

# **Massachusetts Drought Management Task Force Meeting**

## **NWS Update**

**National Weather Service**

**Thursday November 14<sup>th</sup>**

**Nicole Belk, Senior Service Hydrologist  
NWS Boston/Norton MA**

**Ed Capone, Service Coordination Hydrologist  
NWS Northeast River Forecast Center**



# October Overview

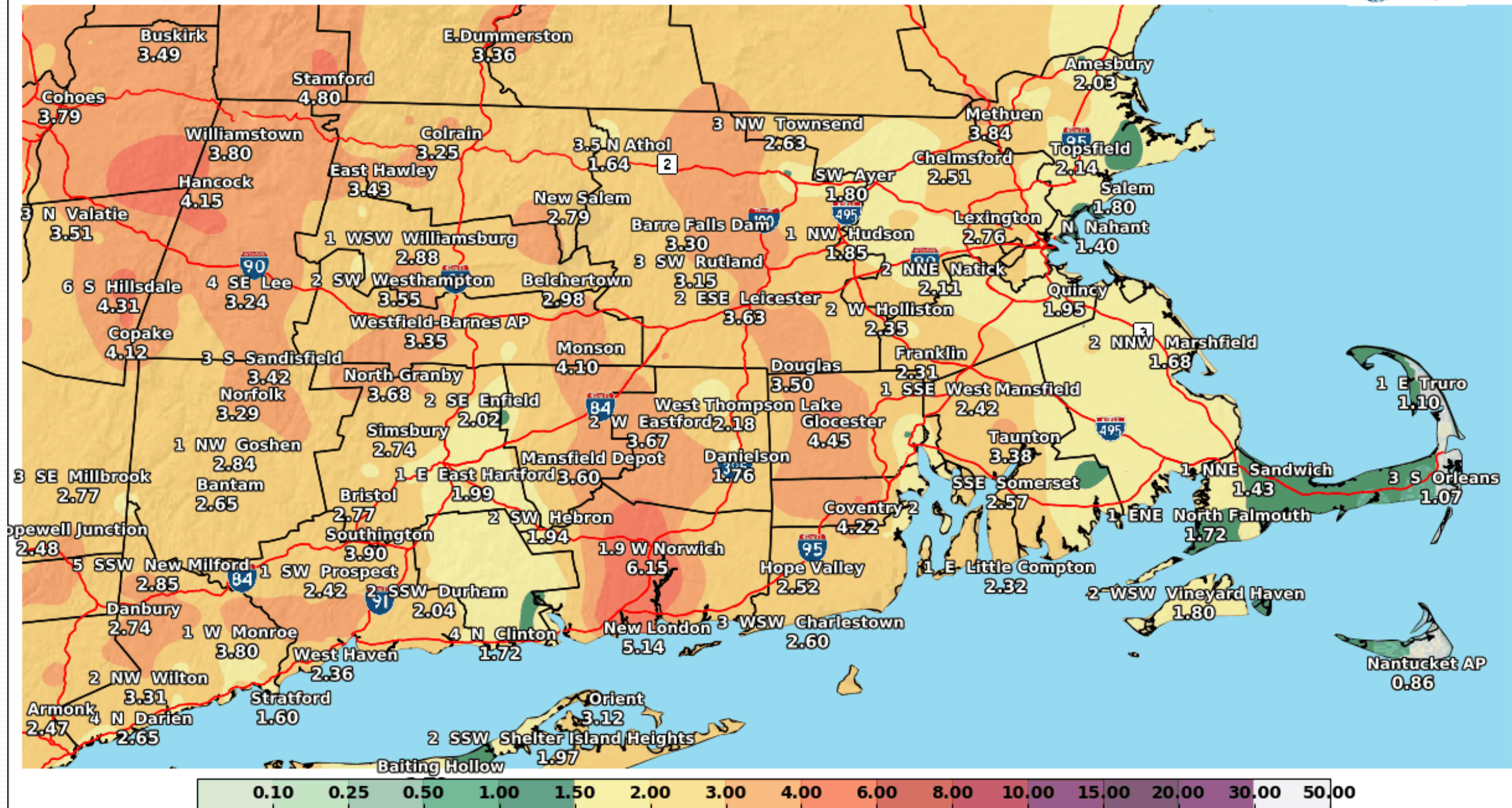
- Frequent Rain events
- Rec'd at least a trace of rain ~21 days out of 31
- Biggest rain event:
  - Oct 16<sup>th</sup>-17<sup>th</sup>
  - Intense low pressure system, damaging winds, soaking rainfall
  - 1.5" to 4" of rain for much of MA
  - 1" to 2" of rain along east coastal MA and the Cape/Islands
  - Temps- averaged 1 to 3 deg F above normal
- El Nino: Neutral



# October 16-17 Storm Total Rainfall

National Weather Service  
Boston/Norton, MA

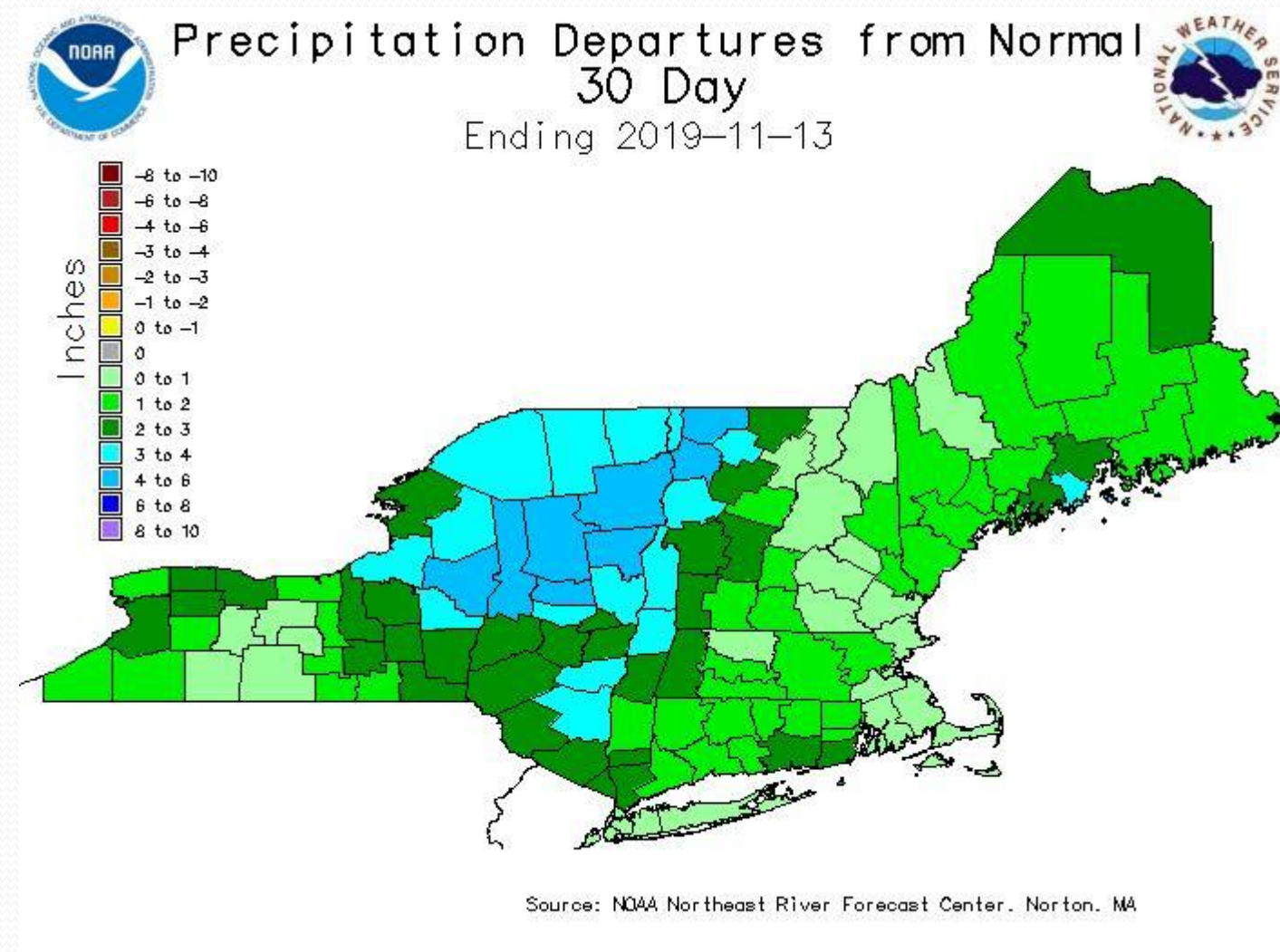
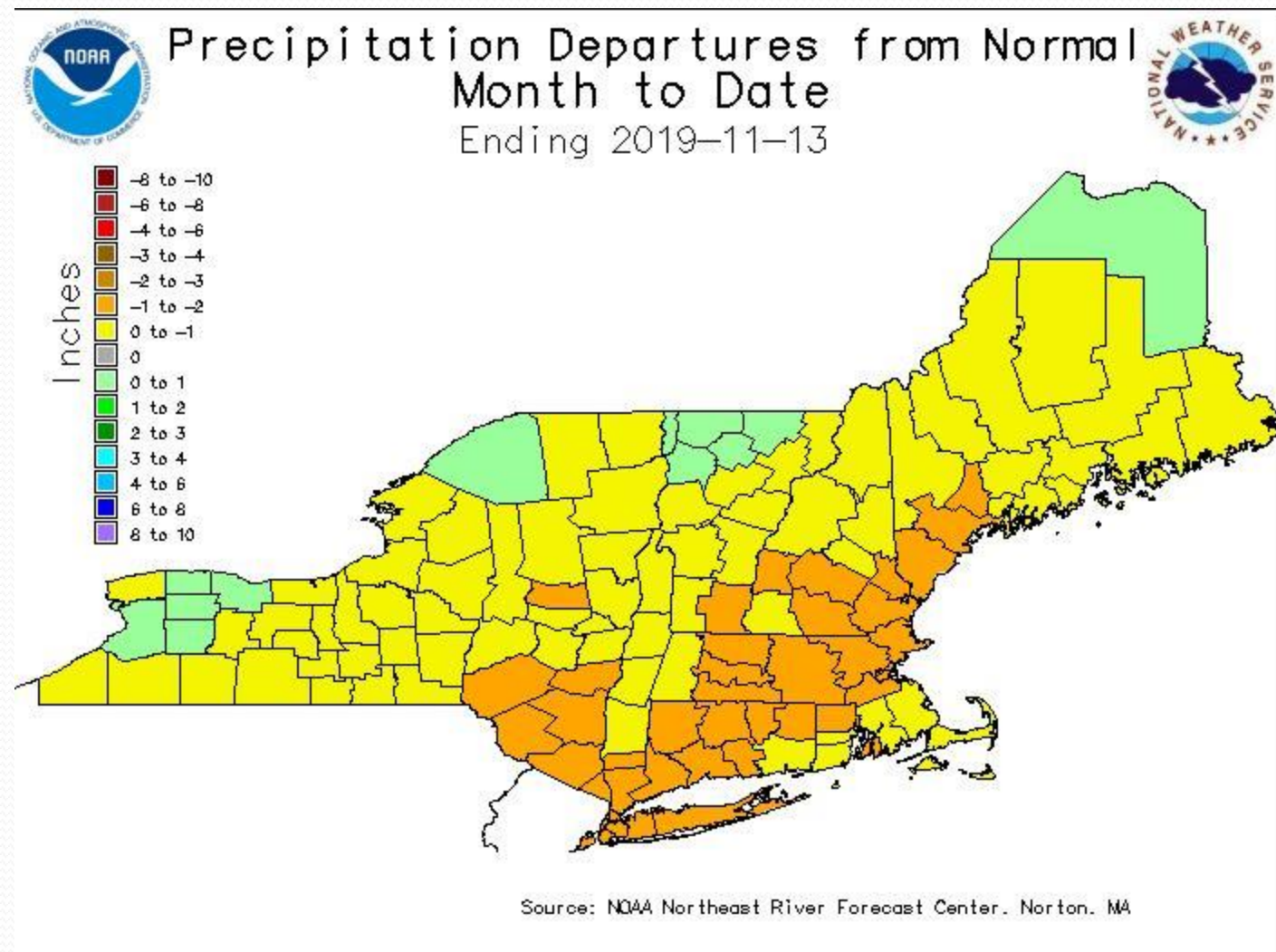
## Observed Storm Total Precipitation Oct 16-17, 2019





# Precipitation Departures

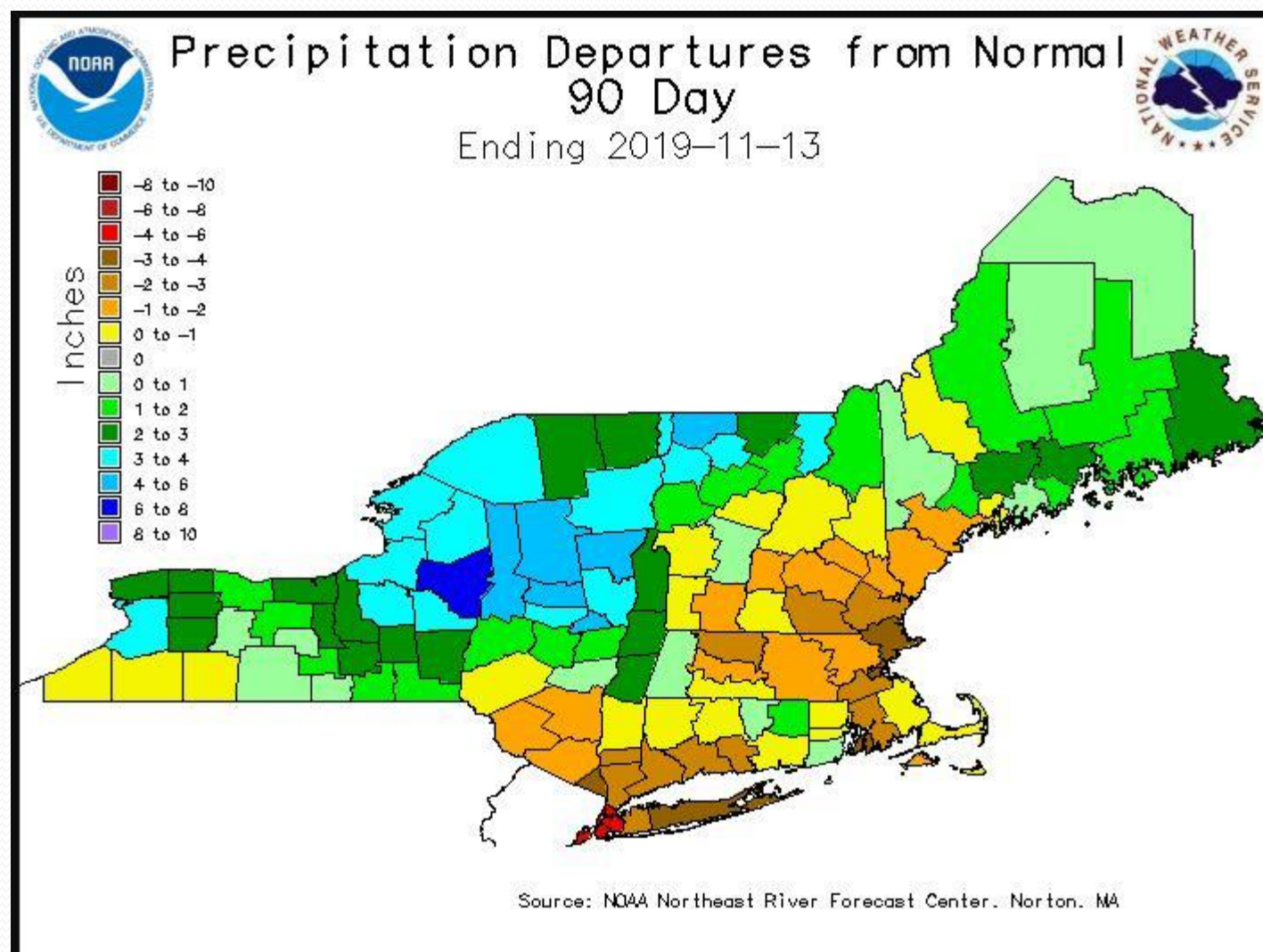
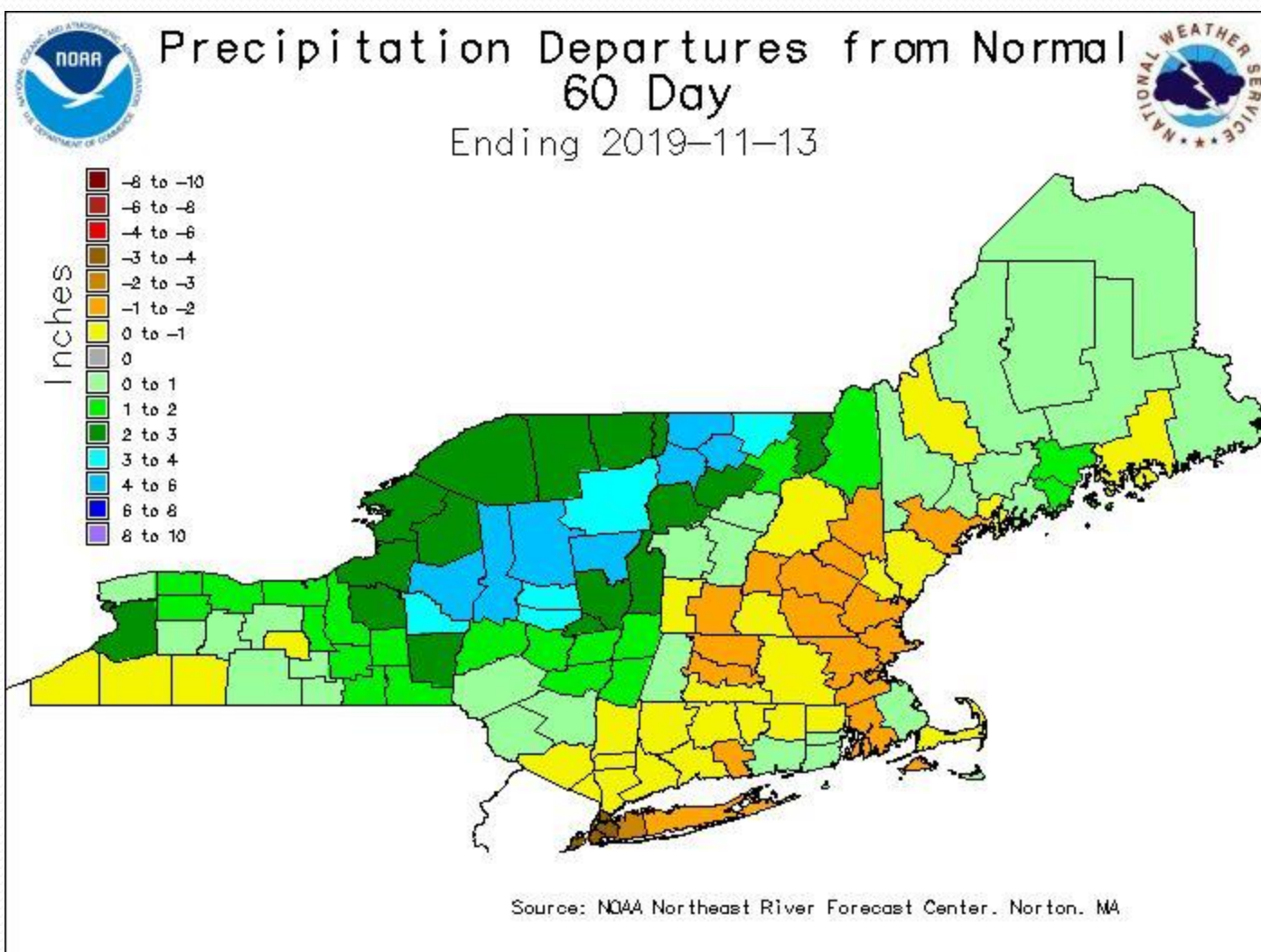
## Month to date and Last 30 Days





# Precipitation Departures

## Last 60 Days and Last 90 Days



# November Month-to-Date Overview

- Rainfall/liquid equivalent MTD 0.5” to ~2”
- This ranges from near normal to 1.25” below normal
- Mainly quick hitting cold fronts
  - Light precipitation totals
  - Reinforcing shots of cold air
- Temps-average 3-5 degrees F below normal
- El Nino: Neutral

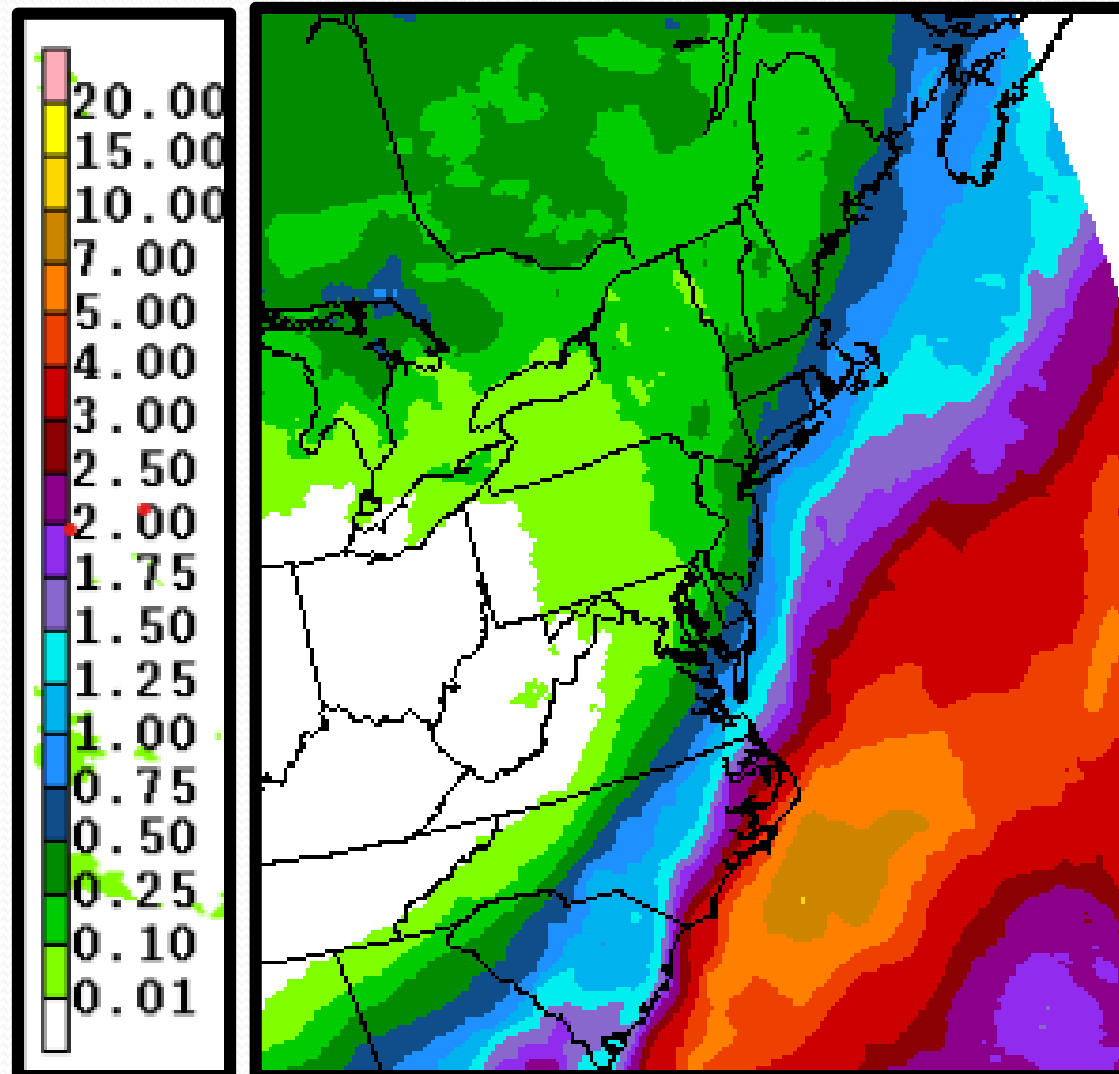
# Forecast thru 11/19

*Mainly dry thru Sat, chances for light precipitation*

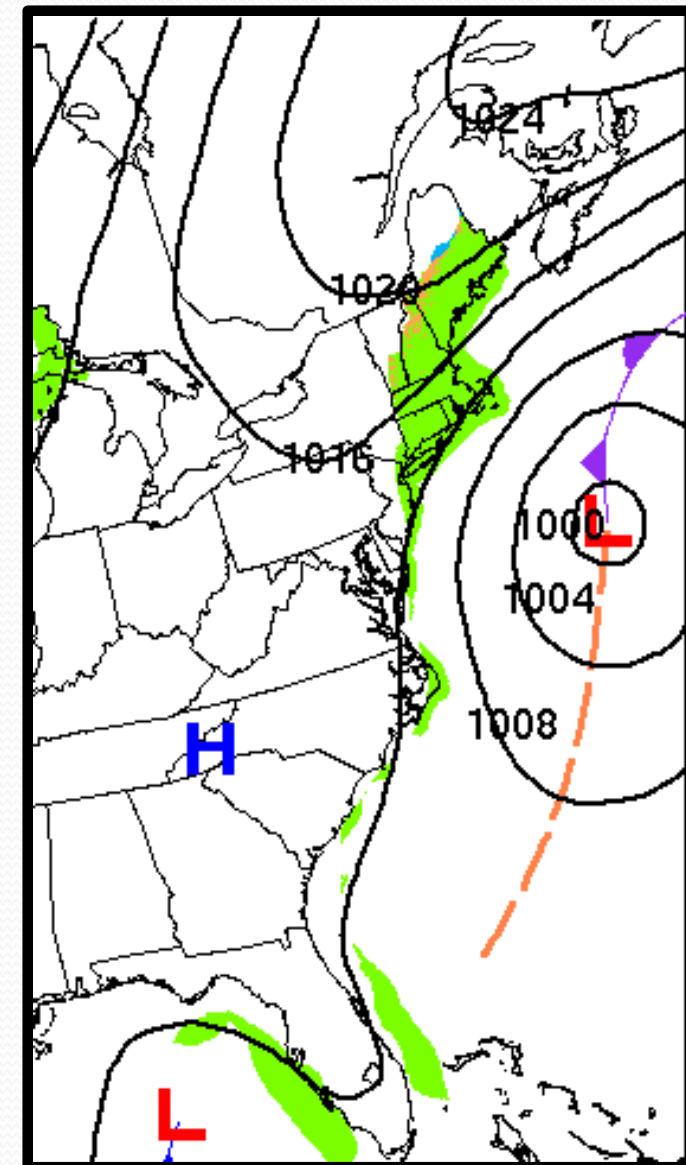
*Better chances for rain:*

*Ocean storm Sunday/early next week*

Rainfall forecast thru 7 am 11/20



Forecast Weather Map for 7 am Mon 11/18

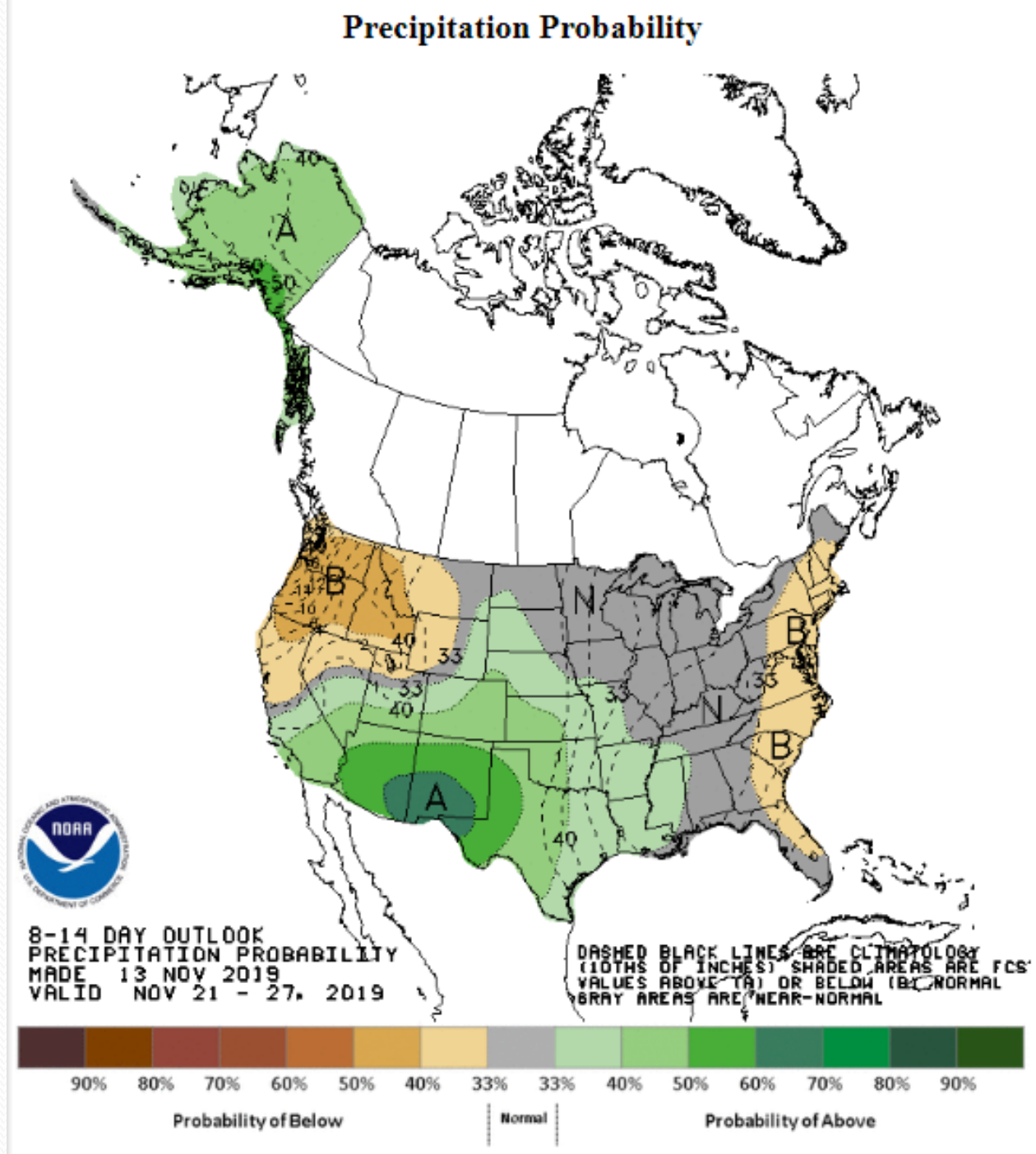
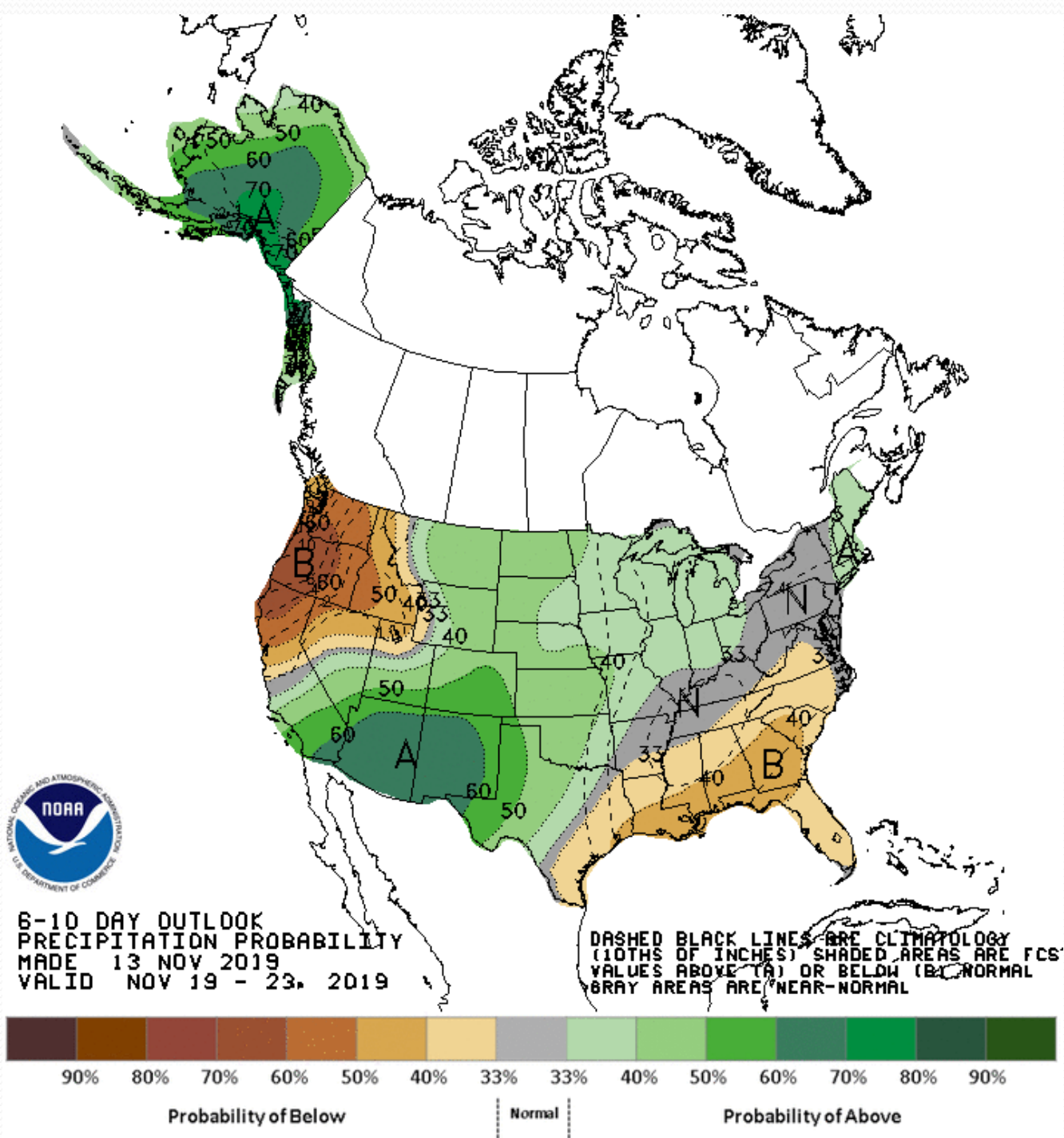




# 6 to 10 day

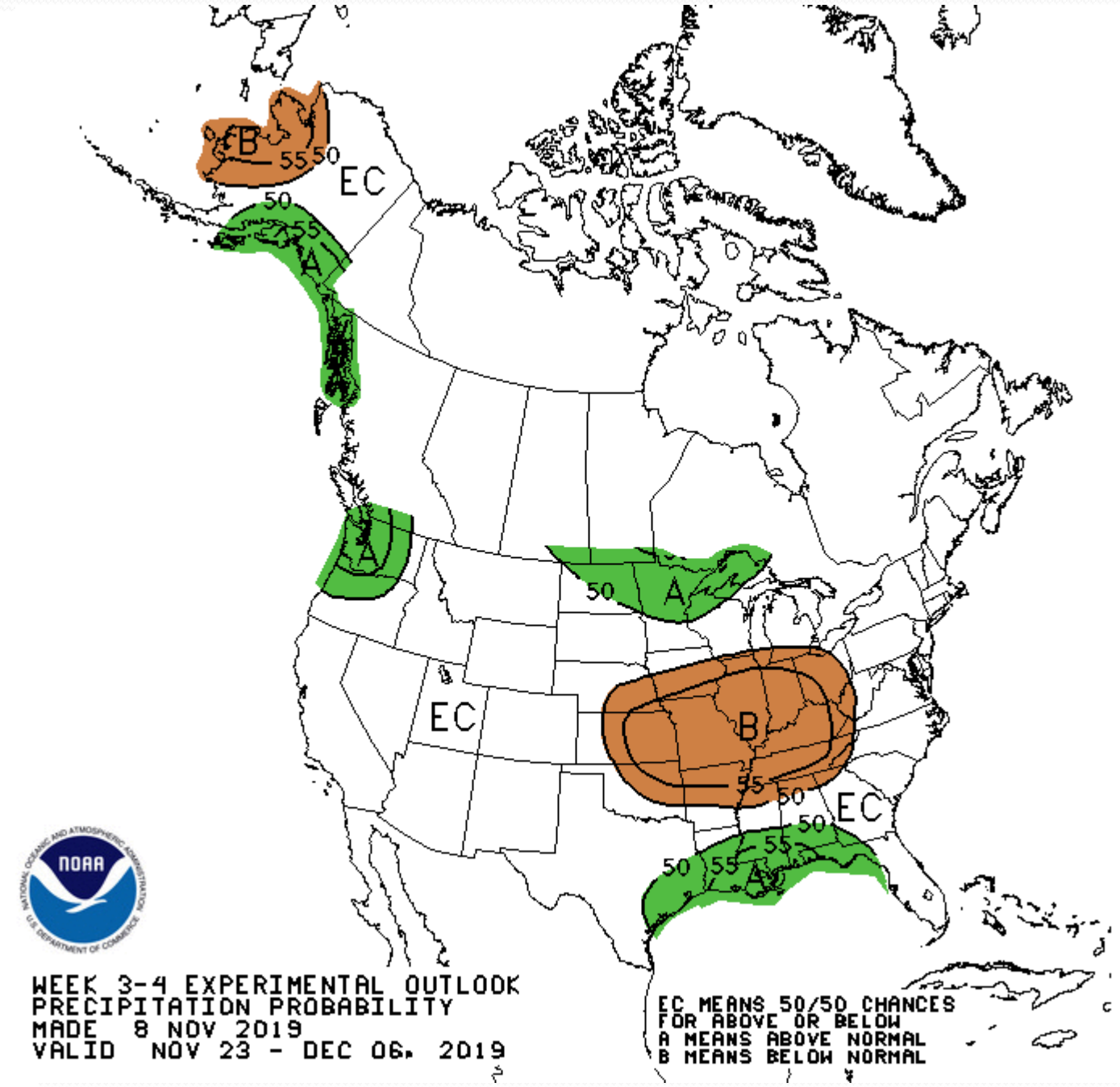
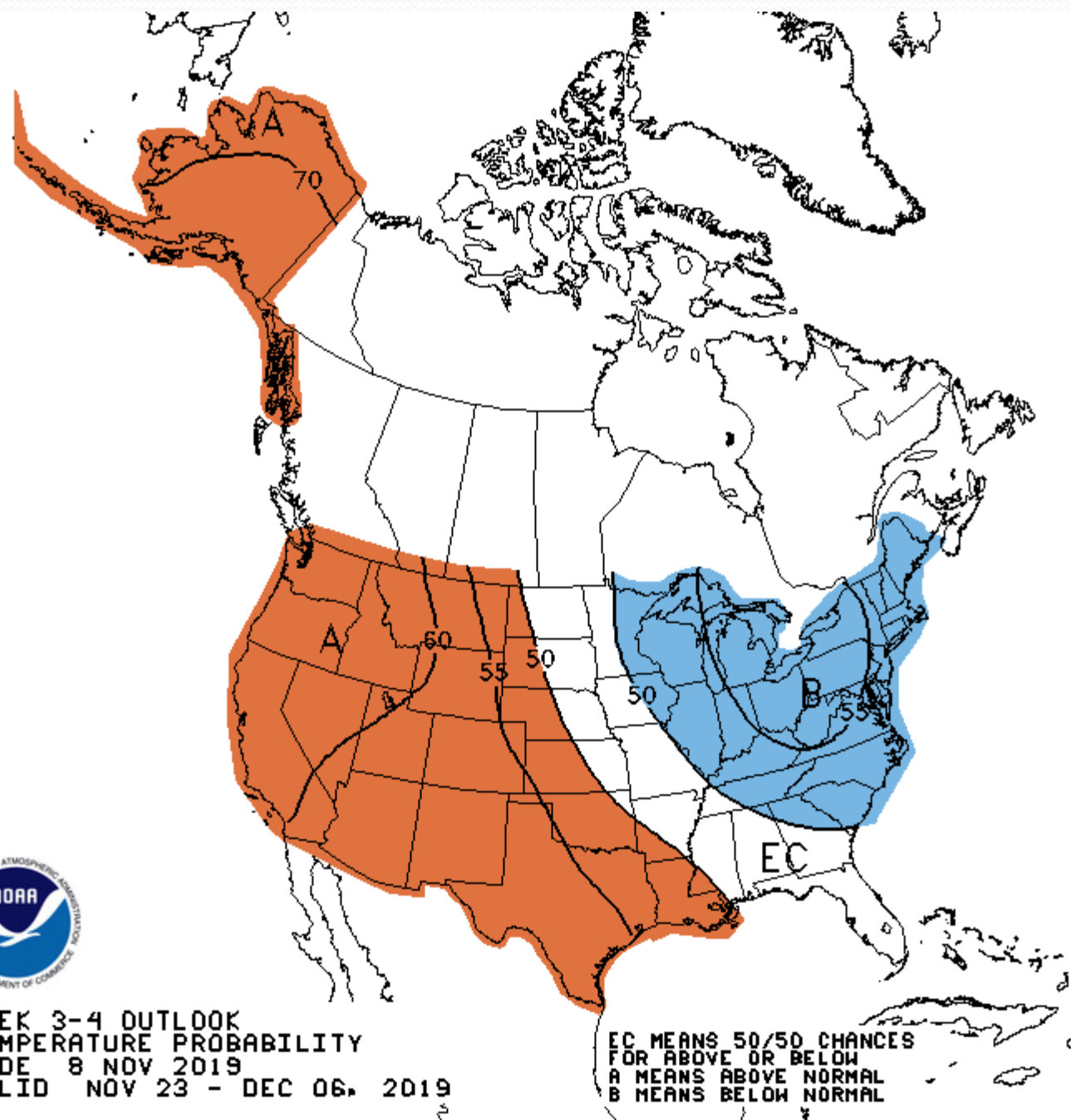
# 8 to 14 day

## Precipitation

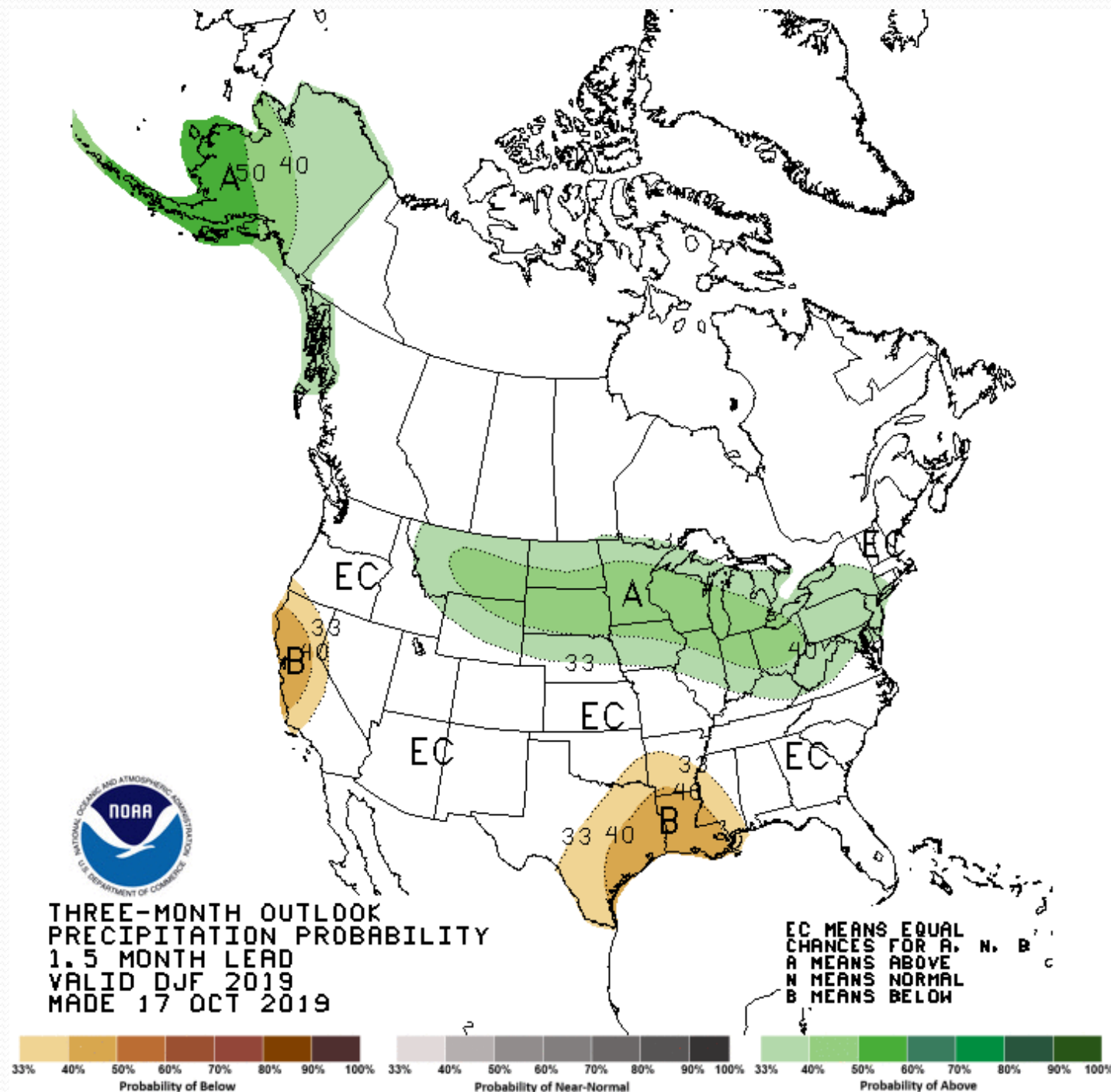
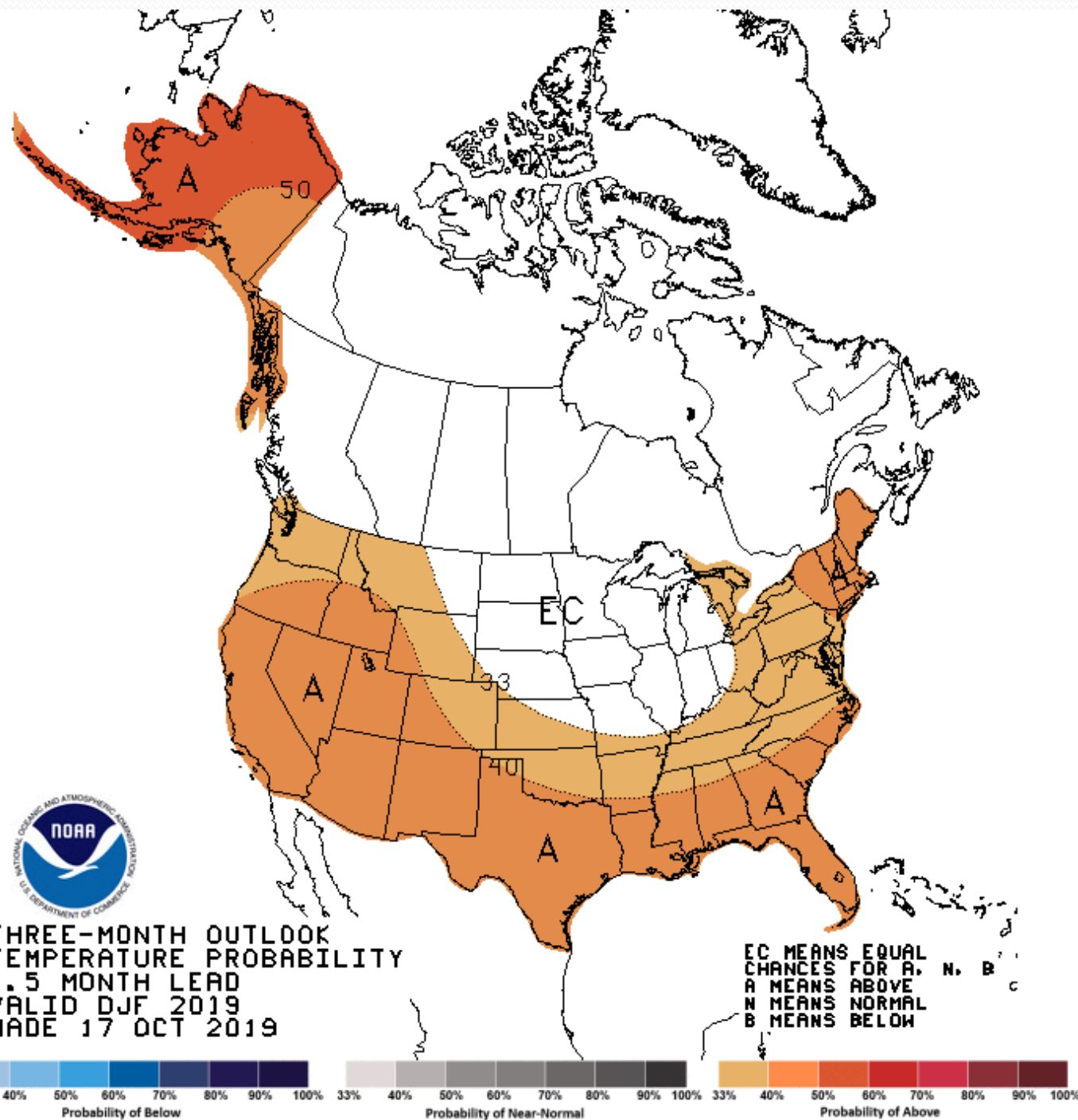




# 3-4 Week Outlook- Nov 23-Dec 6



# Outlook for Dec-Jan-Feb

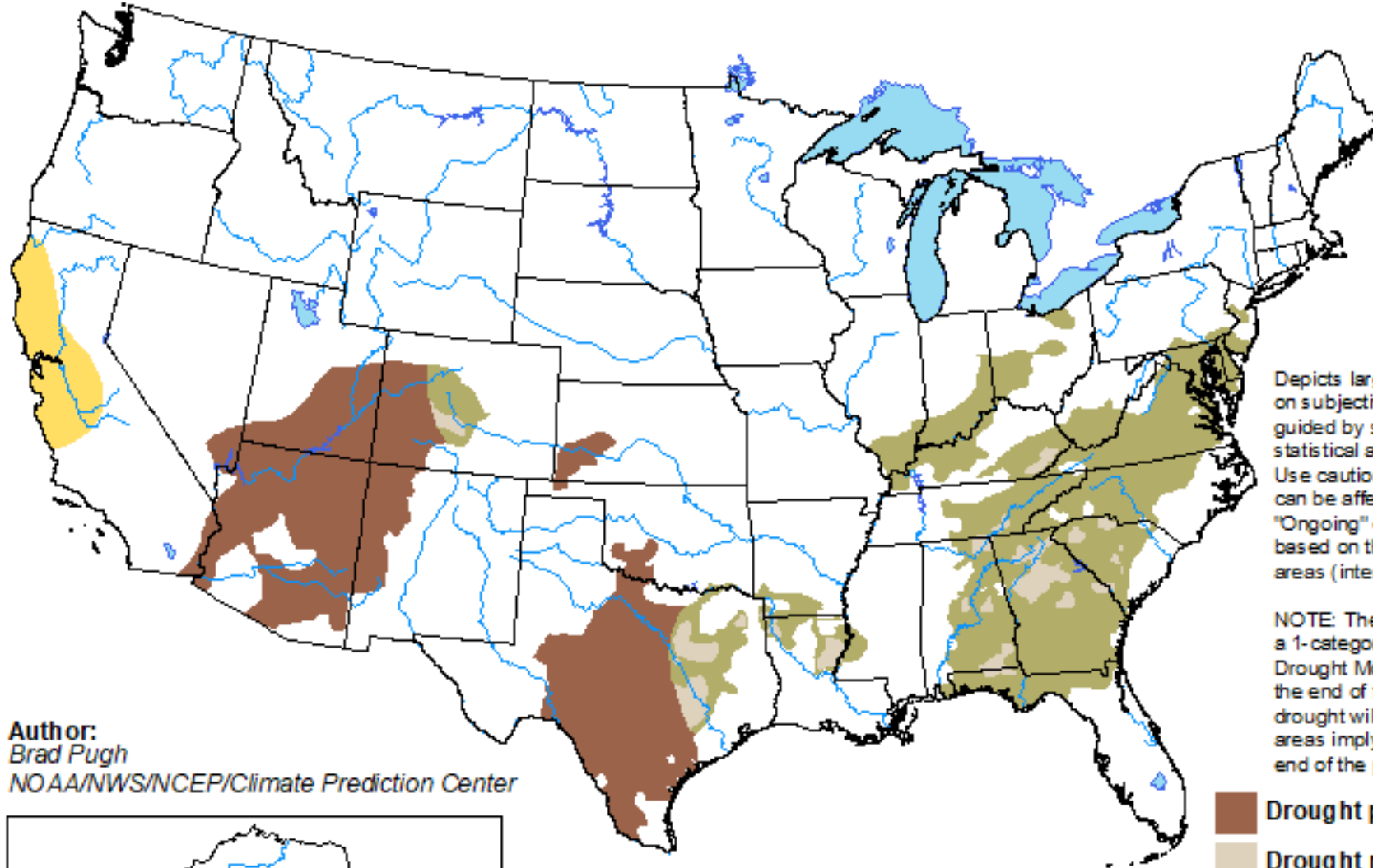




# Drought outlook Thru 1/31/20

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

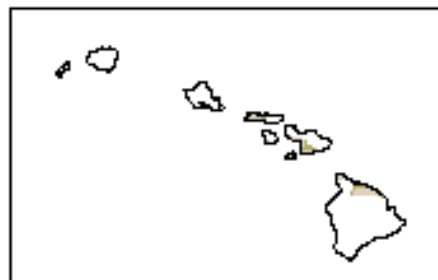
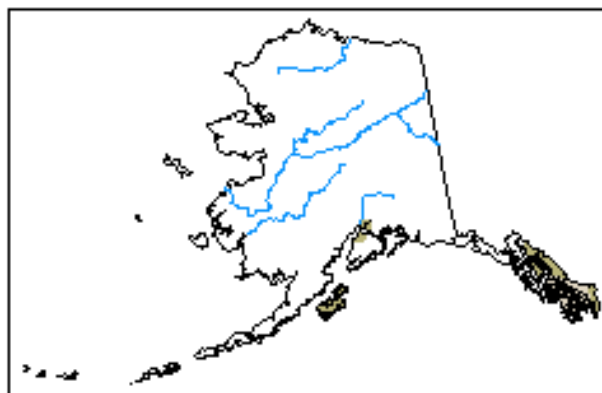
Valid for October 17, 2019 - January 31, 2020  
Released October 17, 2019







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/3eZ73>



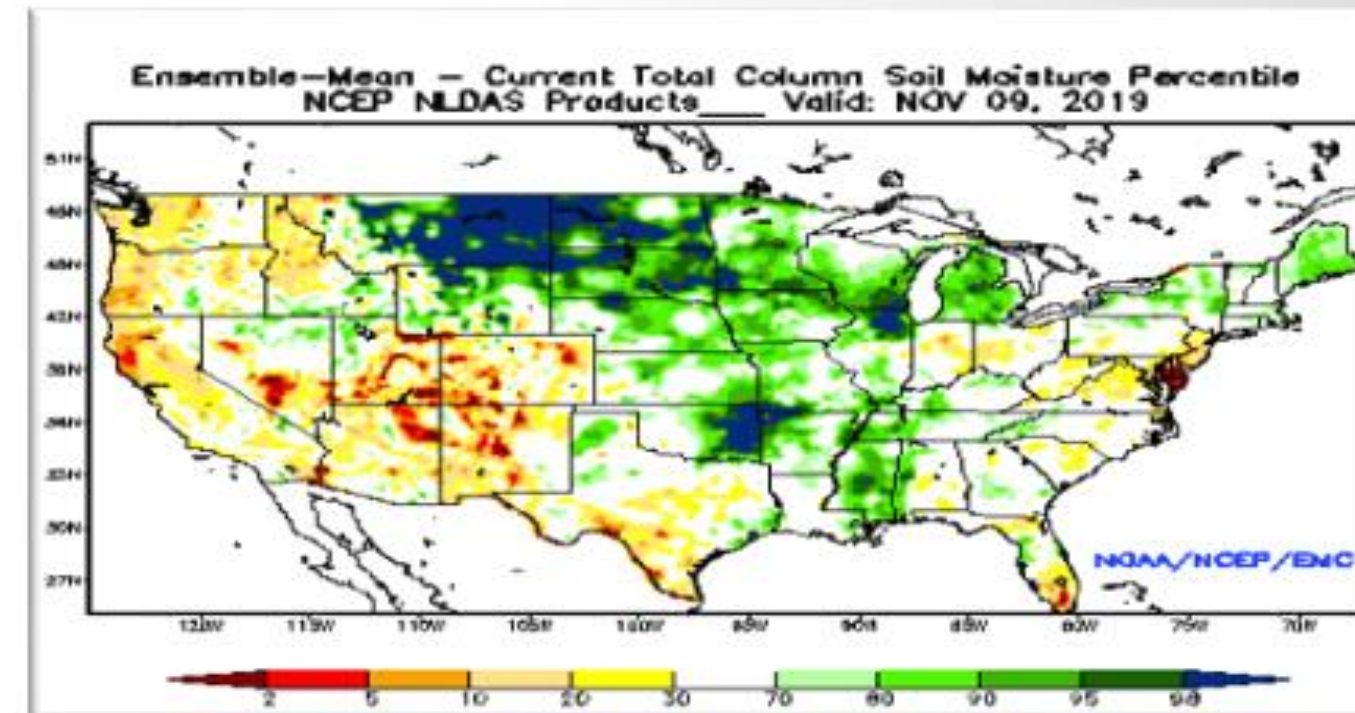
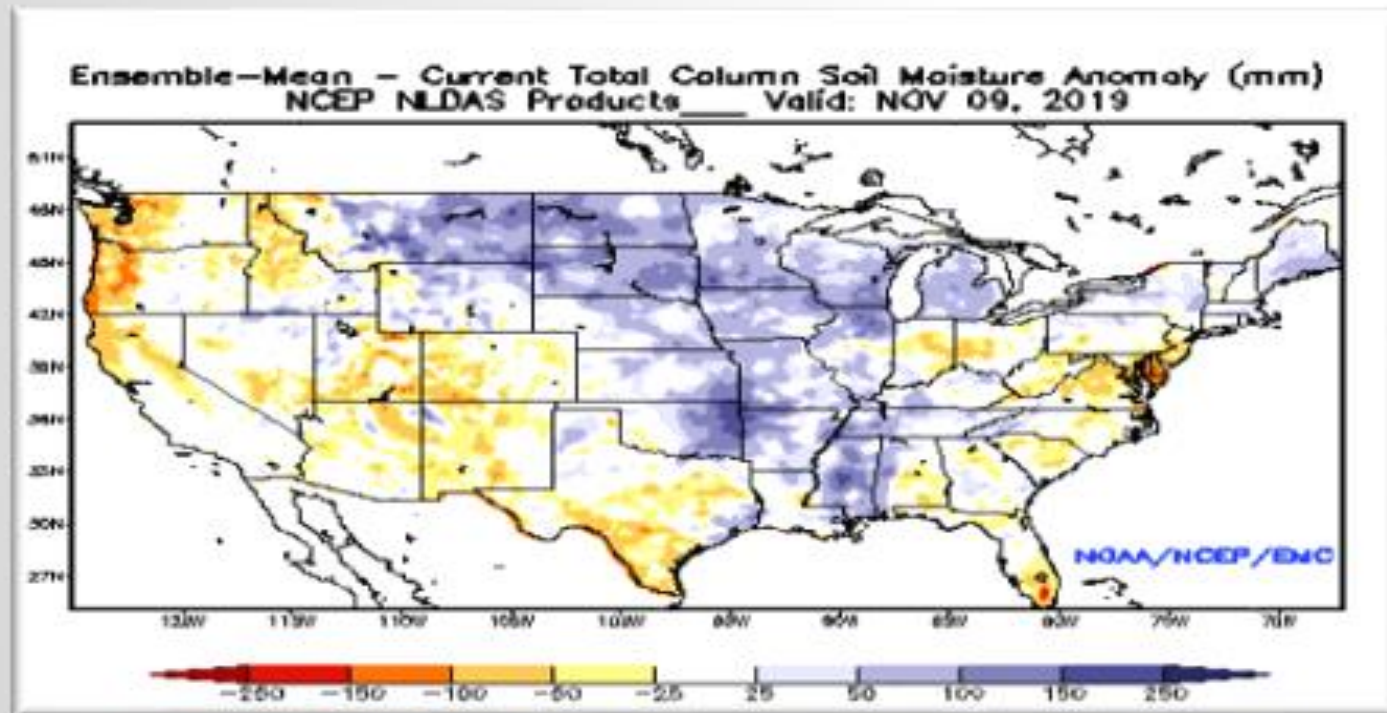


# Soil Moisture Current Conditions

## *Departures and Percentiles*



The NLDAS experimental drought monitor is derived from near real-time soil moisture output from both the NASA MOSAIC and NCEP Noah land surface models. The anomalies and percentiles are based on a 28 year climatology (1980 - 2007). Two separate climatology files are used; one for the calculation of anomalies, and one for the calculation of percentiles. The anomaly climatology file contains 1 soil moisture value per day (daily average over 28 years) for each gridbox. The percentile climatology file contains 140 soil moisture values per day (5 for each year) for each gridbox.





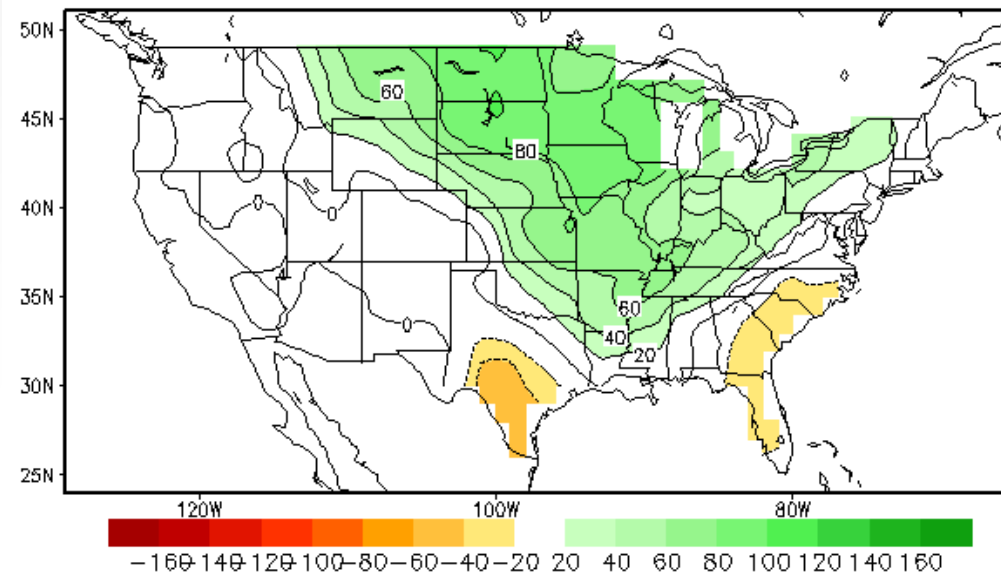


# Soil Moisture Forecasts

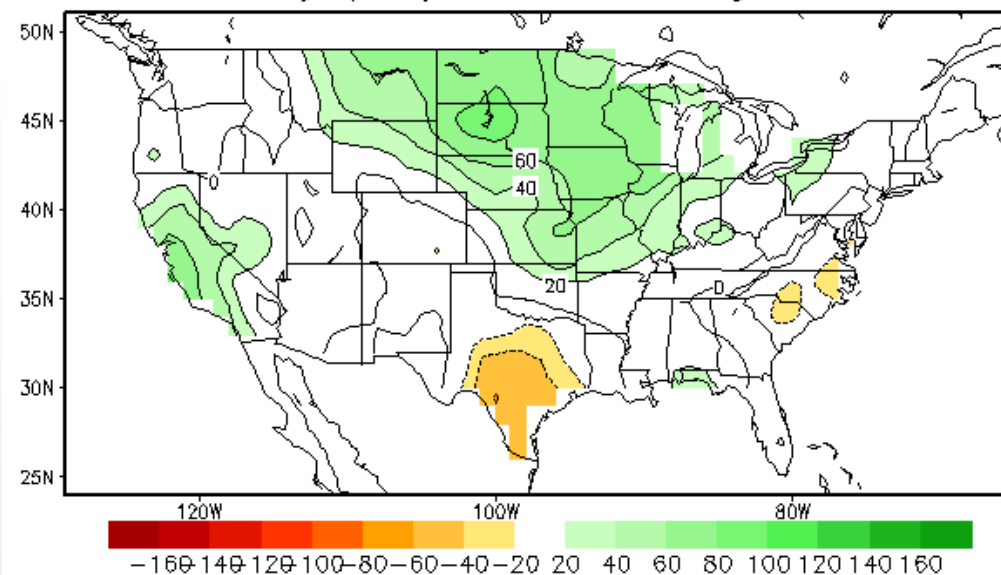
CPC-NCEP



Lagged Averaged Soil Moisture Outlook for End of DEC2019  
units: anomaly (mm), SM data ending at 20191112



Lagged Averaged Soil Moisture Outlook for End of FEB2020  
units: anomaly (mm), SM data ending at 20191112



# Current and 7-day USGS Streamflow

