

RI Drought Steering Committee Meeting NWS Update

National Weather Service Boston/Norton MA
September 10, 2020



Drought Indices From *Rhode Island Water 2030* Document

Table 2, Rhode Island Drought Indices and Phases

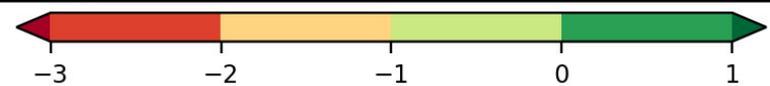
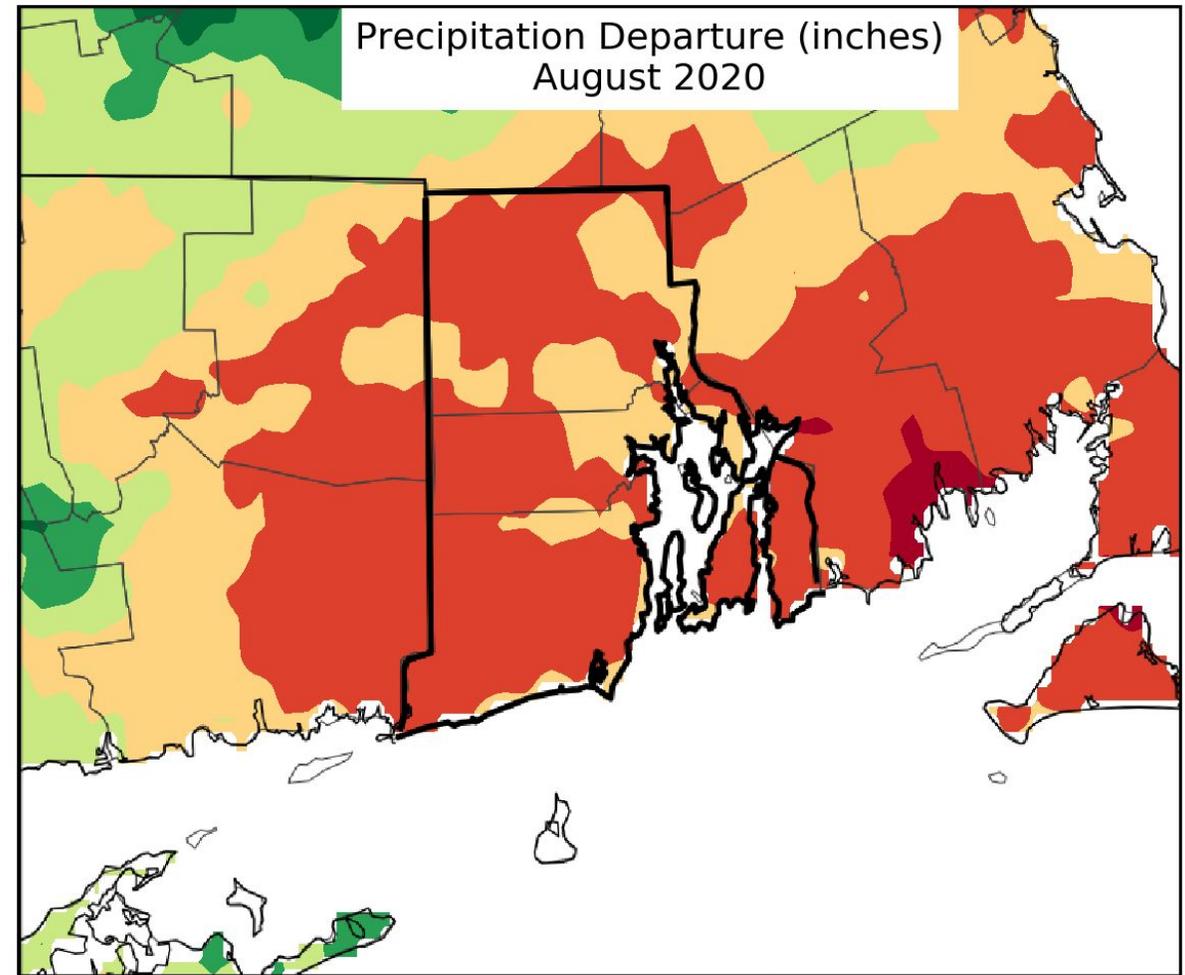
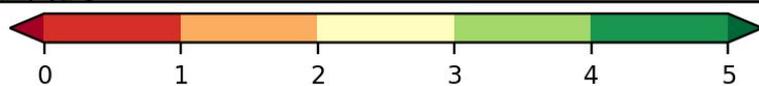
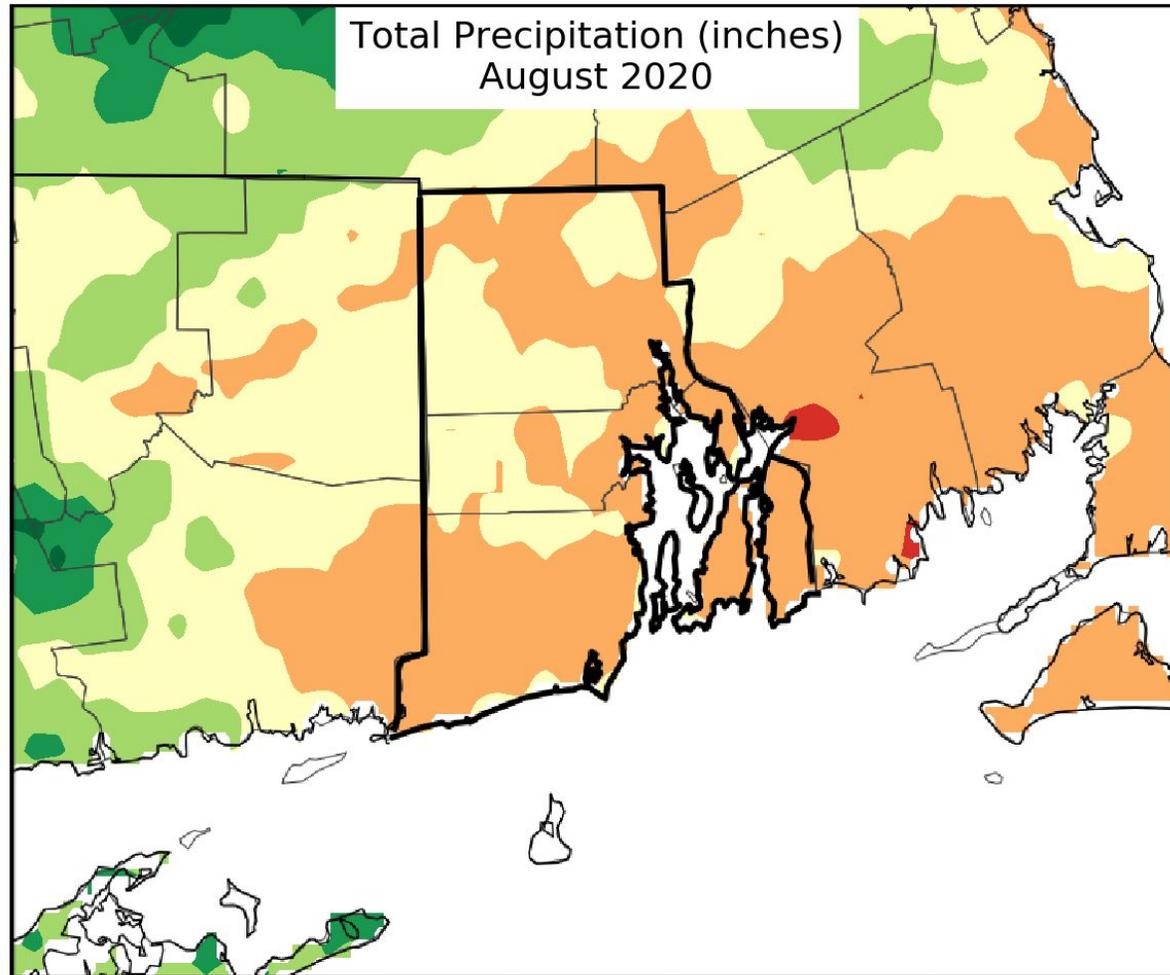
Drought Phase	Palmer Drought Index +	Crop Moisture Index	Precipitation +	Ground Water** +	Stream flow +	Reservoirs**
Normal	-1.0 to -1.99	0.0 to -1.0	Slightly Dry	1 month below normal 1 month below normal	2 consecutive months below normal	Reservoir levels at or near normal for the time of year
Advisory	-2.0 to -2.99	-1.0 to -1.9 Abnormally Dry	2 month cumulative below 65% of normal	At least 2 out of 3 months below normal	3 consecutive months below normal	Small index Reservoirs below normal
Watch	-3.0 to -3.99	-2.0 to -2.9 Excessively Dry	1 of the following criteria met: 3 month cum. <65% or 6 month cum. <70% or 12 month cum. <70%	4-5 consecutive months below normal	At least 4 out of 5 consecutive months below normal	Medium index Reservoirs below normal
Warning	-4.0 and below	> -2.9 Severely Dry	2 out of 3 of the above criteria met: 3 month cum. <65% and 6 month cum. <65% or 6 month cum. <65% and 12 month cum. <65% or 3 month cum. <65% and 12 month cum. <65%	6-7 consecutive months below normal observation wells recording monthly record lows	At least 6 out of 7 consecutive months below normal	Large index reservoirs below normal
Emergency	-4.0 and below	> -2.9 Severely dry	Same criteria as Warning and Previous month was Warning or Emergency	>7 months below normal Observation wells recording monthly record lows	>7 months below normal	Continuation of previous month's conditions

+ Major Hydrologic Indicators.

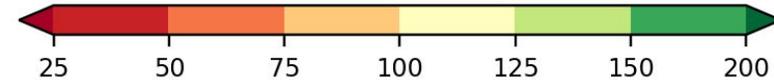
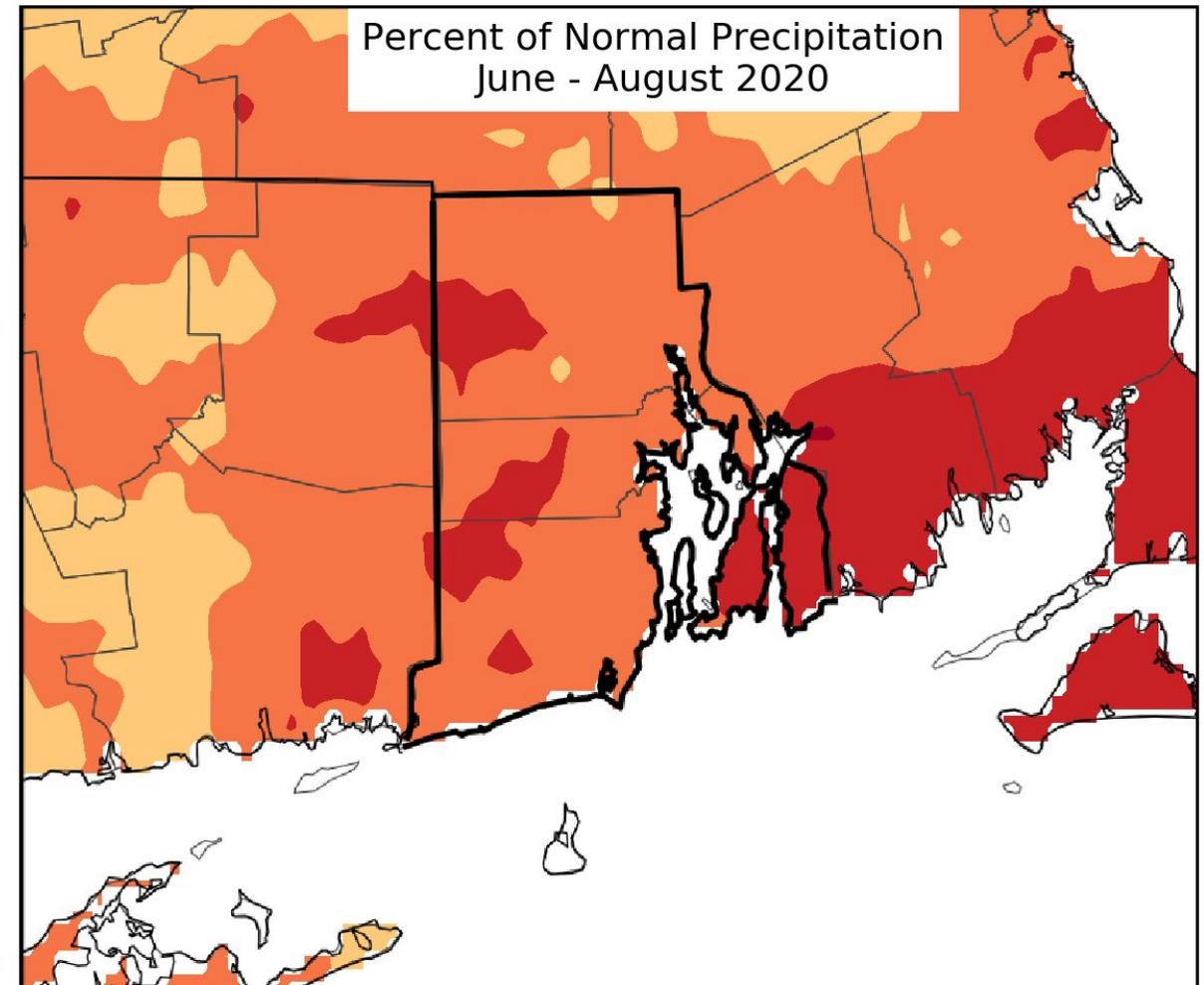
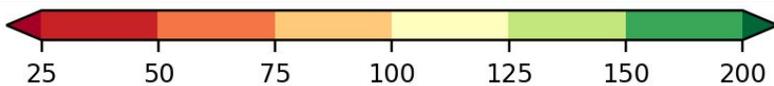
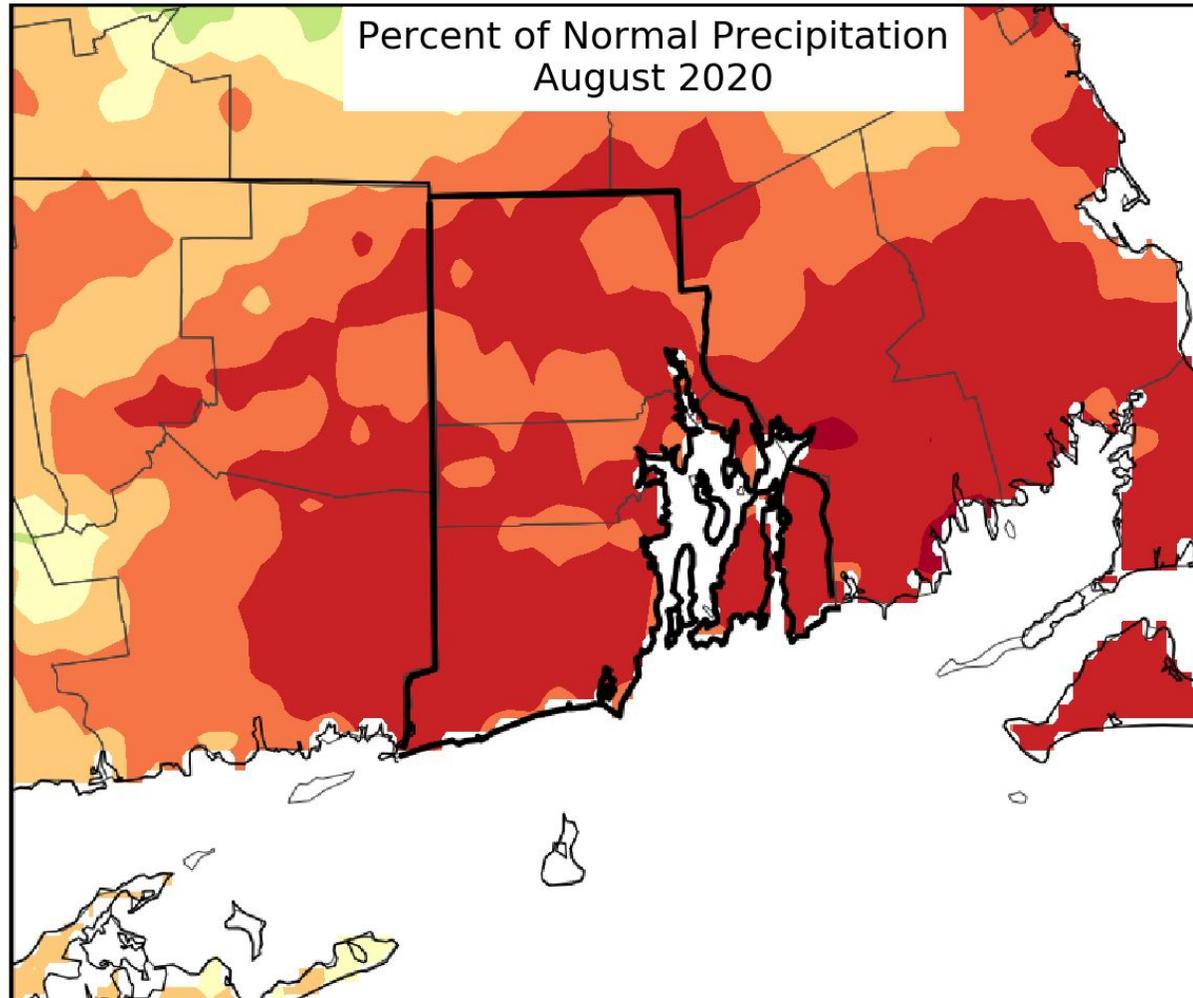
** Local triggers from the water system supply management plans will also be considered in assessing drought phases on a regional basis. The WRB staff will review local plans and work with suppliers to coordinate regarding drought phases and to collect, review and report surface reservoir and ground water data.

"Normal" is defined as the statistical average of the data for the period of record. Percentages for precipitation are relative to normal.

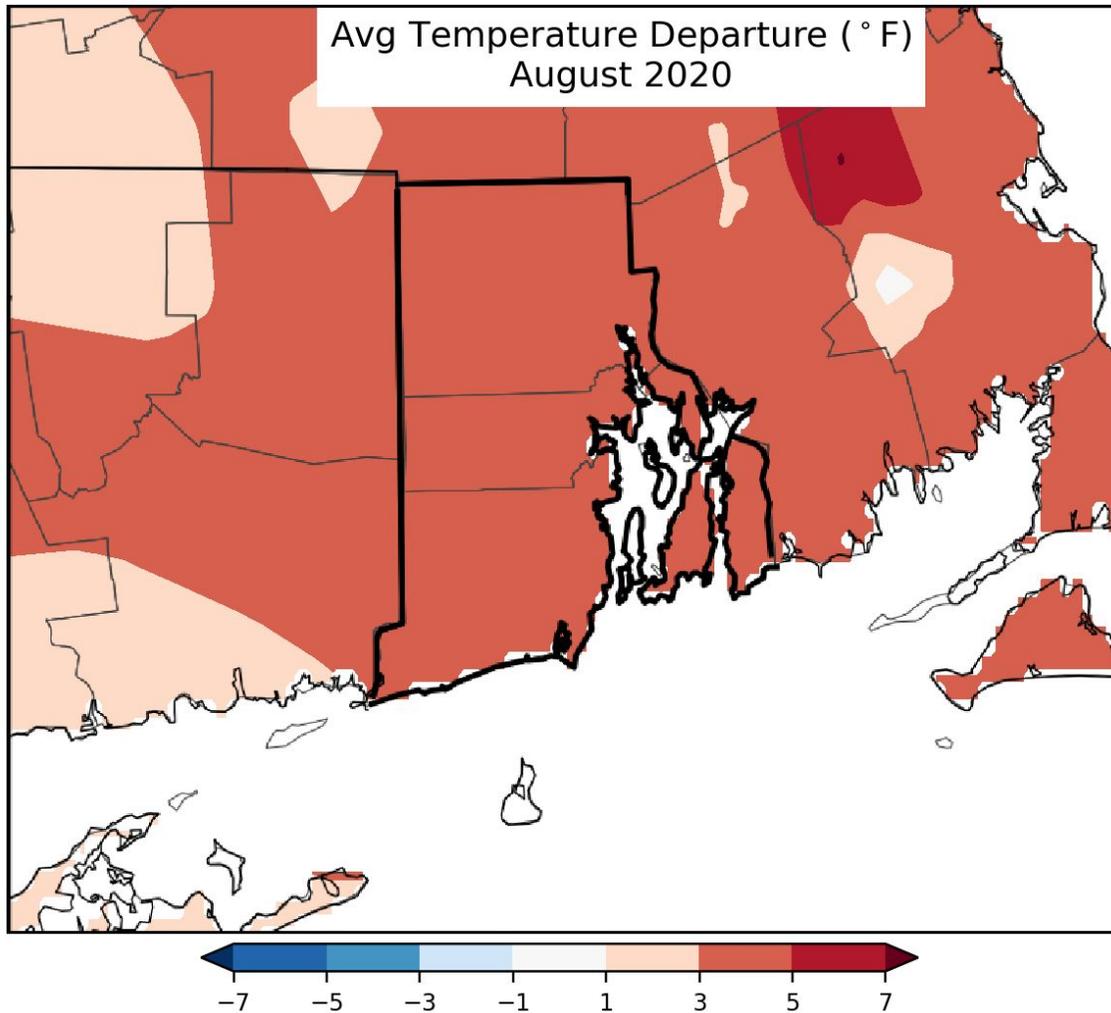
August 2020 Rainfall and Departure



August and June-August Percent of Normal



Temperature Departure from Normal



State-wide Specifics:

August 2020 Temperature Ranking from NRCC:

- Average daily temperature 73.9 deg F
- Departure from normal: +3.6 deg F

Preliminary Rankings for Providence (TF Green)

- 4th warmest August on record (75.6 deg F)
- Warmest summer on record (74.4 deg F)

August and July/August Rainfall by Region

RI 1 month August 2020	Rainfall	Departure	Percent	Normal
Northwest	2.36	-1.97	55	4.33
Northeast	2.00	-2.13	48	4.13
Central West	2.04	-1.98	51	4.02
Central East	1.64	-1.96	46	3.60
Eastern	1.62	-2.18	43	3.80
Southern	1.43	-2.93	33	4.36
New Shoreham	2.97	-1.39	68	4.36

RI 2 month Jul-Aug 20	Rainfall	Departure	Percent	Normal
Northwest	3.86	-4.29	47	8.15
Northeast	4.09	-3.85	52	7.94
Central West	4.15	-3.51	54	7.66
Central East	3.52	-3.37	51	6.89
Eastern	2.91	-3.68	44	6.59
Southern	3.36	-4.66	42	8.02
New Shoreham	3.62	-4.40	45	8.02

Corresponding Drought Phase for 2 months <65% of normal: Drought Advisory



3 and 6-Month Rainfall by Region

RI 3 month Jun-Aug 20	Rainfall	Departure	Percent	Normal
Northwest	7.50	-5.23	59	12.73
Northeast	7.53	-4.62	62	12.15
Central West	5.59	-6.21	47	11.80
Central East	5.99	-4.54	57	10.53
Eastern	4.80	-5.67	46	10.47
Southern	5.96	-6.34	48	12.30
New Shoreham	6.04	-6.26	49	12.30

Corresponding Drought Phase for 3 months <65% of normal:

Drought Watch

RI 6 month Mar-Aug 20	Rainfall	Departure	Percent	Normal
Northwest	21.72	-5.08	81	26.80
Northeast	21.87	-3.81	85	25.68
Central West	20.53	-4.78	81	25.31
Central East	19.65	-3.80	84	23.45
Eastern	16.71	-7.90	68	24.61
Southern	19.77	-7.06	74	26.83
New Shoreham	17.17	-9.66	64	26.83

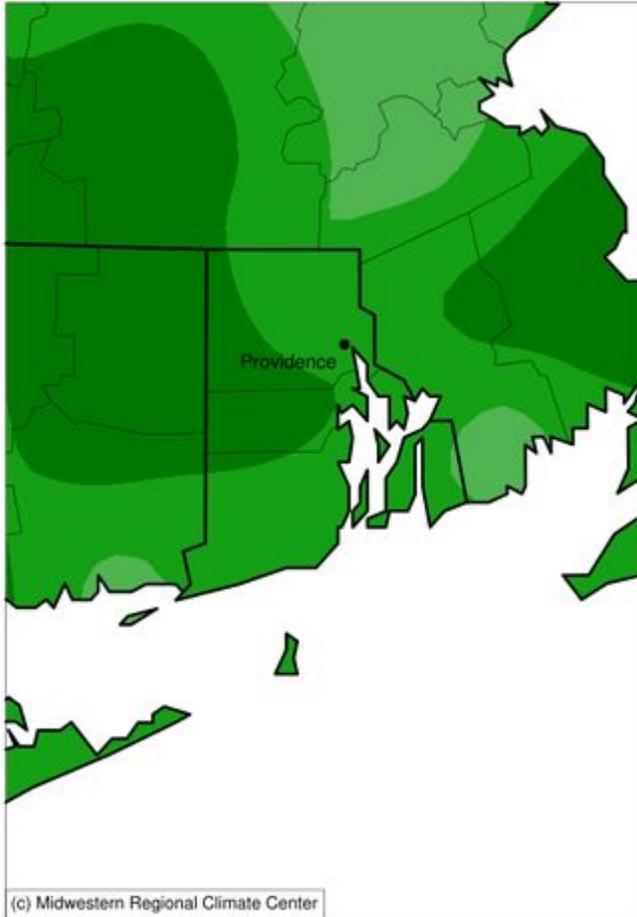
New Shoreham:
Met Drought Warning criteria (both 3 and 6 month <65% of normal)



September 1-8 Month-to-date

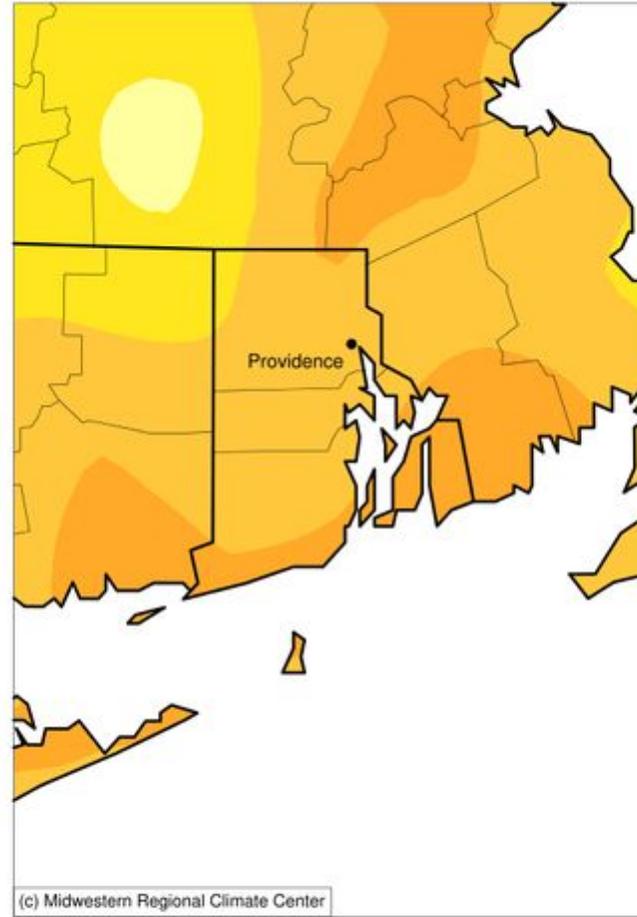
Accumulated Precipitation (in)

September 01, 2020 to September 08, 2020



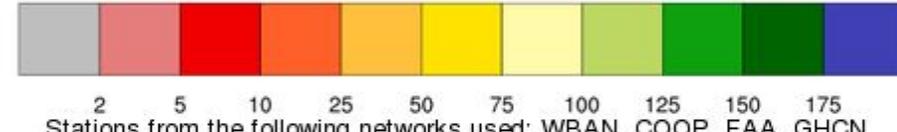
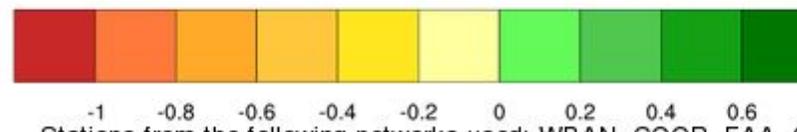
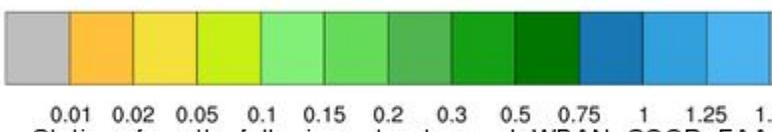
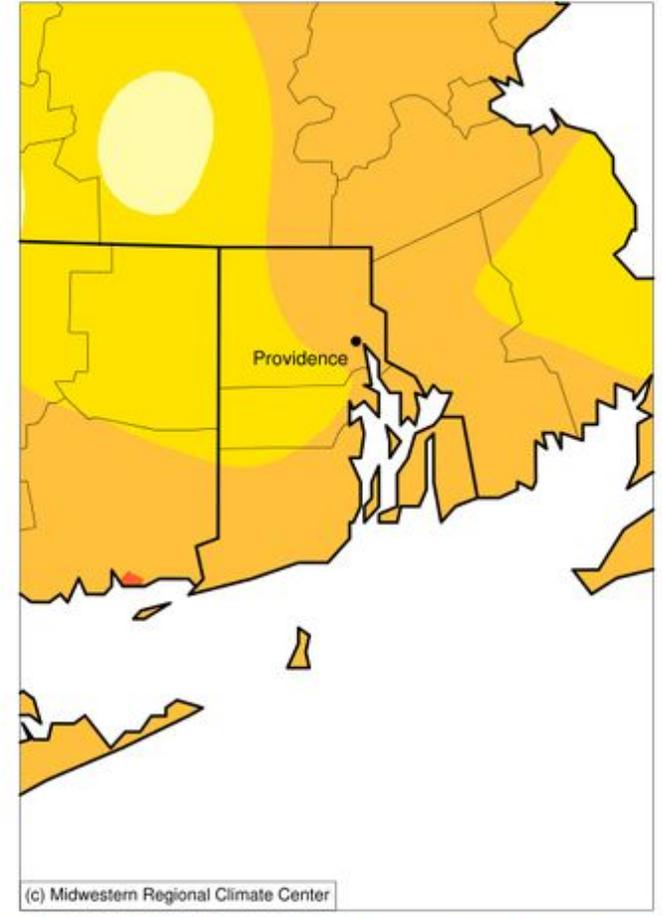
Accumulated Precipitation (in): Departure from 1981-2011

September 01, 2020 to September 08, 2020



Accumulated Precipitation (in): Percent of 1981-2010 Normals

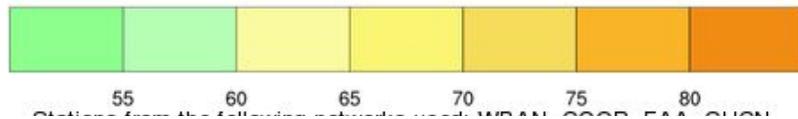
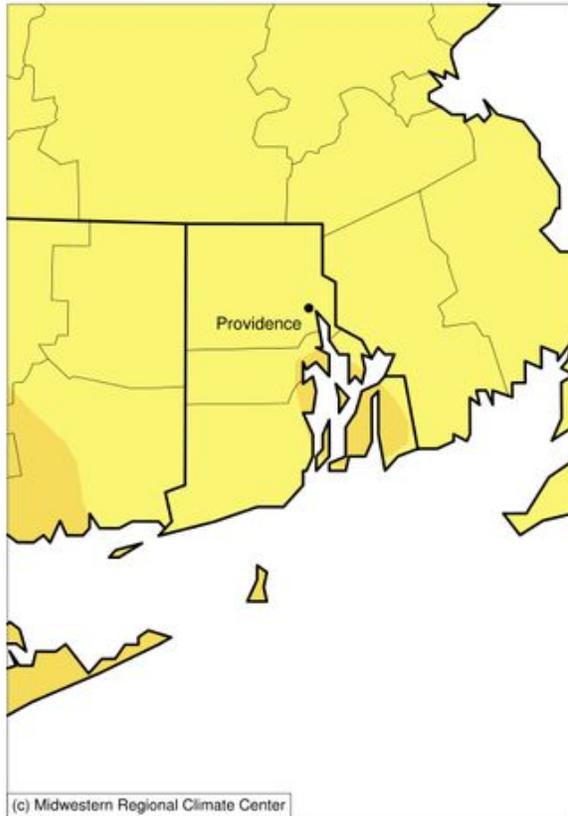
September 01, 2020 to September 08, 2020



September 1-8 Temperatures

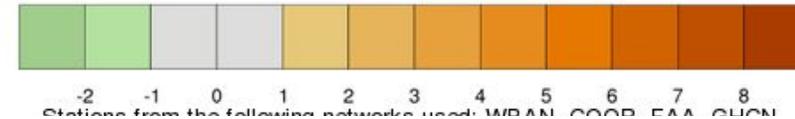
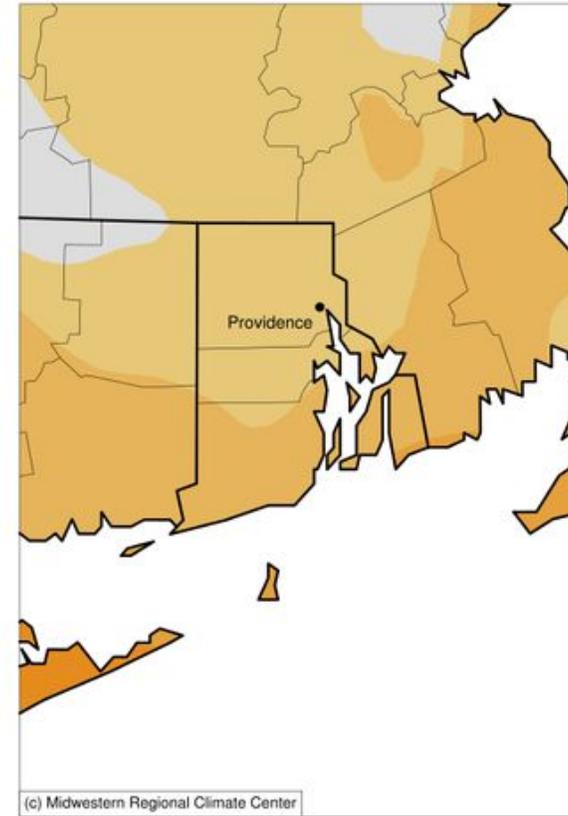
Average Temperature (°F)

September 01, 2020 to September 08, 2020



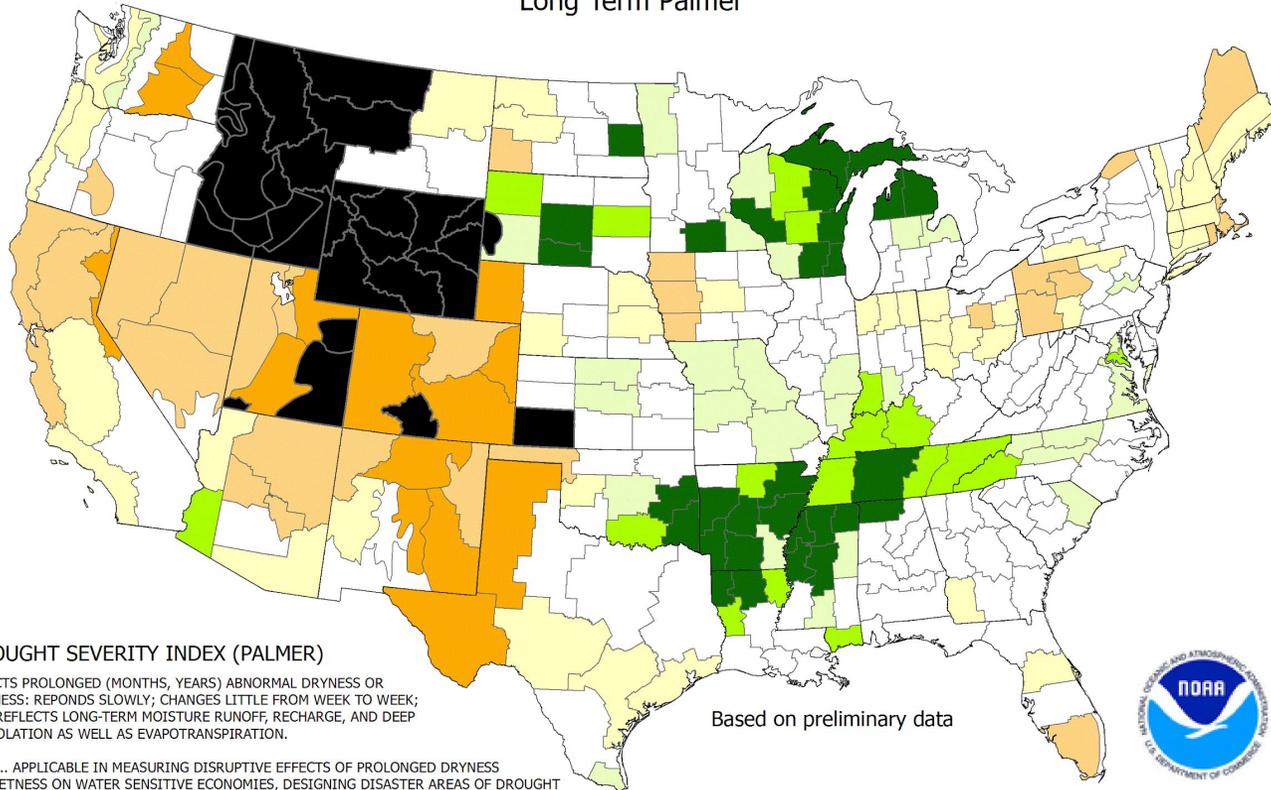
Average Temperature (°F): Departure from 1981-2010 Normals

September 01, 2020 to September 08, 2020



Palmer Drought Index

Drought Severity Index by Division
Weekly Value for Period Ending Sep 05, 2020
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)
- 3.0 to -3.9 (Severe Drought)
- 2.0 to -2.9 (Moderate Drought)
- 1.9 to +1.9 (Near Normal)
- +2.0 to +2.9 (Unusual Moist Spell)
- +3.0 to +3.9 (Very Moist Spell)
- +4.0 and above (Extremely Moist)
- Missing/Incomplete

PDSI for RI: -2.94
Moderate Drought

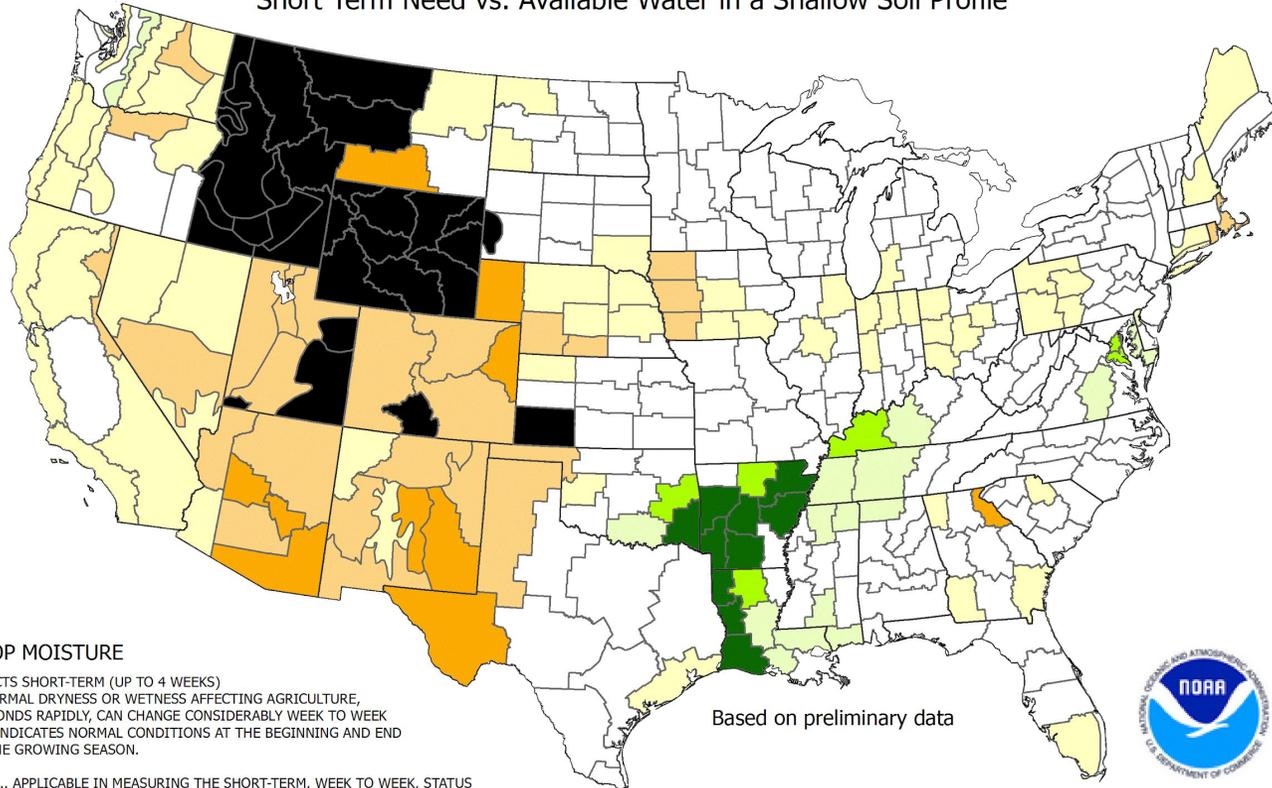
Corresponding Drought Phase for this Index:

Drought Advisory



Crop Moisture Index

Crop Moisture Index by Division
 Weekly Value for Period Ending Sep 05, 2020
 Short Term Need vs. Available Water in a Shallow Soil Profile



Based on preliminary data



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 55°F. 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 (Severely 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)
- Missing/Incomplete

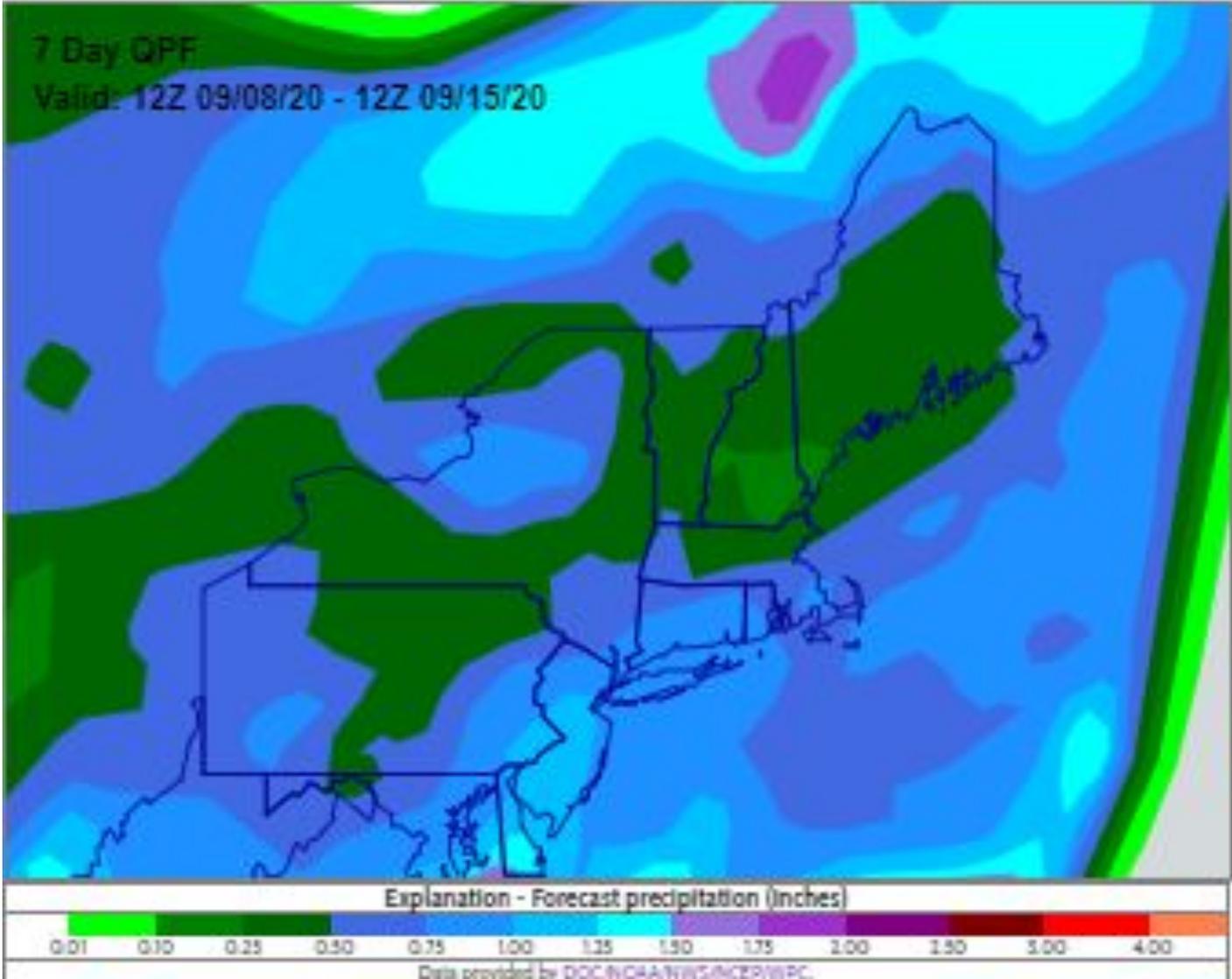
CMI for RI: -2.08
 Excessively Dry

Corresponding Drought Phase for this Index:

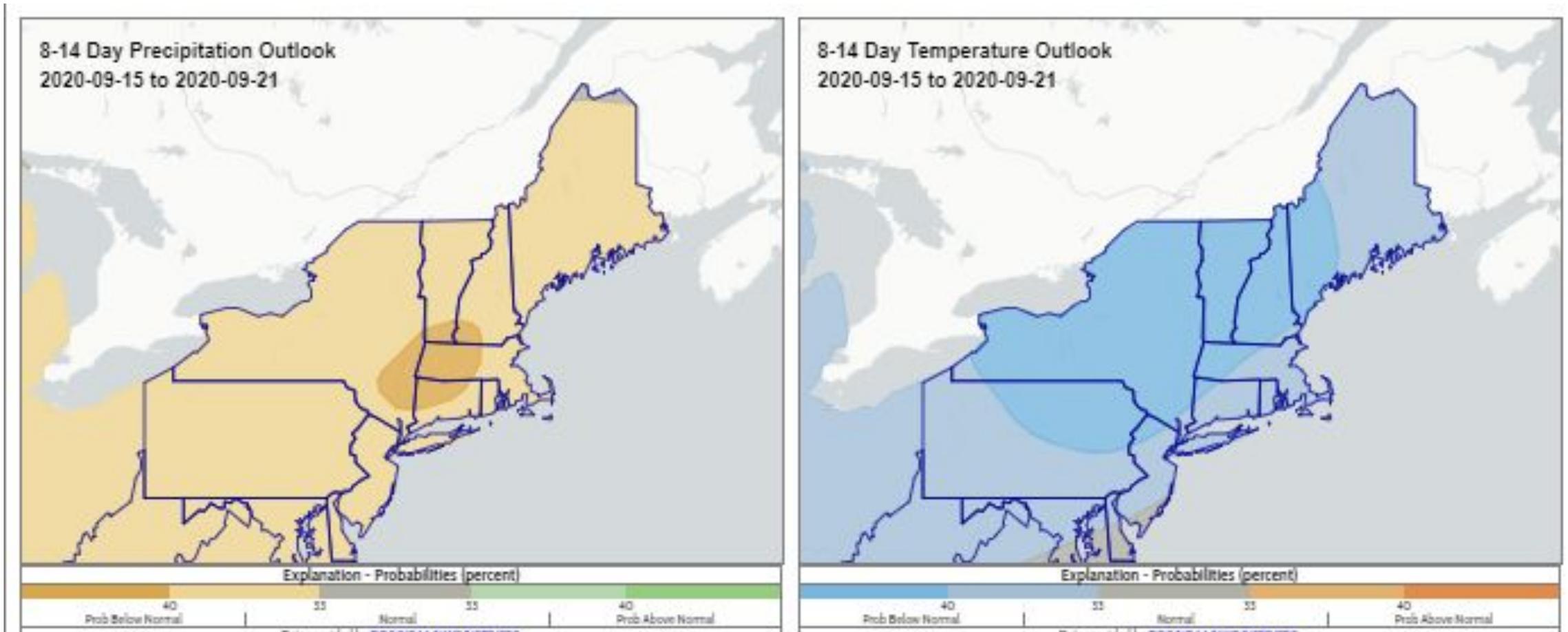
Drought Watch



Rainfall Forecast through 8 am Tuesday September 15

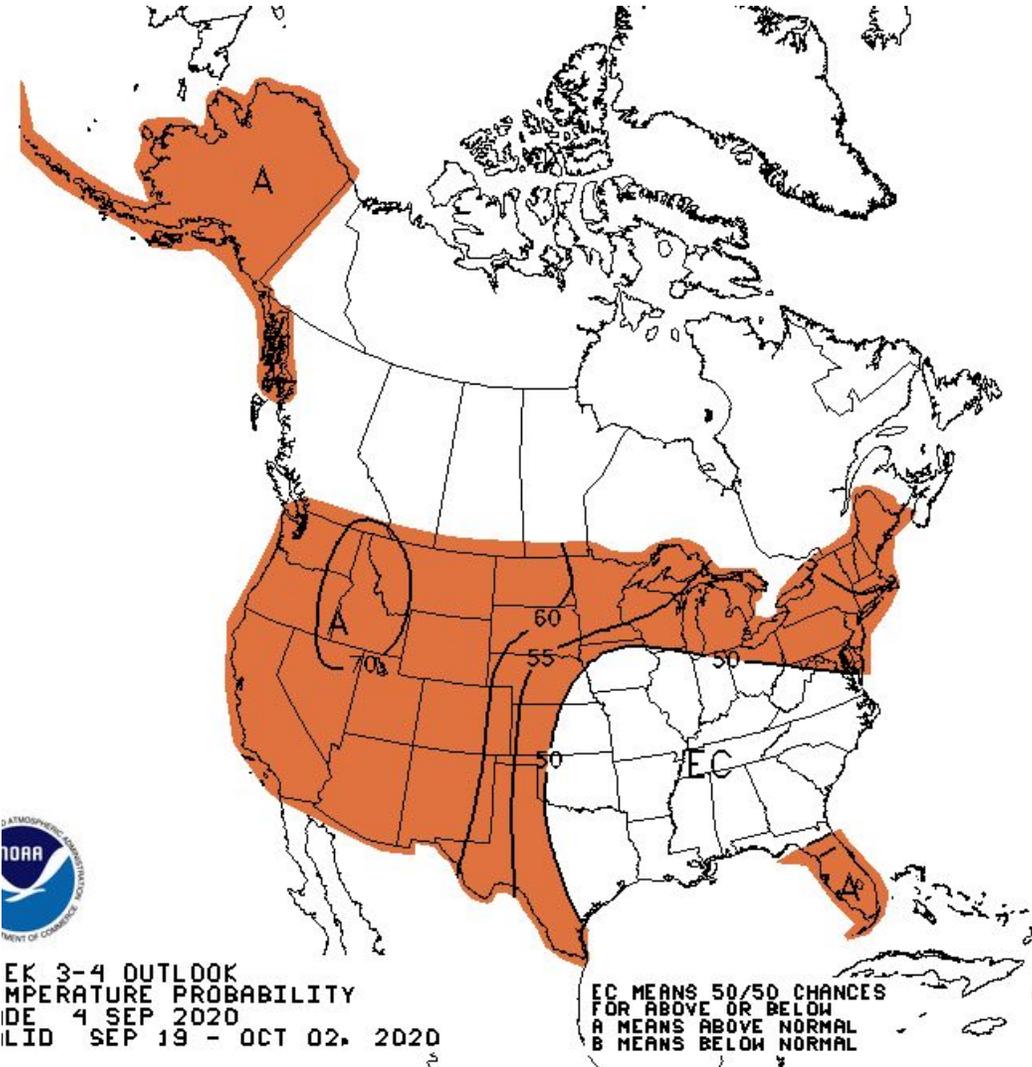
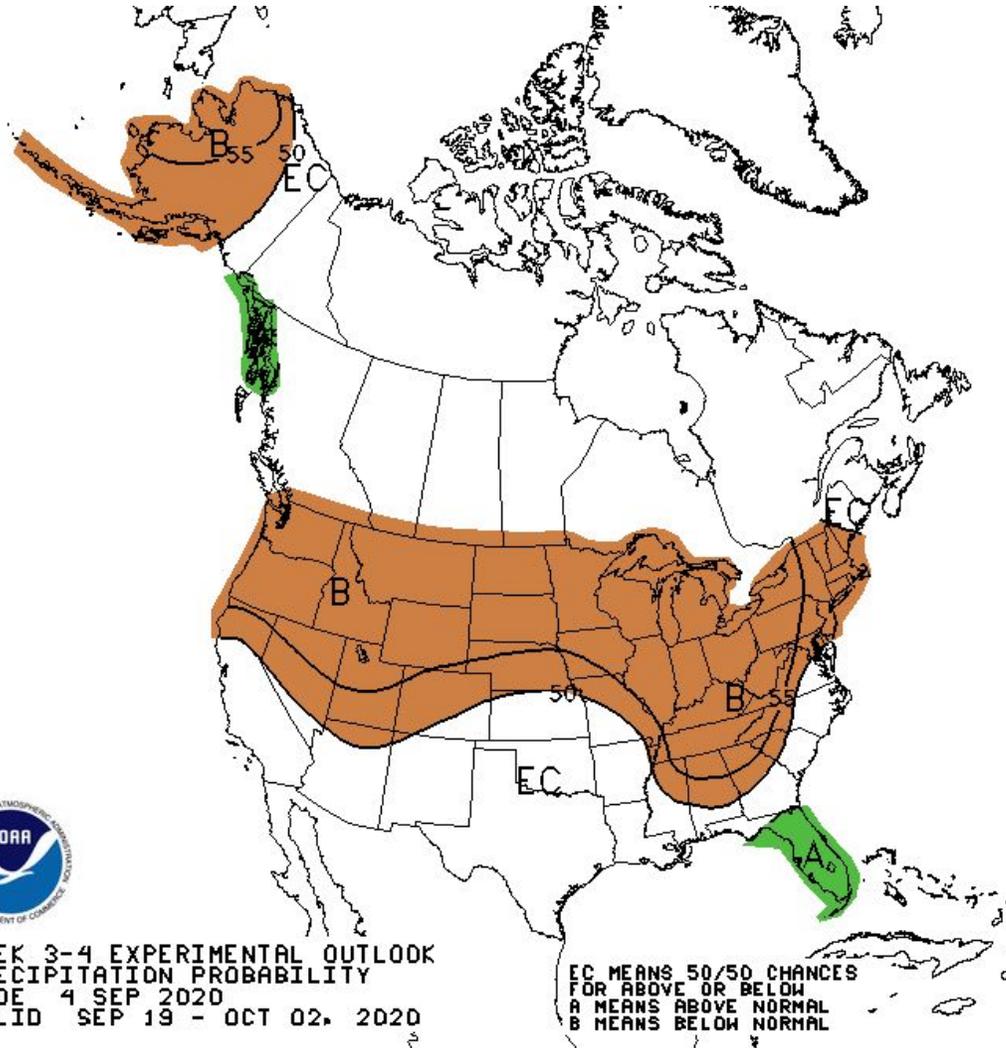


Outlook for September 15-21



Week 3-4 Outlook*: September 19-October 2

*Outlook updated at 3 pm EDT Friday



3 Month Outlook- Sept/Oct/Nov

