

NOAA Climate Science & Services

Monthly Climate Update



Deke Arndt

Chief, Monitoring Branch, NOAA's National Centers for Environmental Information

Dan Collins

Research Scientist, NOAA's Climate Prediction Center

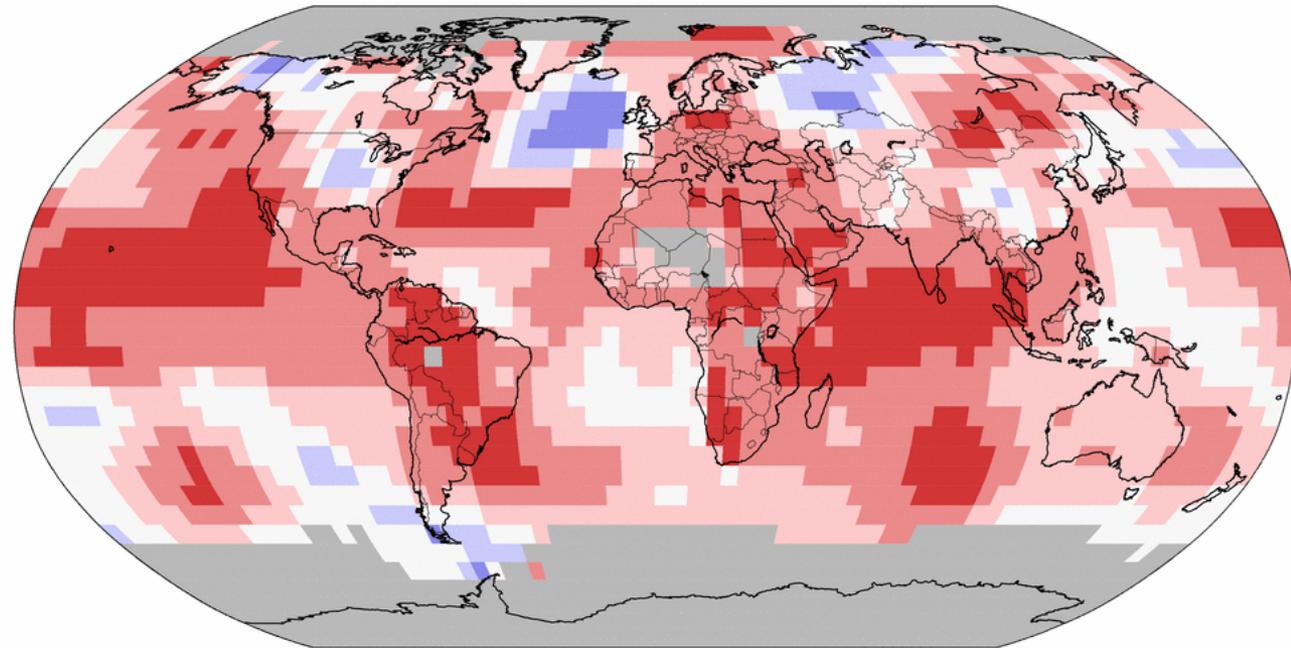
Global Temperature: August 2015

- August +1.58°F warmer than 20th century average
 - Warmest August on record
- Land: +2.05°F
 - Warmest August on record
- Ocean: +1.40°F
 - Warmest August on record
 - Largest warm departure from average for any month
 - Warmest overall ocean temperature for any month on record

Land & Ocean Temperature Percentiles Aug 2015

NOAA's National Centers for Environmental Information

Data Source: GHCN-M version 3.3.0 & ERSST version 4.0.0



Record Coldest

Much Cooler than Average

Cooler than Average

Near Average

Warmer than Average

Much Warmer than Average

Record Warmest

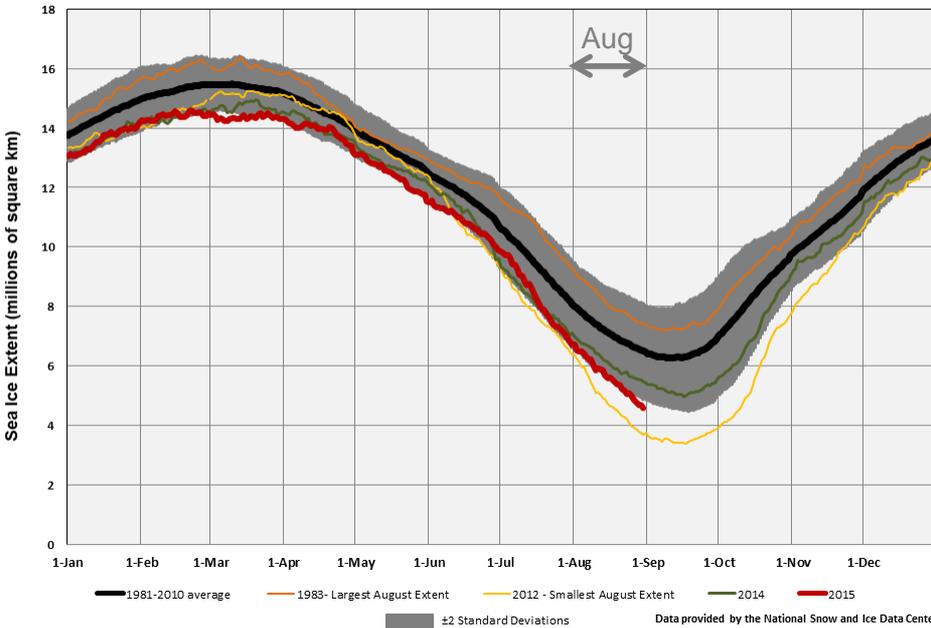
The global temperature record dates to 1880 (136 years)

Polar Sea Ice Extent: August 2015

Arctic Sea Ice Extent - Daily



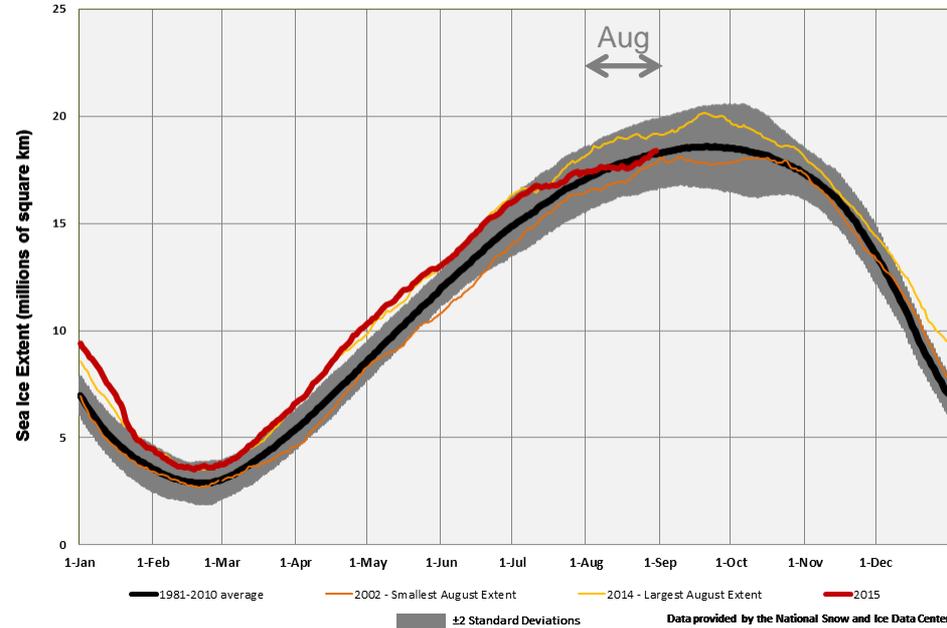
Data through August 31, 2015



Antarctic Sea Ice Extent - Daily



Data through August 31, 2015



Please note that these graphs use different scales

August **Arctic** sea ice extent:
620,000 square miles (22.3 percent)
below average, 4th smallest August
extent (records began in 1979)

August **Antarctic** sea ice extent:
30,000 square miles (0.5 percent)
below average. First below average
month since November 2011

Monthly sea ice extent information from analysis by the
National Snow & Ice Data Center using data from NOAA and NASA.



Global Temperature: Jan-Aug 2015

January-August 2015 was record warm for the year-to-date

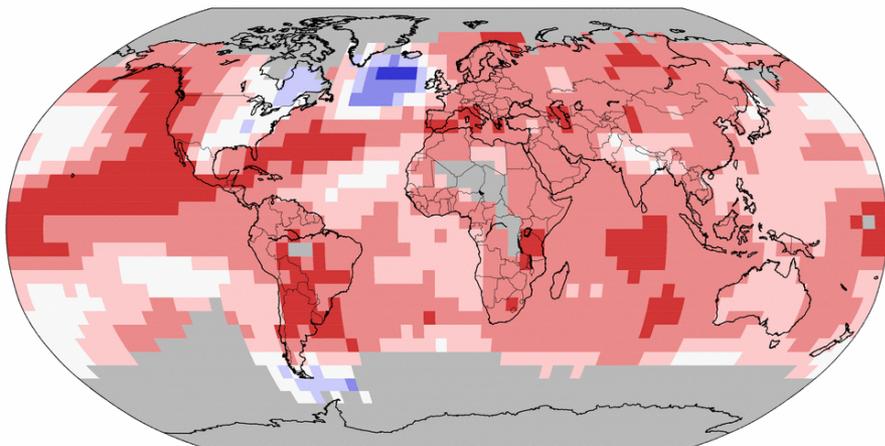
Global Temperature (record warm): $+1.51^{\circ}\text{F}$

Land Temperature (record warm): $+2.32^{\circ}\text{F}$

Ocean Temperature (record warm): $+1.22^{\circ}\text{F}$

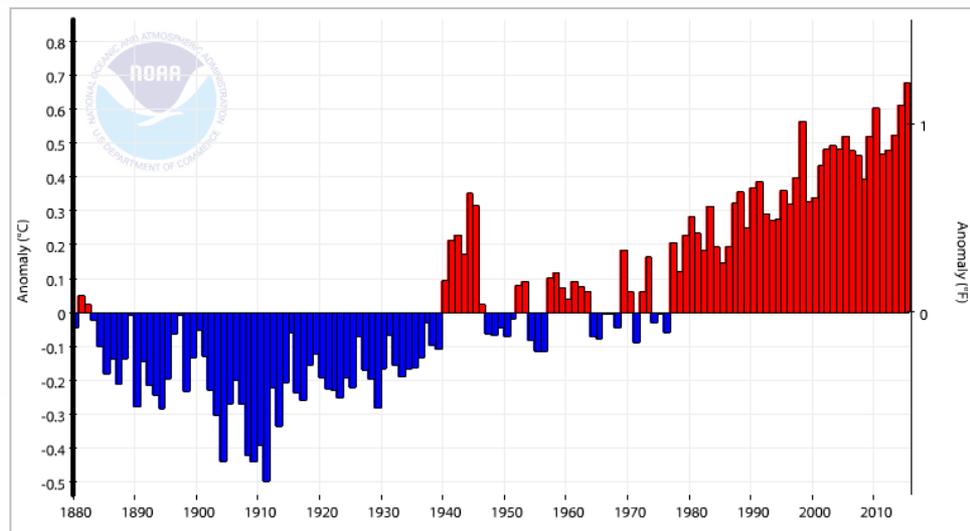
Land and Ocean Temperature Percentiles January-August 2015

Data Source: GHCN-M version 3.3.0 & ERSST version 4.0.0



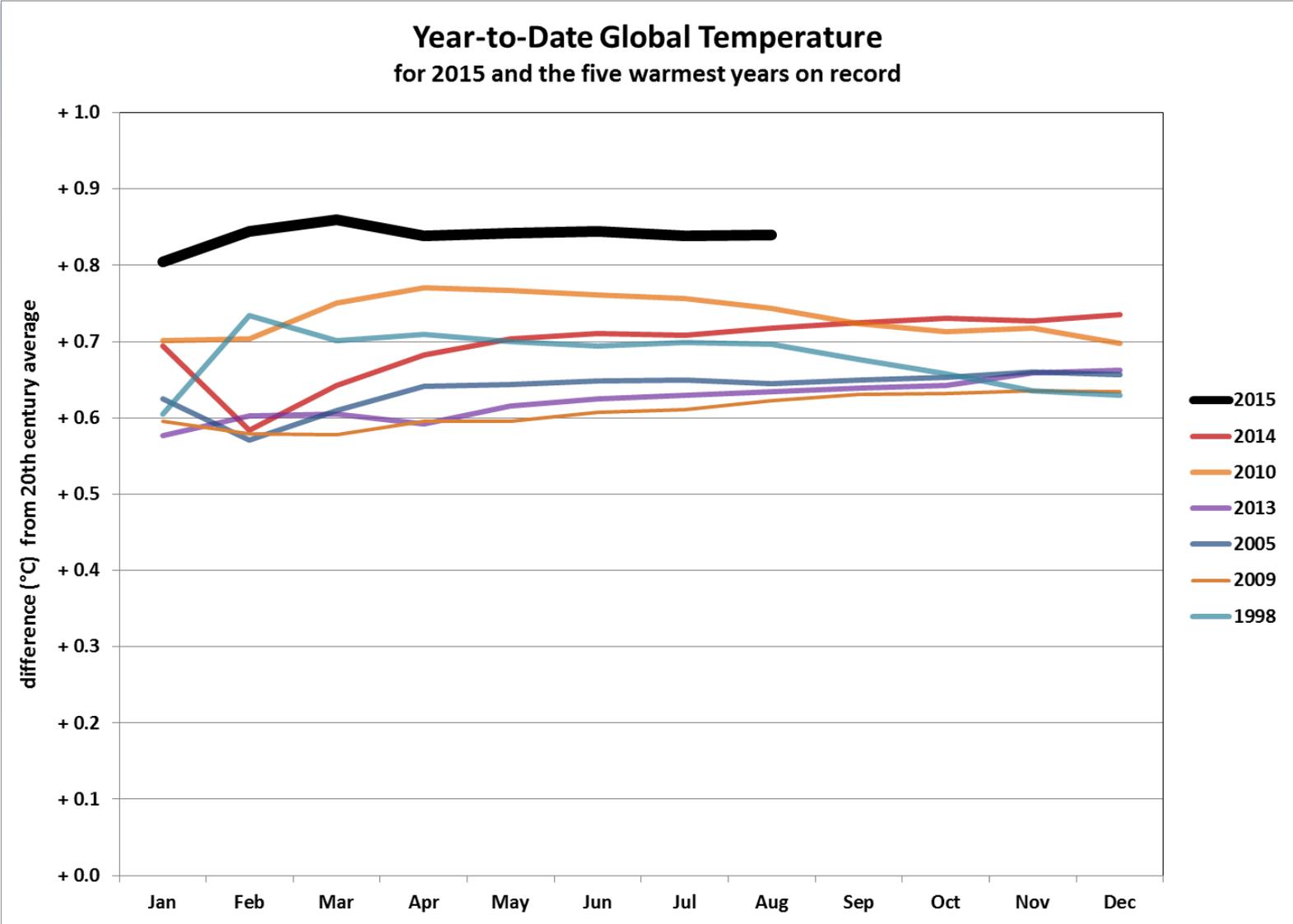
Mon Sep 14 06:43:31 EDT 2015

Global Land and Ocean Temperature Departure from 20th Century Average, January-August



Climate at a Glance: www.ncdc.noaa.gov/cag/

Global Temperature: Jan-Aug 2015



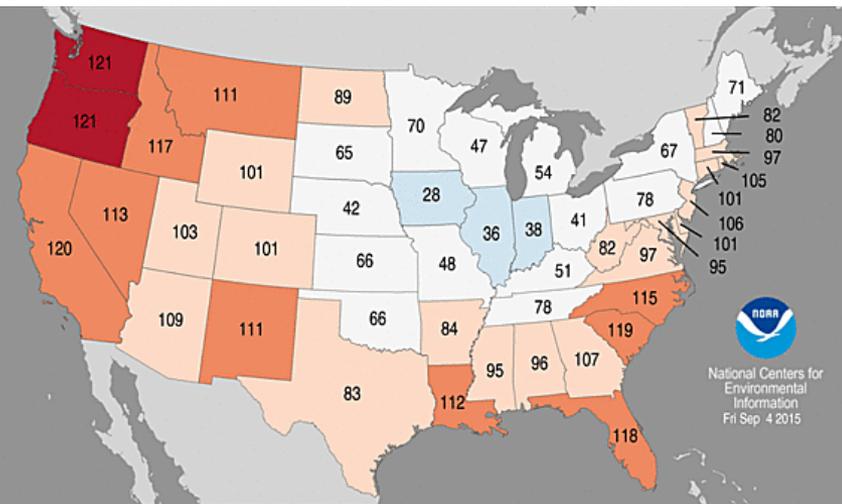
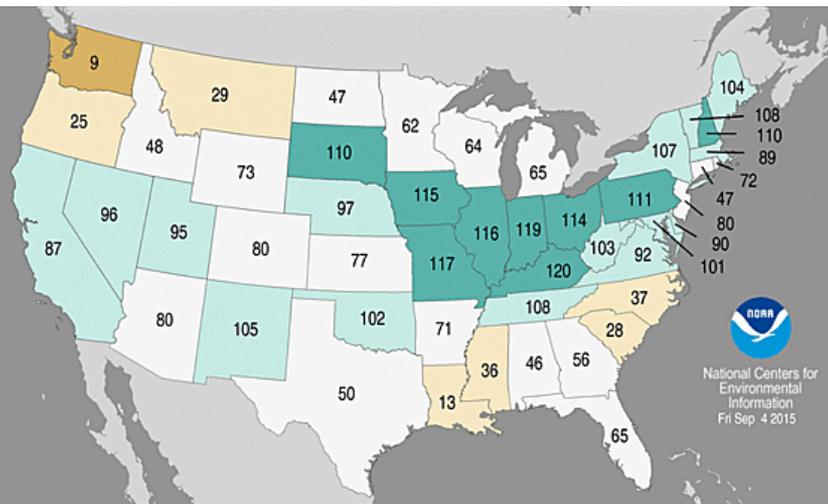
Contiguous U.S. Summer 2015

Temperature: 72.7°F, +1.3°F, 12th warmest summer on record

Precipitation: 9.14", +0.82", 16th wettest summer on record

Statewide Precipitation Ranks, Summer 2015
Period: 1895-2015 (121 years)

Statewide Temperature Ranks, Summer 2015
Period: 1895-2015 (121 years)



- Dry in Northwest and parts of Southeast. Wet in Midwest to Northeast.
- Record wet June and July across Midwest and Northeast, wetter than average summer
- WA had its 9th driest summer; 52% of average precipitation – record wildfires in the state

- Record & near-record warmth in the West and Southeast. Cool in Midwest
 - Warmest summer on record for OR (+4.6°F) and WA (+5.3°F)
 - For the 3rd consecutive summer, parts of the Midwest were cooler than average

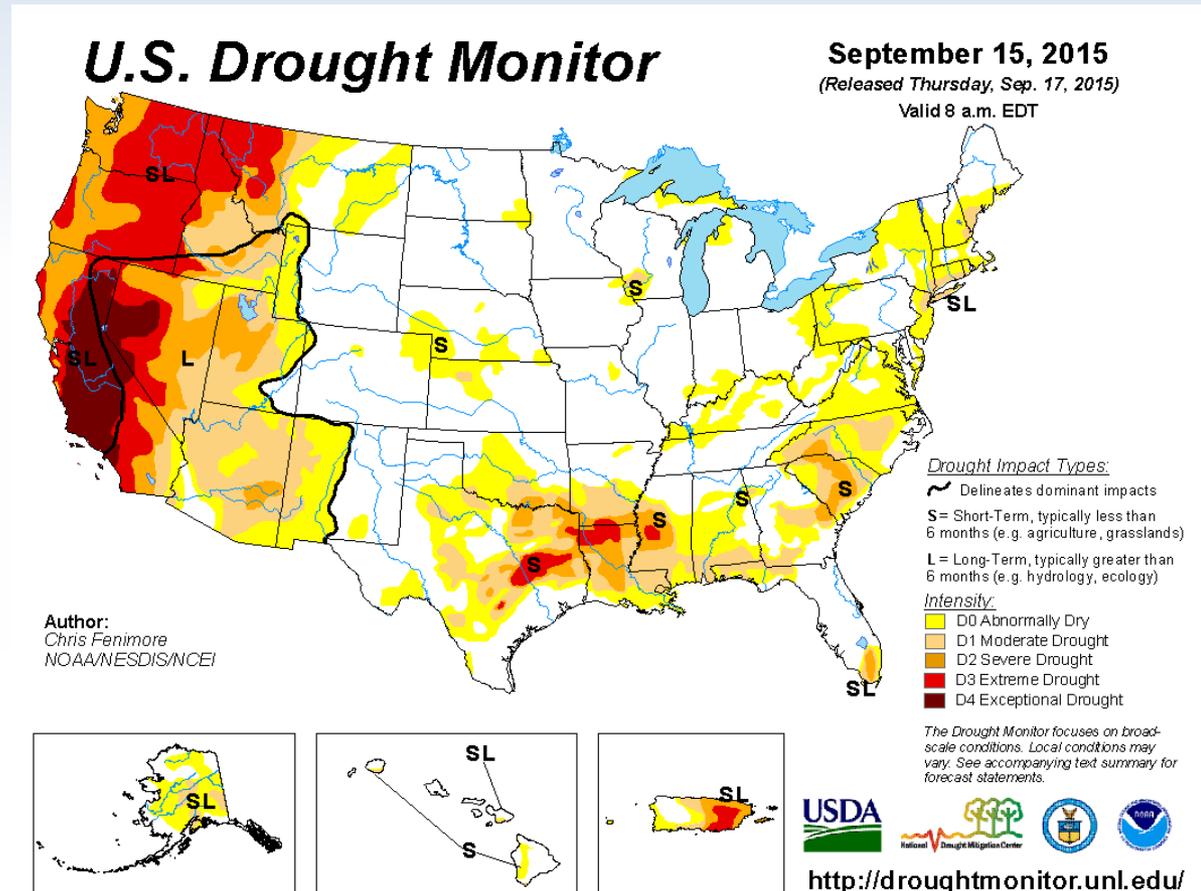


Current U.S. Drought

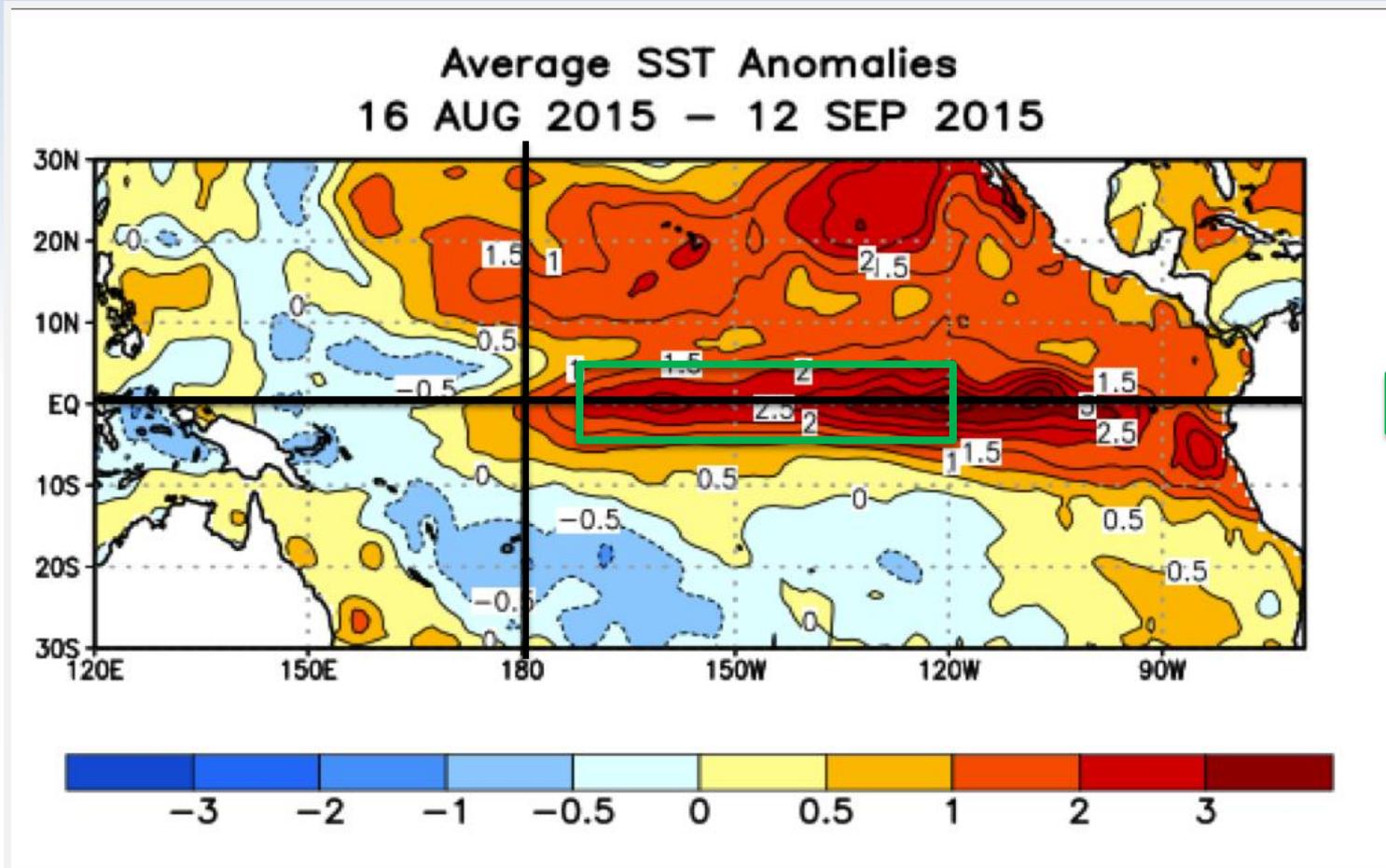
31.5% of Contiguous U.S. in Drought

↑ ~6 percentage points since late July

- Continued Stranglehold: Western US and Puerto Rico
- Improvement: Parts of the Plains and Northeast
- New drought: “Flash Drought” develops in ArkLaTex region
- Degradation: Drought intensified in parts of the Southeast

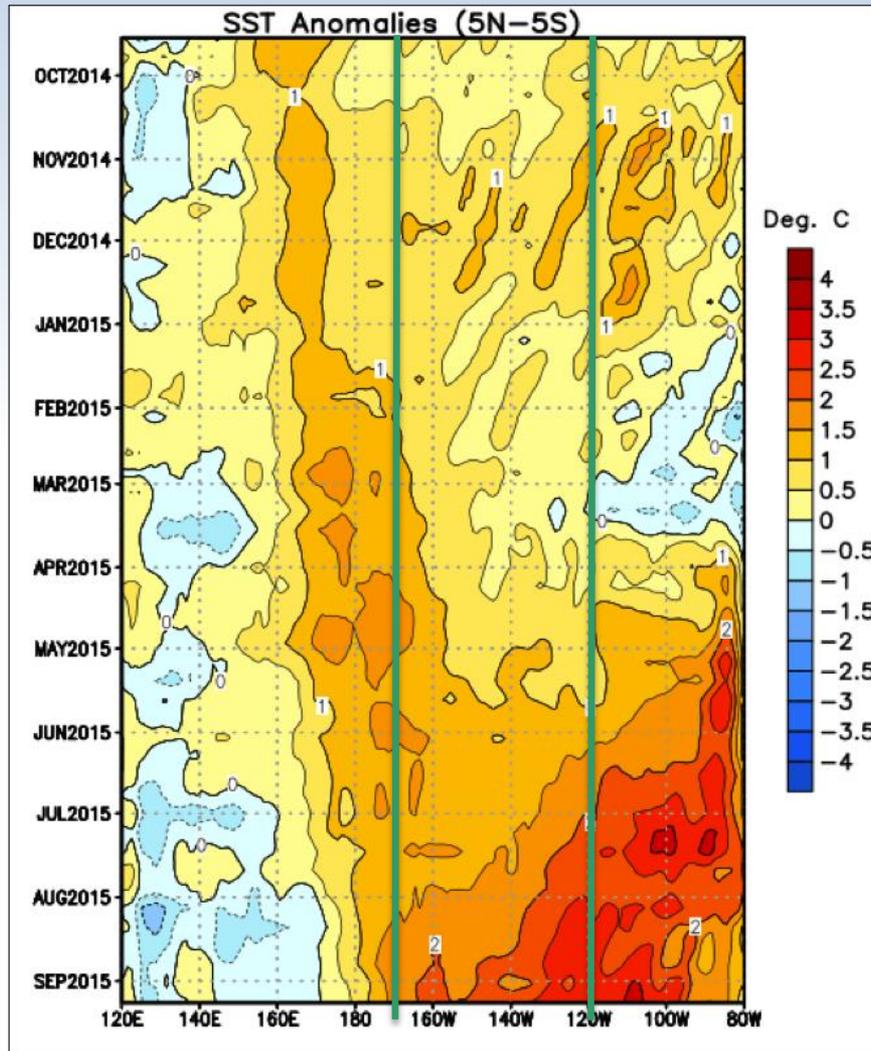


Sea Surface Temperatures and ENSO



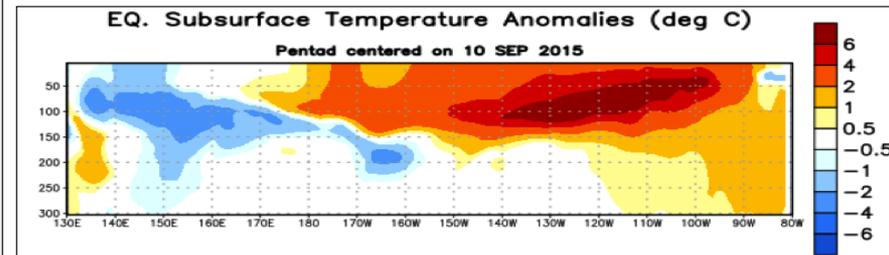
Niño 3.4

Ocean Temperatures and ENSO

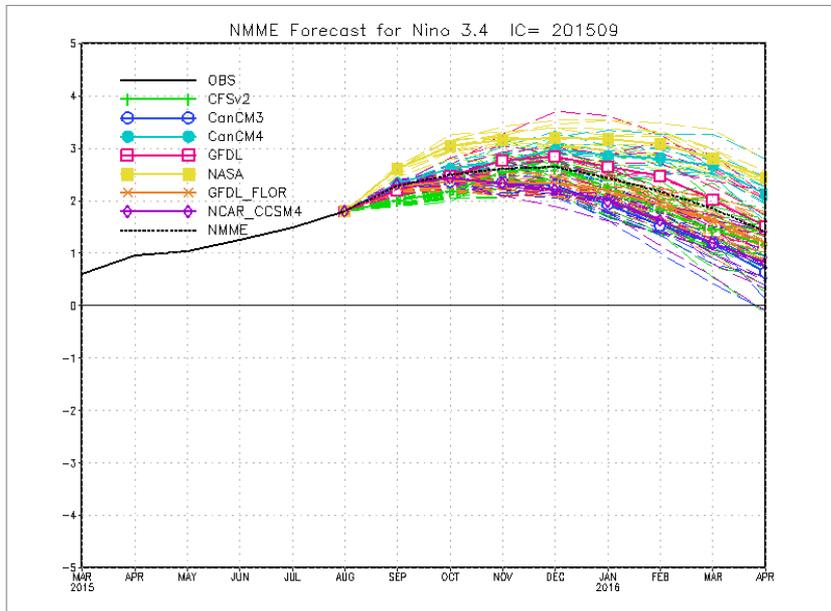
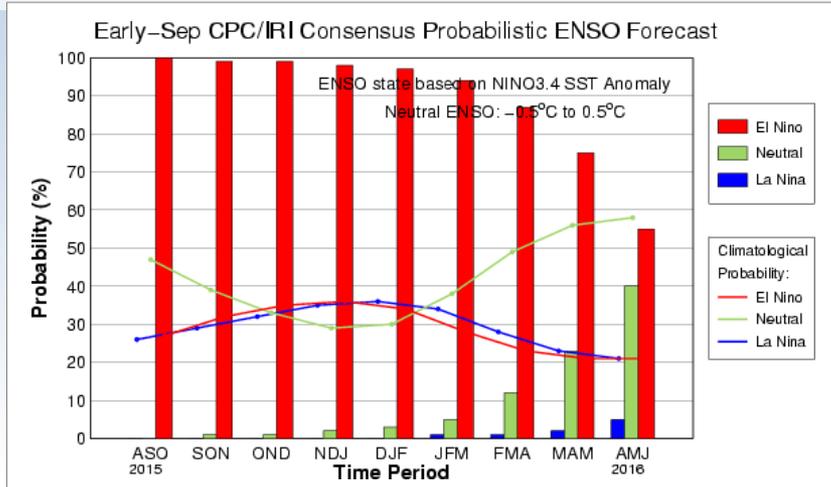


Nino 3.4

- Above-normal sea surface temperatures in the East-Central Pacific (Nino 3.4) have been strengthening since spring
- Nino 3.4 weekly average is warmest since the end of the 1997/1998 El Nino
- Subsurface warm reservoir supports persistence of above normal sea surface temperatures
- Magnitude of above-normal East Pacific temperatures are not nearly as great as the 1997/1998 event at this same time of year



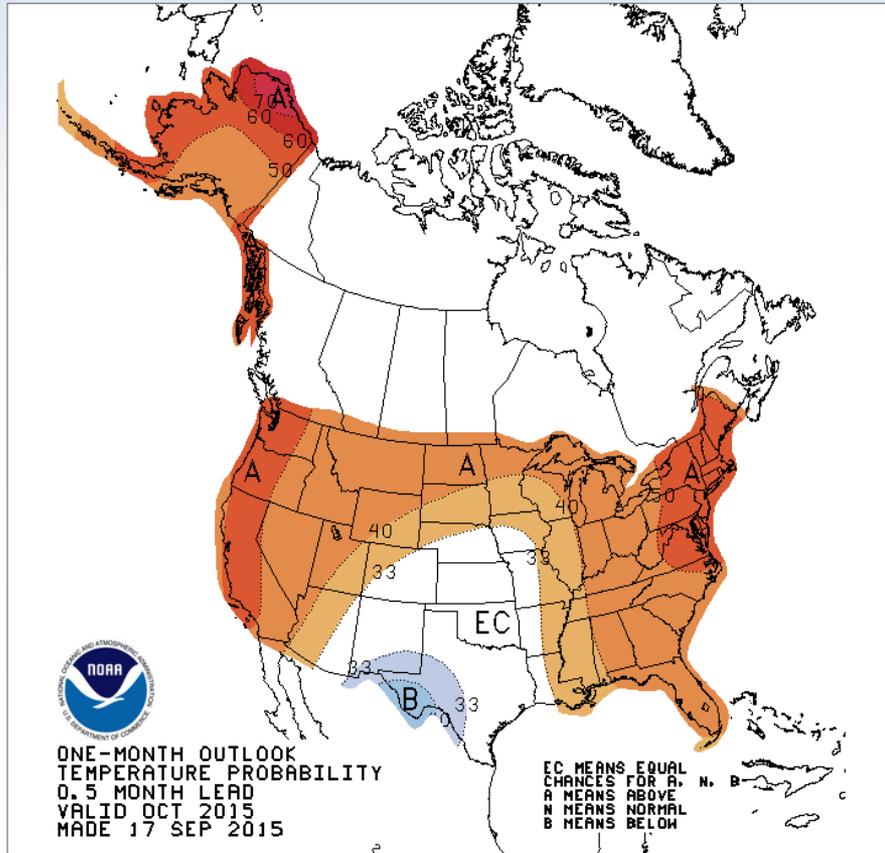
ENSO Forecast



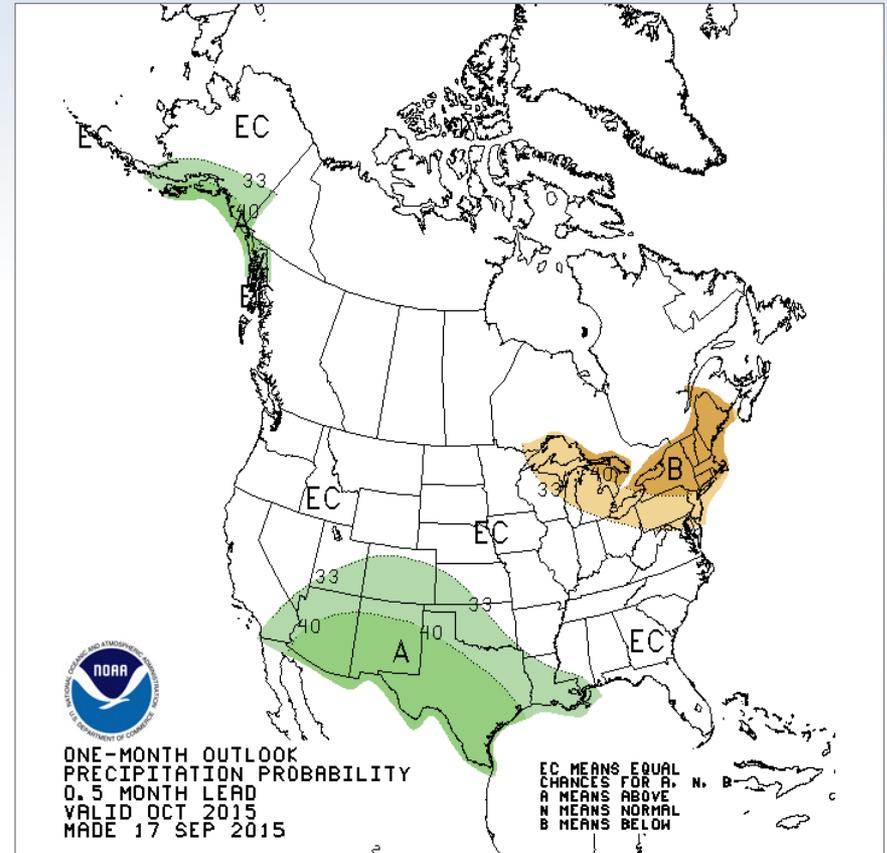
- There is high confidence that El Niño will last through winter
- A strong event with seasonal average sea surface temperatures in the east-central Pacific more than 1.5 degrees Celsius above-normal is likely
- A very strong event with sea surface temperatures near or above 2 degrees above-normal is predicted
- El Niño is the primary driver of the seasonal outlooks for temperature and precipitation this autumn and winter

Monthly Forecast (October)

October Average Temperature Probability

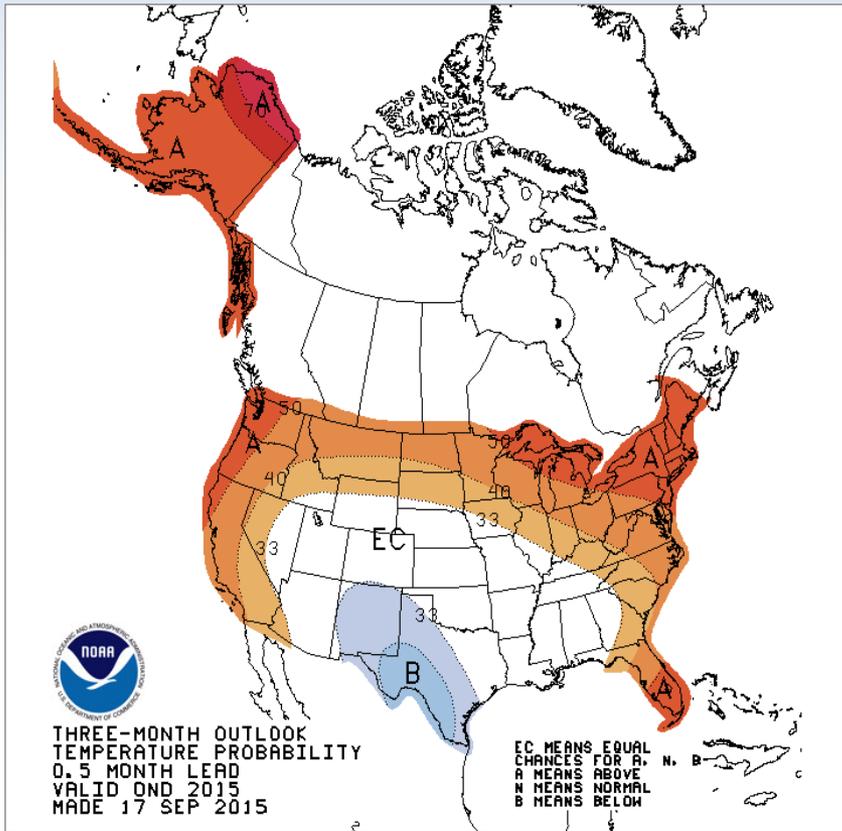


October Total Precipitation Probability

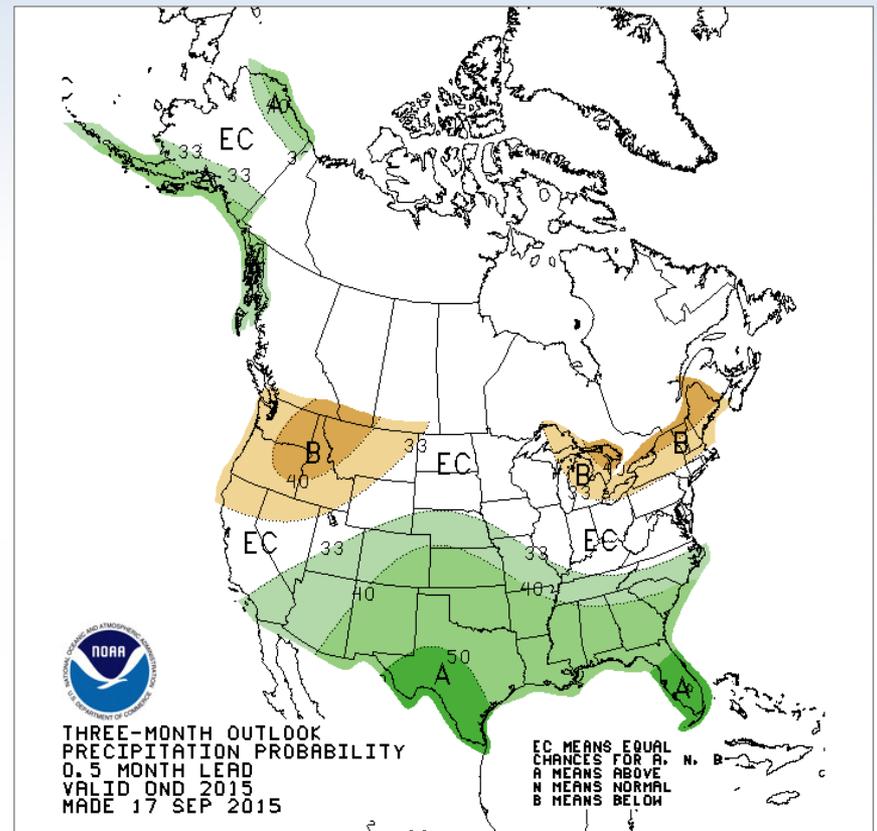


Autumn Seasonal Forecast (Oct-Nov-Dec)

Oct-Nov-Dec Average Temperature Probability

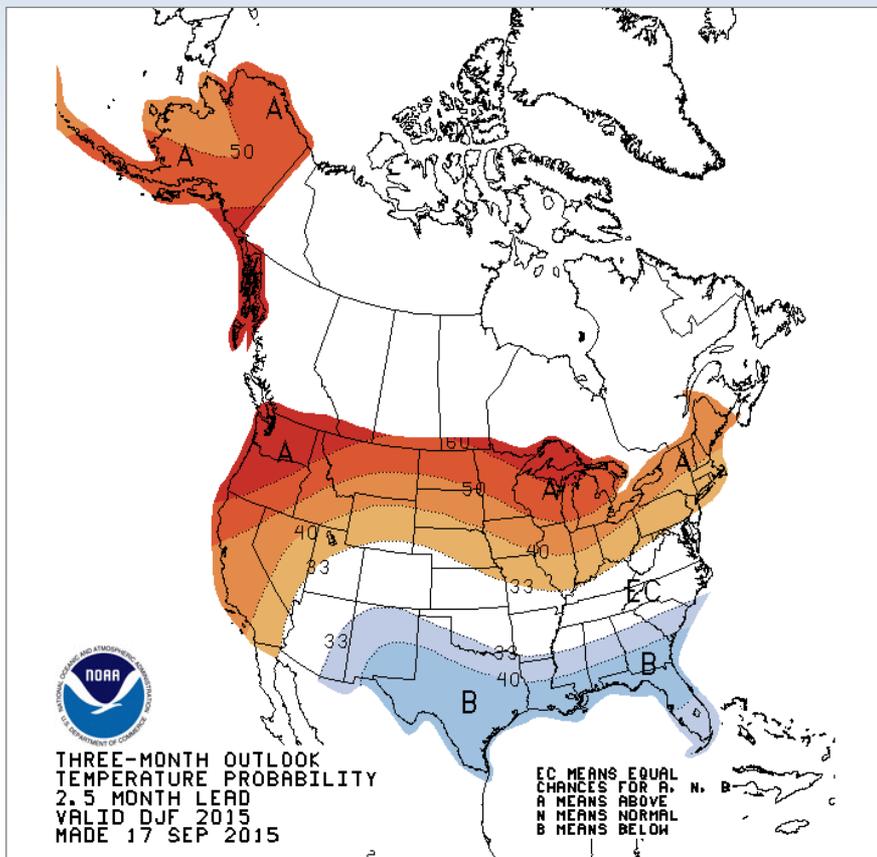


Oct-Nov-Dec Total Precipitation Probability

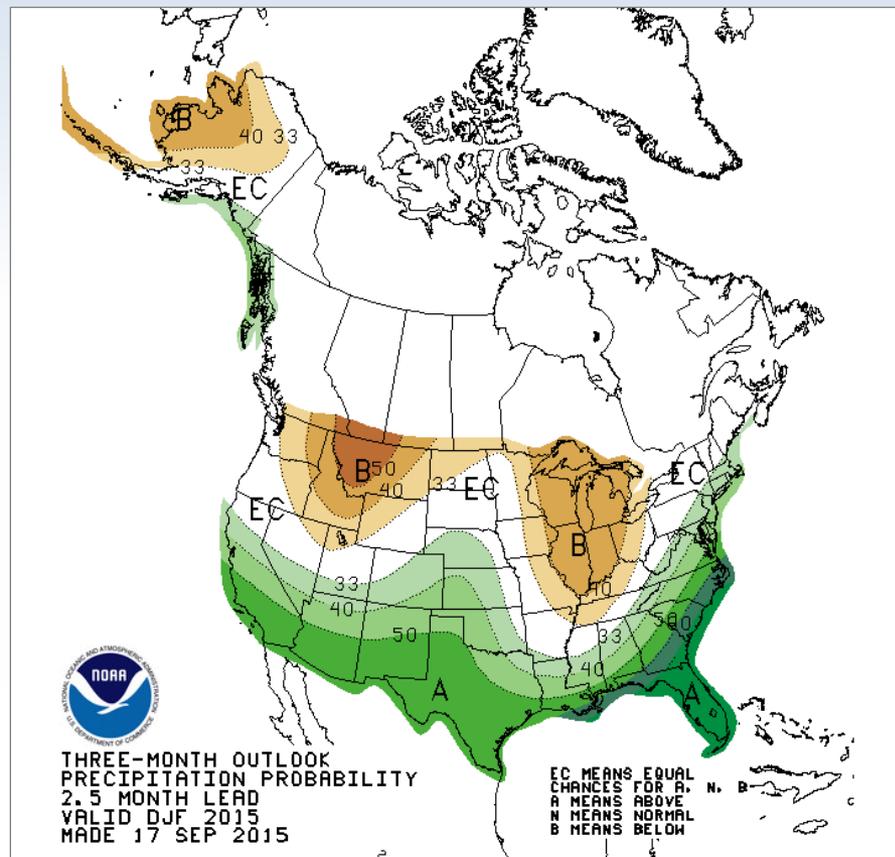


Winter Seasonal Forecast (Dec-Jan-Feb)

Dec-Jan-Feb Average Temperature Probability

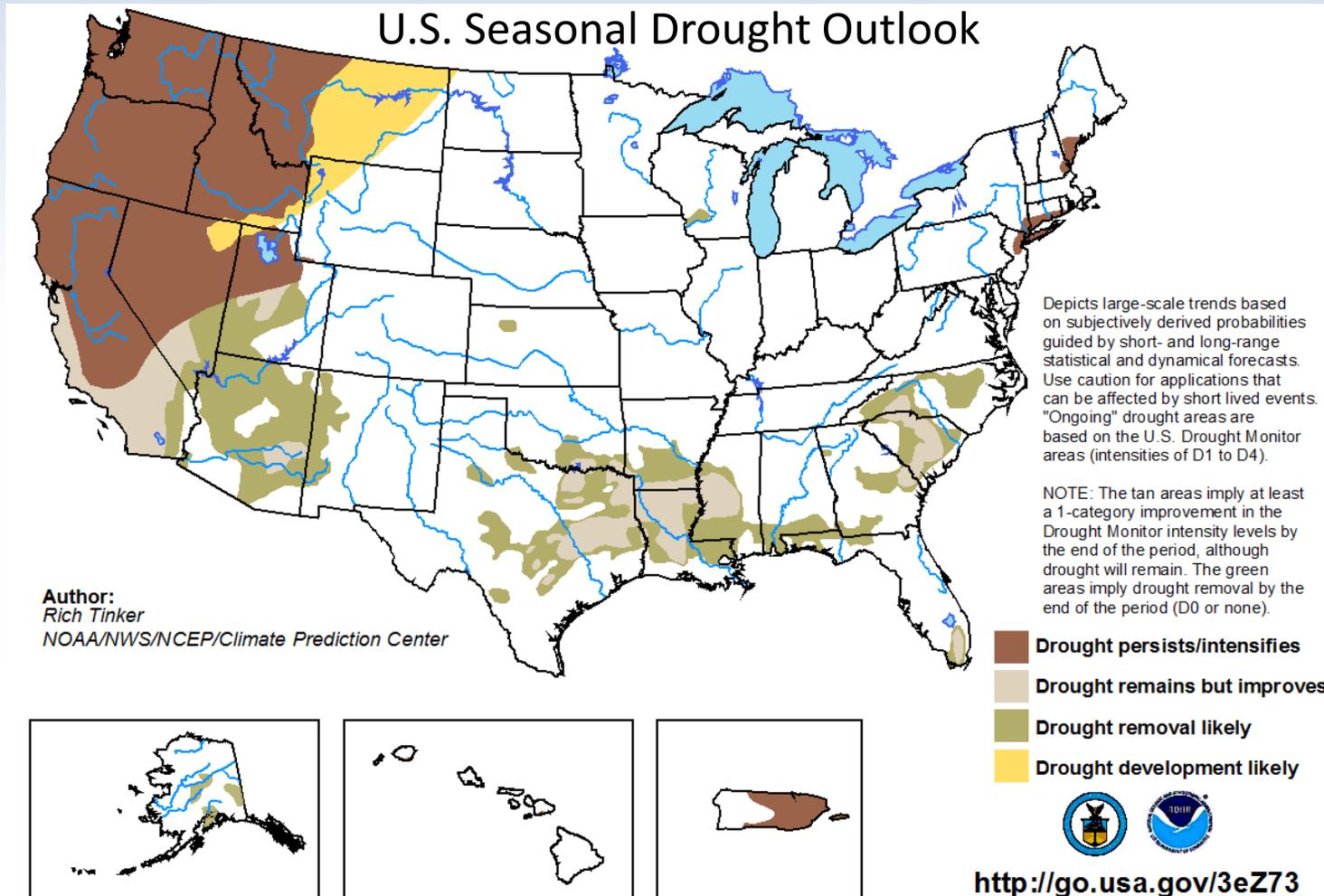


Dec-Jan-Feb Total Precipitation Probability



U.S. Drought Outlook

Drought Tendency During the Valid Period September 17 – December 31, 2015;
Released September 17, 2015



For More Information



TODAY'S PRESENTATION:

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

NOAA's National Centers for Environmental Information:

www.ncdc.noaa.gov

- Monthly climate reports (U.S. & Global): 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

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

Climate Portal: www.climate.gov

NOAA Media Contacts:

- John.Ewald@noaa.gov, 240-429-6127 (Office of Communications)
- Katy.Matthews@noaa.gov, 828-257-3136 (National Centers for Environmental Information)

