



# RI Drought Steering Committee NWS Update

Tuesday September 13<sup>th</sup> 2022

*Prepared by: National Weather Service Boston/Norton, MA*

# Drought Indices from RI Water 2030



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Rhode Island Water 2030  
Part 3

State Guide Plan 721

Table 2, Rhode Island Drought Indices and Phases

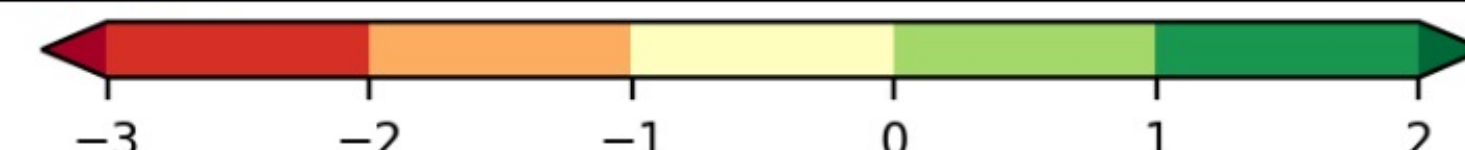
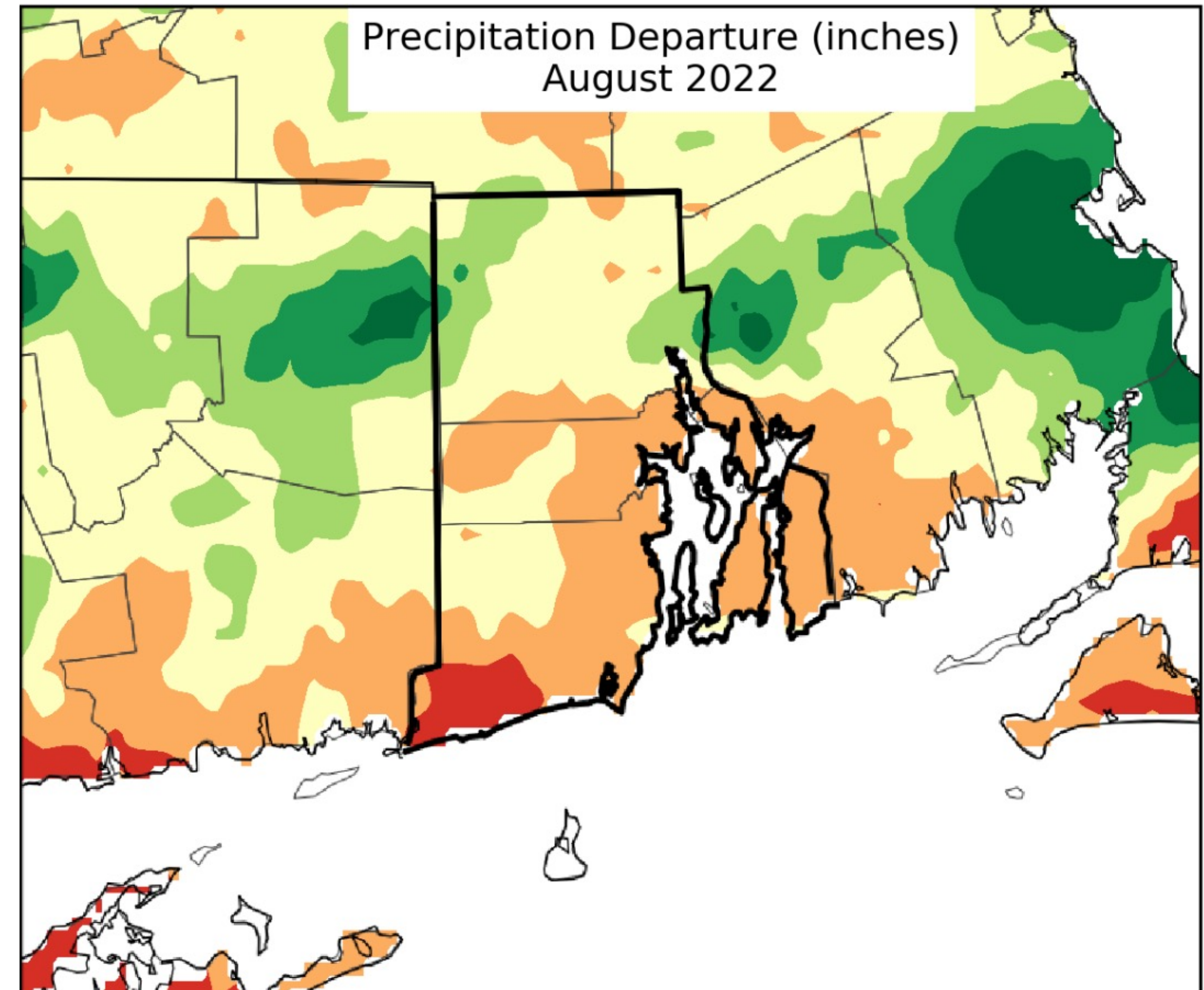
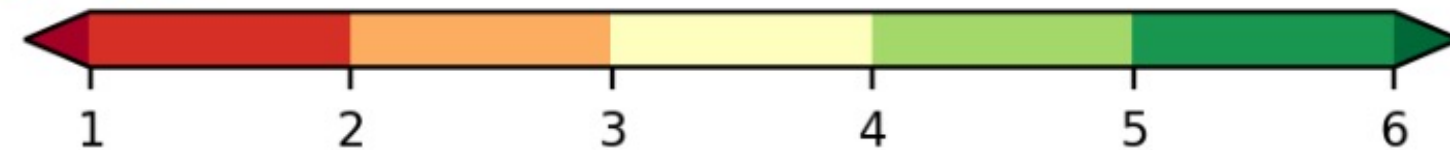
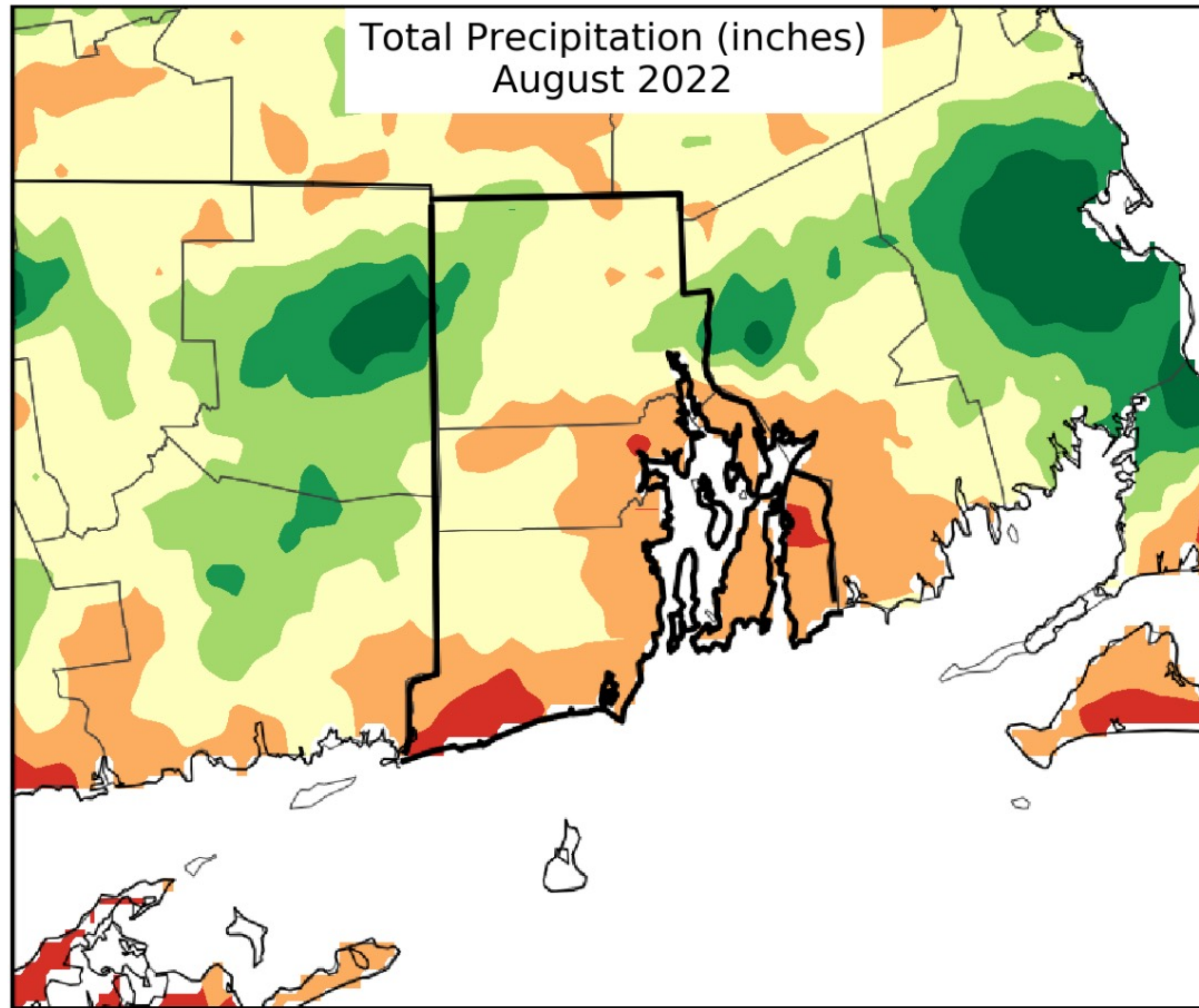
Drought Phase	Palmer Drought Index +	Crop Moisture Index	Precipitation +	Ground Water** +	Stream flow +	Reservoirs**
<b>Normal</b>	-1.0 to -1.99	0.0 to -1.0	Slightly Dry	1 month below normal 1 month below normal	2 consecutive months below normal	Reservoir levels at or near normal for the time of year
<b>Advisory</b>	-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
<b>Watch</b>	-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
<b>Warning</b>	-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
<b>Emergency</b>	-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

# August 2022 Rainfall and Departure



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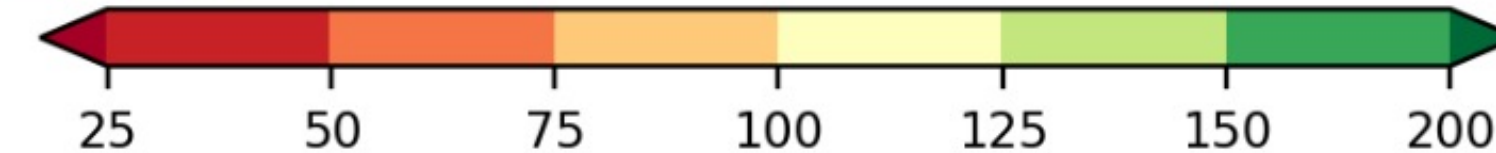
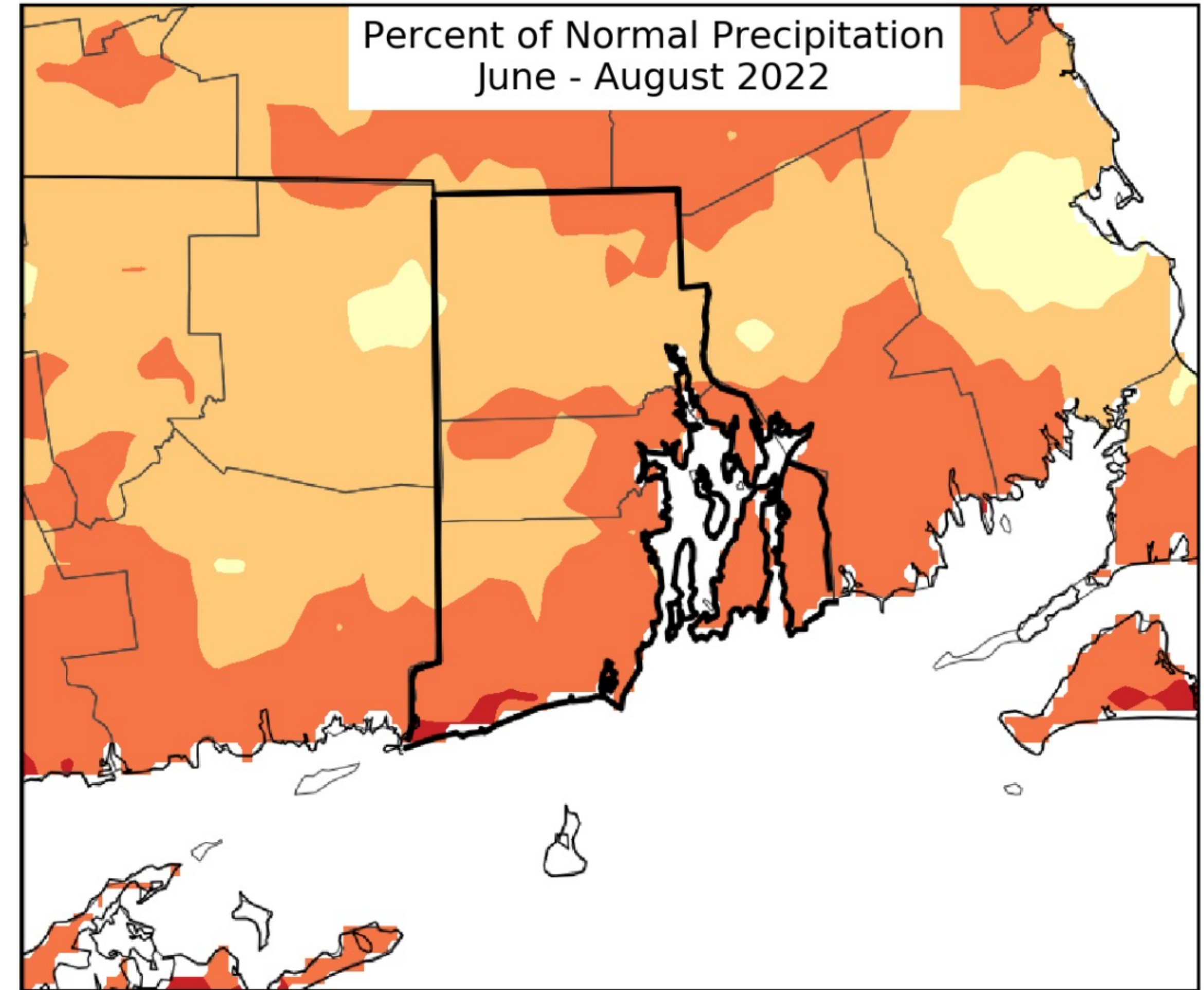
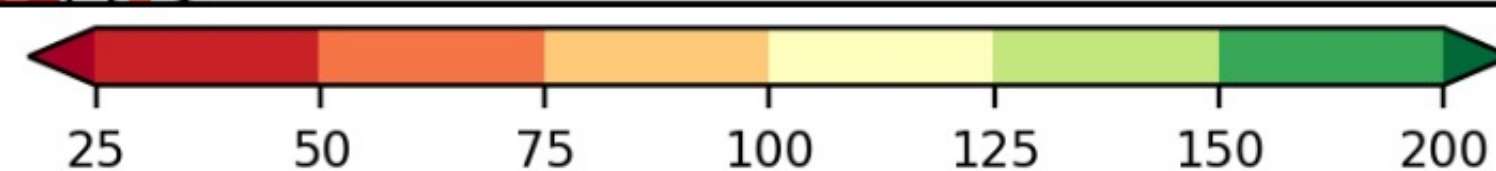
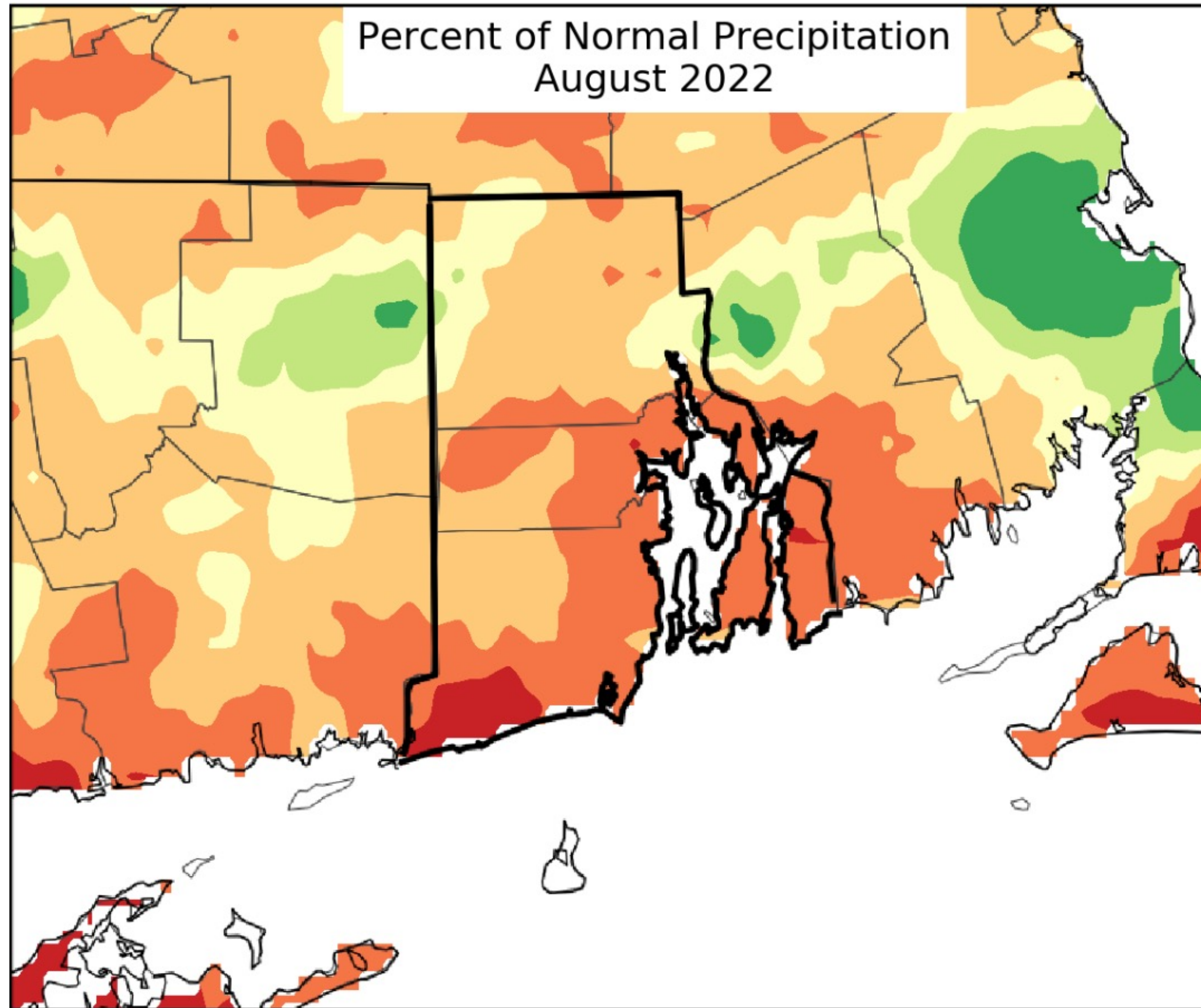
Generally 2 to 4 inches across RI with isolated higher and lower amounts



# August and June-August Percent of Normal



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# Rainfall Profile: Providence

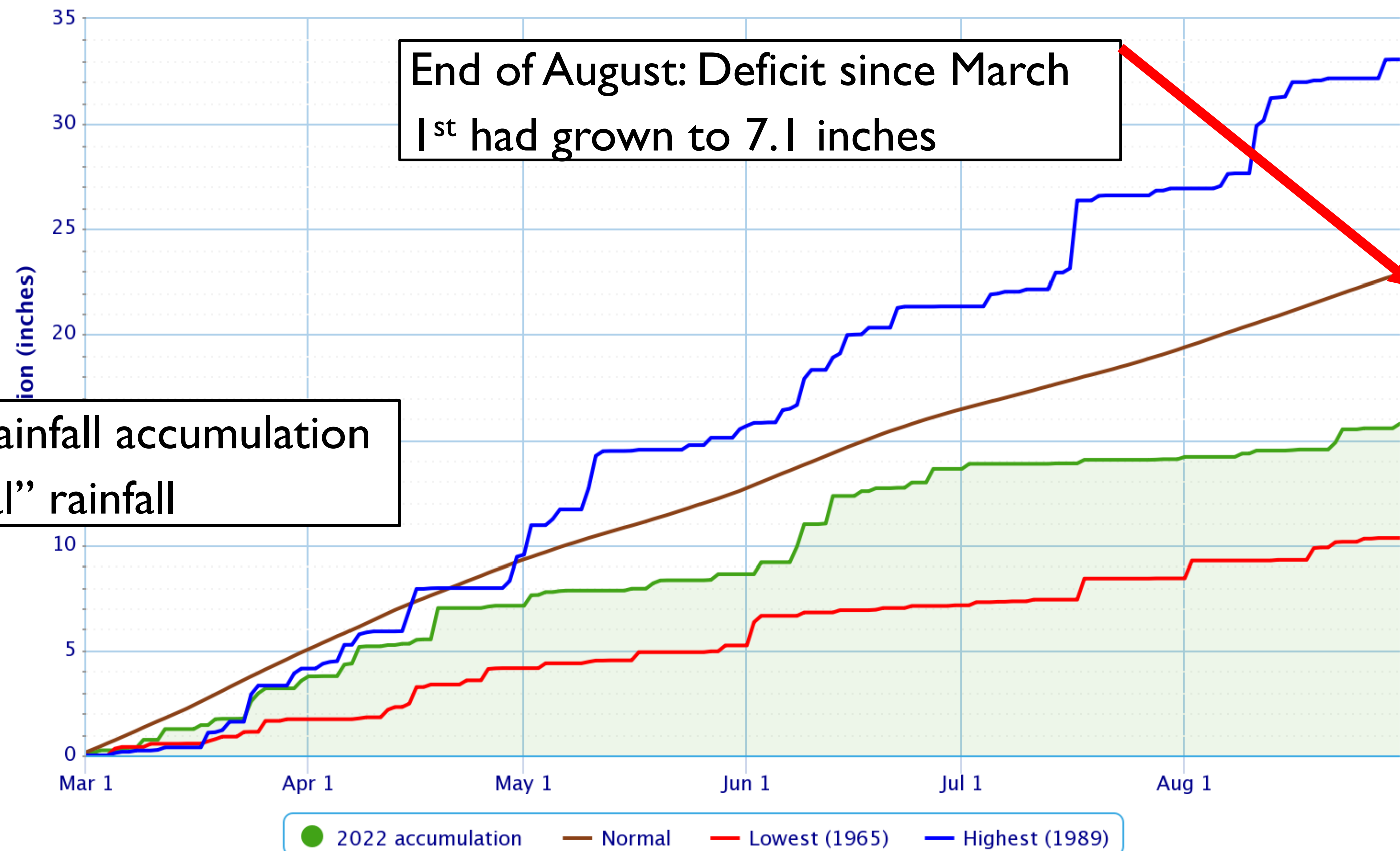


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Spring through June: Periods where it would dry out, then recover to some degree.  
Then exceptionally low rainfall during July with high heat brought a rapid intensification of dryness.

Accumulated Precipitation – Providence Area, RI (ThreadEx)

Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



Powered by ACIS

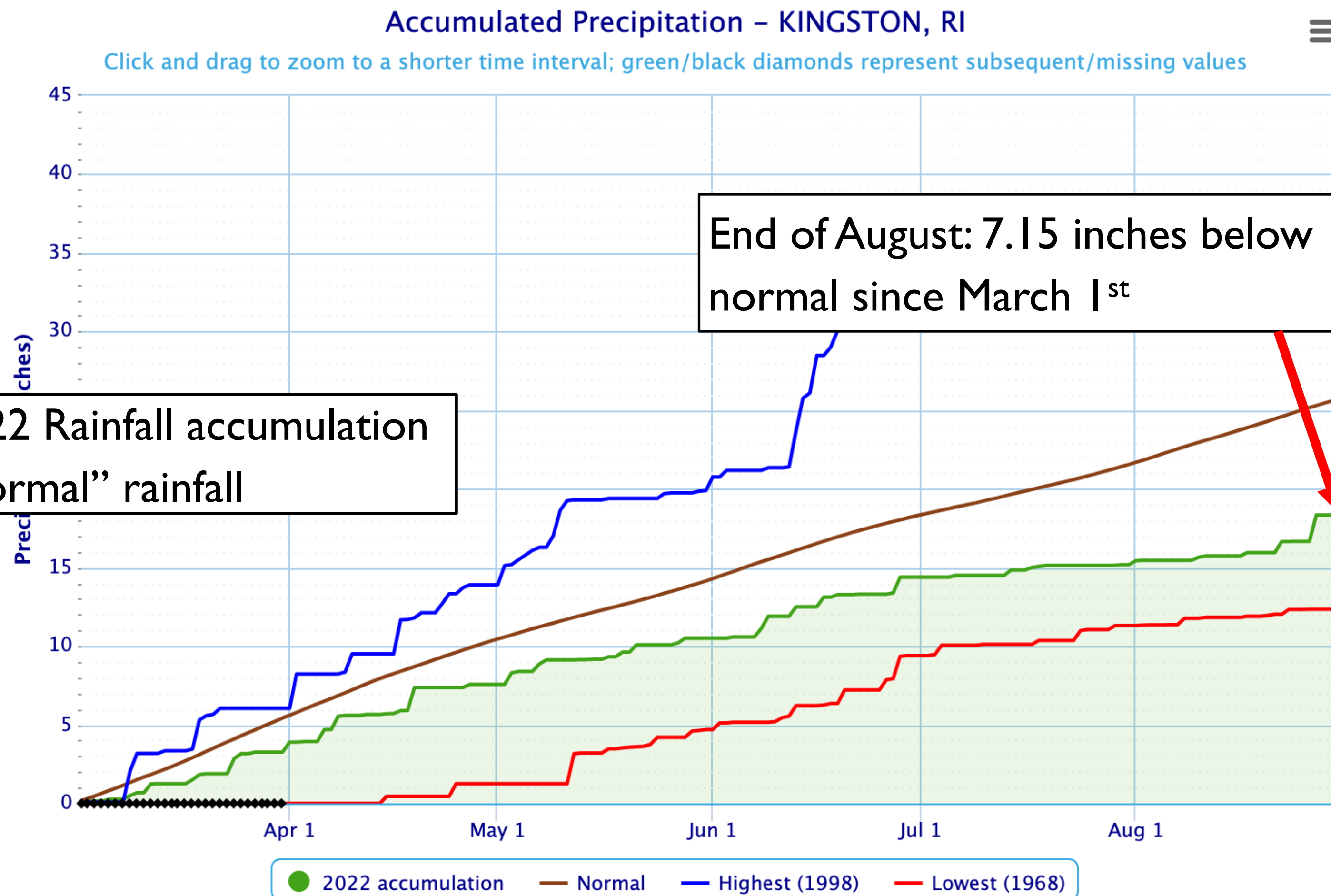
# Rainfall Profile: Kingston



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Much appreciation to the Kingston RI Cooperative Weather Observers!

Some beneficial rainfalls were observed in Kingston toward the end of August, but the deficit since March 1<sup>st</sup> still increased to 7.15 inches.



# August and July/August Rainfall by Region



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RI 1-month Aug 2022	Rainfall	Departure	Percent	Normal
Northwest	4.25	-0.26	94	4.51
Northeast	4.18	0.17	104	4.01
Central West	2.18	-2.10	51	4.28
Central East	2.66	-1.35	66	4.01
Eastern	2.40	-1.43	63	3.83
Southern	2.65	-1.37	66	4.02
New Shoreham	4.20	0.00	100	4.20

**Large spread in precipitation distribution due to a couple of generous thunderstorm events**

RI 2-month Jul-Aug 22	Rainfall	Departure	Percent	Normal
Northwest	6.55	-1.53	81	8.08
Northeast	6.10	-1.52	80	7.62
Central West	3.05	-4.69	39	7.74
Central East	3.46	-3.70	48	7.16
Eastern	2.87	-4.01	42	6.88
Southern	3.41	-3.93	46	7.34
New Shoreham	5.66	-1.50	79	7.16

**Central, Eastern, Southern, Drought Regions <50% of normal:**

**Drought Advisory Level For rainfall**

# 3 and 6-Month Rainfall by Region



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RI 3-month Jun-Aug 22	Rainfall	Departure	Percent	Normal
Northwest	10.62	-1.98	84	12.60
Northeast	9.73	-2.30	81	12.03
Central West	8.23	-3.72	69	11.95
Central East	8.06	-3.13	72	11.19
Eastern	6.49	-4.05	62	10.54
Southern	7.09	-4.12	63	11.21
New Shoreham	7.46	-3.48	68	10.94

**Eastern and Southern Drought Regions <65% of 3 month normal:**

**Central West/East <70% of 6 month normal**

**Drought Watch Level For rainfall**

RI 6-month Mar-Aug 22	Rainfall	Departure	Percent	Normal
Northwest	18.99	-7.28	72	26.27
Northeast	18.17	-7.01	72	25.18
Central West	17.31	-8.13	68	25.44
Central East	16.59	-7.75	68	24.34
Eastern	15.90	-7.22	69	23.12
Southern	17.26	-7.18	71	24.44
New Shoreham	17.52	-5.96	75	23.48

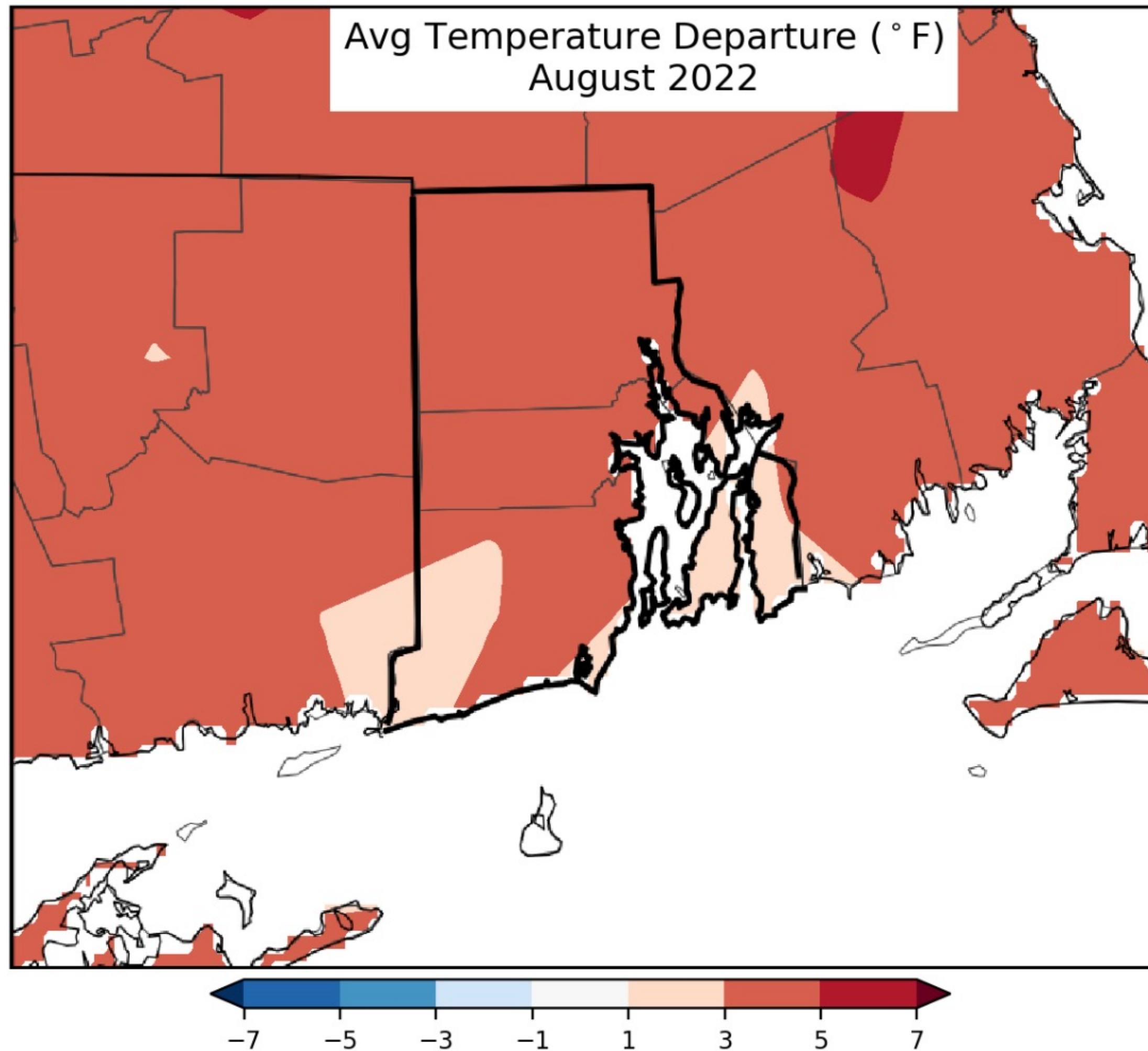
**Eastern Drought Region <70% of Normal for 6 months & <65% of normal for 3 months: Meets Drought Warning Criteria for Precipitation**



# August 2022 Top Warmest July Rankings



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**Rankings are preliminary until assessed and verified by NCEI**

Location	Warmest August Ranking	Temperature Departure from Normal Degrees F	Records go back to...
Providence	1st	+4.0	1904
Kingston	2 <sup>nd</sup>	+3.5	1893
Block Island	-	-	-
North Foster	-	-	-

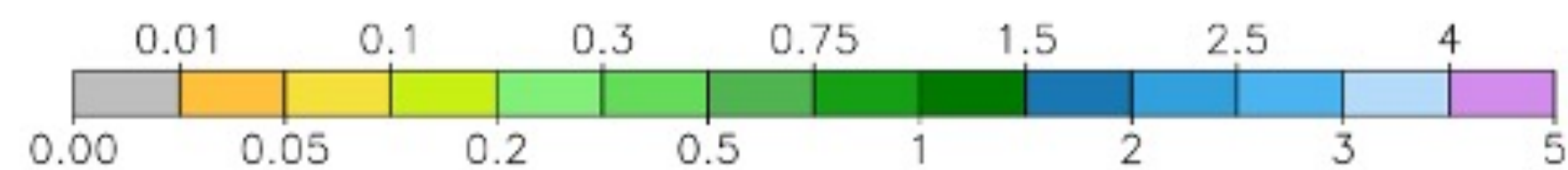
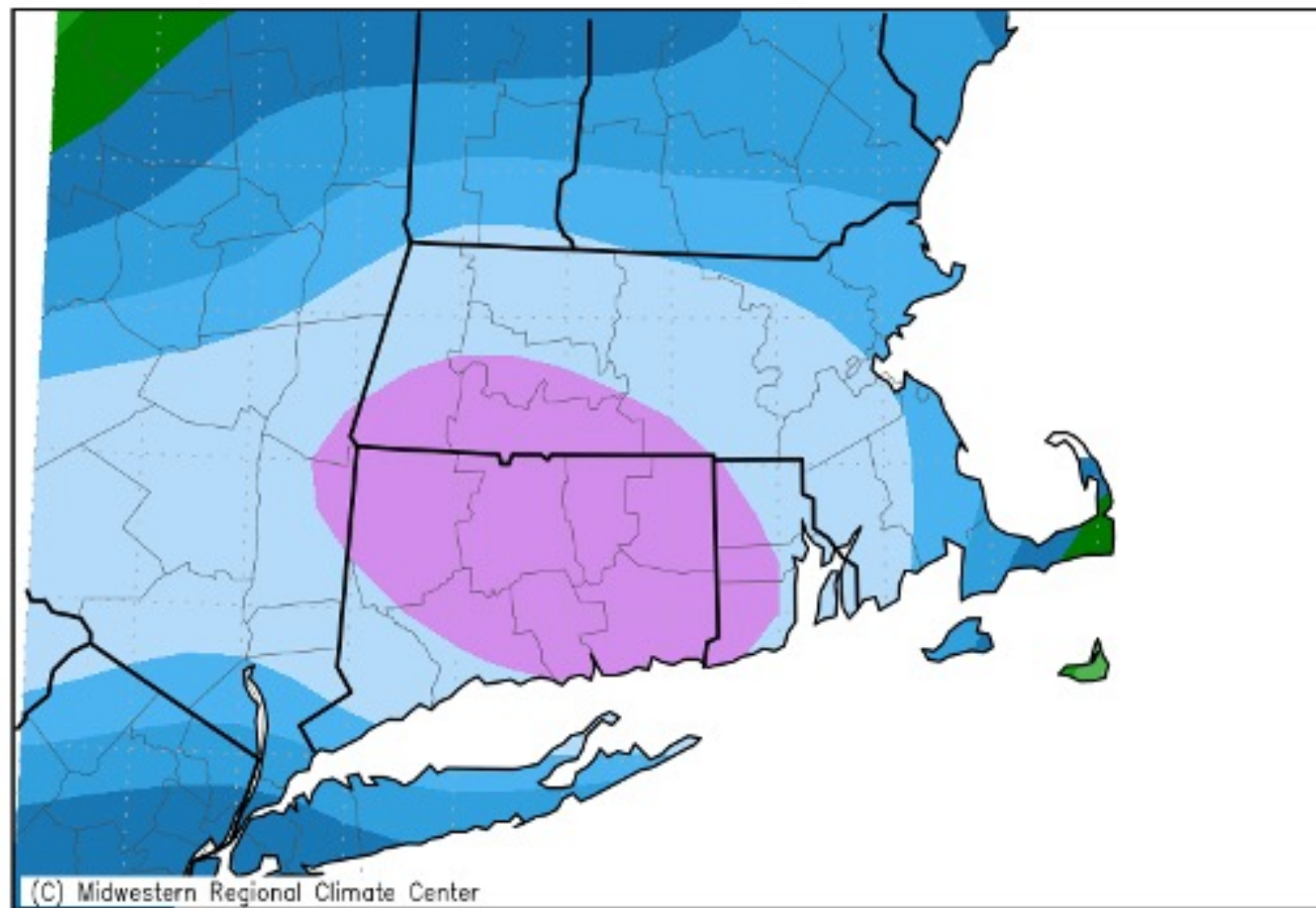
# September MTD Rainfall and Temperatures



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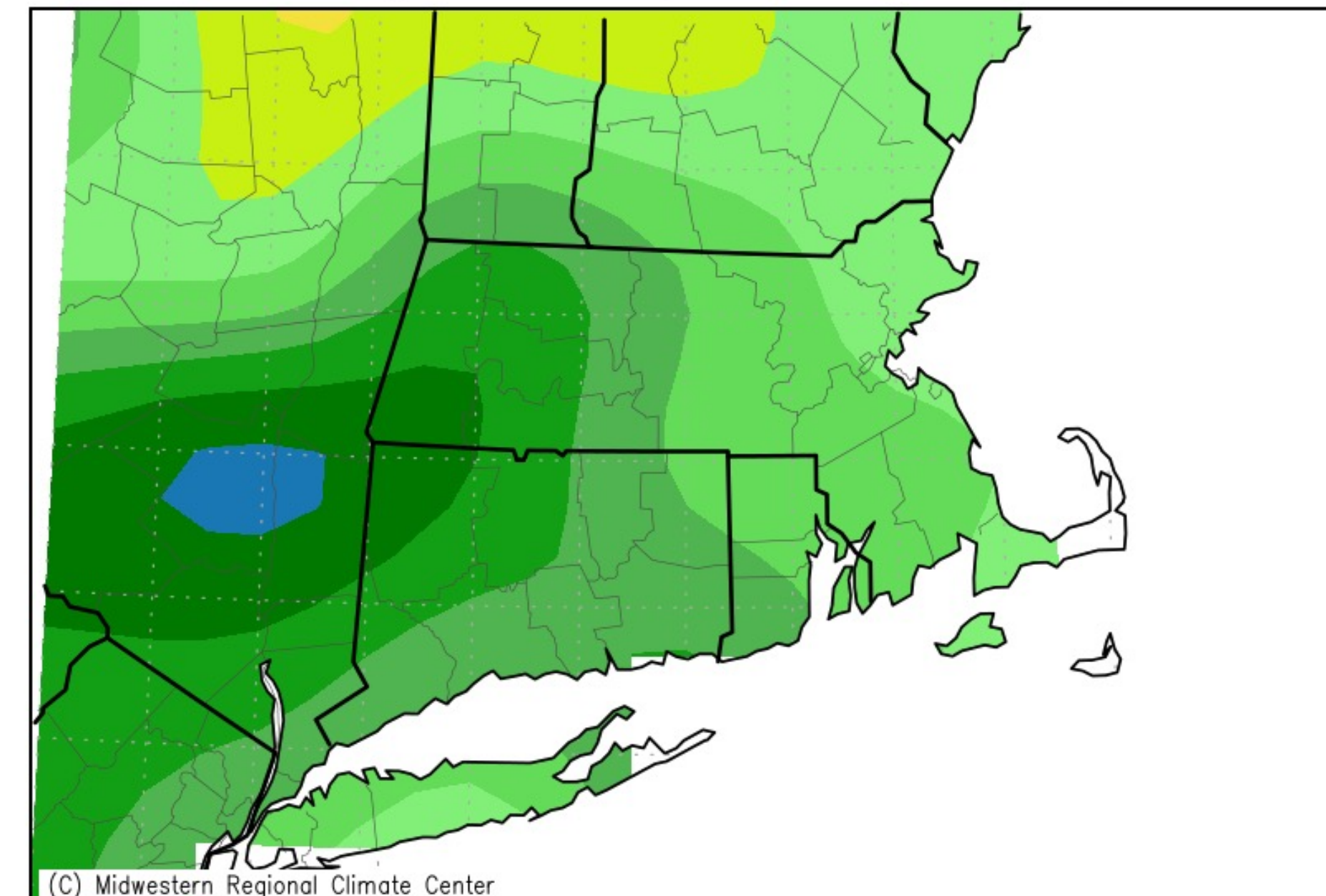
Portions of RI have already exceeded their monthly normal precipitation for September

Accumulated Precipitation (in)  
September 1, 2022 to September 7, 2022



Midwestern Regional Climate Center

Accumulated Precipitation (in): September 1 to September 30  
Averaged over 30 years: 1991 to 2020



Midwestern Regional Climate Center

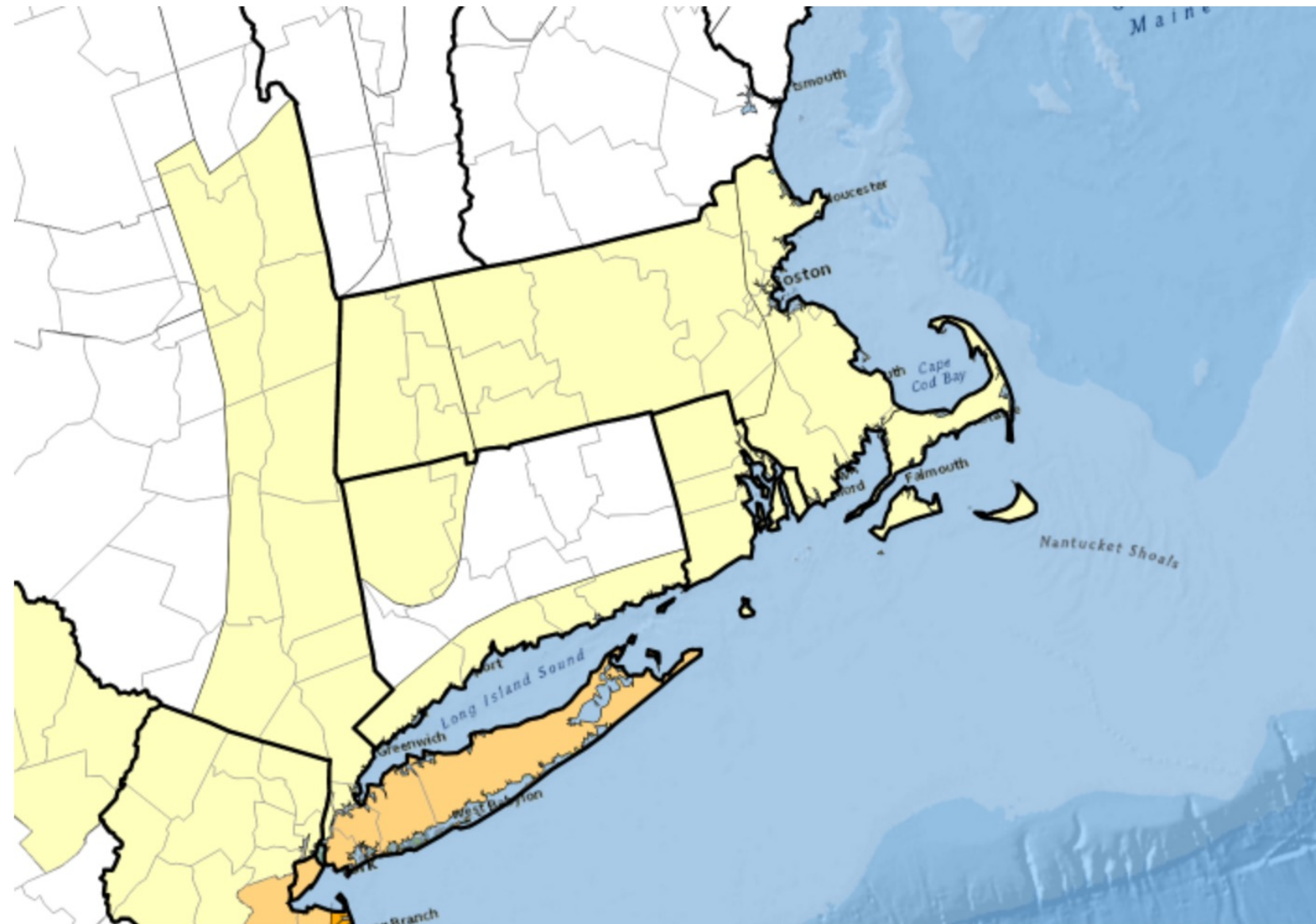
# Crop Moisture Index

Valid through Week ending September 3rd



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## Crop Moisture Index



Basemap Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, INCREMENT P

### Dry Conditions



### Wet Conditions



### Other Values



Source(s): Climate Prediction Center  
Updates Weekly - 09/03/22

[Drought.gov](http://Drought.gov)

CMI for RI: -0.81 Slightly Dry  
No longer meets Drought  
Advisory threshold



*Issues remain with the calculations of the Palmer Drought Severity Index  
Values continue to be too dry across the region*

Feedback from CPC: Calculations will improve over the next few weeks. Current calculations are better, but use with caution. More work to be done on program.

Latest CPC PDSI calculation: -4.05 (Extreme Drought)  
Conservative approach to allow for dry bias/margin of error: Between -2.5 and -3.0 (Moderate to Severe Drought)

Corresponding Drought Phase for this Index: Drought Advisory/Watch

# Forecast Through 8 am Monday Sep 19



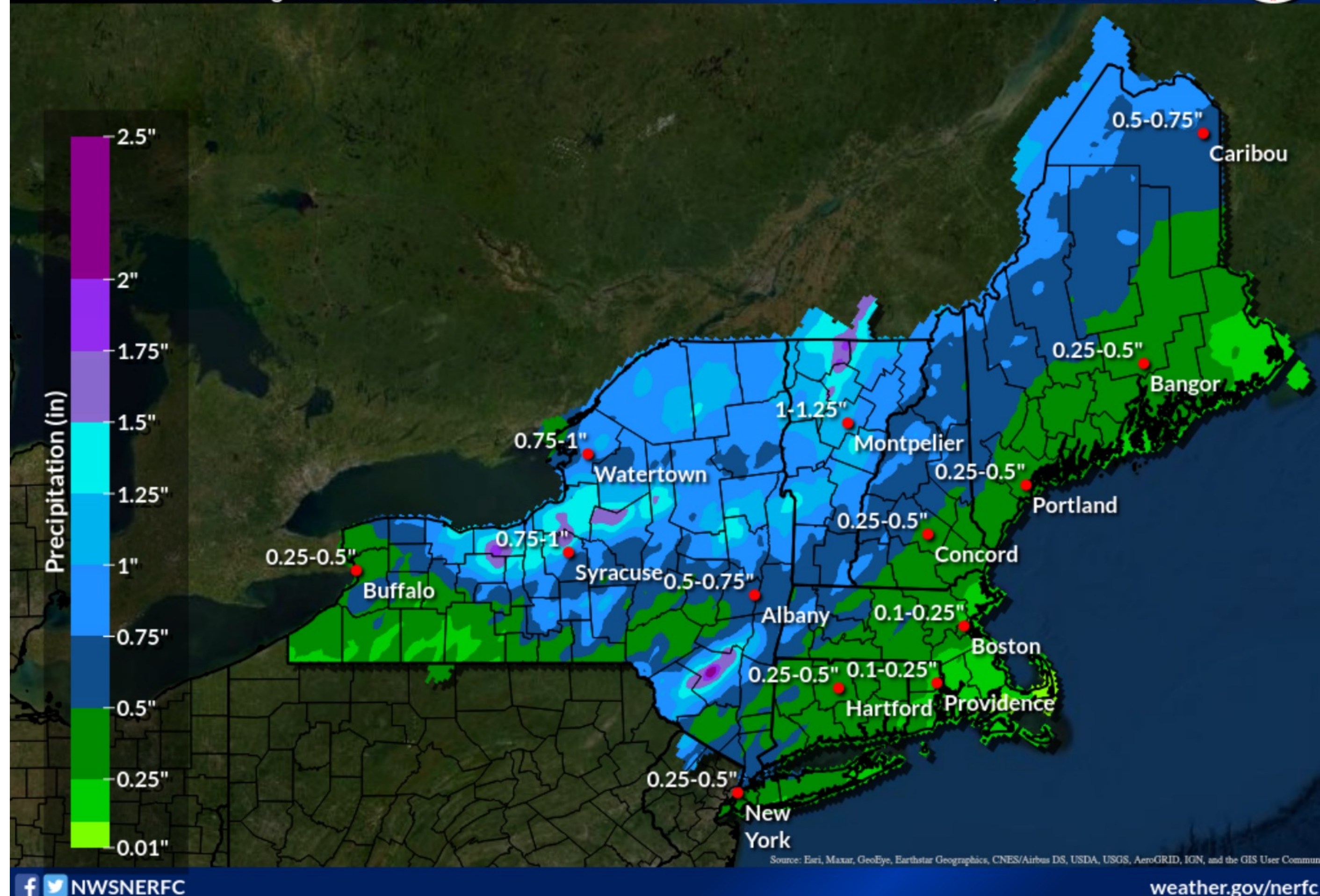
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Mostly Dry Over the next Week

## 7 Day WPC Precipitation Forecast

Valid Mon 8:00AM through Mon 8:00AM EDT

River Forecast Center  
Northeast RFC  
Issued Sep 12, 2022 8:05 AM EDT



**Forecast through next Monday**  
**(Mainly Consists of Rainfall expected today)**

Showers and thunderstorms possible through this evening.

Drying trend ensues with more seasonable temperatures expected through the end of the week

Slightly above normal temperatures return this weekend.

Next chance for substantial precipitation won't be until early next week.

# CPC 8-14 Day Outlook

September 19-25 2022



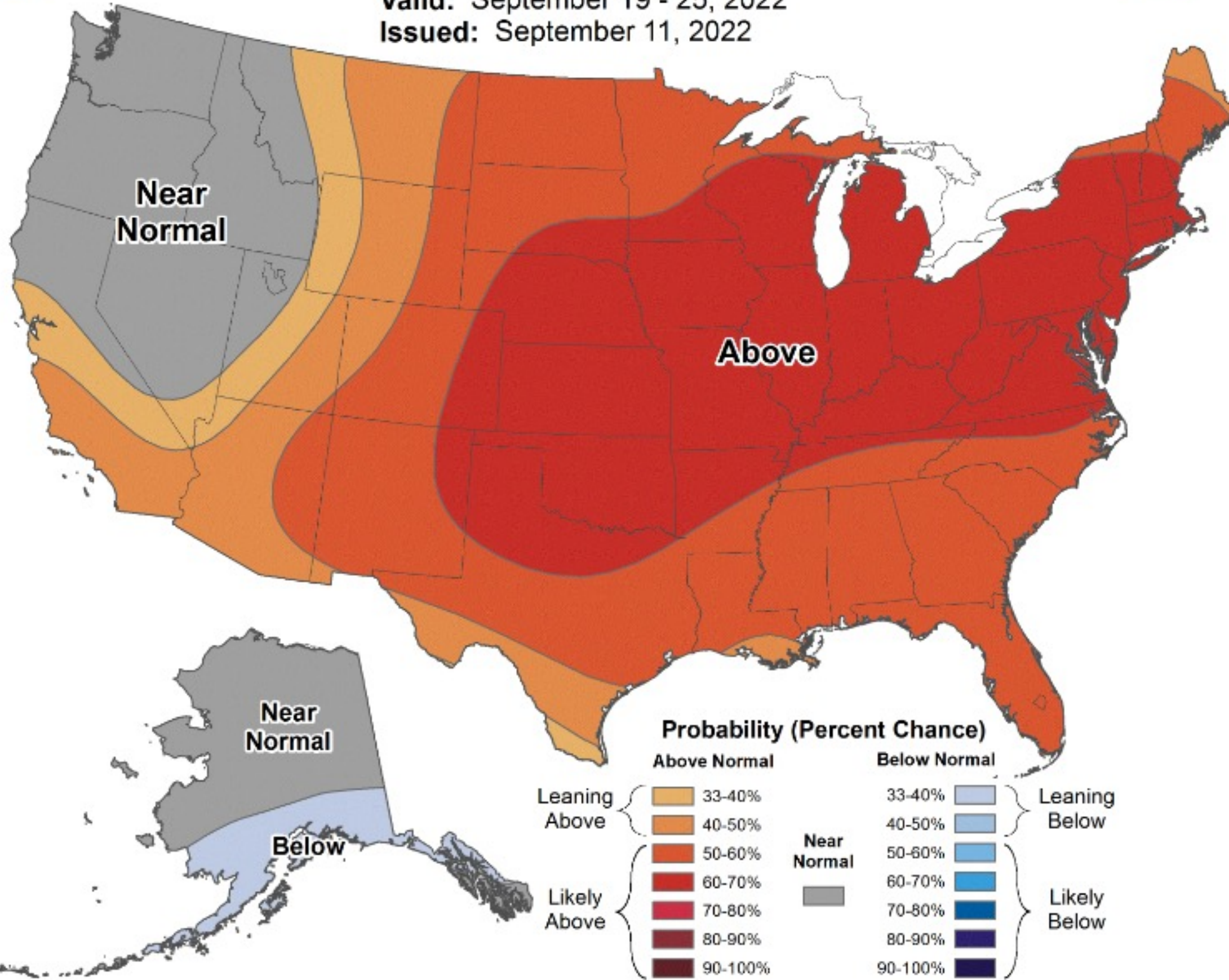
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## 8-14 Day Temperature Outlook



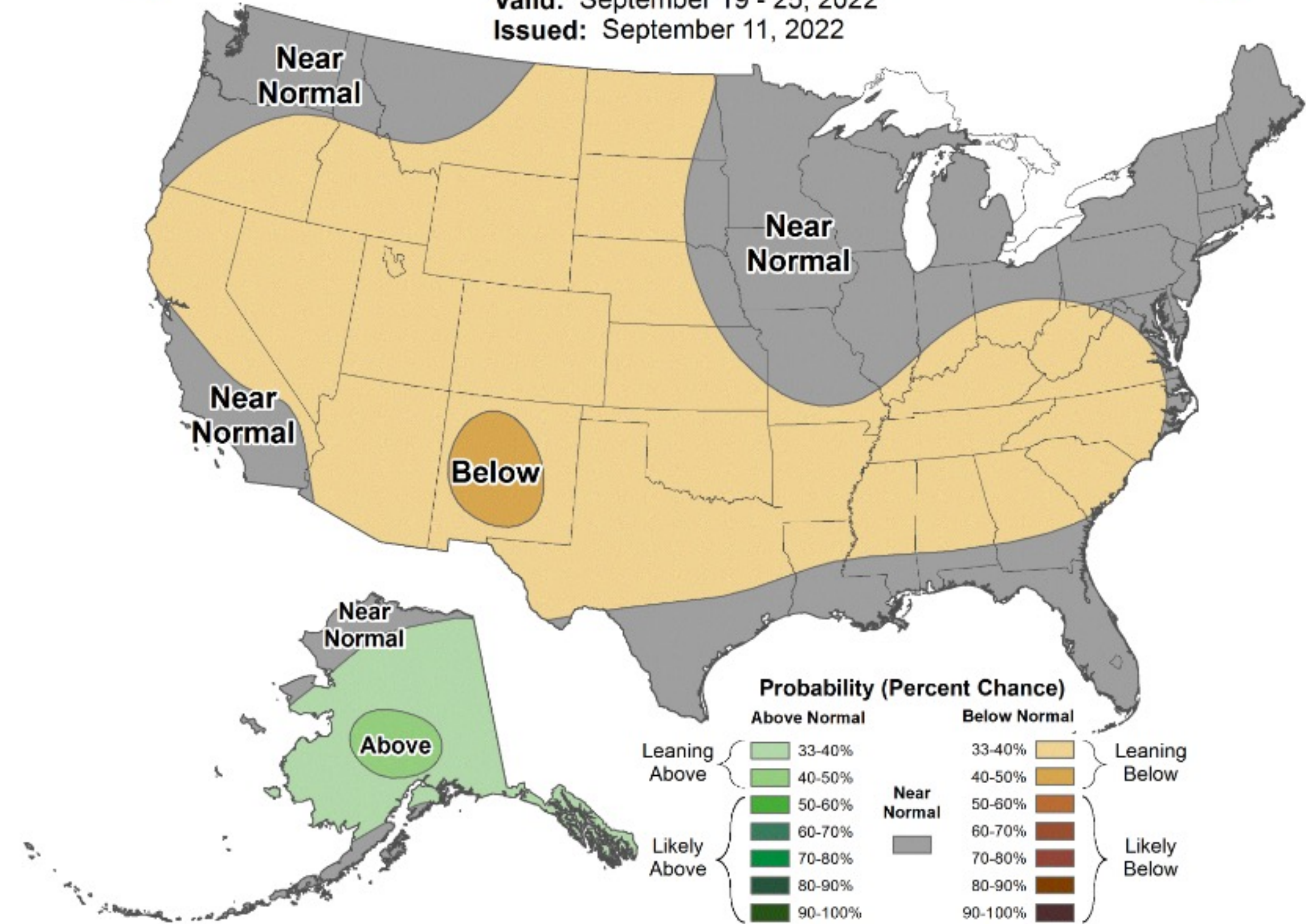
Valid: September 19 - 25, 2022  
Issued: September 11, 2022



## 8-14 Day Precipitation Outlook



Valid: September 19 - 25, 2022  
Issued: September 11, 2022



# CPC Outlook for Sep/Oct/Nov



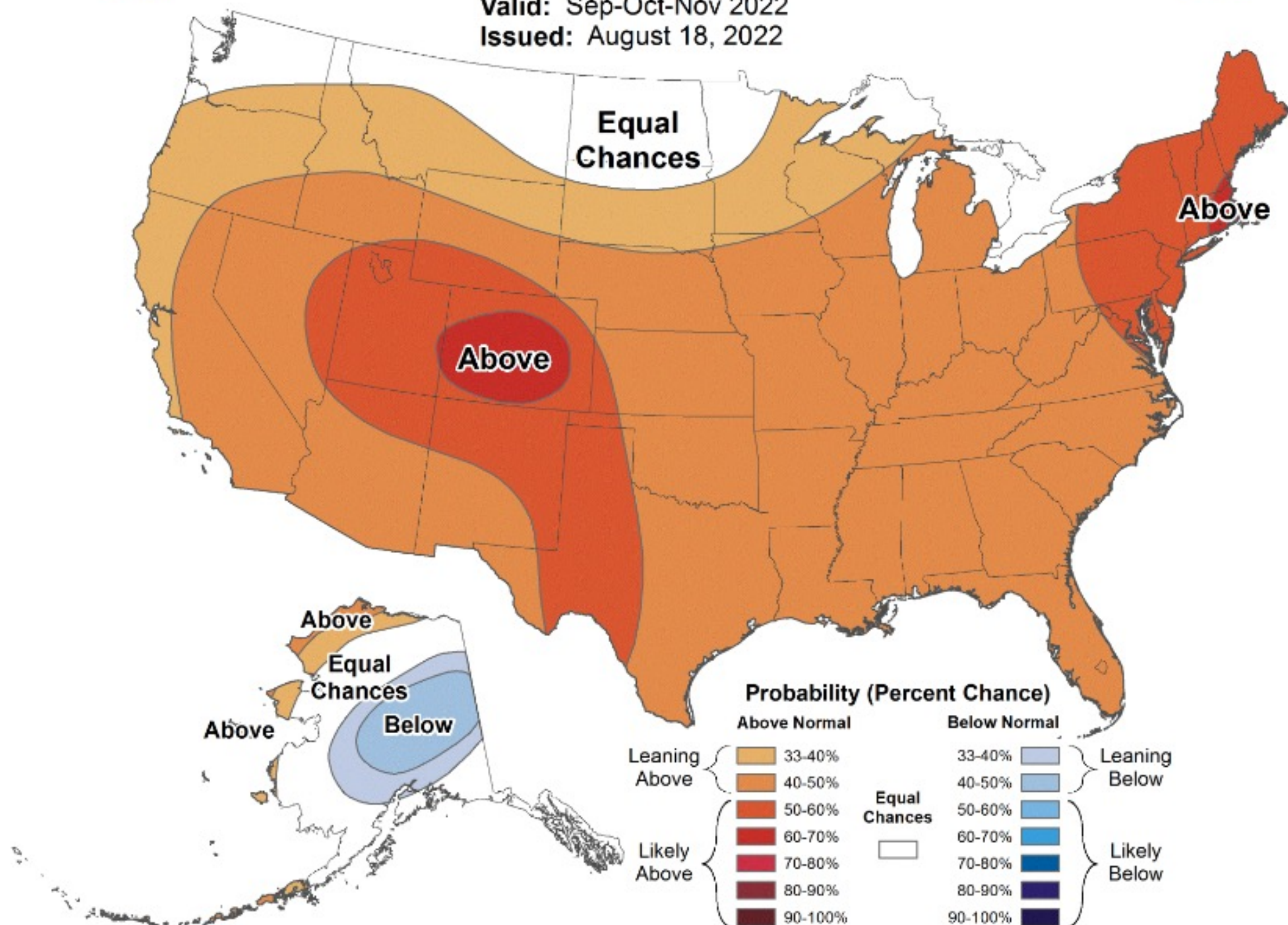
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## Seasonal Temperature Outlook



Valid: Sep-Oct-Nov 2022  
Issued: August 18, 2022



## Seasonal Precipitation Outlook



Valid: Sep-Oct-Nov 2022  
Issued: August 18, 2022

