

Massachusetts Drought Task Force Meeting NWS Update

National Weather Service

Thursday September 9th, 2016

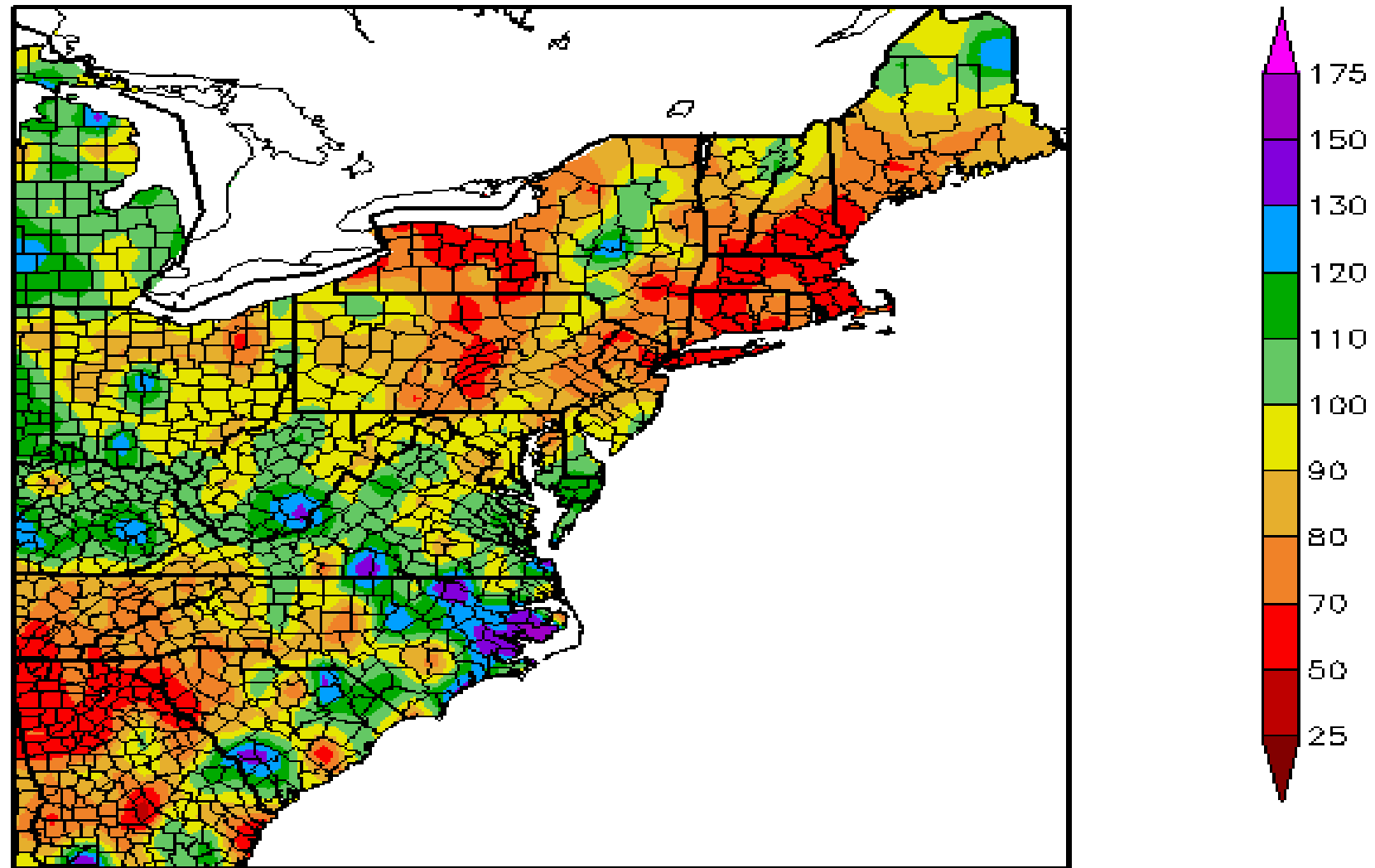
Alan Dunham, Hydrologic Program Leader



**National Weather Service
Boston, MA**

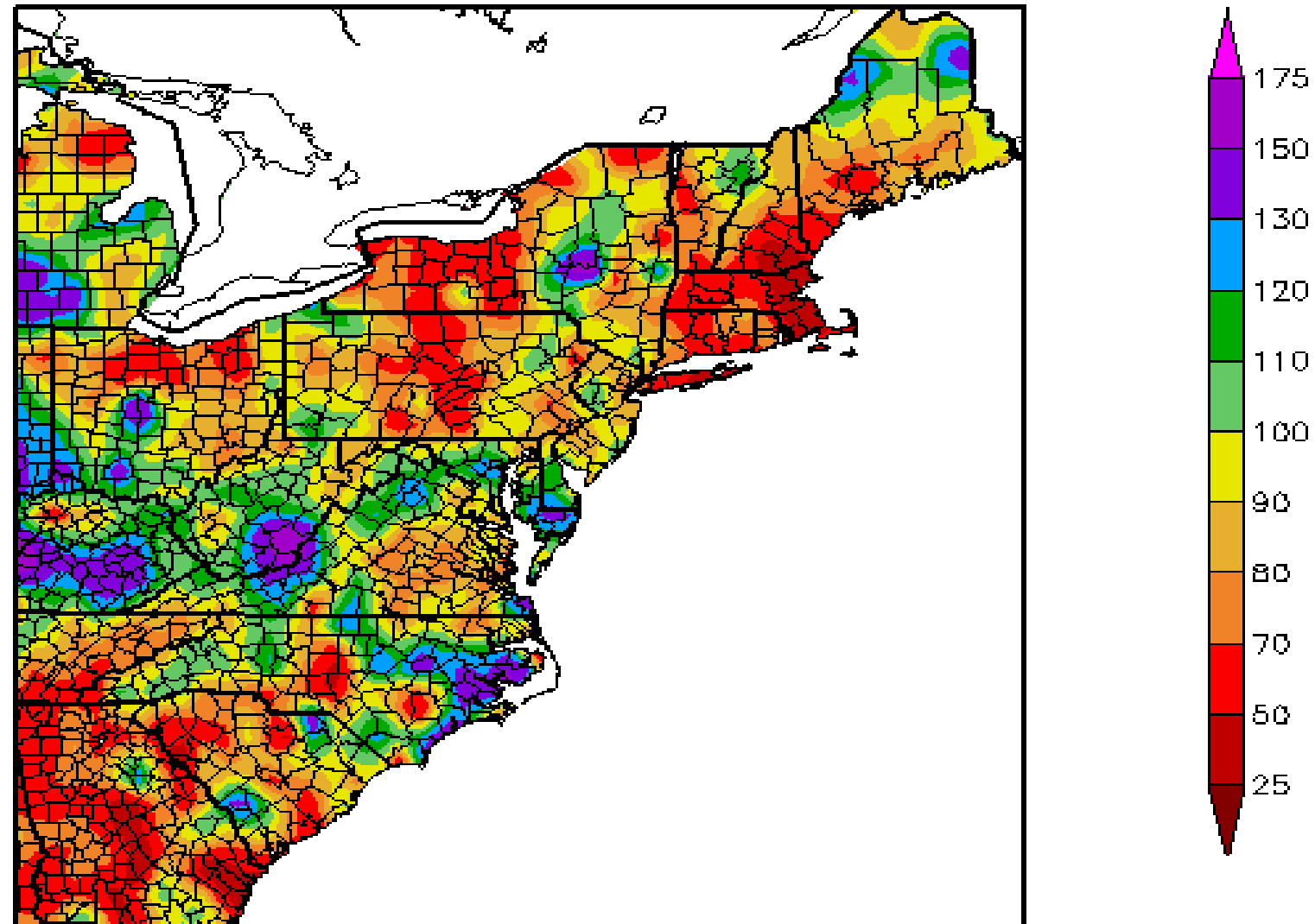
6 Month Percent of Normal

Percent of Normal Precipitation (%)
3/6/2016 – 9/5/2016



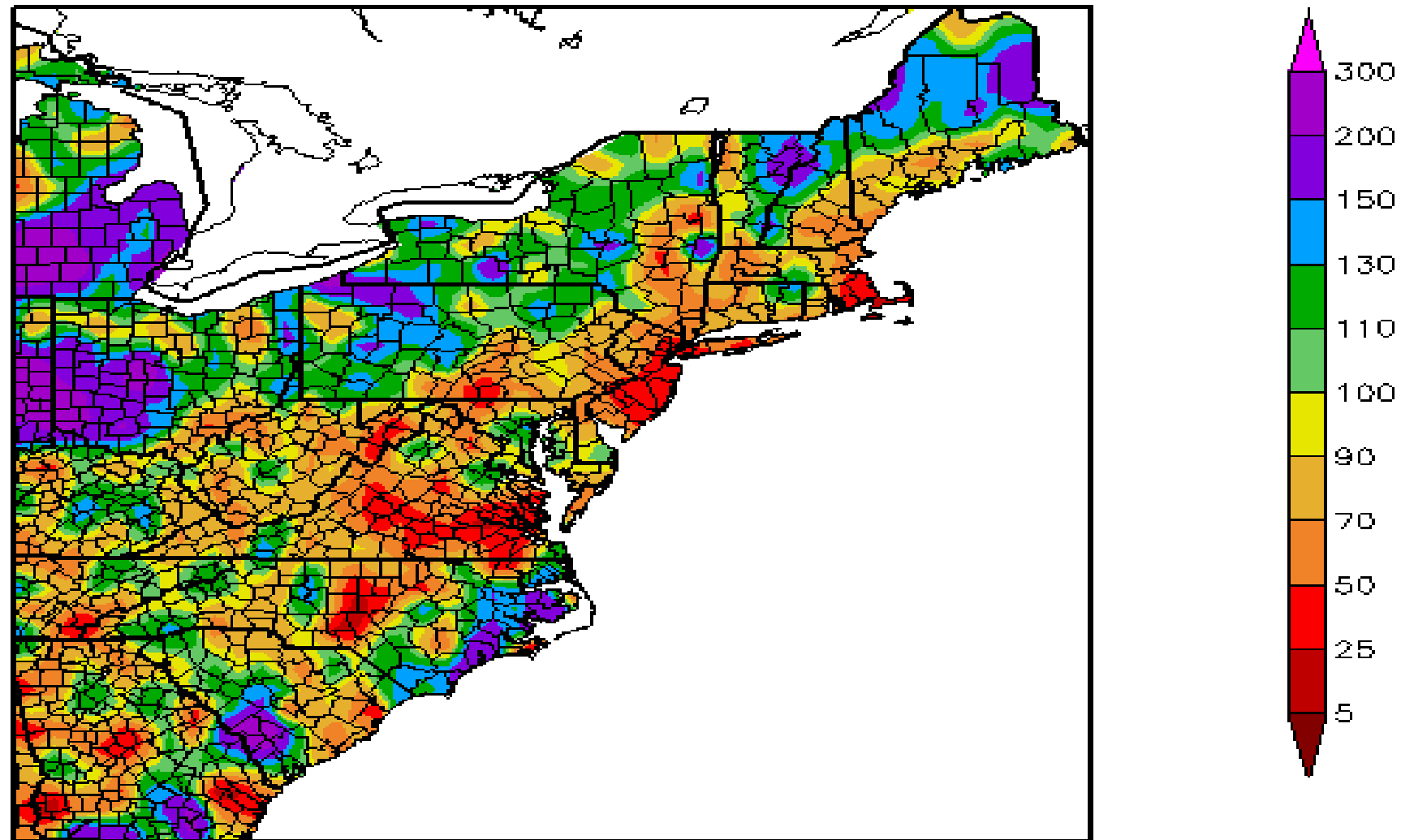
90 day Percent of Normal

Percent of Normal Precipitation (%)
6/8/2016 – 9/5/2016



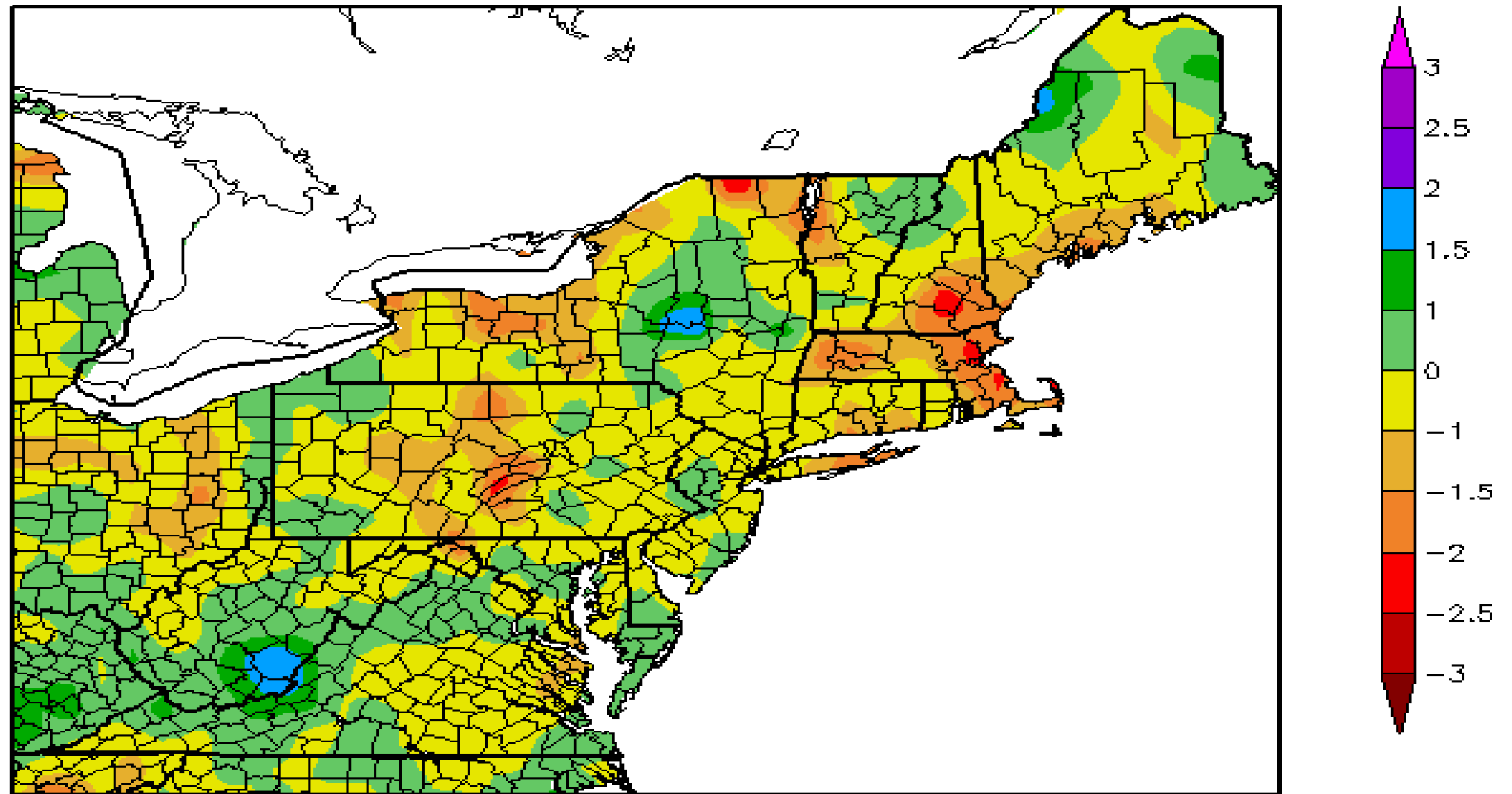
30 Day Percent of Normal

Percent of Normal Precipitation (%)
8/7/2016 – 9/5/2016



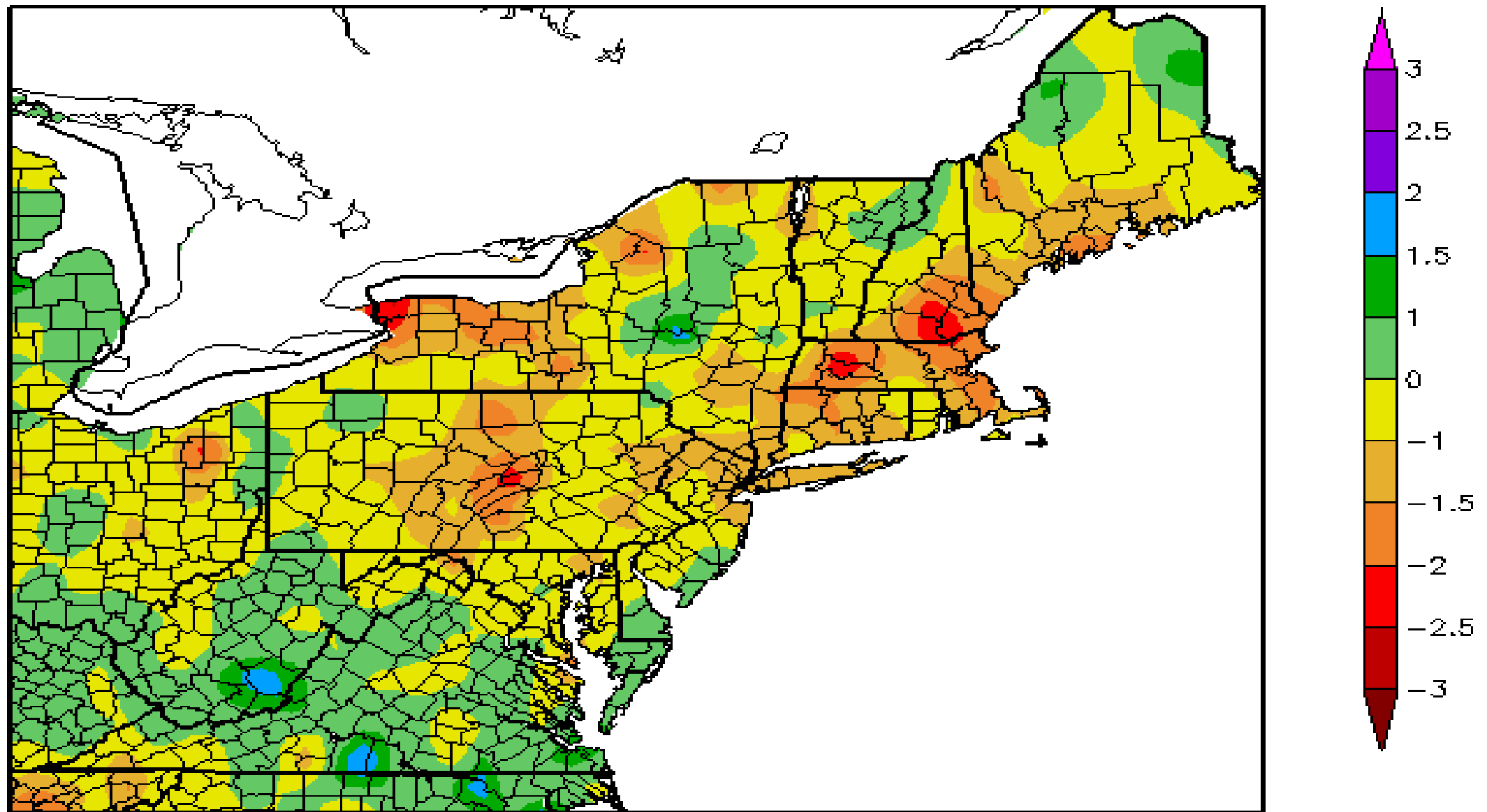
3 Month SPI through 09/9/16

90 Day SPI
6/9/2016 – 9/6/2016



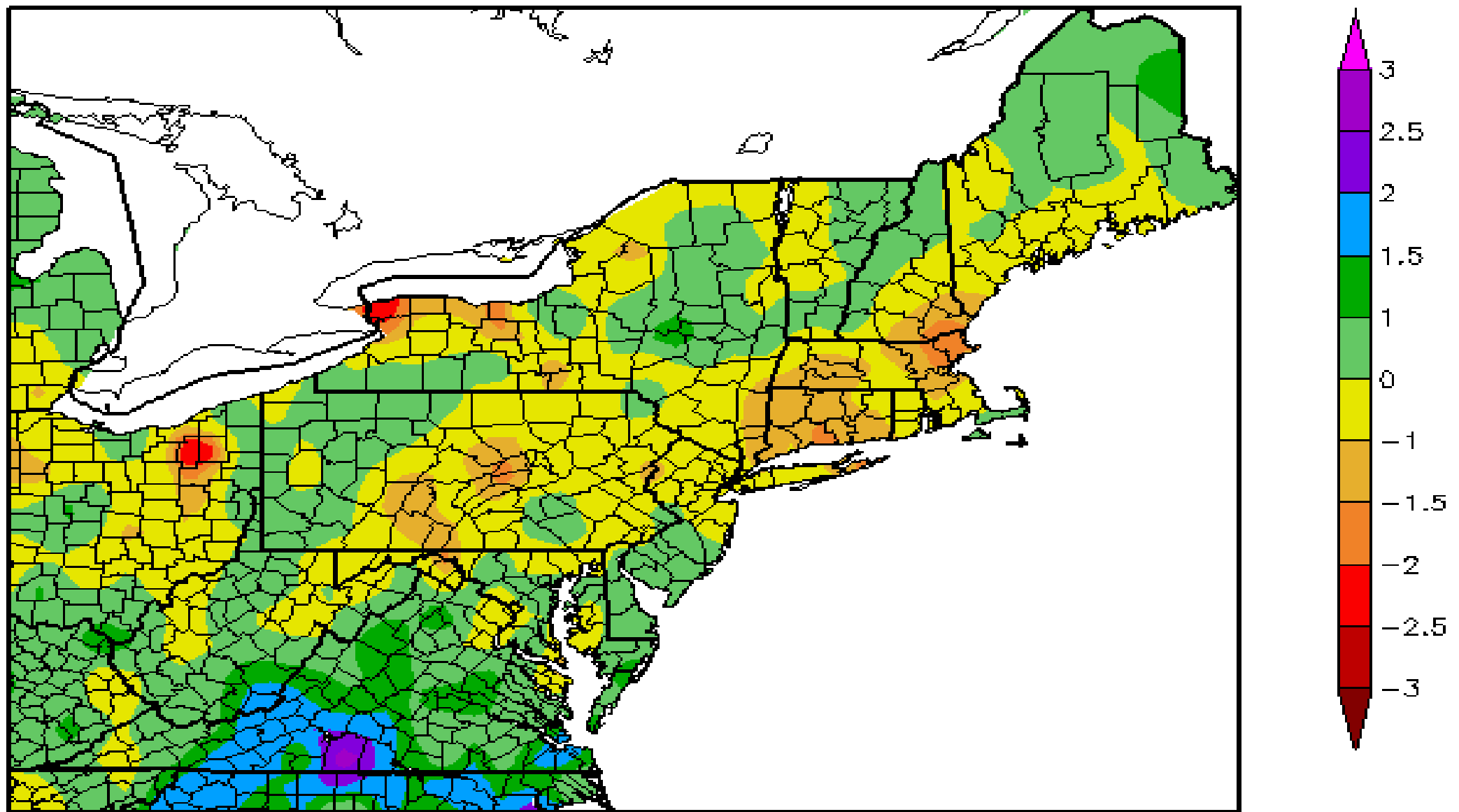
6 Month SPI through 09/6/16

6 Month SPI
3/7/2016 - 9/6/2016

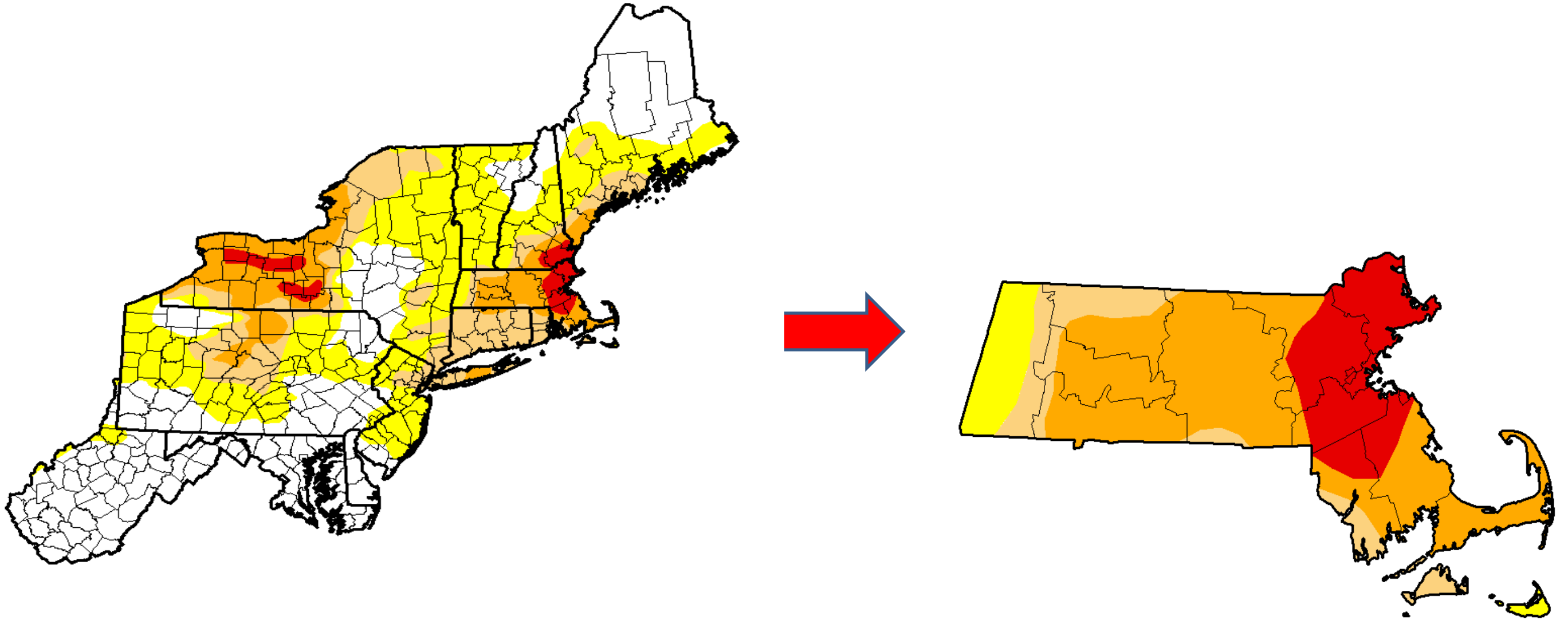


12 Month SPI through 09/6/16

12 Month SPI
9/7/2015 - 9/6/2016

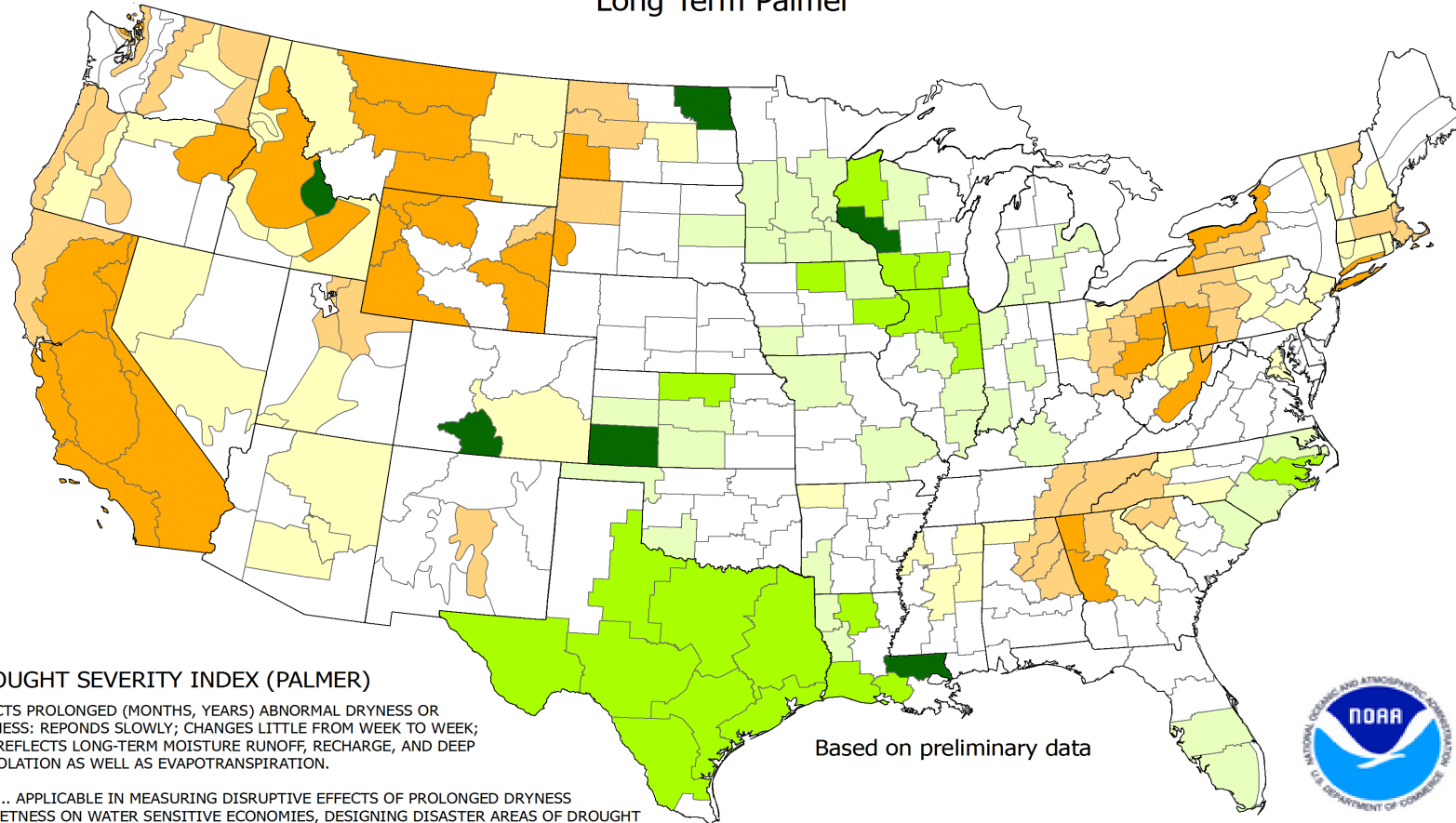


U.S. Drought Monitor 08/30/16



Palmer Drought Severity Index (PDSI)- Updated 9/03/16

Drought Severity Index by Division
Weekly Value for Period Ending Sep 03, 2016
Long Term Palmer



DROUGHT SEVERITY INDEX (PALMER)

DEPICTS PROLONGED (MONTHS, YEARS) ABNORMAL DRYNESS OR WETNESS; REponds SLOWLY; CHANGES LITTLE FROM WEEK TO WEEK; AND REFLECTS LONG-TERM MOISTURE RUNOFF, RECHARGE, AND DEEP PERCOLATION AS WELL AS EVAPOTRANSPIRATION.

USES... APPLICABLE IN MEASURING DISRUPTIVE EFFECTS OF PROLONGED DRYNESS OR WETNESS ON WATER SENSITIVE ECONOMIES, DESIGNING DISASTER AREAS OF DROUGHT OR WETNESS; AND REFLECTING THE GENERAL LONG-TERM STATUS OF WATER SUPPLIES IN AQUIFERS, RESERVOIRS AND STREAMS.

LIMITATIONS... IS NOT GENERALLY INDICATIVE OFFSHORT-TERM (FEW WEEKS) STATUS OF DROUGHT OR WETNESS SUCH AS FREQUENTLY AFFECTS CROPS AND FIELD OPERATIONS (THIS IS INDICATED BY THE CROP MOISTURE INDEX).

Based on preliminary data



- | | |
|-----------------------------------|--------------------------------------|
| ■ -4.0 or less (Extreme Drought) | ■ +2.0 to +2.9 (Unusual Moist Spell) |
| ■ -3.0 to -3.9 (Severe Drought) | ■ +3.0 to +3.9 (Very Moist Spell) |
| ■ -2.0 to -2.9 (Moderate Drought) | ■ +4.0 and above (Extremely Moist) |
| □ --1.9 to +1.9 (Near Normal) | |

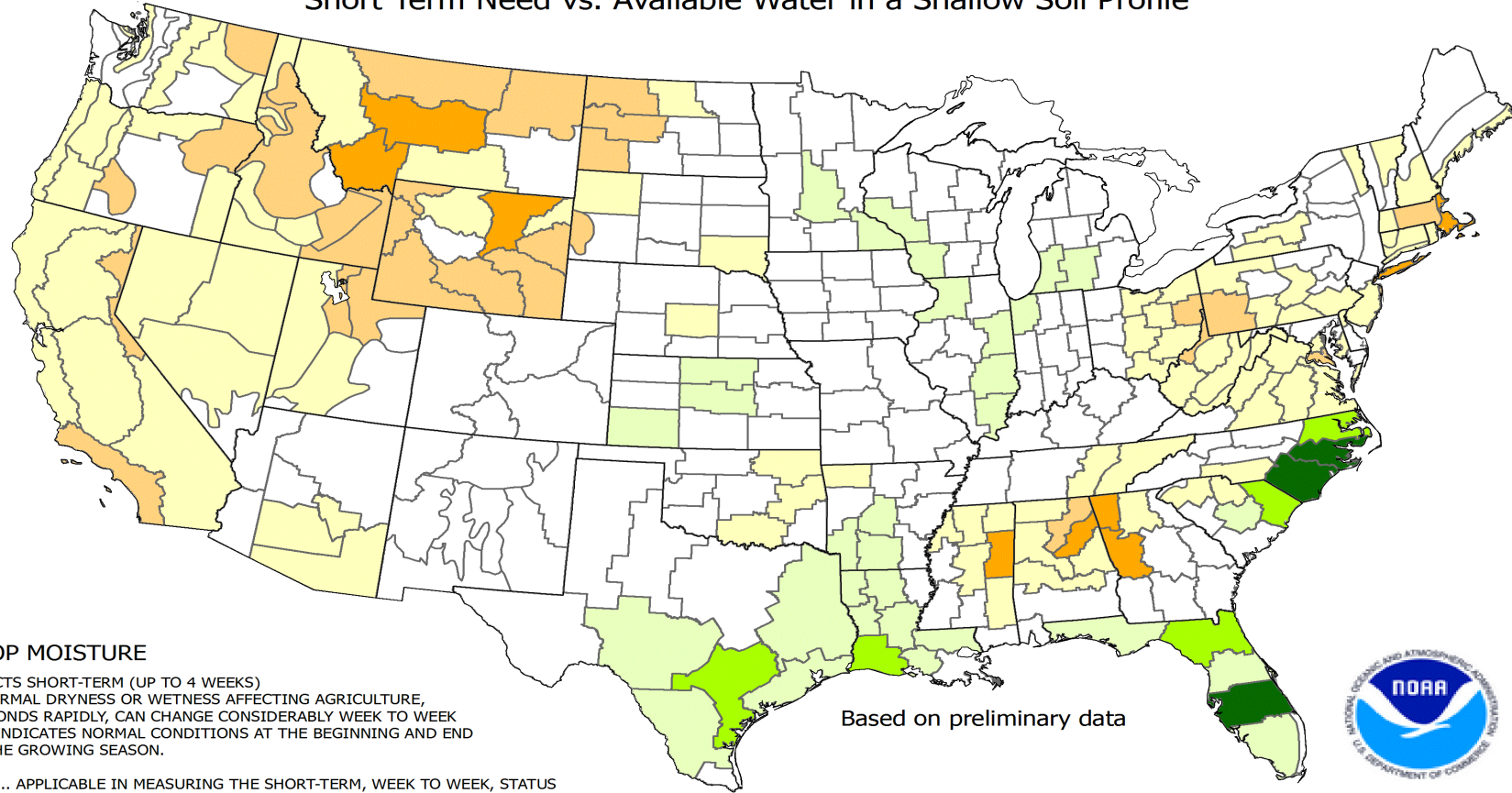
MA Drought Index: PDSI



- | | |
|-----------------------------------|--------------------------------------|
| ■ -4.0 or less (Extreme Drought) | ■ +2.0 to +2.9 (Unusual Moist Spell) |
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| ■ -2.0 to -2.9 (Moderate Drought) | ■ +4.0 and above (Extremely Moist) |
| □ --1.9 to +1.9 (Near Normal) | |

Crop Moisture Index (CMI)- Updated 9/03/16

Crop Moisture Index by Division
 Weekly Value for Period Ending Sep 03, 2016
 Short Term Need vs. Available Water in a Shallow Soil Profile



Based on preliminary data



MA Secondary Drought Index: CMI

CROP MOISTURE
 DEPICTS SHORT-TERM (UP TO 4 WEEKS) ABNORMAL DRYNESS OR WETNESS AFFECTING AGRICULTURE, RESPONDS RAPIDLY, CAN CHANGE CONSIDERABLY WEEK TO WEEK AND INDICATES NORMAL CONDITIONS AT THE BEGINNING AND END OF THE GROWING SEASON.
 USES... APPLICABLE IN MEASURING THE SHORT-TERM, WEEK TO WEEK, STATUS OF DRYNESS OR WETNESS AFFECTING WARM SEASON CROPS AND FIELD OPERATIONS
 LIMITATIONS... MAY NOT BE APPLICABLE TO GERMINATING AND SHALLOW ROOTED CROPS WHICH ARE UNABLE TO EXTRACT THE DEEP OR SUBSOIL MOISTURE FROM A SHALLOW SOIL PROFILE, OR FOR COOL SEASON CROPS GROWING WHEN TEMPERATURES ARE AVERAGING BELOW ABOUT 55F. IT IS NOT GENERALLY INDICATIVE OF THE LONG-TERM (MONTHS, YEARS) DROUGHT OR WET SPELLS WHICH ARE DEPICTED BY THE DROUGHT SEVERITY INDEX.

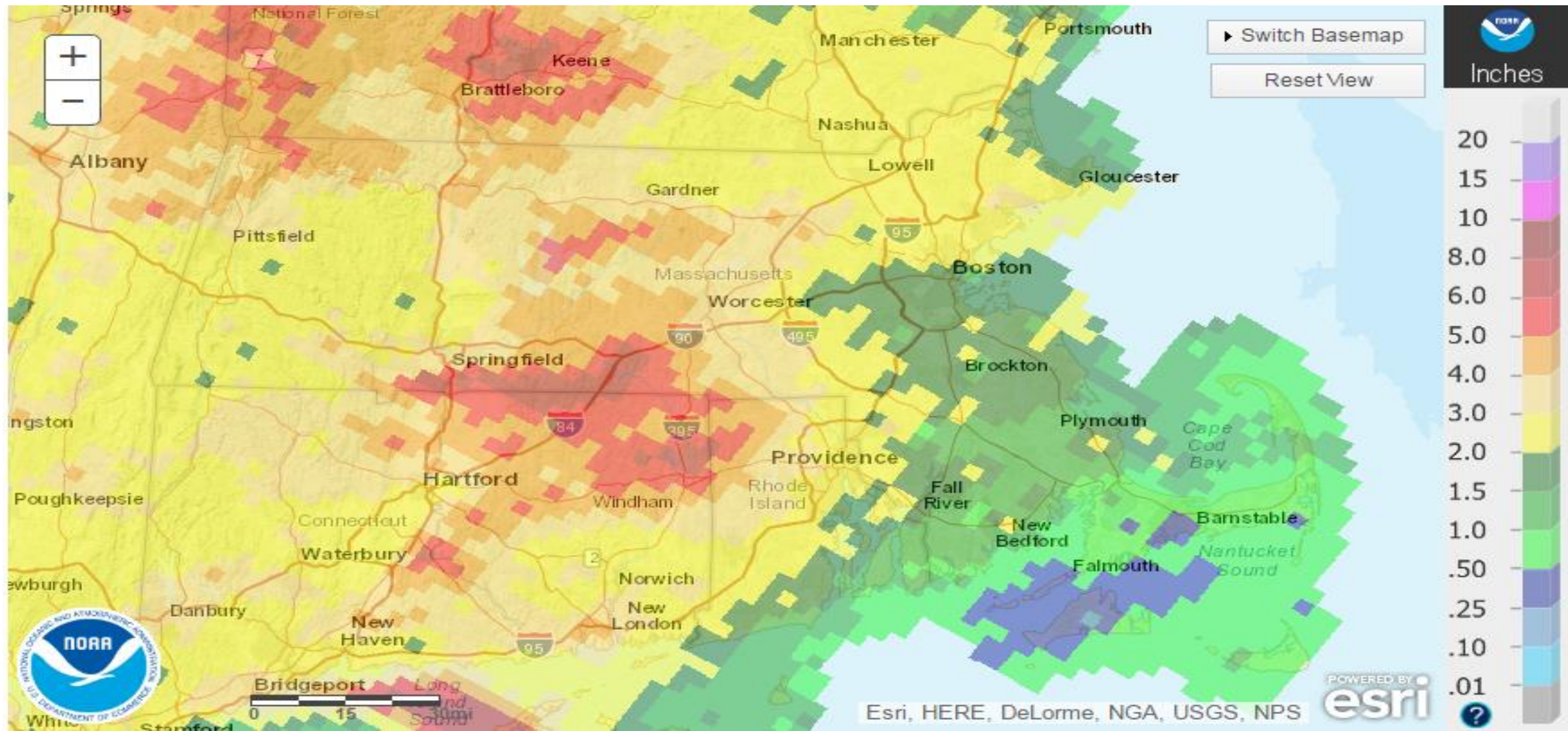
- 3.0 or less (Severly Dry)
- 2.0 to -2.9 (Excessively Dry)
- 1.0 to -1.9 (Abnormally Dry)
- 0.9 to +0.9 (Slightly Dry/Favorably Moist)
- +1.0 to +1.9 (Abnormally Moist)
- +2.0 to +3.0 (Wet)
- 3.0 and above (Excessively Wet)



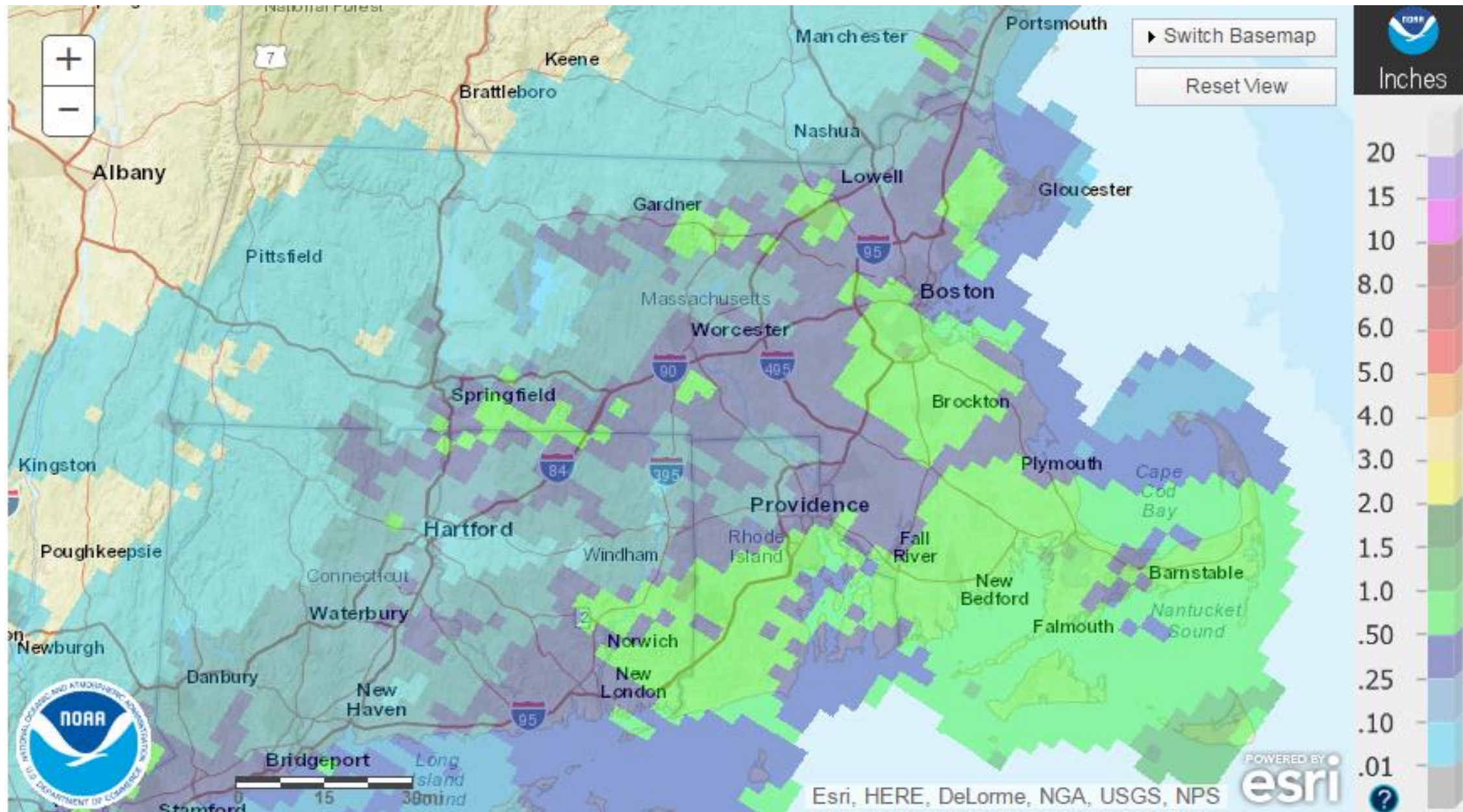
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- +2.0 to +3.0 (Wet)
- 3.0 and above (Excessively Wet)

August 2016 Rainfall

Using Radar and Real-Time Rain Gage Data

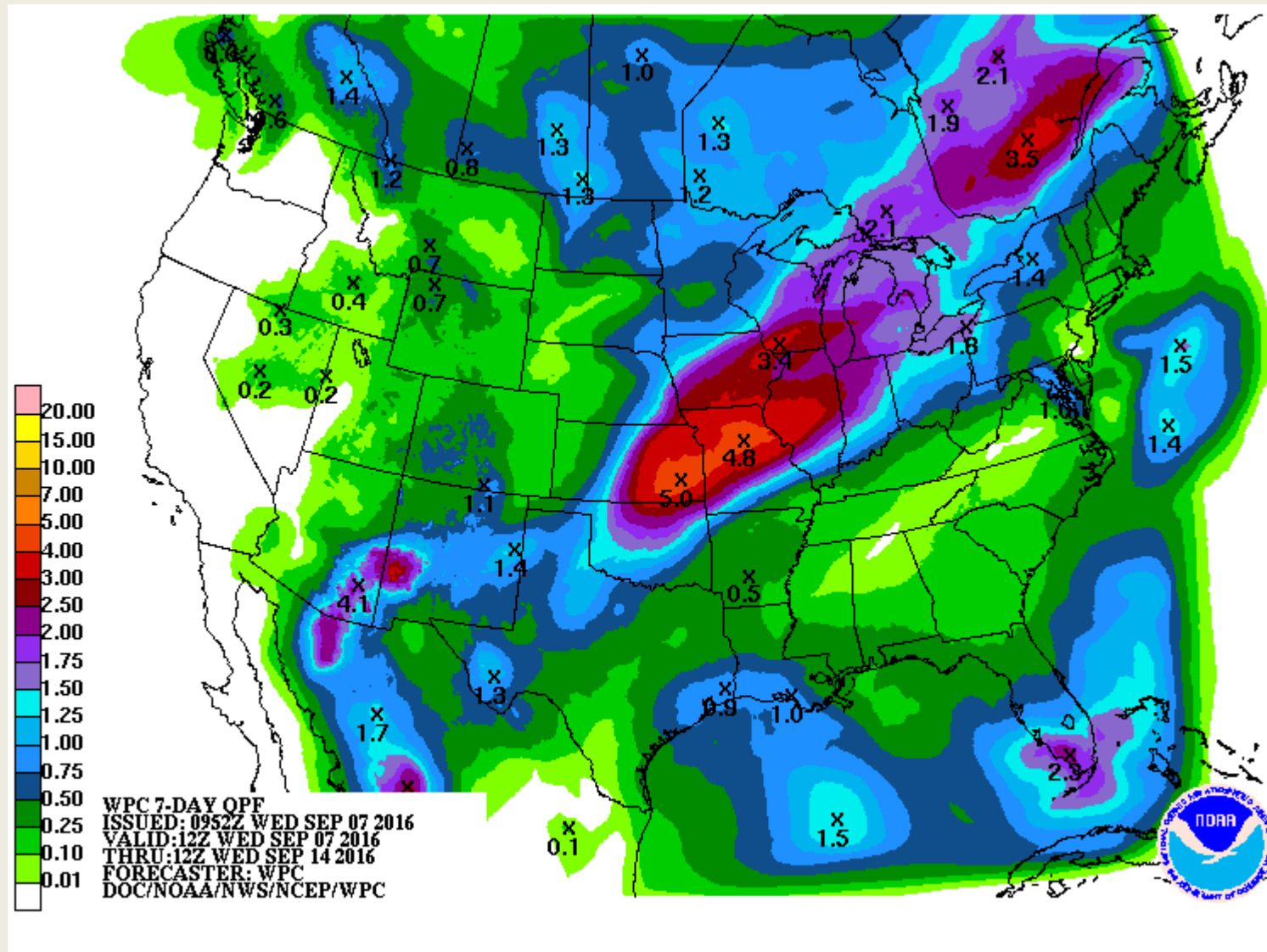


September Month-to-Date Rainfall Using Radar and Real-Time Gage Data



Forecast for the Next 7 Days

Rainfall Forecast thru 8 AM Sep 14th

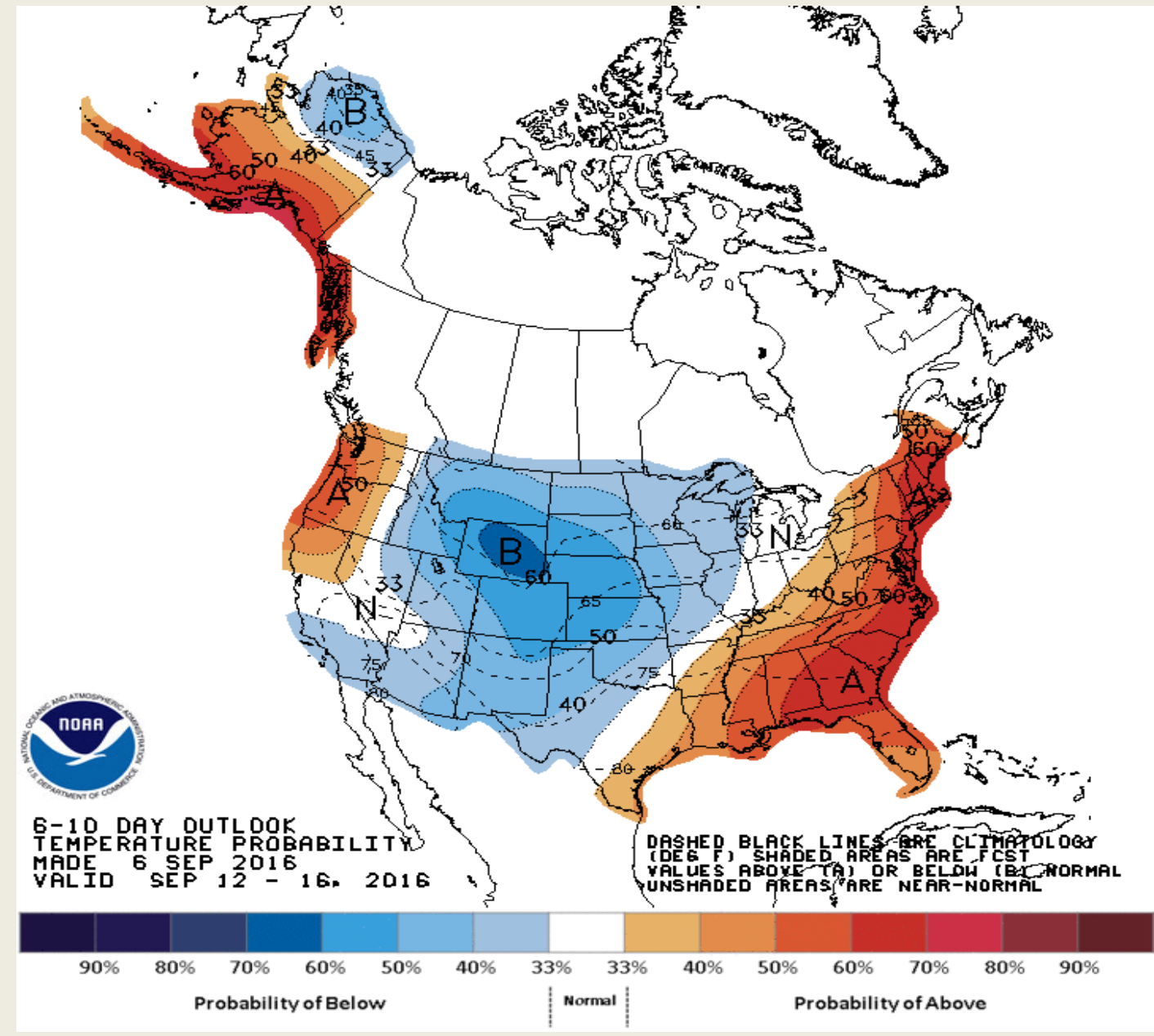
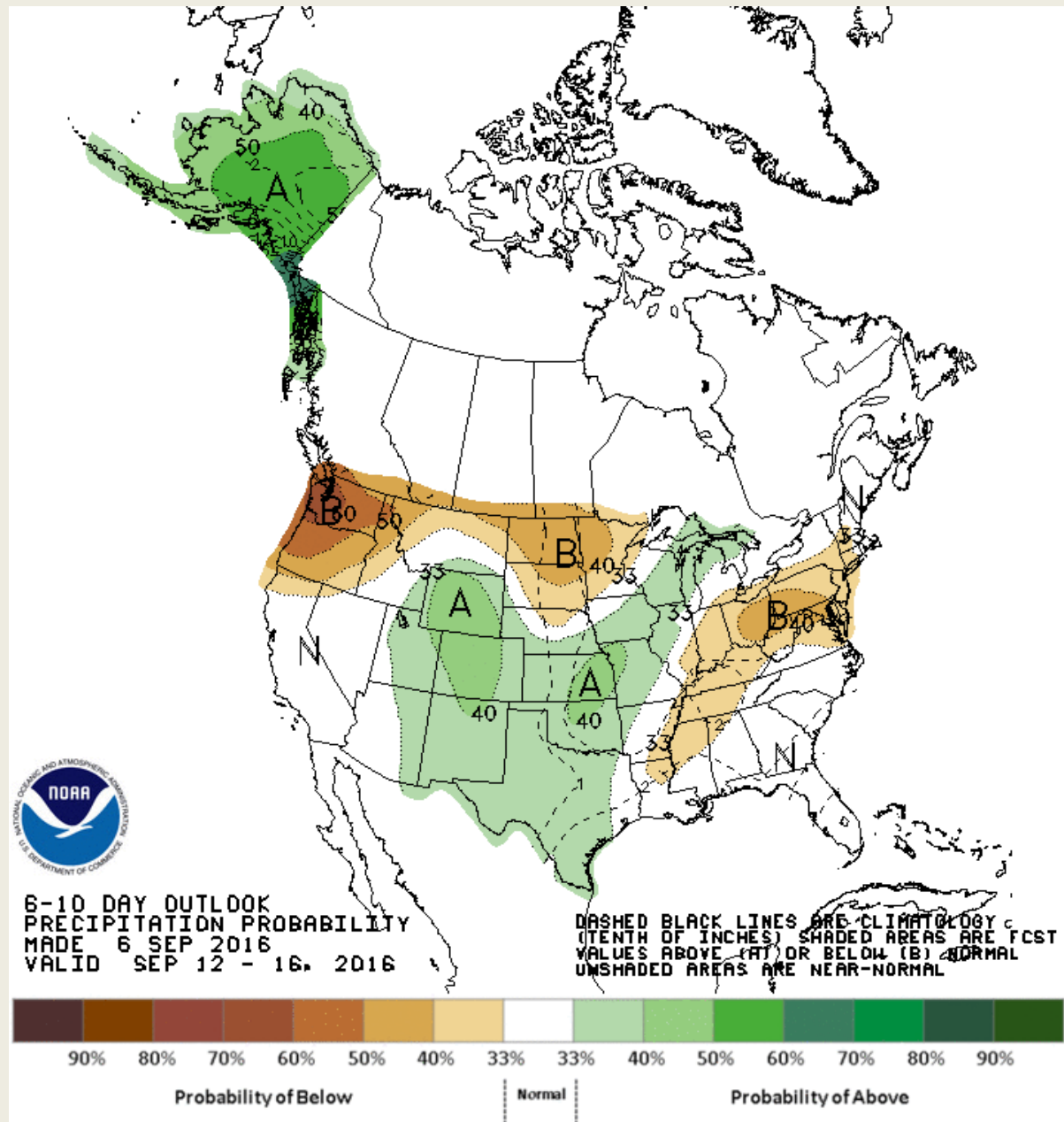


Predominant Pattern:

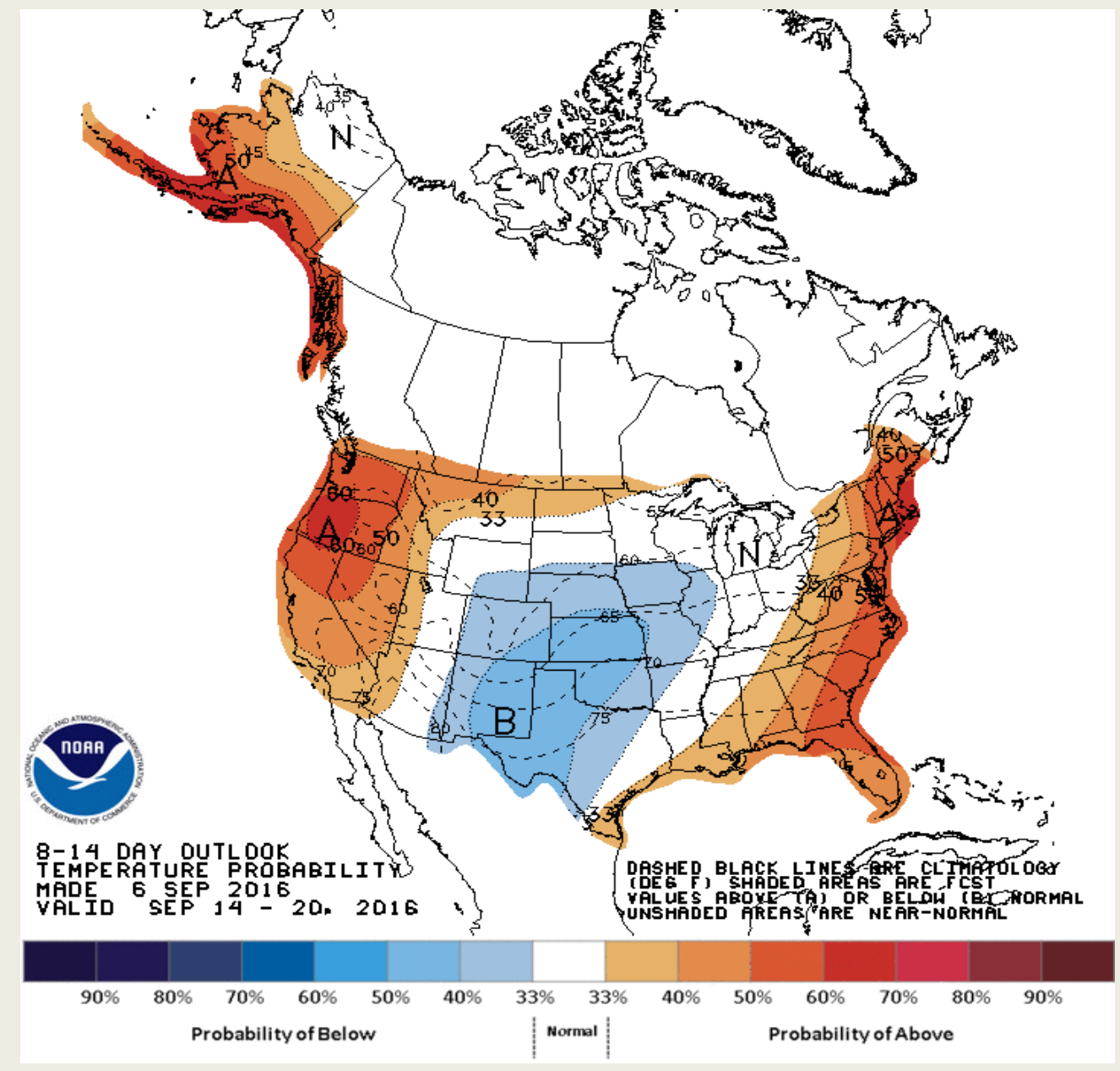
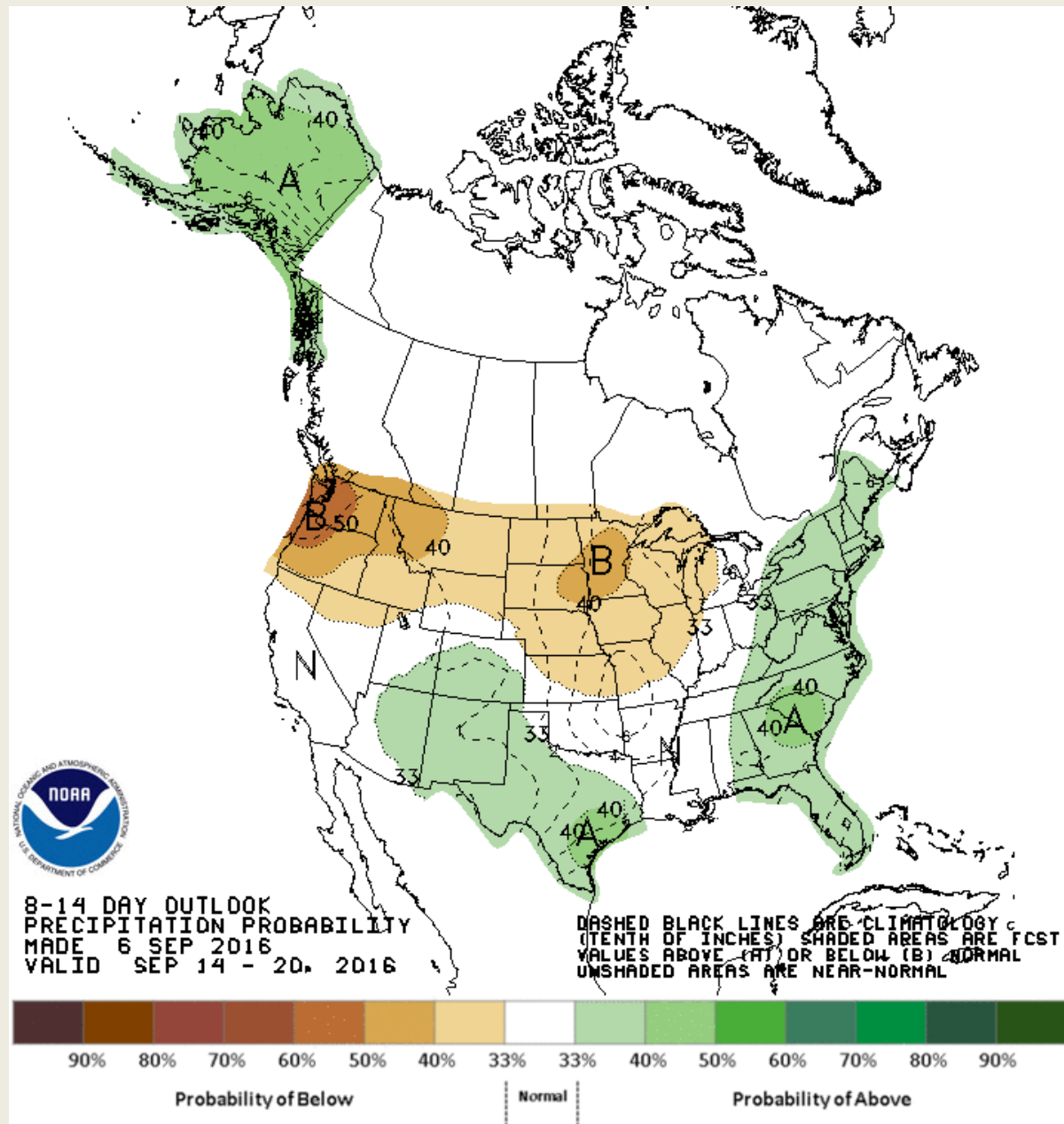
- Remnants of Hermine keep chance of showers Thursday
- *Cold front brings showers Sat night and Sun. "Potential" of widespread rain with heavier embedded showers*
- *High pressure with dry conditions Sun night through mid week.*



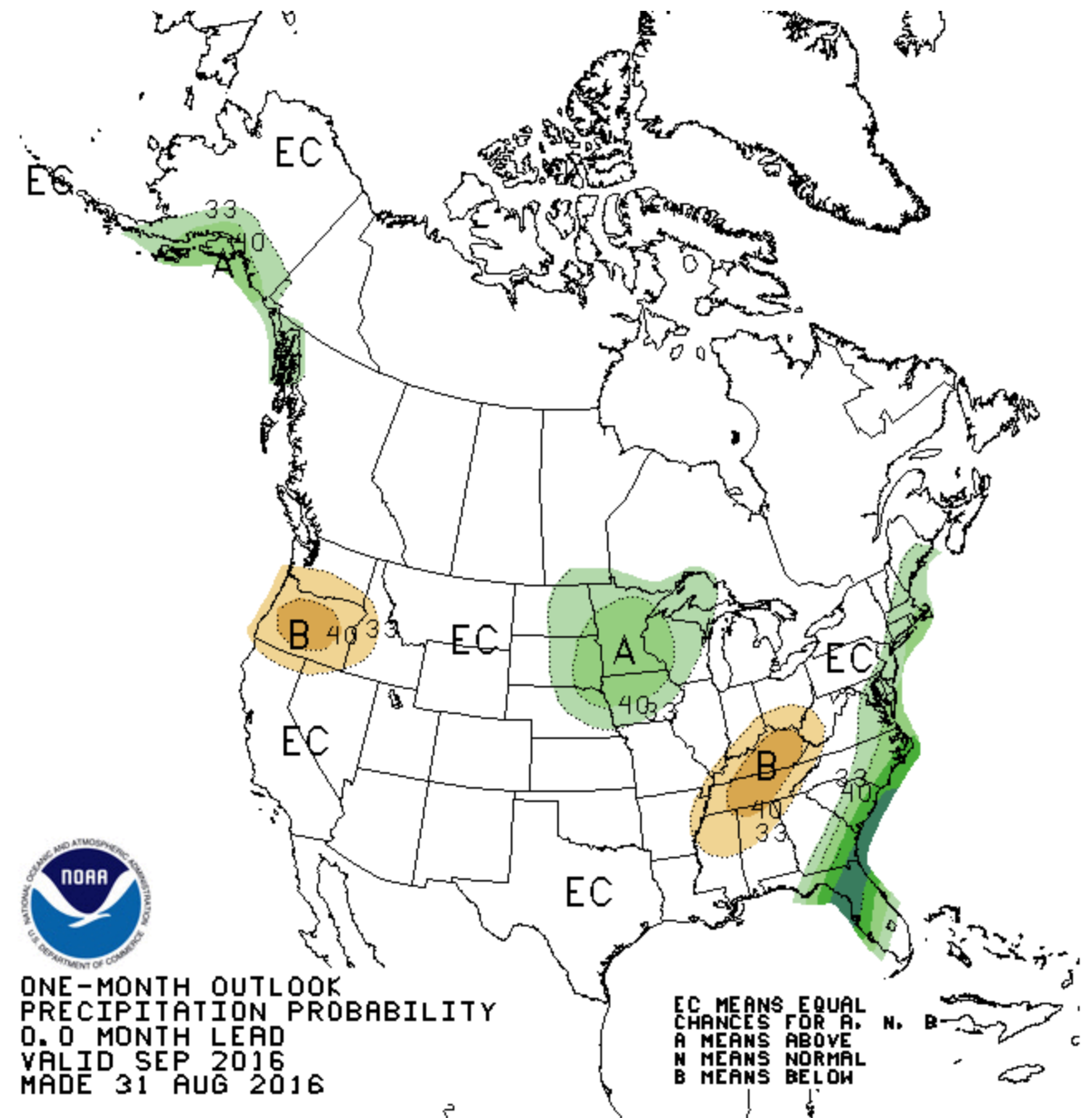
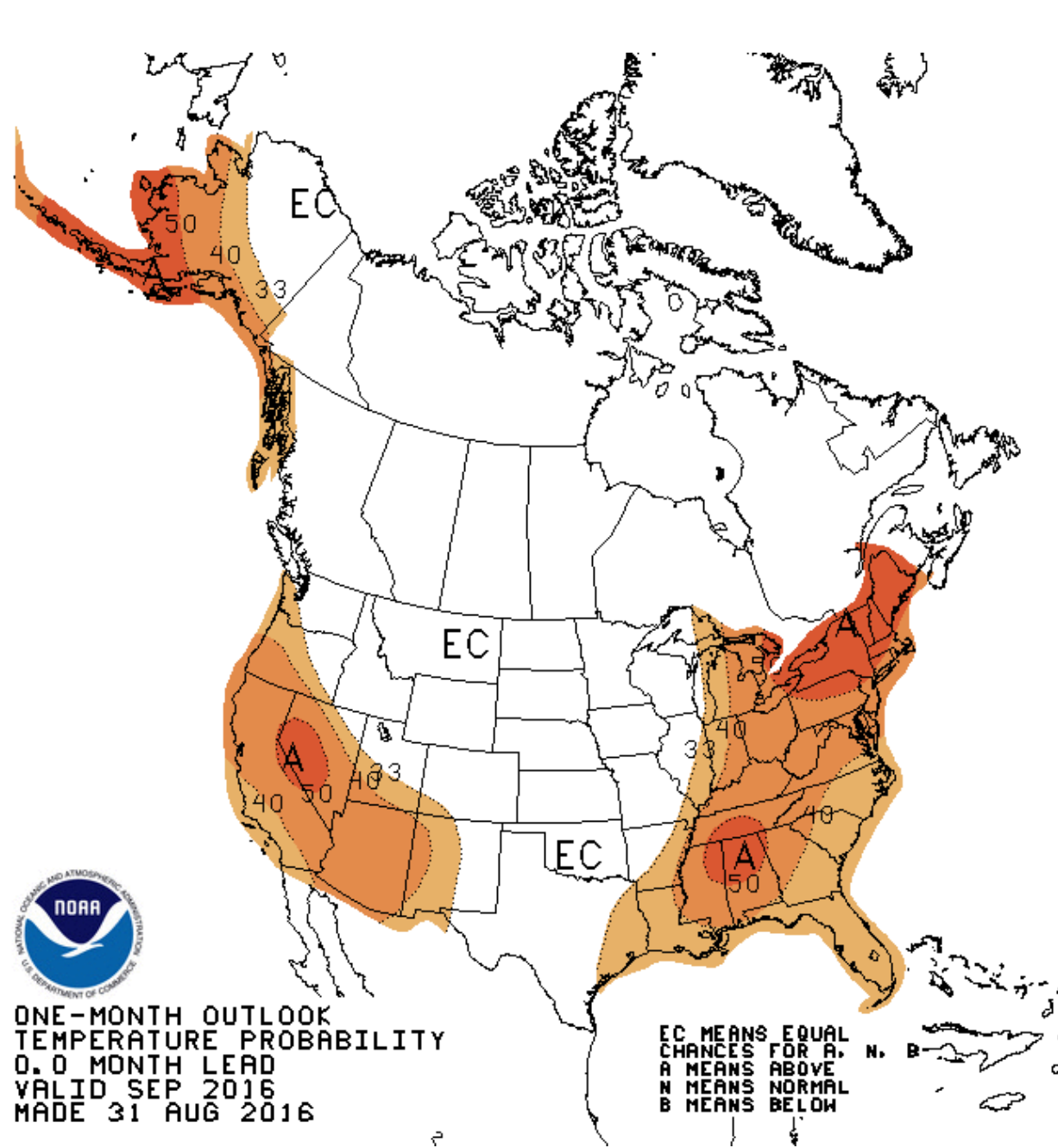
Outlook: September 12th-16th



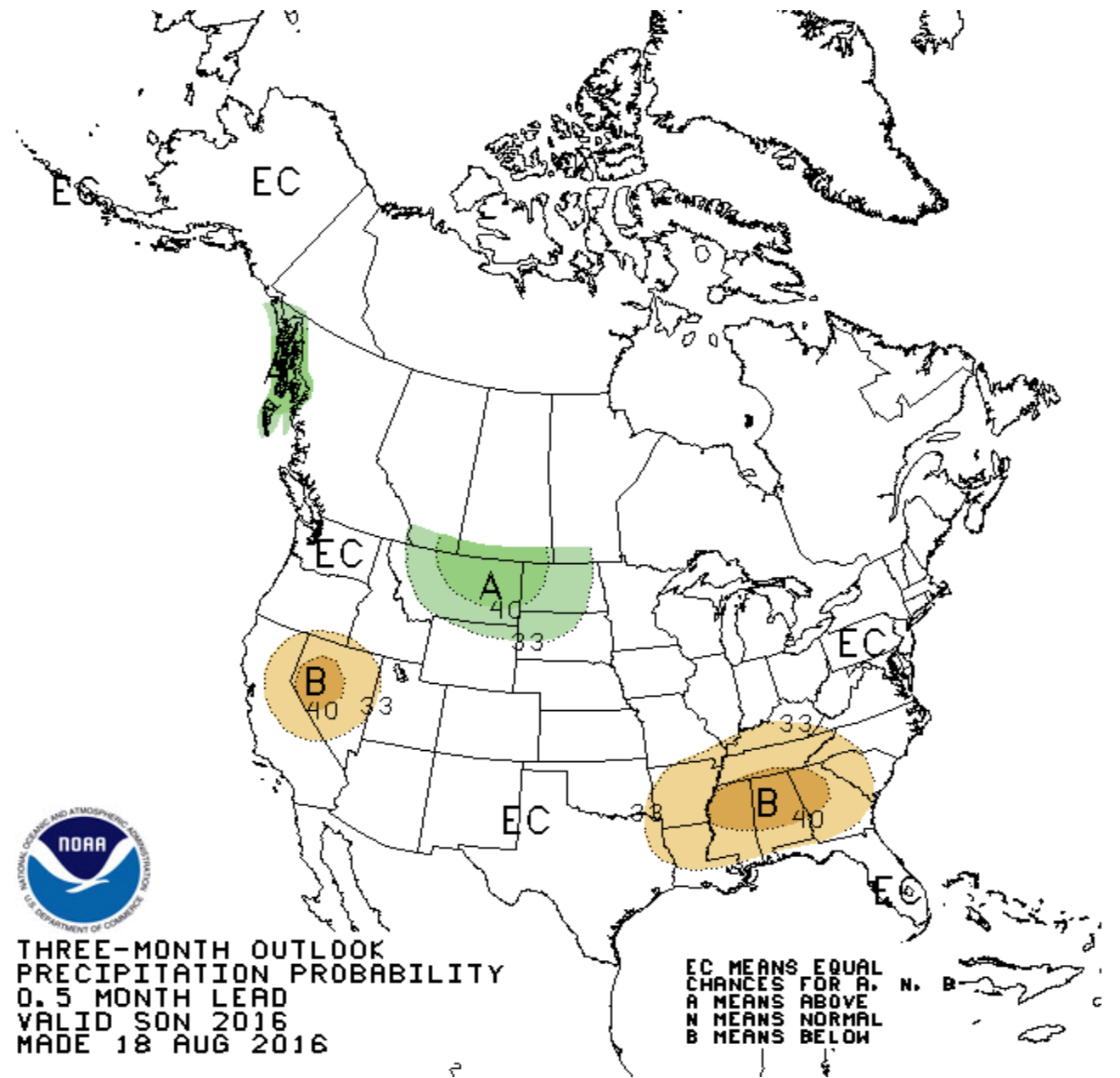
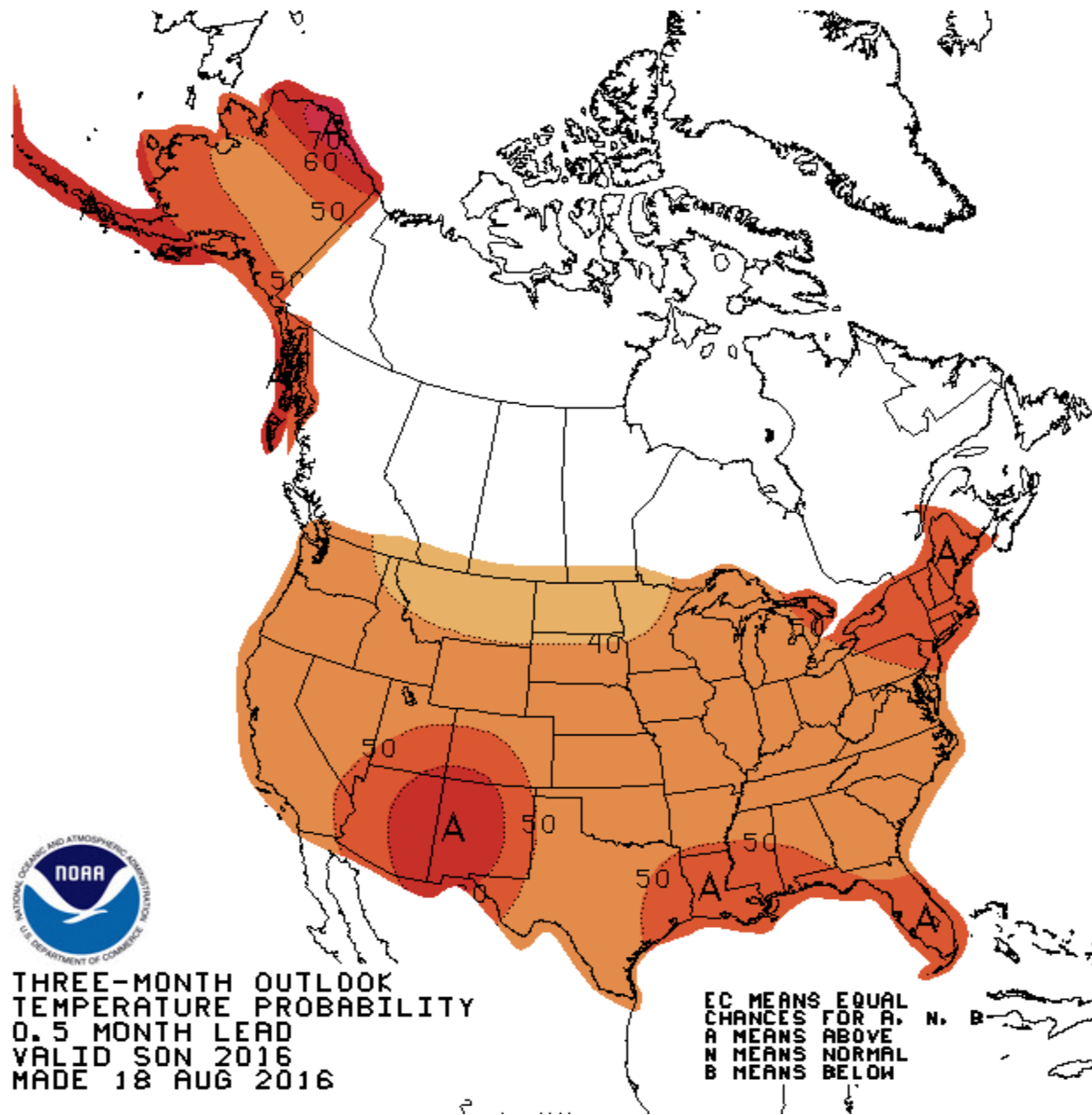
Outlook: September 14th-20th



CPC 1 Month Outlook for Sep



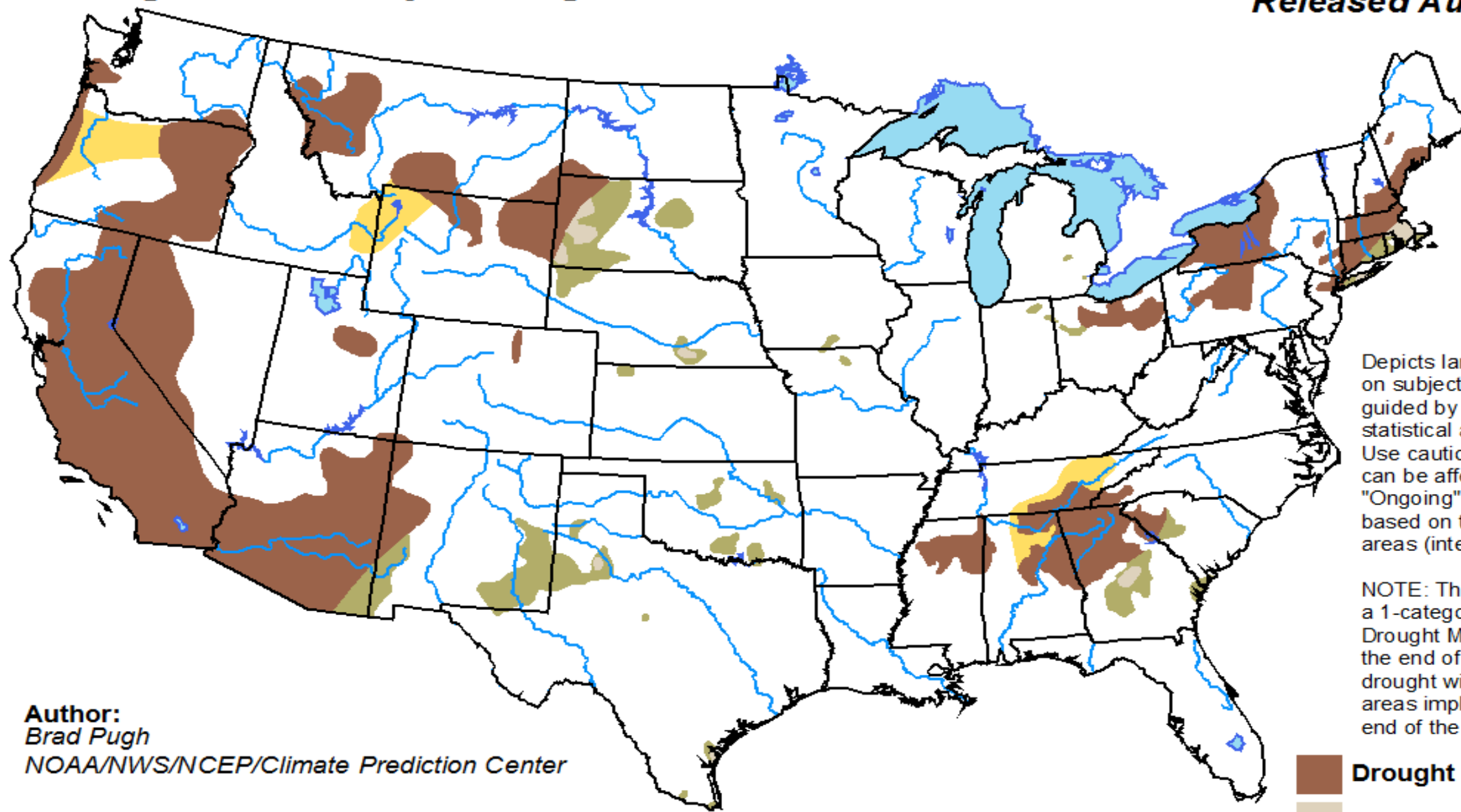
CPC 3 Month Sep-Oct



U.S. Monthly Drought Outlook

Drought Tendency During the Valid Period





Valid for September 2016
Released August 31, 2016

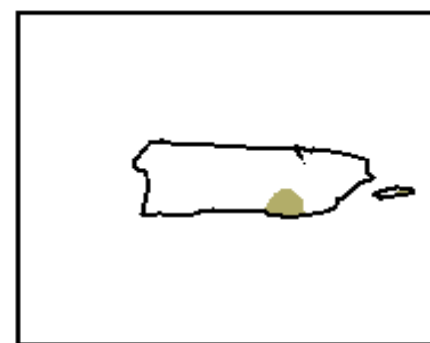
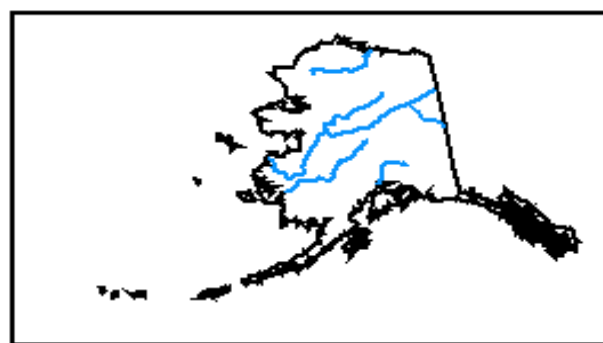


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to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

Author:
Brad Pugh
NOAA/NWS/NCEP/Climate Prediction Center

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

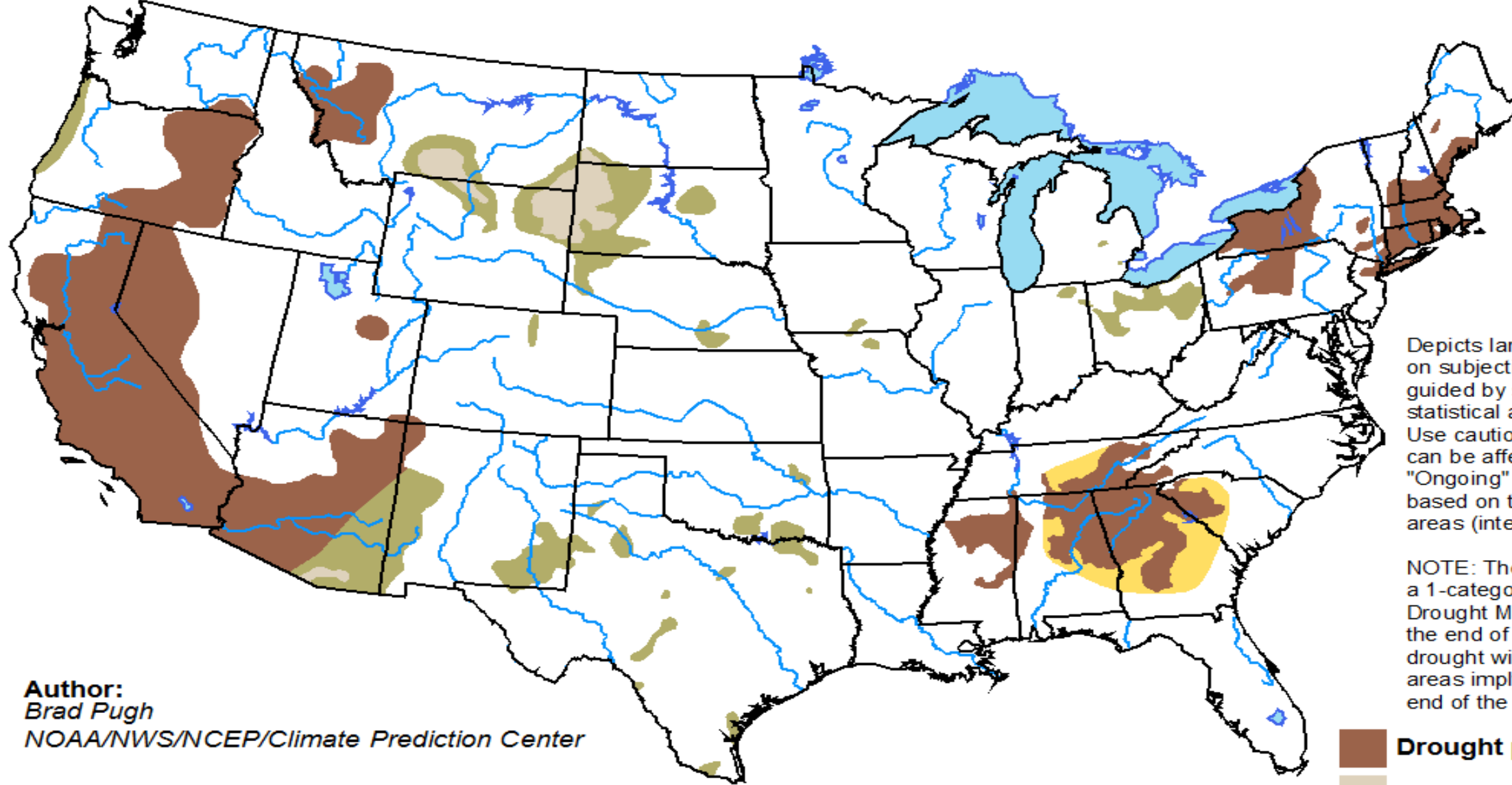


<http://go.usa.gov/3eZGd>

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period




Valid for August 18 - November 30, 2016
Released August 18, 2016

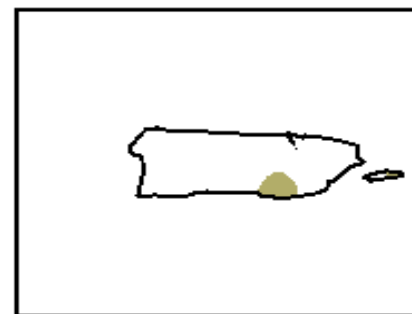
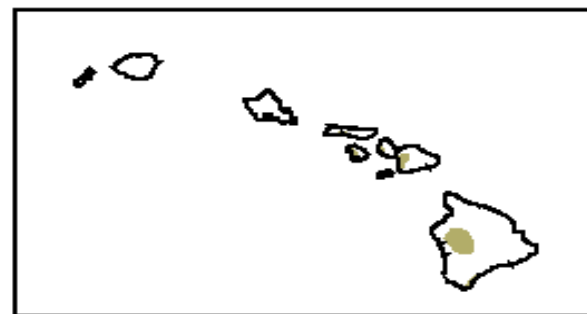
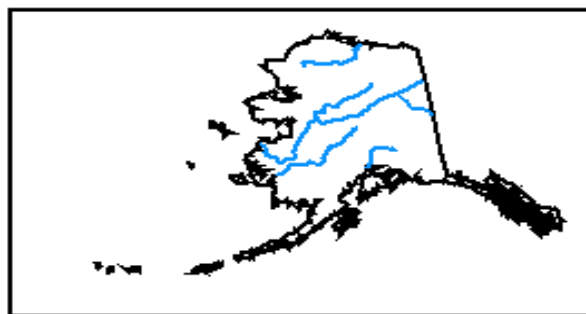


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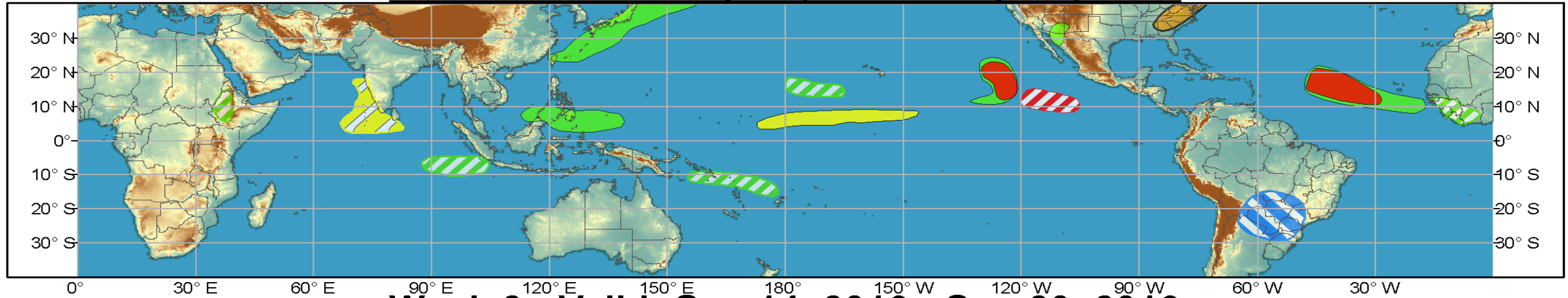
<http://go.usa.gov/3eZ73>



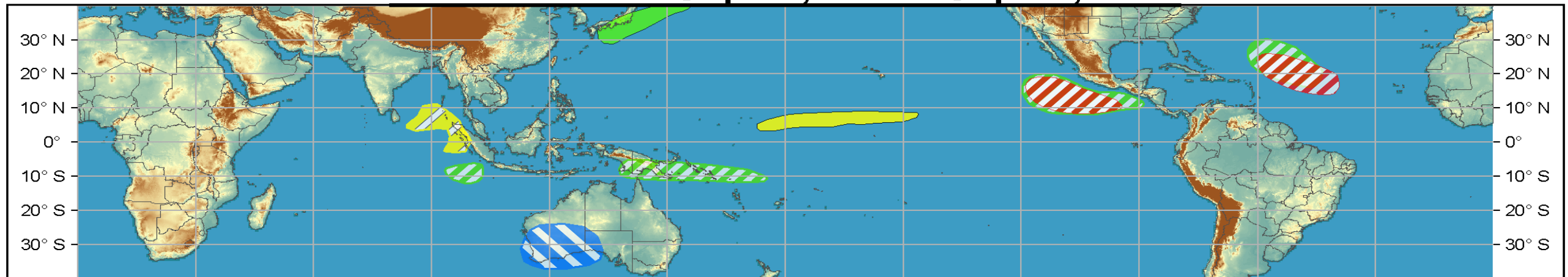
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Sep 07, 2016 - Sep 13, 2016



Week 2 - Valid: Sep 14, 2016 - Sep 20, 2016



Confidence
High Moderate

- Tropical Cyclone Formation** Development of a tropical cyclone (tropical depression - TD, or greater strength).
- Above-average rainfall** Weekly total rainfall in the upper third of the historical range.
- Below-average rainfall** Weekly total rainfall in the lower third of the historical range.
- Above-normal temperatures** 7-day mean temperatures in the upper third of the historical range.
- Below-normal temperatures** 7-day mean temperatures in the lower third of the historical range.

Produced: 09/06/2016

Forecaster: D.Harnos

Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

