

NOAA Climate Science & Services

Monthly Climate Update



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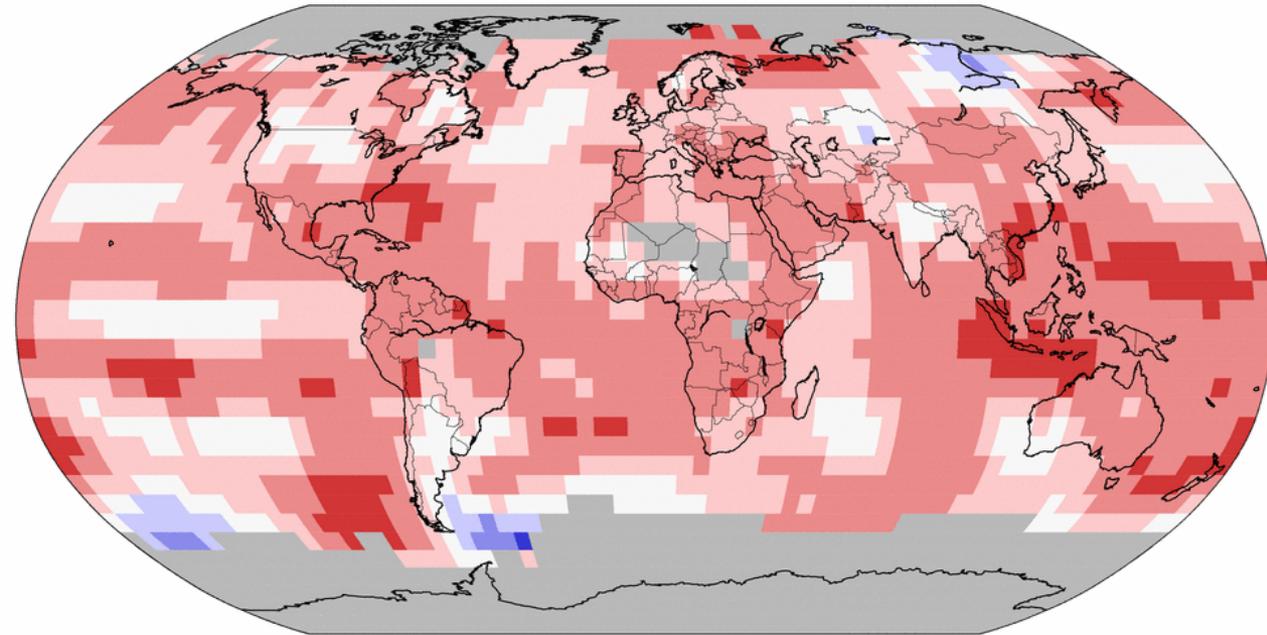
Meteorologist and Seasonal Forecaster
NOAA's Climate Prediction Center

Global Temperature: July 2016

- July: $+0.87^{\circ}\text{C}$ above 20th century average
 - Warmest July and month on record
 - 15th consecutive record warm month
- Land: $+1.10^{\circ}\text{C}$
 - Ties 1998 as warmest July on record
- Ocean: $+0.79^{\circ}\text{C}$
 - Warmest July on record
 - 9th largest departure from average of any month

Land and Ocean Temperature Percentiles July 2016

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



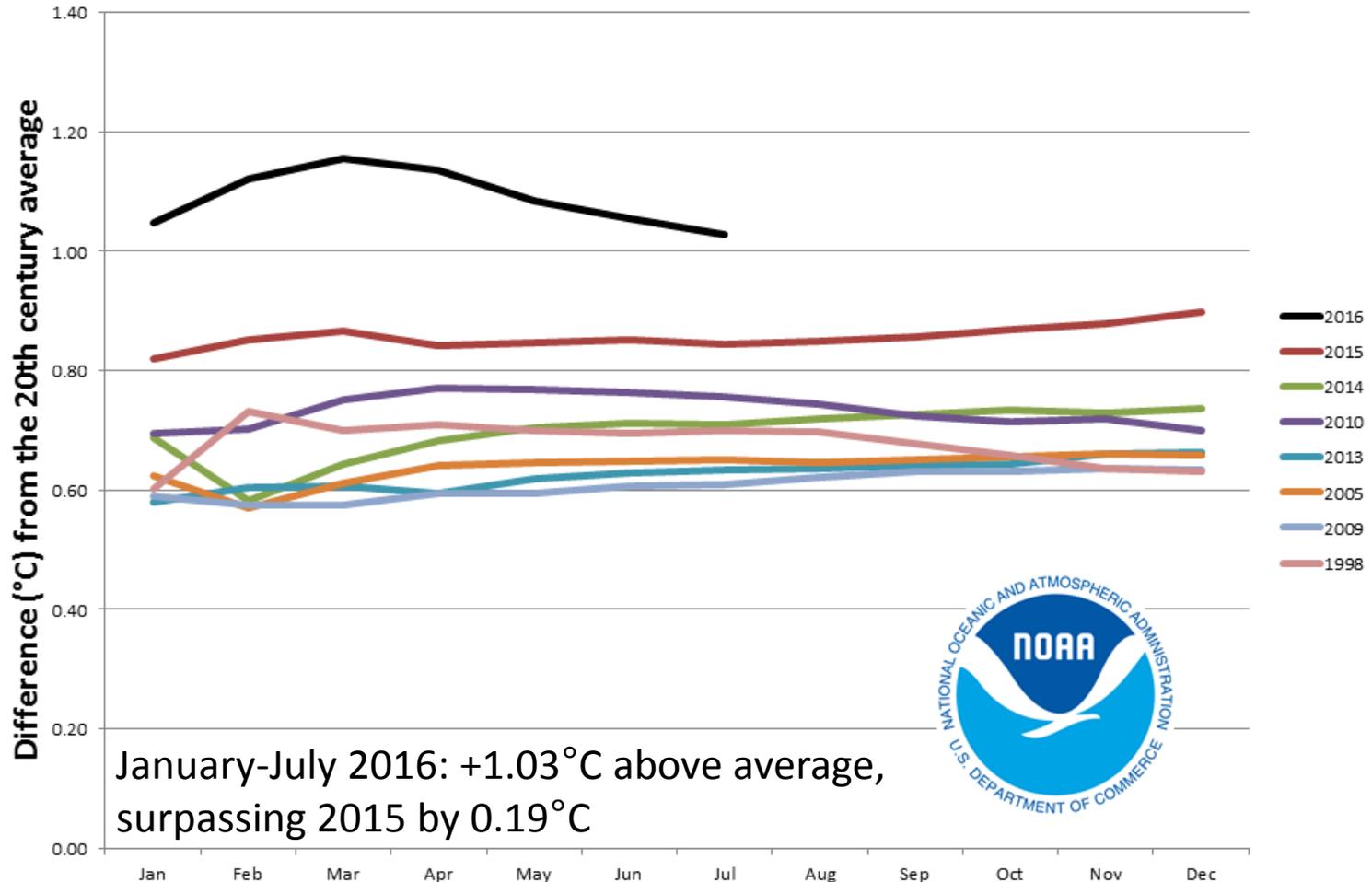
Mon Aug 15 07:11:32 EDT 2016

The global temperature record dates to 1880 (137 years)

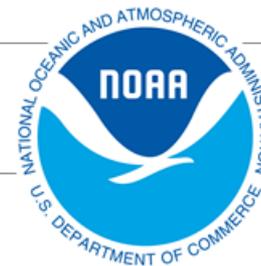


Global Temperature: Jan-Jul 2016

Year-to-Date Global Temperatures for 2016 and the other seven warmest years on record



January-July 2016: +1.03°C above average,
surpassing 2015 by 0.19°C



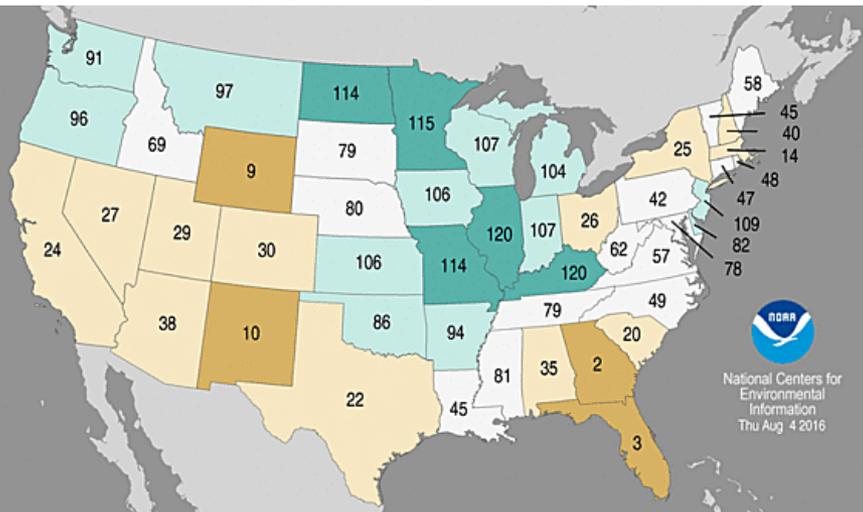
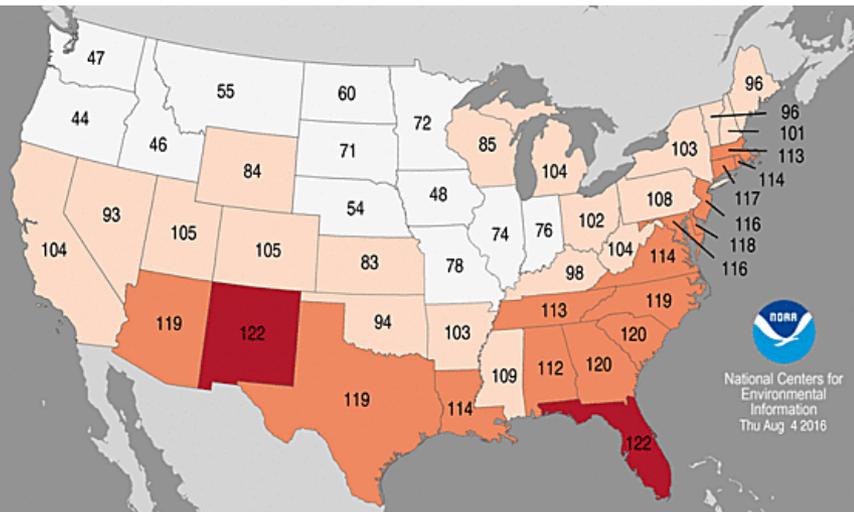
Contiguous U.S. July

Temperature: 75.3°F, +1.6°F, 14th warmest July

Precipitation: 2.87", +0.09", near average July

Statewide Temperature Ranks, Jul 2016
Period: 1895-2016 (122 years)

Statewide Precipitation Ranks, Jul 2016
Period: 1895-2016 (122 years)



National Centers for Environmental Information
Thu Aug 4 2016

National Centers for Environmental Information
Thu Aug 4 2016

Record Coldest (1) Much Below Average Below Average Near Average Above Average Much Above Average Record Warmest (122)

Record Driest (1) Much Below Average Below Average Near Average Above Average Much Above Average Record Wettest (122)

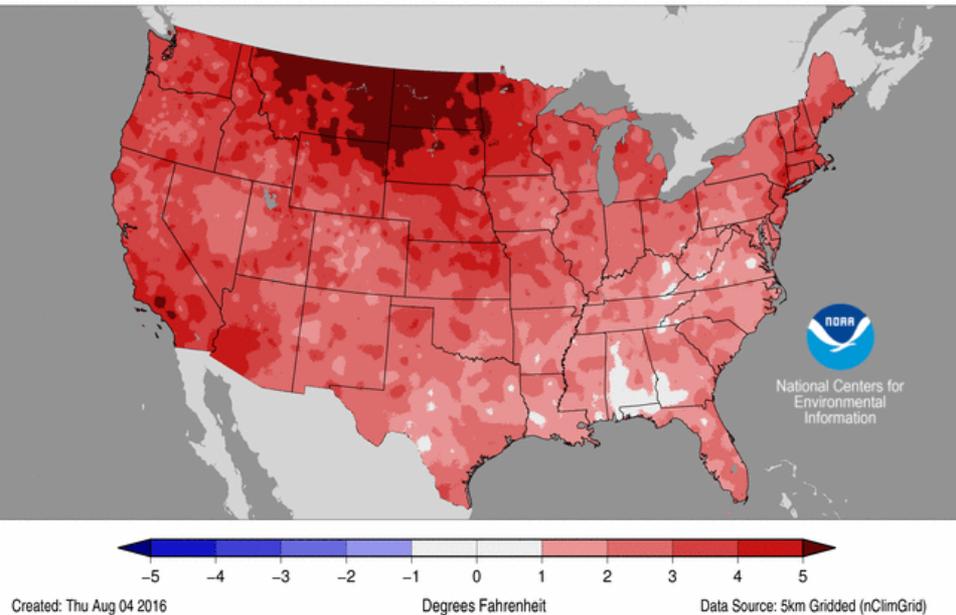
- Above-average temperatures across the South and East
- Florida and New Mexico were both record warm
- Above-average precipitation suppressed daytime temperatures in the Northwest and Northern Plains to Midwest

- Below-average precipitation across the Southwest, Central Rockies, Southern Plains, Southeast, and Northeast
- Above-average precipitation across the Northwest, Midwest, and parts of Great Plains
- Significant flooding impacted western Kentucky with more than 16" observed in parts of the state

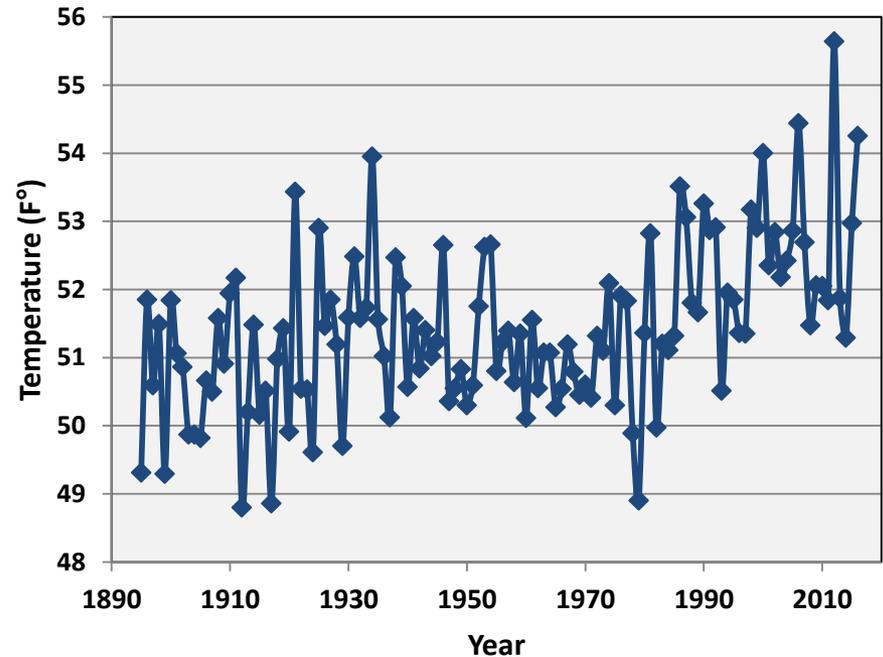


Contiguous U.S. January-July

Temperature Departures from 20th Century Average
January-July 2016



Contiguous U.S. Average Temperature
July 1895-2016



- Contiguous U.S. Jan-July temperature was 53.4°F. 3.0°F above average, the 3rd warmest
- Only Jan-July of 2012 (55.6°F) and 2006 (54.4°F) were warmer
- Every state was warmer than average
- Alaska continues to be record warm for 2016

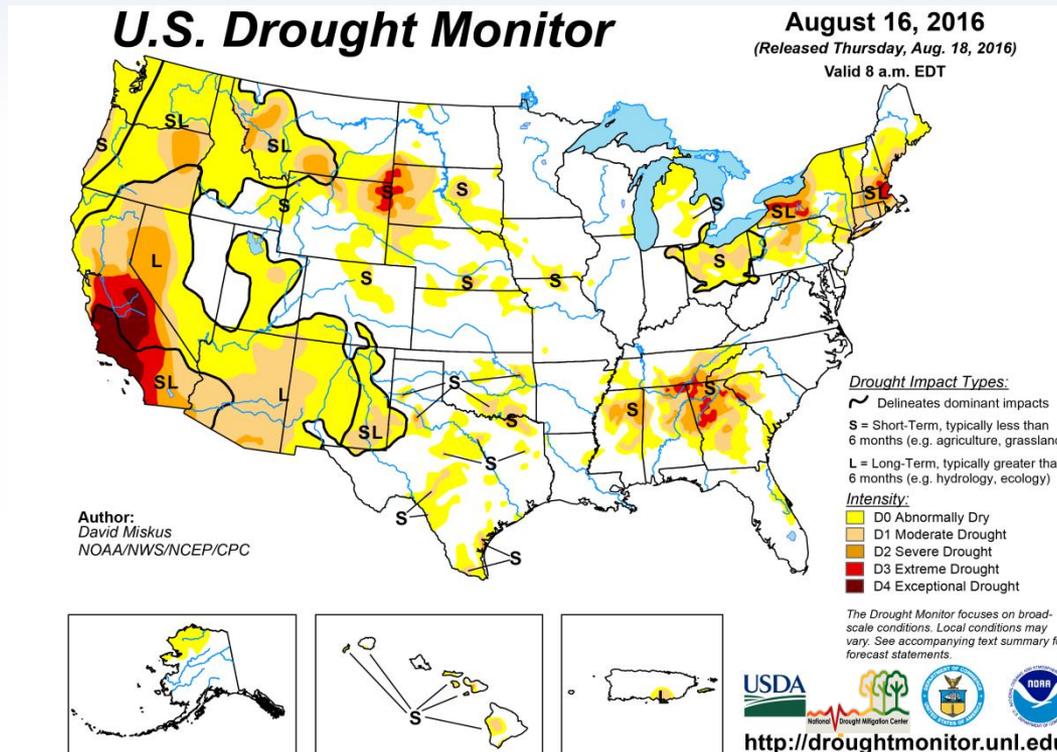


Current U.S. Drought

19.9% of Contiguous U.S. in Drought

(↑2.1 percentage points since early July)

- Improvement: Parts of the Midwest and Southeast
- Degradation: Southeast, Northern Plains and Rockies, Southern Plains, and Northeast
- Outside CONUS: Drought improved in Hawaii with help from Darby



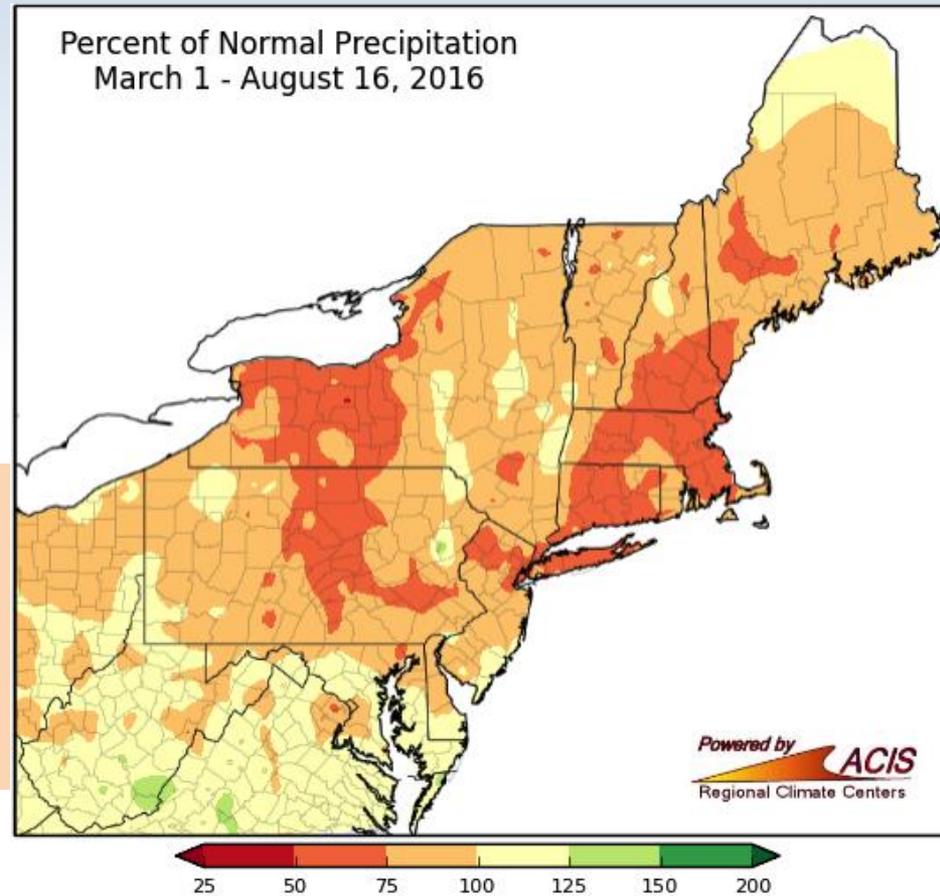
Northeast Drought

- Majority of region in precipitation deficit since March
- Dark orange < 75% of normal

Record Low Precipitation

March 1 - August 16 Precipitation (inches)

Station	2016	Normal	% of Normal
Geneva, NY	7.69	17.09	45
Lawrence, MA	10.71	23.20	46
Elmira, NY	9.43	18.91	50
Avon, NY	8.28	16.42	50
Lowville, NY	10.50	18.13	58



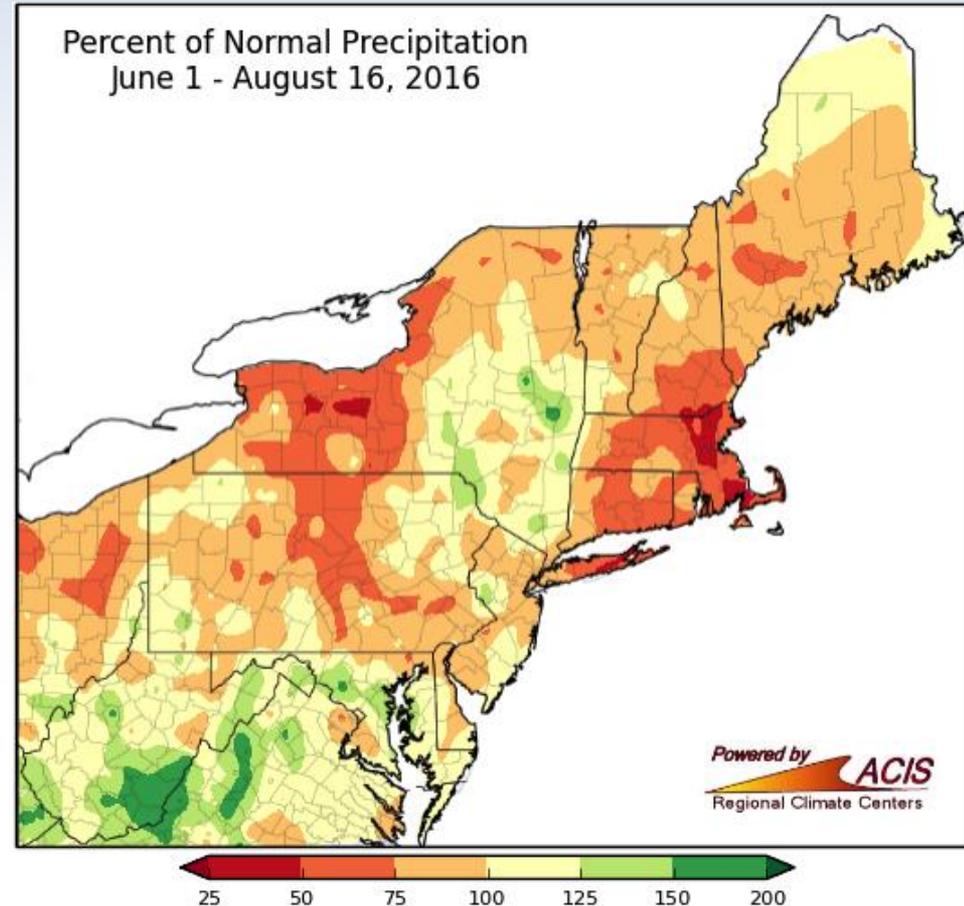
Northeast Drought

- Summer rains for some, other areas go farther into deficit
- Dark orange < 75% of normal
- Red < 50% or normal

Record Low Precipitation

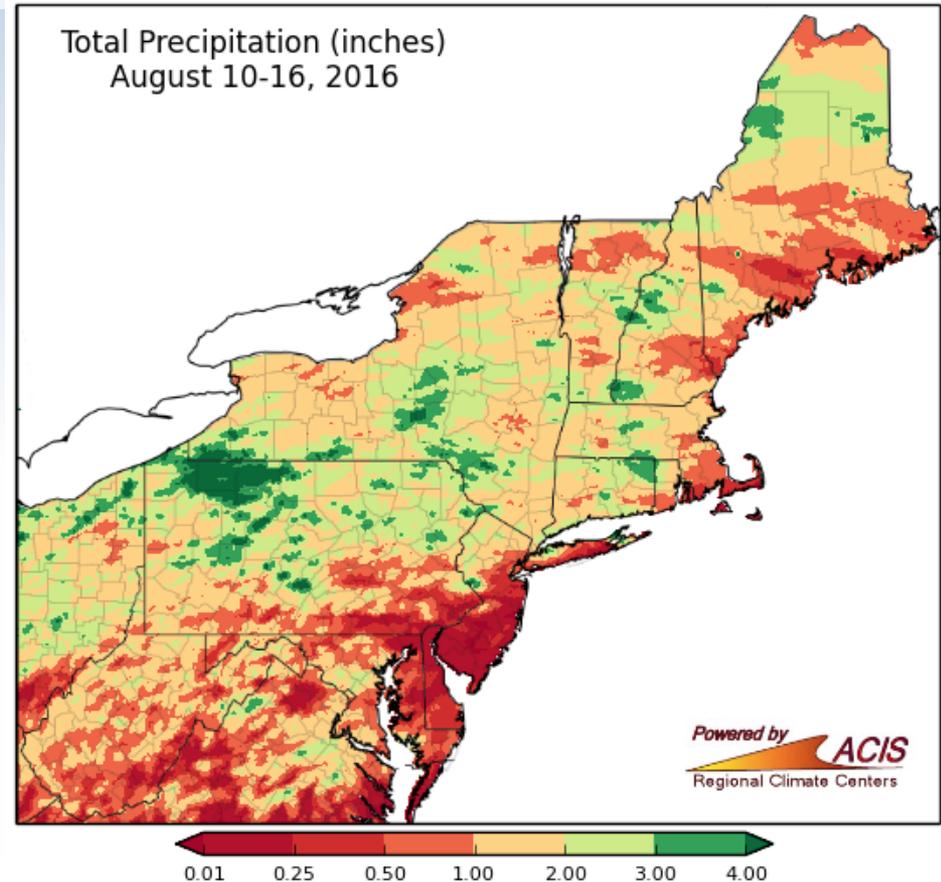
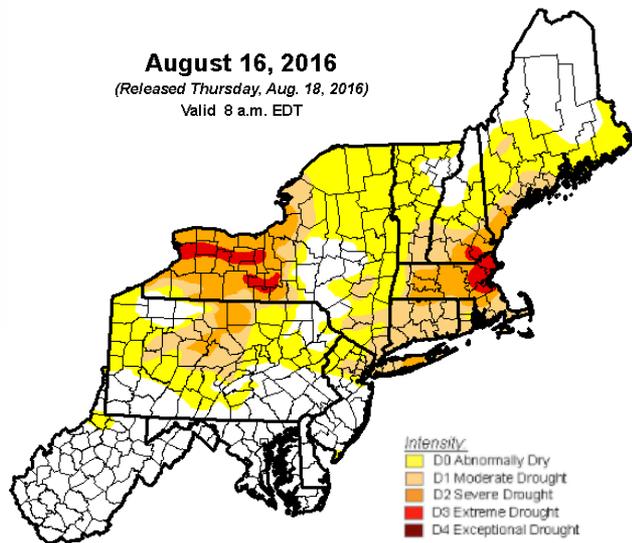
June 1 - August 16 Precipitation (inches)

Station	2016	Normal	% of Normal
Boston, MA	3.02	8.96	34
Geneva, NY	3.26	8.83	37
Walpole, MA	3.96	10.15	39



Northeast Drought

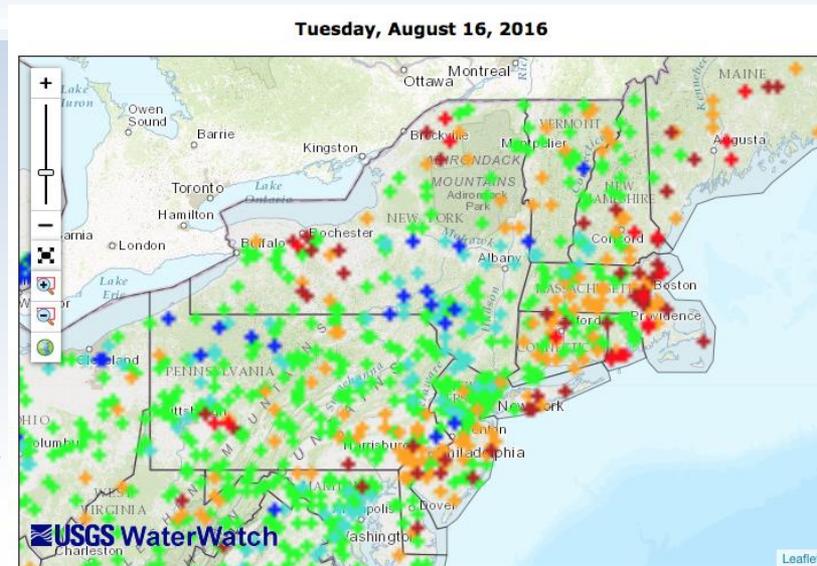
- August 16 Drought Monitor
- 7-Day Precipitation totals
- Expect some improvement where heavy precipitation has fallen
- Expect expansion and introduction of extreme drought where precipitation has missed



Northeast Drought

Impacts

- Below normal stream flow
- Low well & reservoir levels
- Wildlife & recreation impacted
- Increased fire risk
- State declarations of drought watches, advisories, and warnings



Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

Agriculture Impacts

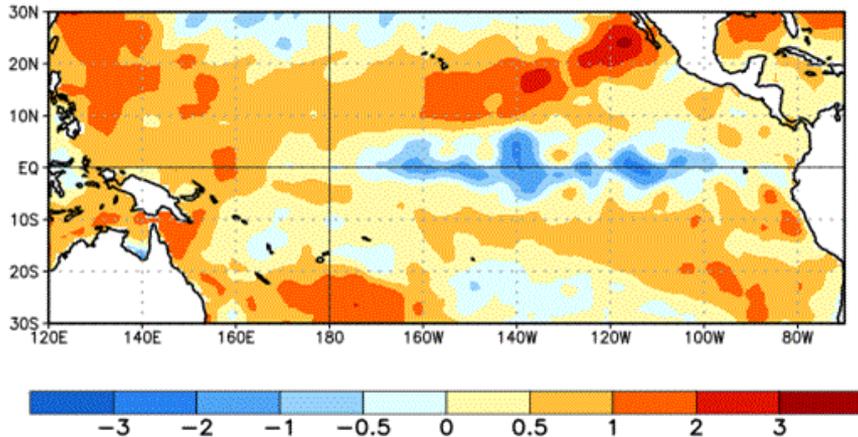
- Some corn total loss
- Loss of alfalfa, pumpkins
- Low hay yields
- Combine & tractor fire risk
- Shallow live stock ponds



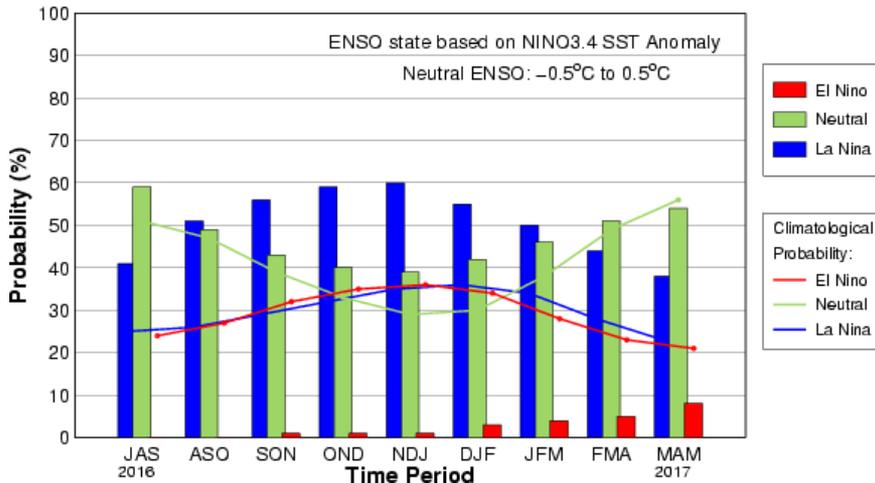
Photos: Cornell University Cooperative Extension

Sea Surface Temperatures and ENSO

SST Anomalies (°C)
03 AUG 2016



Early-Aug CPC/IRI Official Probabilistic ENSO Forecast

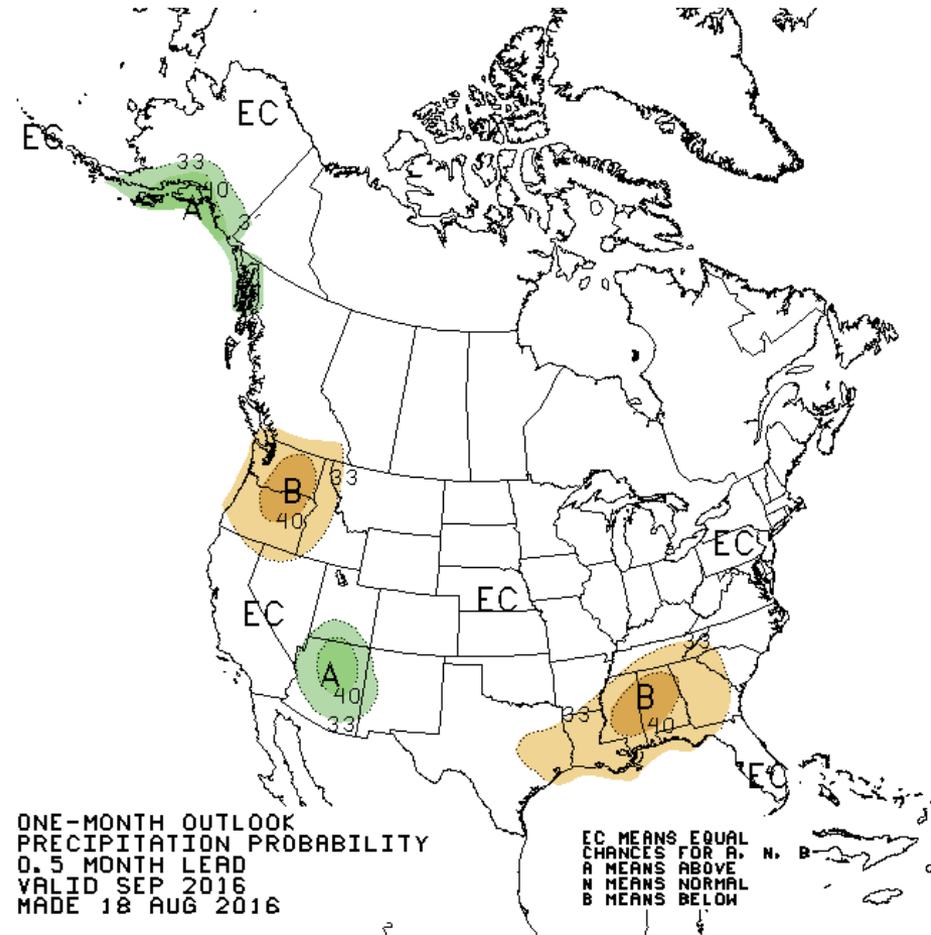
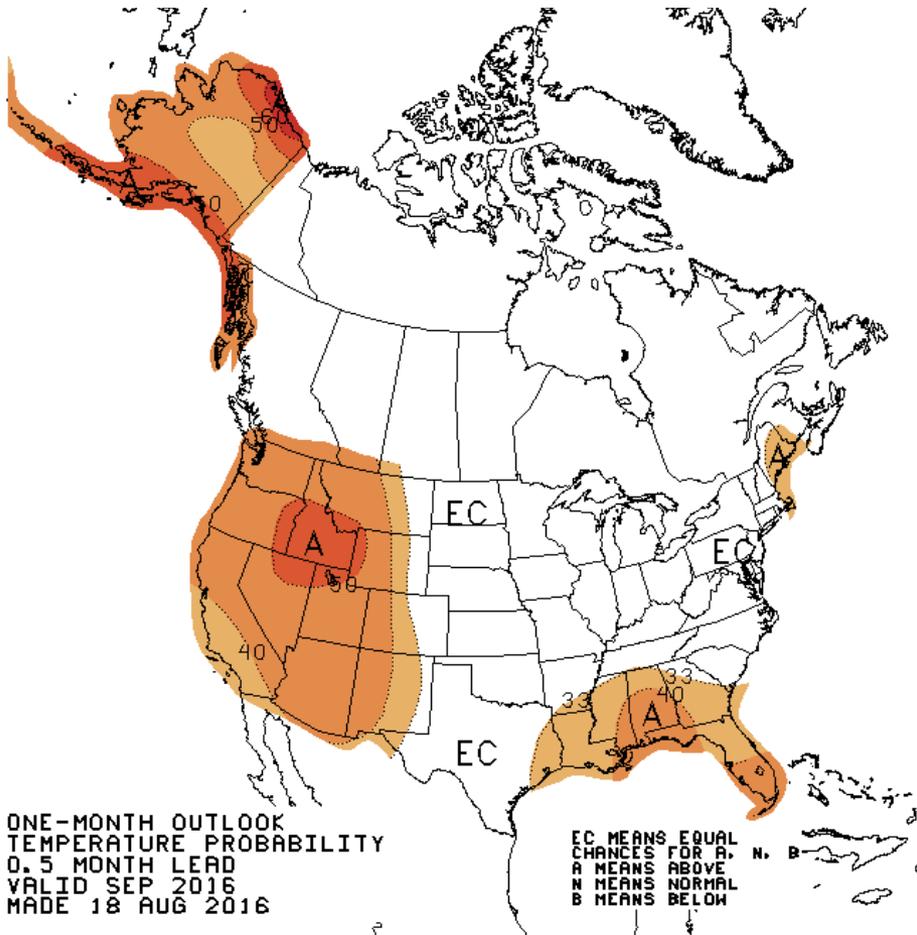


- Sea surface temperatures
 - Below normal SSTs across much of the central & eastern equatorial Pacific
 - Above normal SSTs off coast of southern California/Baja, and most of Alaska
 - La Niña Watch in place
- ENSO forecast
 - ENSO is in its “Neutral” phase
 - A transition to weak La Niña event is anticipated during the autumn & winter 2016-17
 - Borderline or weak La Niña expected during autumn/winter 2016-17

Monthly Forecast (September)

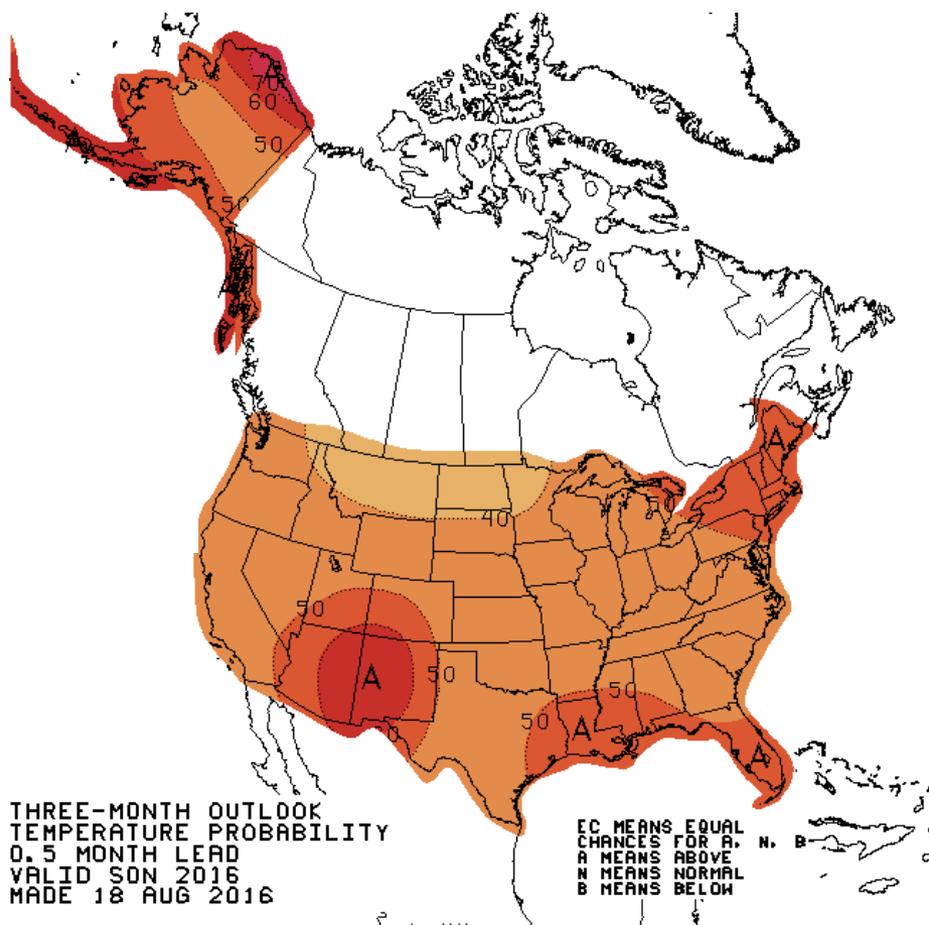
September Average Temperature Probability

September Total Precipitation Probability

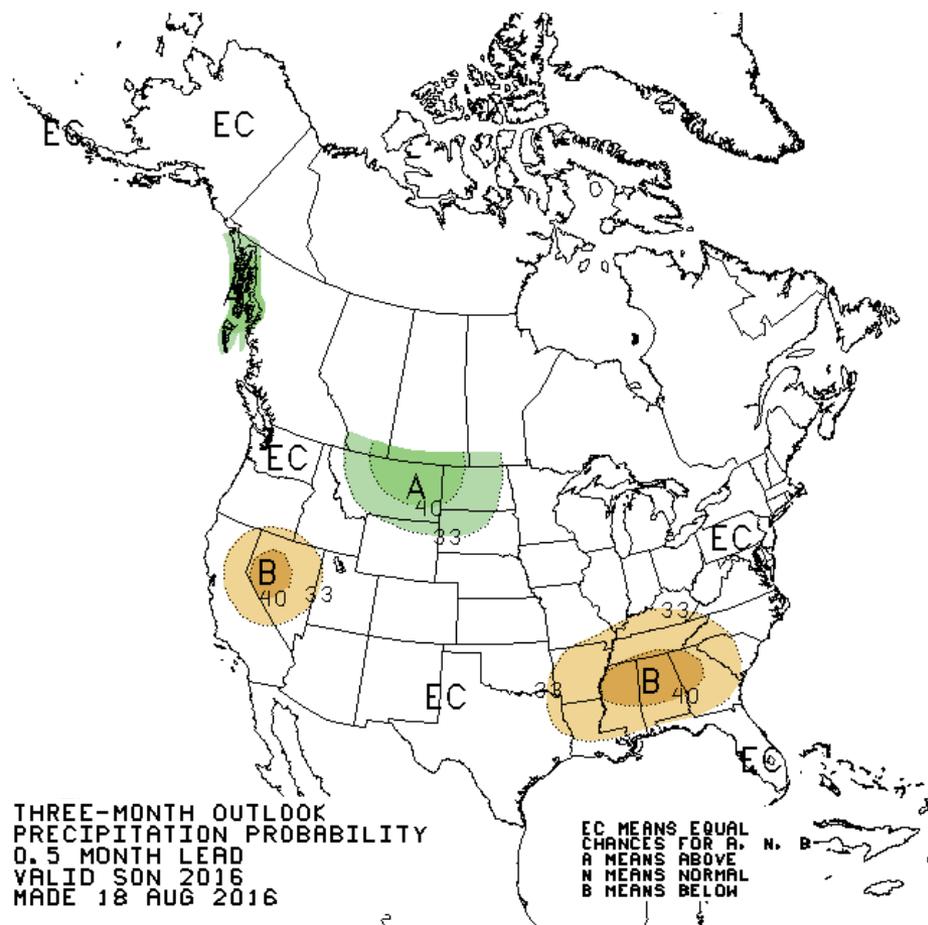


Seasonal Forecast (Sep–Oct–Nov)

Sep-Oct-Nov Average Temperature Probability



Sep-Oct-Nov Total Precipitation Probability

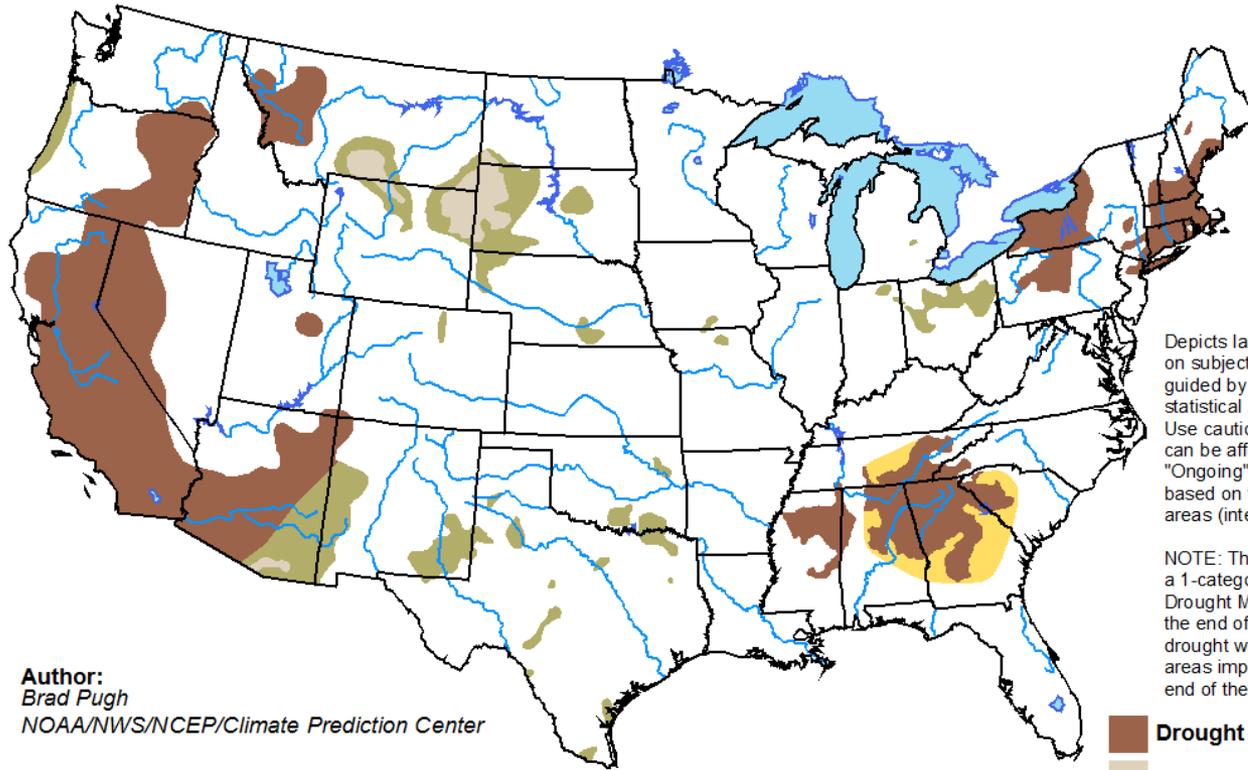


U.S. Drought Outlook

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for August 18 - November 30, 2016

Released August 18, 2016

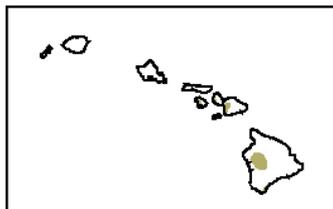
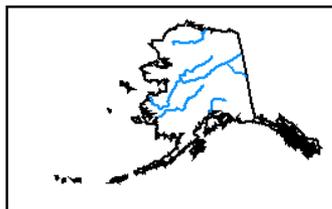


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Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan 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).

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



<http://go.usa.gov/3eZ73>



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

Northeast Regional Climate Center: <http://www.nrcc.cornell.edu/>

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

Climate Portal: www.climate.gov

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