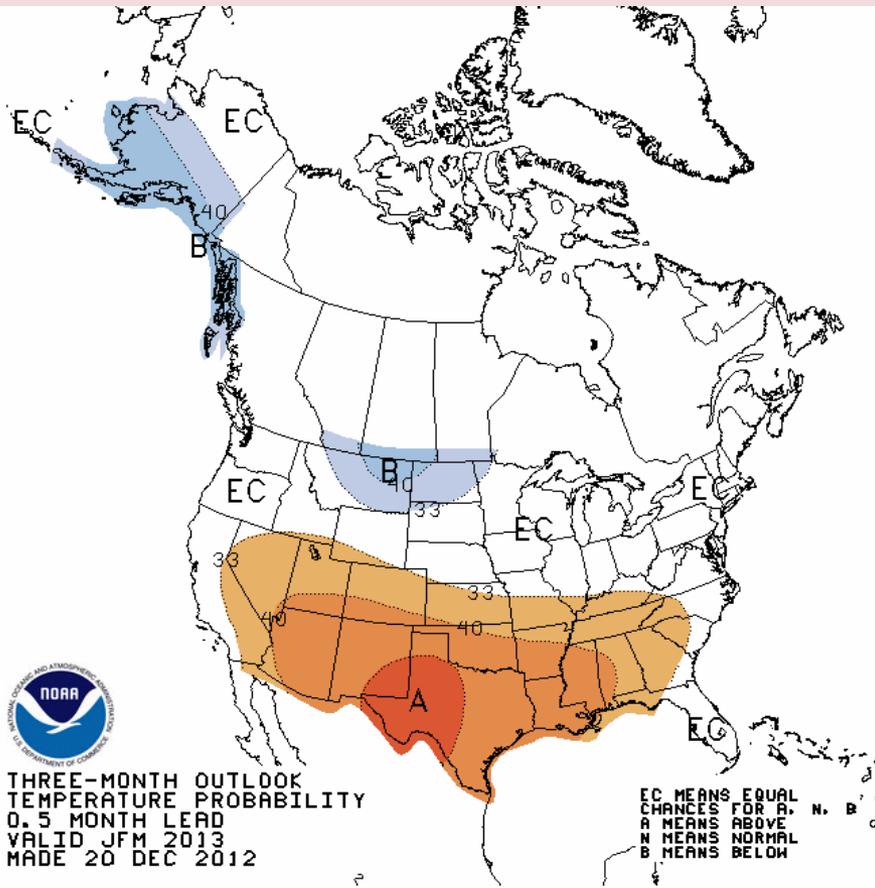
ONE-MONTH OUTLOOK
 TEMPERATURE PROBABILITY
 0.5 MONTH LEAD
 VALID JAN 2013
 MADE 20 DEC 2012



ONE-MONTH OUTLOOK
 PRECIPITATION PROBABILITY
 0.5 MONTH LEAD
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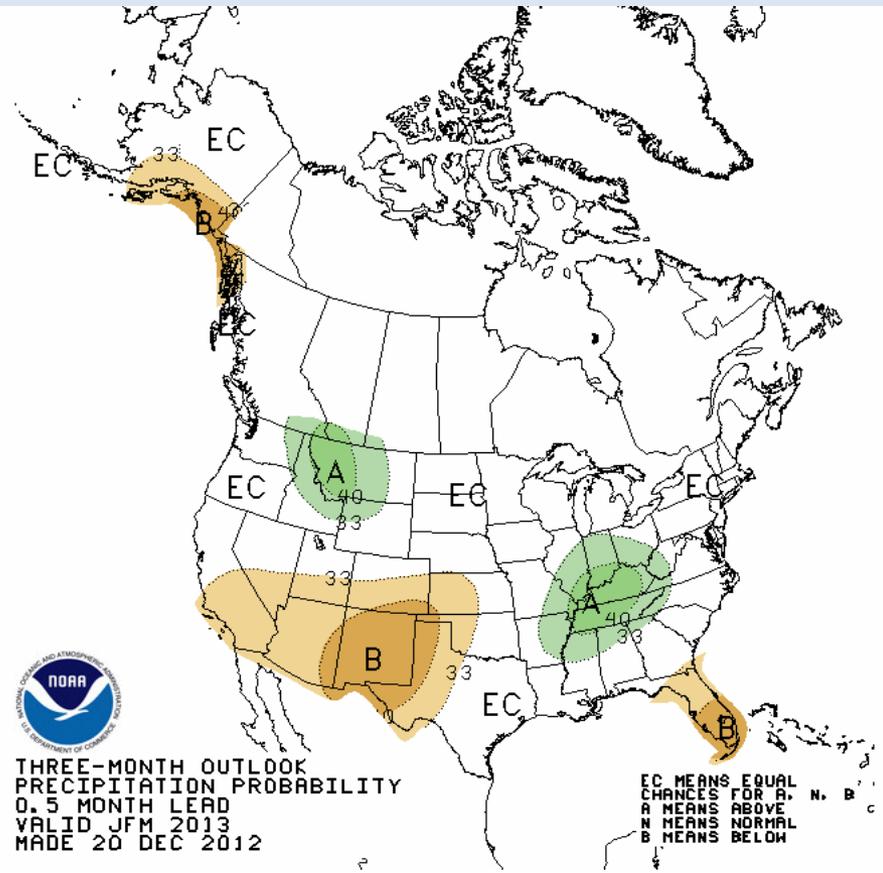
Jan-Feb-Mar Seasonal Forecast

Jan-Feb-Mar Average Temperature Probability



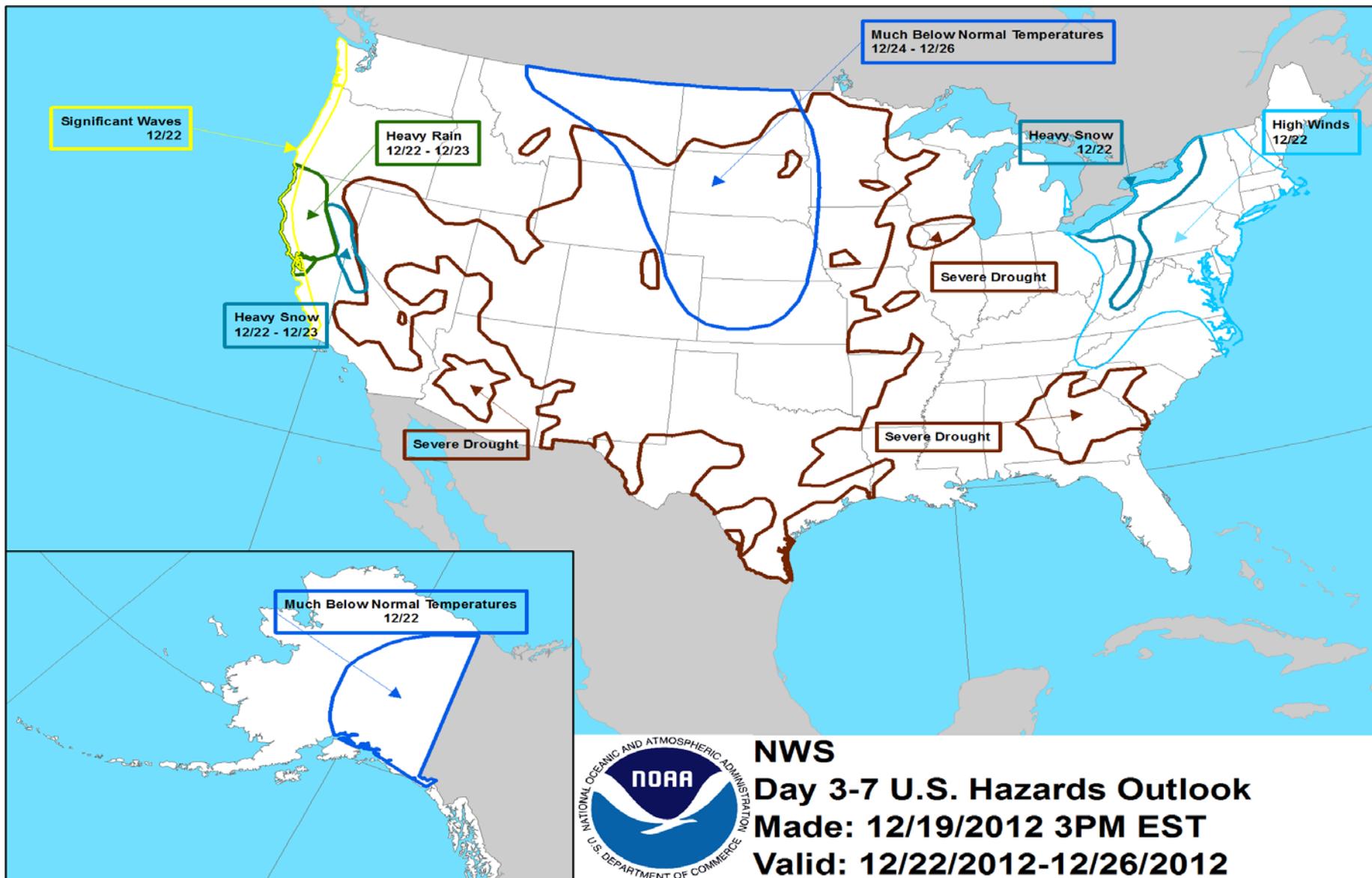

THREE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID JFM 2013
MADE 20 DEC 2012

Jan-Feb-Mar Total Precipitation Probability




THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID JFM 2013
MADE 20 DEC 2012

U.S. Hazards Outlook



For More Information



Today's Presentation:

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

NOAA's National Climatic Data Center: www.ncdc.noaa.gov

- Monthly climate reports (U.S. & Global): www.ncdc.noaa.gov/sotc/
- Billion Dollar Weather/Climate Disasters: <http://www.ncdc.noaa.gov/billions/>

NOAA's Climate Prediction Center: www.cpc.ncep.noaa.gov

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

Climate Portal: www.climate.gov

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