



RI Drought Steering Committee NWS Update

Tuesday February 14th 2023

Prepared by: National Weather Service Boston/Norton, MA

Drought Indices from RI Water 2030



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WEATHER FORECAST OFFICE

Recovery Criteria

| Current Drought Phase | Next Drought Phase | Reduce Drought Phase by one category |
|-----------------------|---|---|
| Emergency | Emergency-continued below normal conditions | Groundwater levels at or above normal and no precipitation deficit for past 3 months; and/or water resource problems which prompted the emergency have abated |
| Warning | Emergency-worsening conditions or continued below normal conditions | 2 consecutive months of groundwater levels at or above normal and near normal precipitation for past 6 months |
| Watch | Warning-worsening conditions Watch continued below normal | 2 consecutive months of groundwater levels at or above normal and near normal precipitation for past 6 months |
| Advisory | Watch-worsening conditions | 2 consecutive months of groundwater levels at or above normal and near normal precipitation for past 3 months |

January 2023 Rainfall and Departure

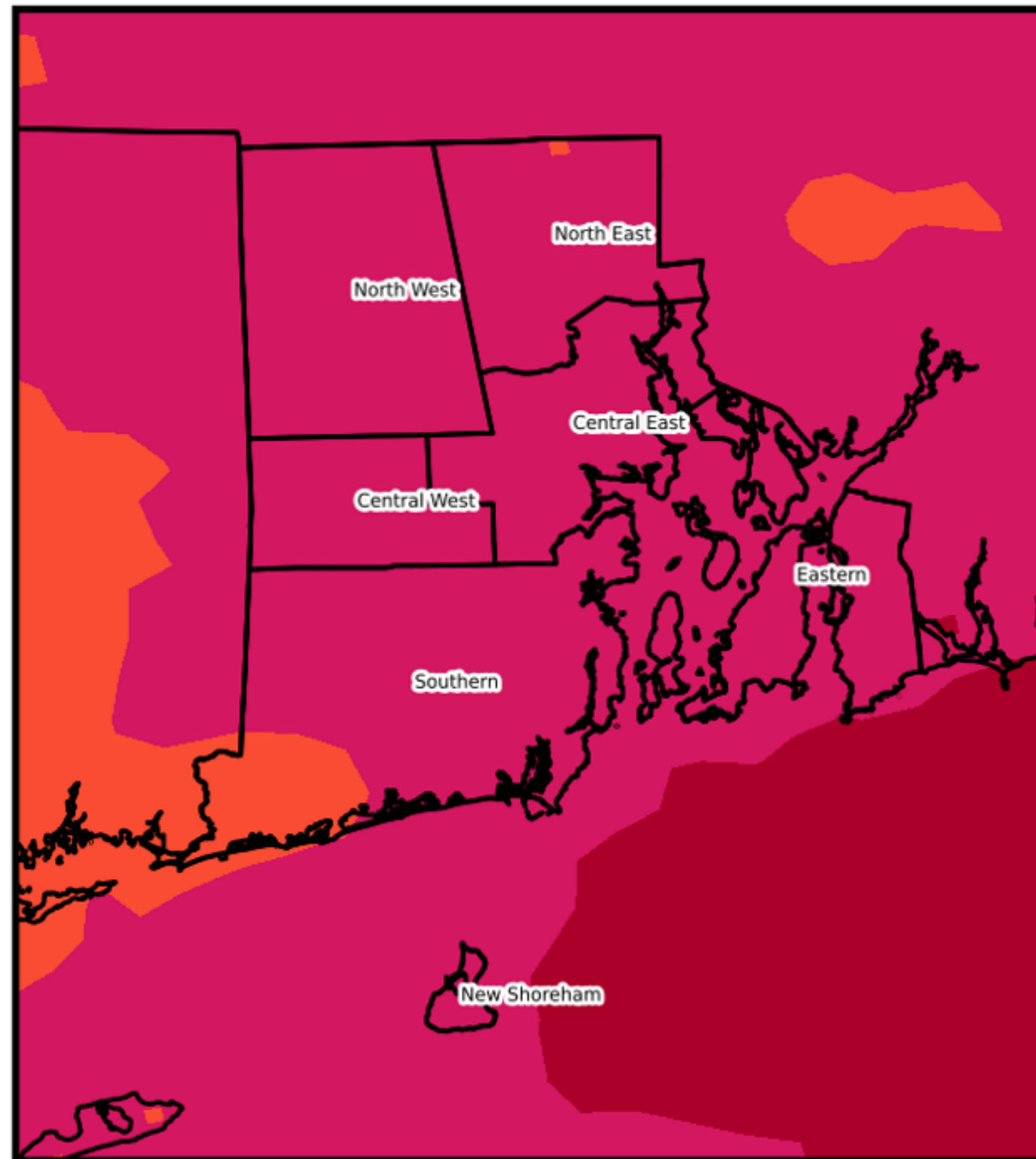


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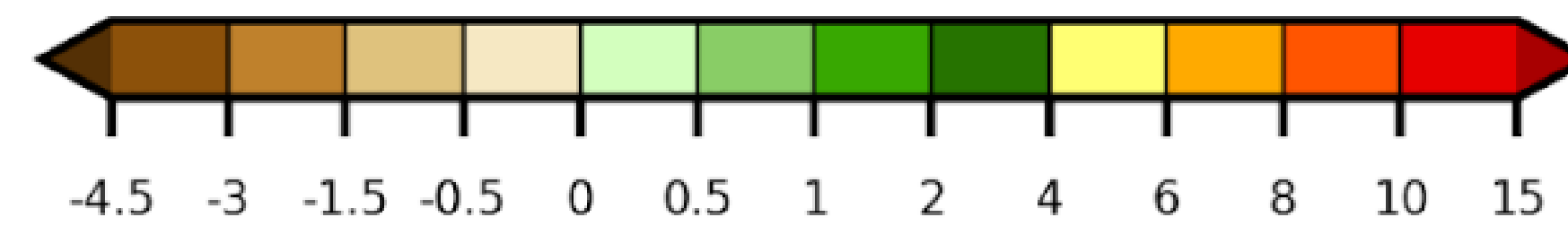
Generally 6 to 8 inches across RI with isolated higher and lower amounts

Accumulated Precipitation (inches)
January 01, 2023 to January 31, 2023

Precipitation Departure from Normal (inches)
January 01, 2023 to January 31, 2023



Precipitation (inches)



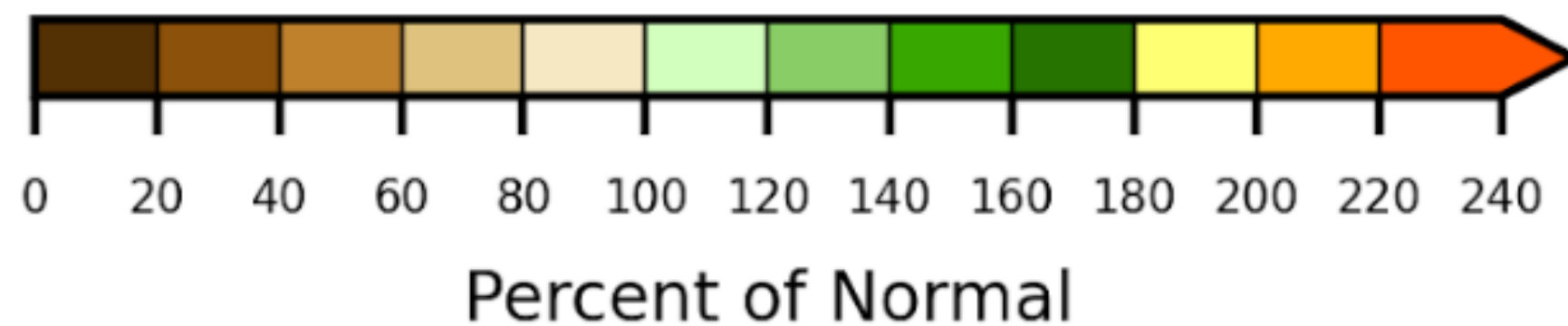
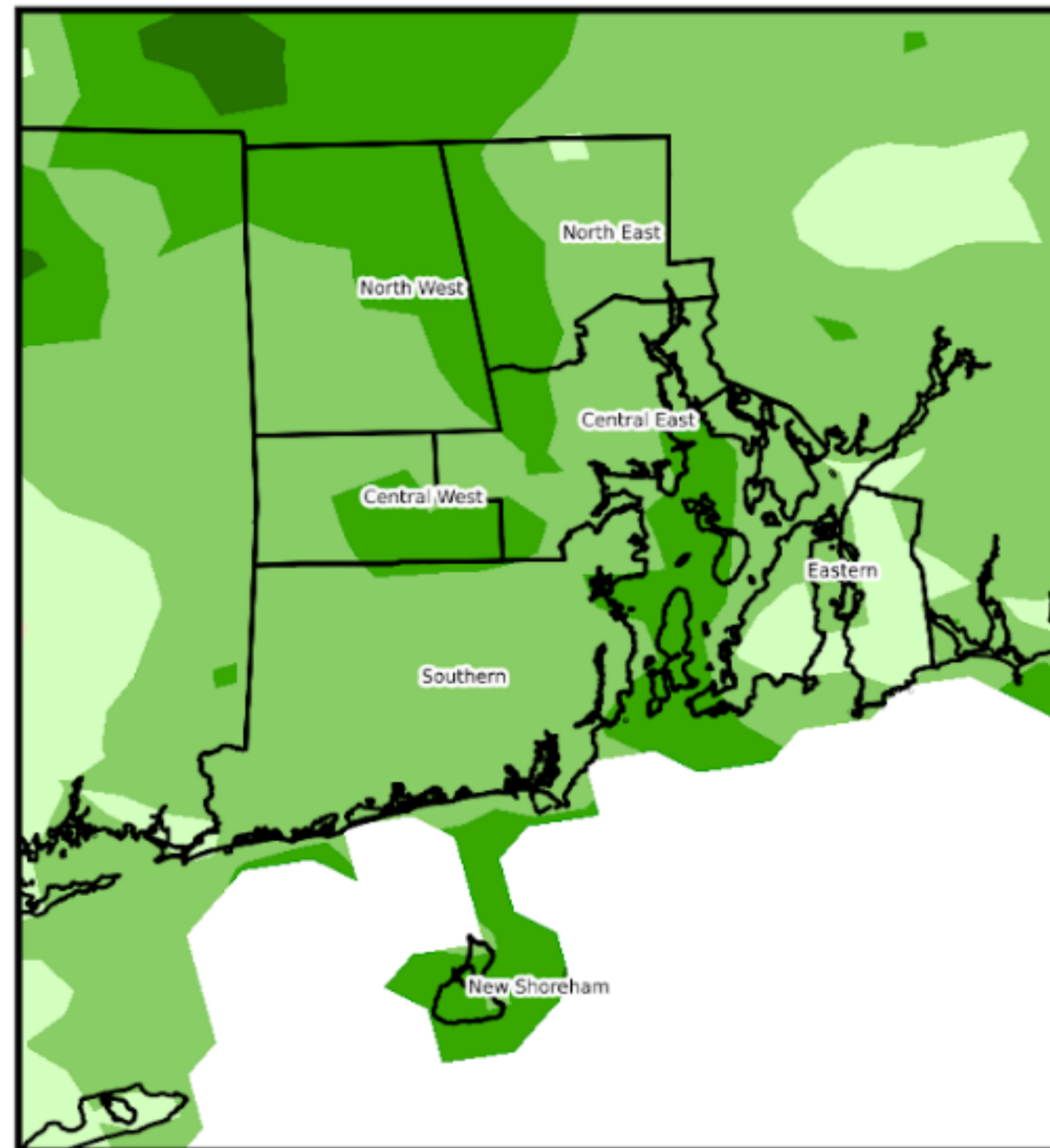
Departure from Normal (inches)

Nov-Jan and Aug-Jan Percent of Normal

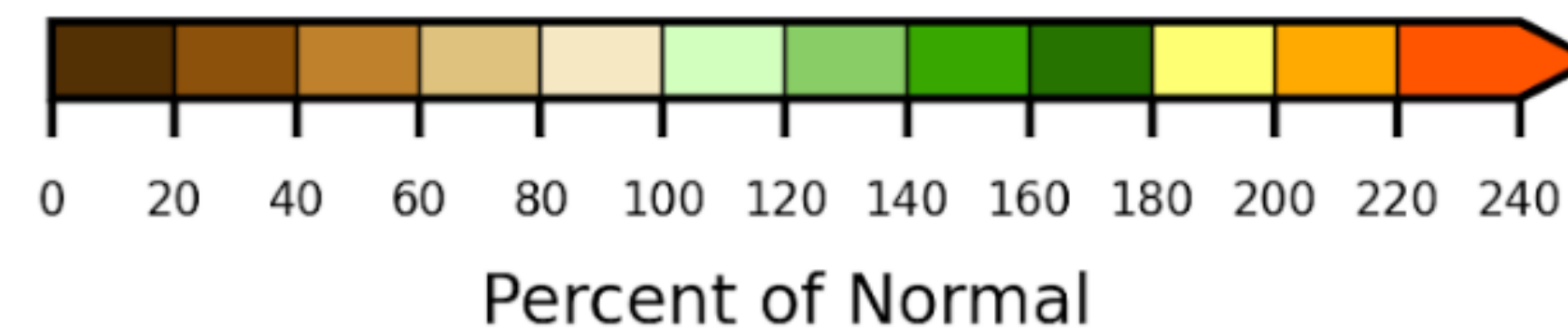
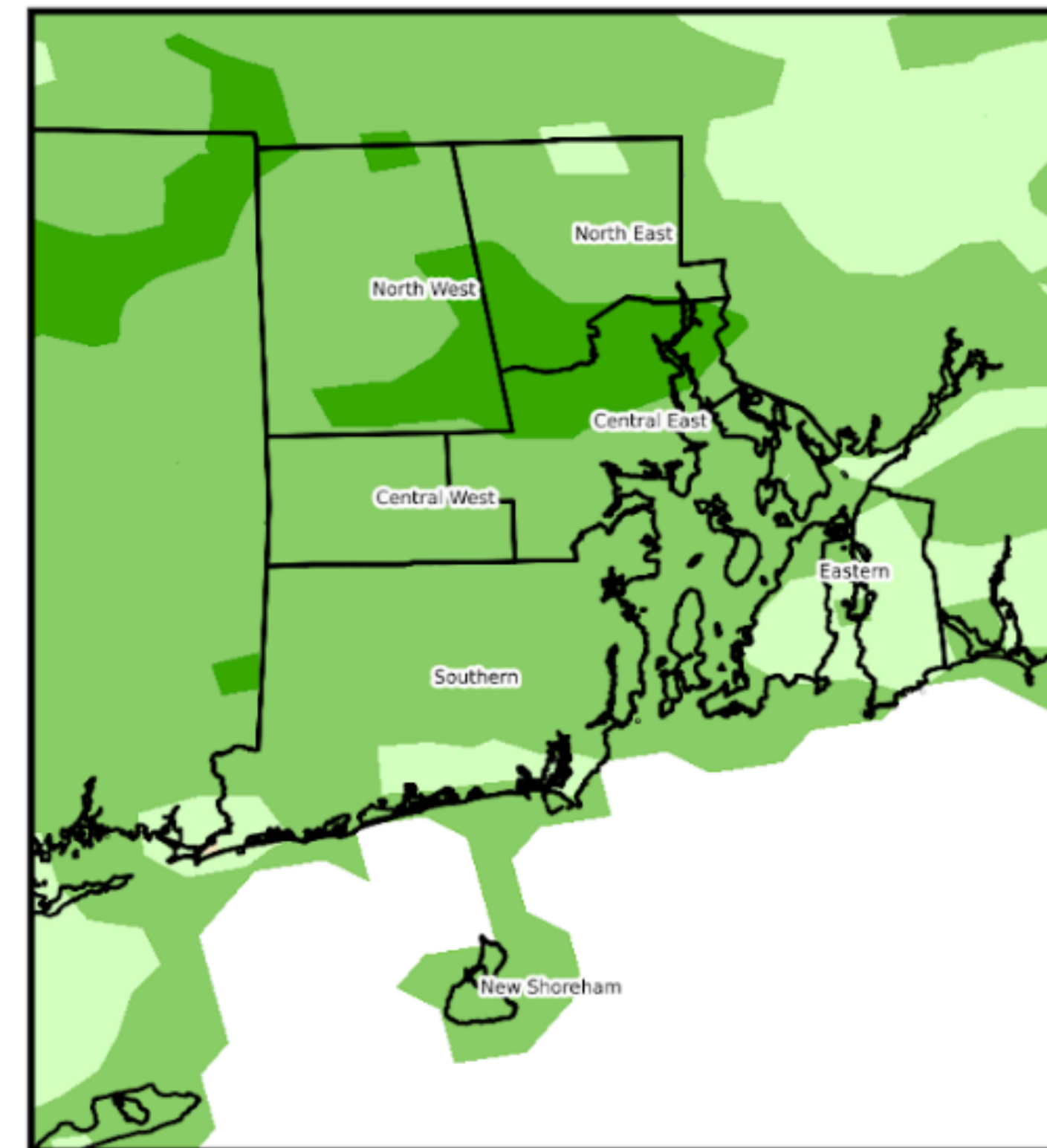


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Precipitation Percent of Normal November 01, 2022 to January 31, 20



Precipitation Percent of Normal August 01, 2022 to January 31, 2023



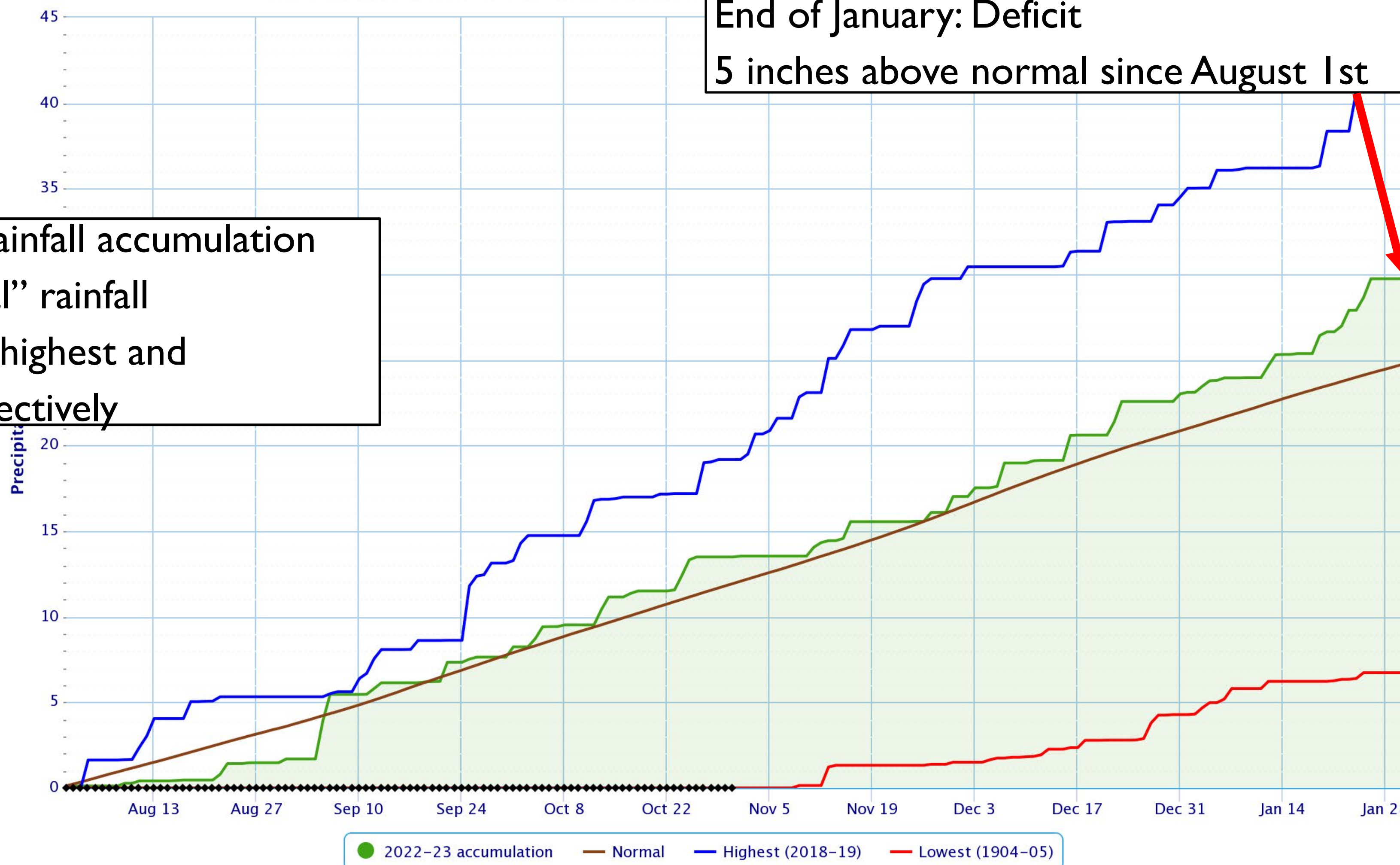
Rainfall Profile: Providence



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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

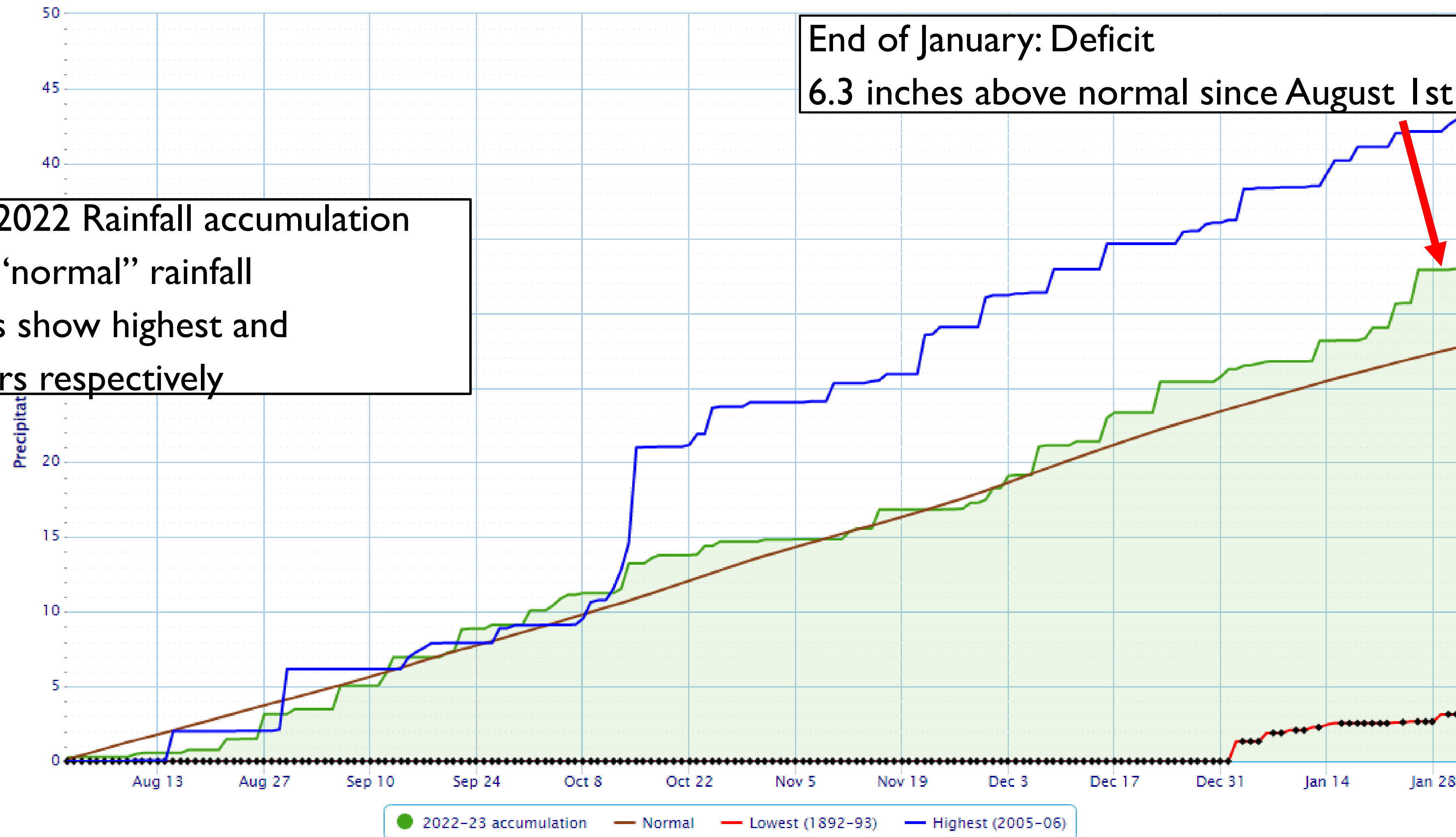
Rainfall Profile: Kingston



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Accumulated Precipitation – KINGSTON, RI

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



December and Jan/Dec Rainfall by Region



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| RI 1-month Jan 2023 | Rainfall | Departure | Percent | Normal |
|---------------------|----------|-----------|---------|--------|
| Northwest | 7.3 | 2.81 | 163 | 4.49 |
| Northeast | 7.28 | 2.89 | 166 | 4.39 |
| Central West | 7.08 | 2.61 | 158 | 4.47 |
| Central East | 6.96 | 2.75 | 165 | 4.21 |
| Eastern | 6.98 | 3.07 | 179 | 3.91 |
| Southern | 7.09 | 3.02 | 174 | 4.07 |
| New Shoreham | 7.94 | 3.82 | 193 | 4.12 |

| RI 2-month Dec 22-Jan 23 | Rainfall | Departure | Percent | Normal |
|--------------------------|----------|-----------|---------|--------|
| Northwest | 14.64 | 4.92 | 151 | 9.72 |
| Northeast | 13.52 | 4.11 | 144 | 9.41 |
| Central West | 14.88 | 5.15 | 153 | 9.73 |
| Central East | 13.09 | 3.83 | 141 | 9.26 |
| Eastern | 13.36 | 4.87 | 157 | 8.49 |
| Southern | 11.67 | 2.63 | 129 | 9.04 |
| New Shoreham | 12.46 | 3.72 | 143 | 8.74 |

- **1 month rainfall was well above normal for all regions**
- **2 month rainfall also well above normal.**
- **All regions above 2 month drought advisory criteria of 65%**

3 and 6-Month Rainfall by Region



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| RI 3-month Nov 22-Jan23 | Rainfall | Departure | Percent | Normal |
|-------------------------|----------|-----------|---------|--------|
| Northwest | 17.57 | 3.36 | 124 | 14.21 |
| Northeast | 16.10 | 2.42 | 118 | 13.68 |
| Central West | 17.60 | 3.50 | 125 | 14.10 |
| Central East | 15.71 | 2.09 | 115 | 13.62 |
| Eastern | 15.96 | 3.32 | 126 | 12.64 |
| Southern | 13.76 | 0.55 | 104 | 13.21 |
| New Shoreham | 14.96 | 2.48 | 120 | 12.48 |

- **3 Month precipitation is near to above normal statewide**

| RI 6-month Aug 22-Jan 23 | Rainfall | Departure | Percent | Normal |
|--------------------------|----------|-----------|---------|--------|
| Northwest | 35.63 | 7.52 | 127 | 28.11 |
| Northeast | 33.90 | 7.09 | 126 | 26.81 |
| Central West | 32.12 | 4.59 | 117 | 27.53 |
| Central East | 31.57 | 5.06 | 119 | 26.51 |
| Eastern | 29.07 | 4.24 | 117 | 24.83 |
| Southern | 27.79 | 1.86 | 107 | 25.93 |
| New Shoreham | 28.22 | 2.71 | 111 | 25.51 |

- **6 Month Rainfall also near to above normal in all regions**

Rainfall by Region Last 3 Months



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| RI 1- month | Nov Percent | Dec Percent | Jan Percent | 3-month Nov-Jan |
|--------------|-------------|-------------|-------------|-----------------|
| Northwest | 65 | 140 | 163 | 124 |
| Northeast | 60 | 124 | 166 | 118 |
| Central West | 62 | 148 | 158 | 125 |
| Central East | 60 | 121 | 165 | 115 |
| Eastern | 63 | 139 | 179 | 126 |
| Southern | 50 | 92 | 174 | 104 |
| New Shoreham | 67 | 98 | 193 | 120 |

Very wet January has offset below normal precipitation in November to yield an above normal 3 month precipitation departure

12-Month Rainfall by Region

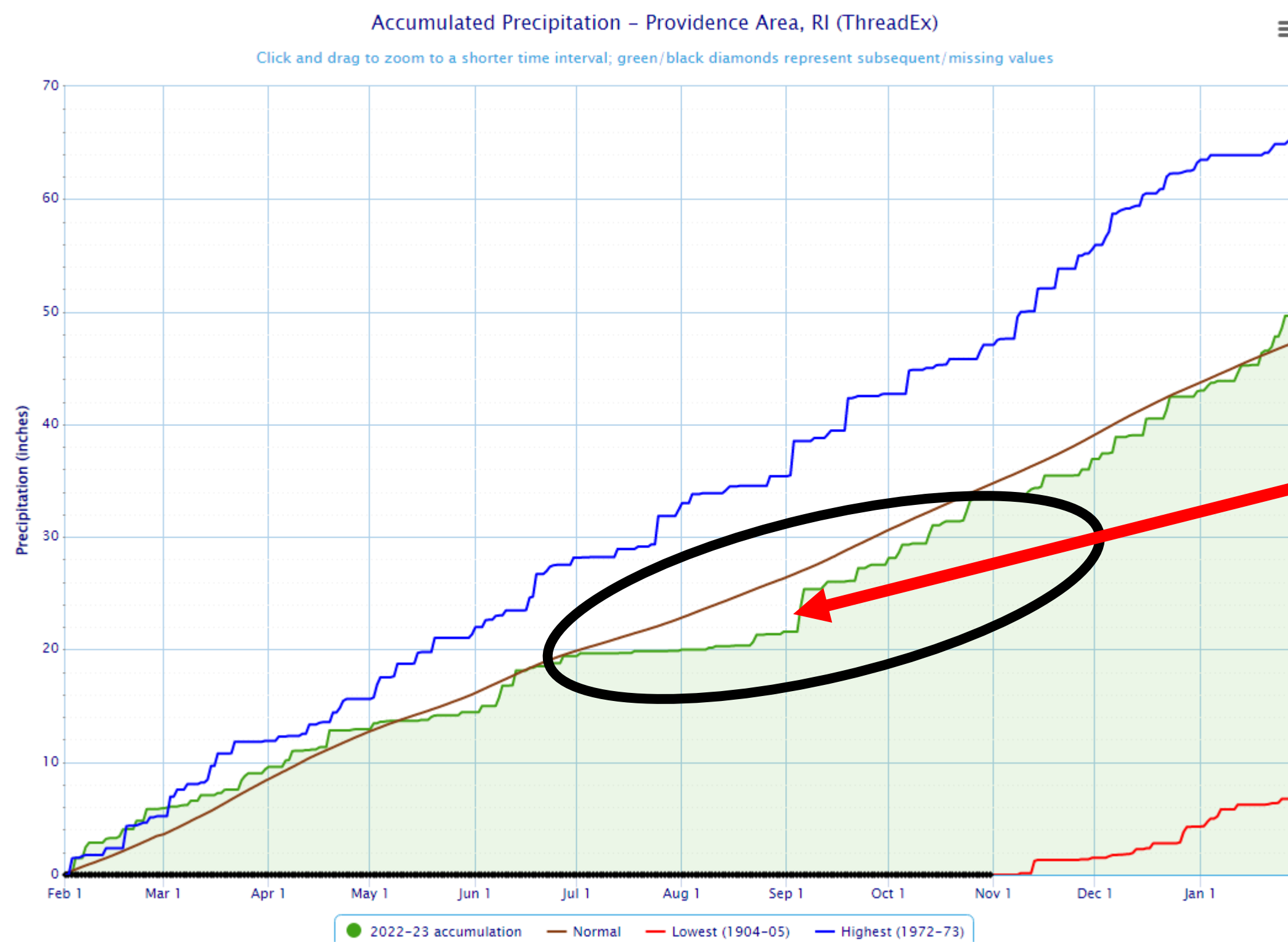


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| RI 12-month Feb 21-Jan 23 | Rainfall | Departure | Percent | Normal |
|---------------------------|----------|-----------|---------|--------|
| Northwest | 56.73 | 2.95 | 105 | 53.78 |
| Northeast | 53.92 | 2.26 | 104 | 51.66 |
| Central West | 53.17 | 2.40 | 105 | 50.77 |
| Central East | 51.18 | 0.87 | 102 | 50.31 |
| Eastern | 48.13 | 0.50 | 101 | 47.63 |
| Southern | 48.86 | -1.07 | 98 | 49.93 |
| New Shoreham | 44.98 | -3.42 | 93 | 48.40 |

- **12 Month rainfall is now right around normal**

- **Below normal rainfall this year was driven by an exceptionally dry first half of the summer**



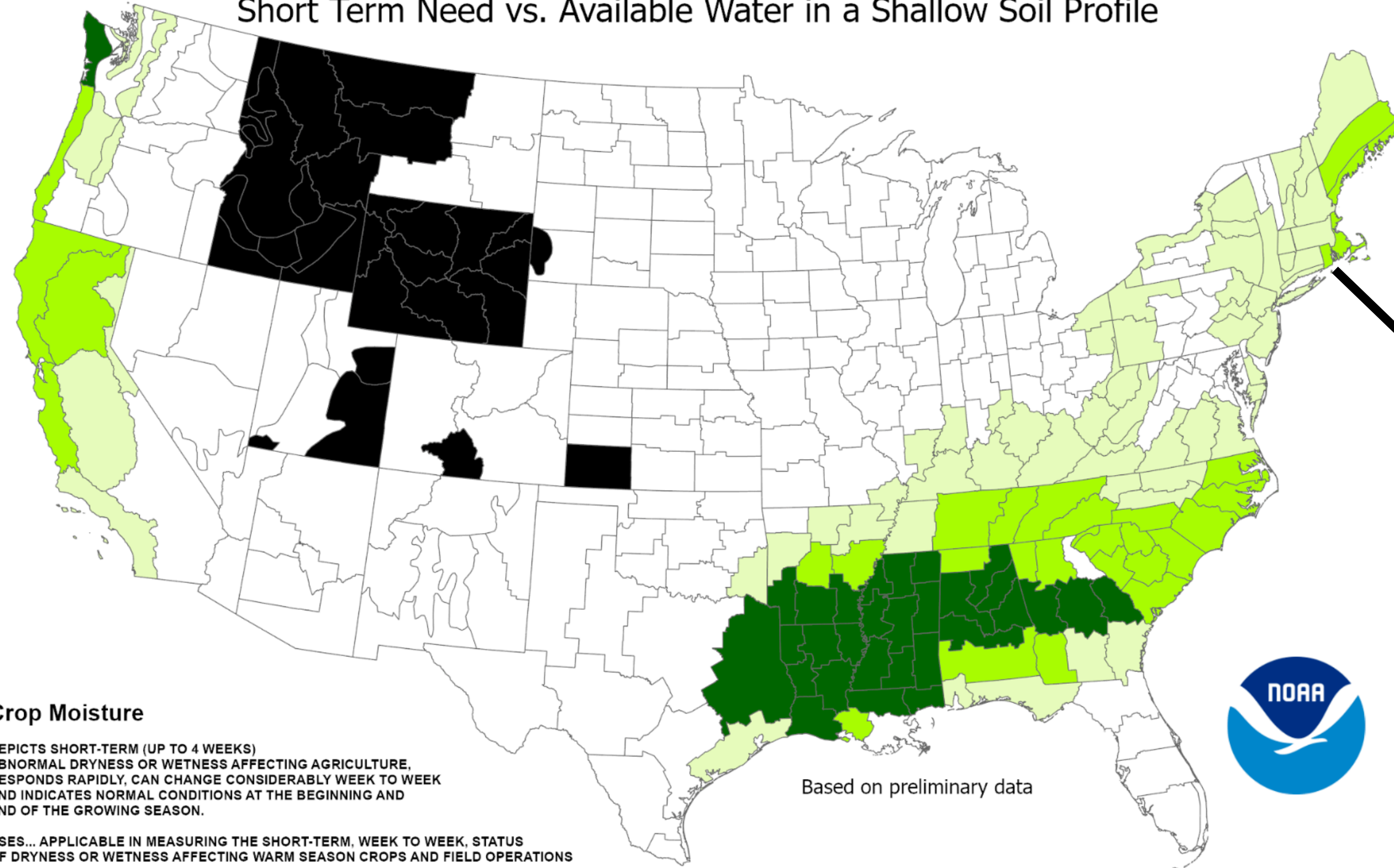
Crop Moisture Index

Valid through Week ending February 4th

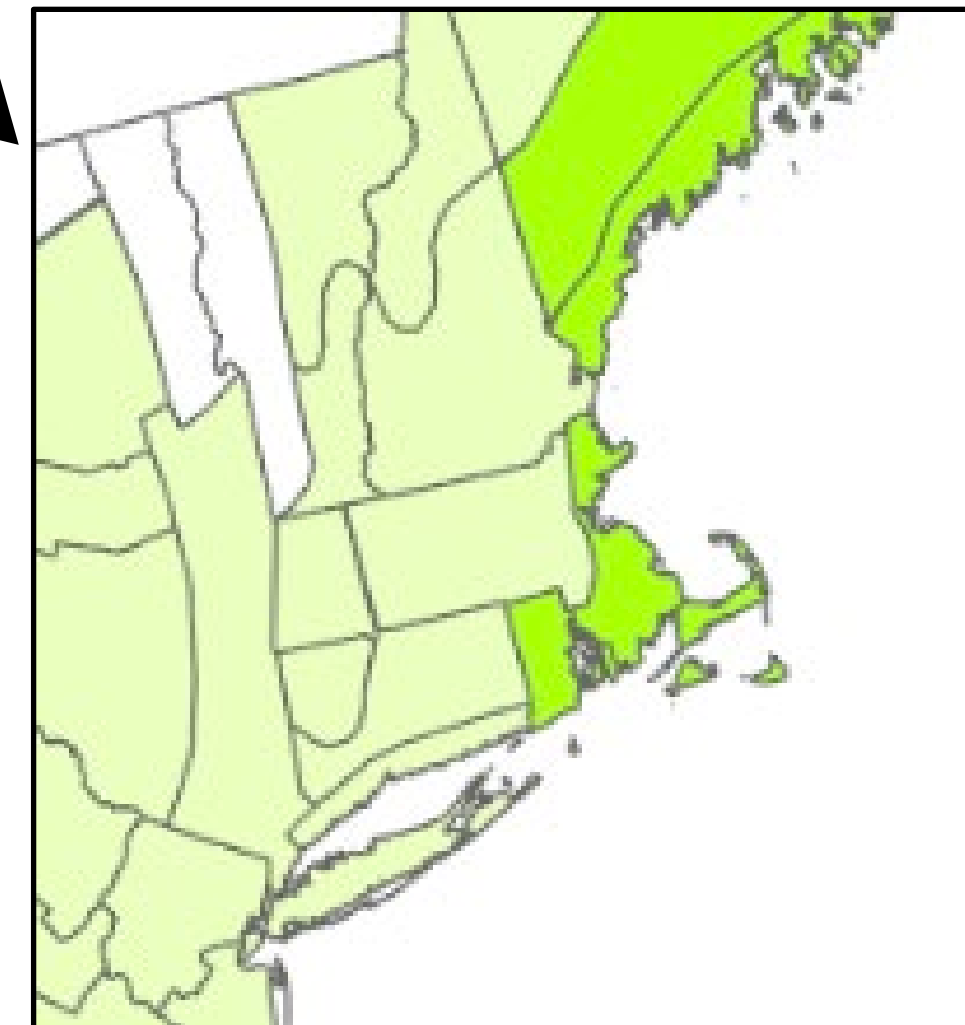


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WEATHER FORECAST OFFICE

Crop Moisture Index by Division
Weekly Value for Period Ending Feb 04, 2023
Short Term Need vs. Available Water in a Shallow Soil Profile



CMI for RI: 2.14 Wet



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.

Based on preliminary data



- | | | | |
|--------------|---|--------------|---------------------------------|
| Orange | -3.0 or less (Severely Dry) | Light Green | +1.0 to +1.9 (Abnormally Moist) |
| Dark Orange | -2.0 to -2.9 (Excessively Dry) | Yellow-Green | +2.0 to +3.0 (Wet) |
| Light Yellow | -1.0 to -1.9 (Abnormally Dry) | Dark Green | 3.0 and above (Excessively Wet) |
| White | -0.9 to +0.9 (Slightly Dry/Favorably Moist) | Black | Missing/Incomplete |

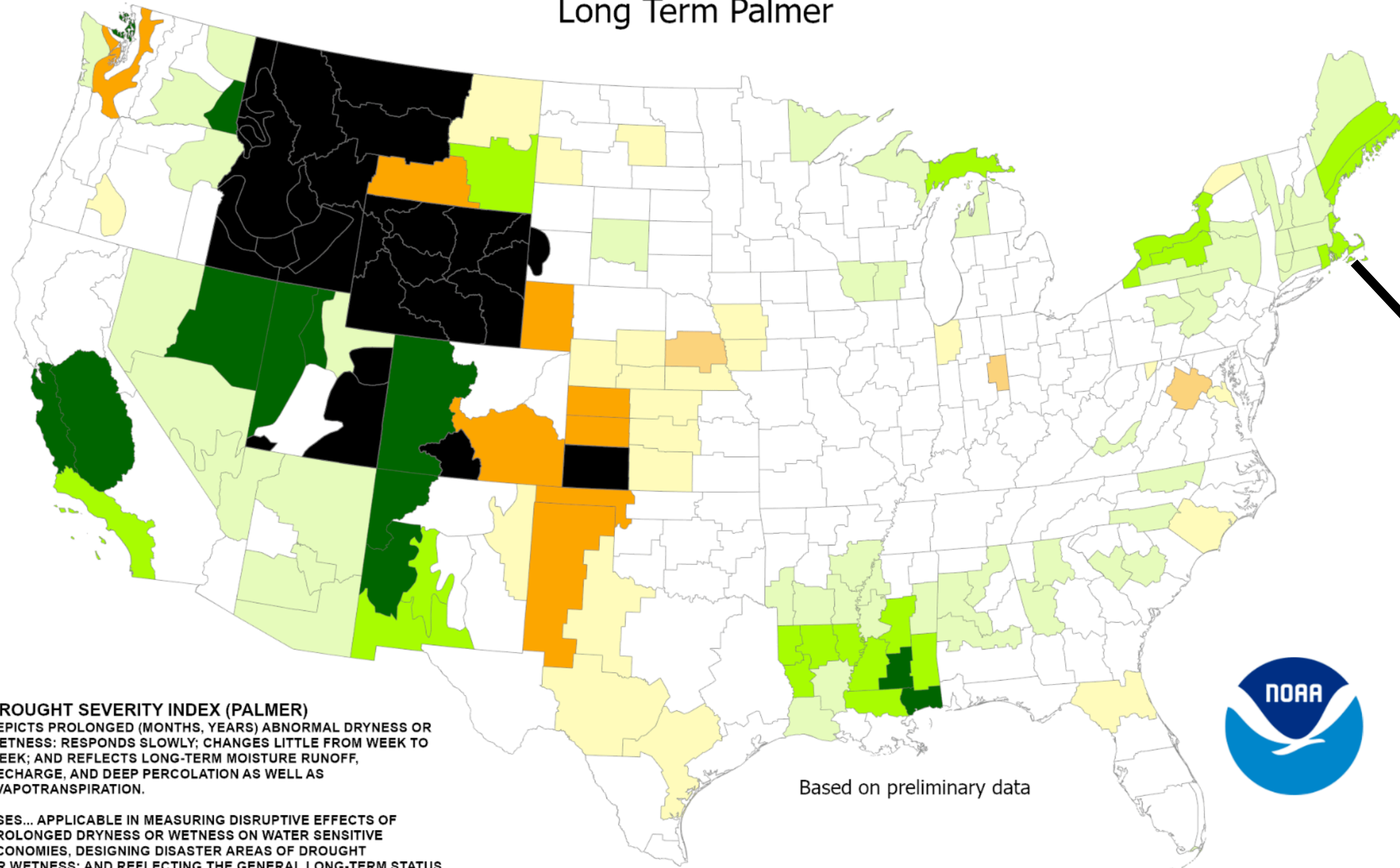
Palmer Drought Index

Valid through Week ending February 4th



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Drought Severity Index by Division
Weekly Value for Period Ending Feb 04, 2023
Long Term Palmer



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

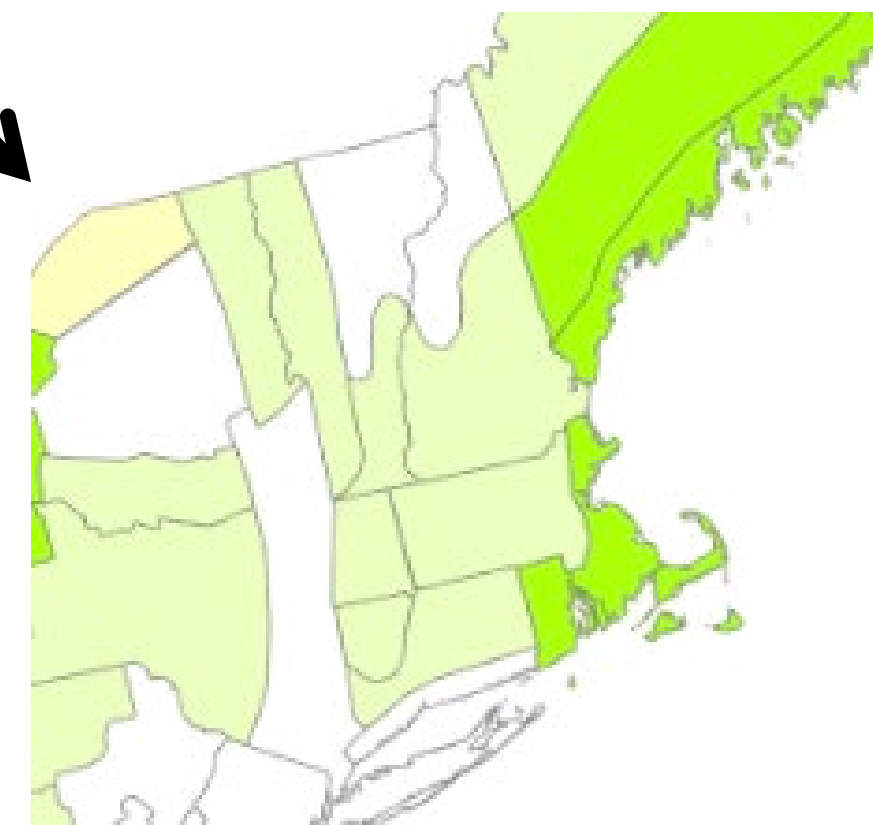
USES... APPLICABLE IN MEASURING DISRUPTIVE EFFECTS OF PROLONGED DRYNESS OR WETNESS ON WATER SENSITIVE ECONOMIES; DESIGNING DISASTER AREAS OF DROUGHT OR WETNESS; AND REFLECTING THE GENERAL LONG-TERM STATUS OF WATER SUPPLIES IN AQUIFERS, RESERVOIRS AND STREAMS.

LIMITATIONS... IS NOT GENERALLY INDICATIVE OF SHORT-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) | ■ Missing/Incomplete |

Latest CPC PDSI calculation: 3.36

“Very Moist Spell”



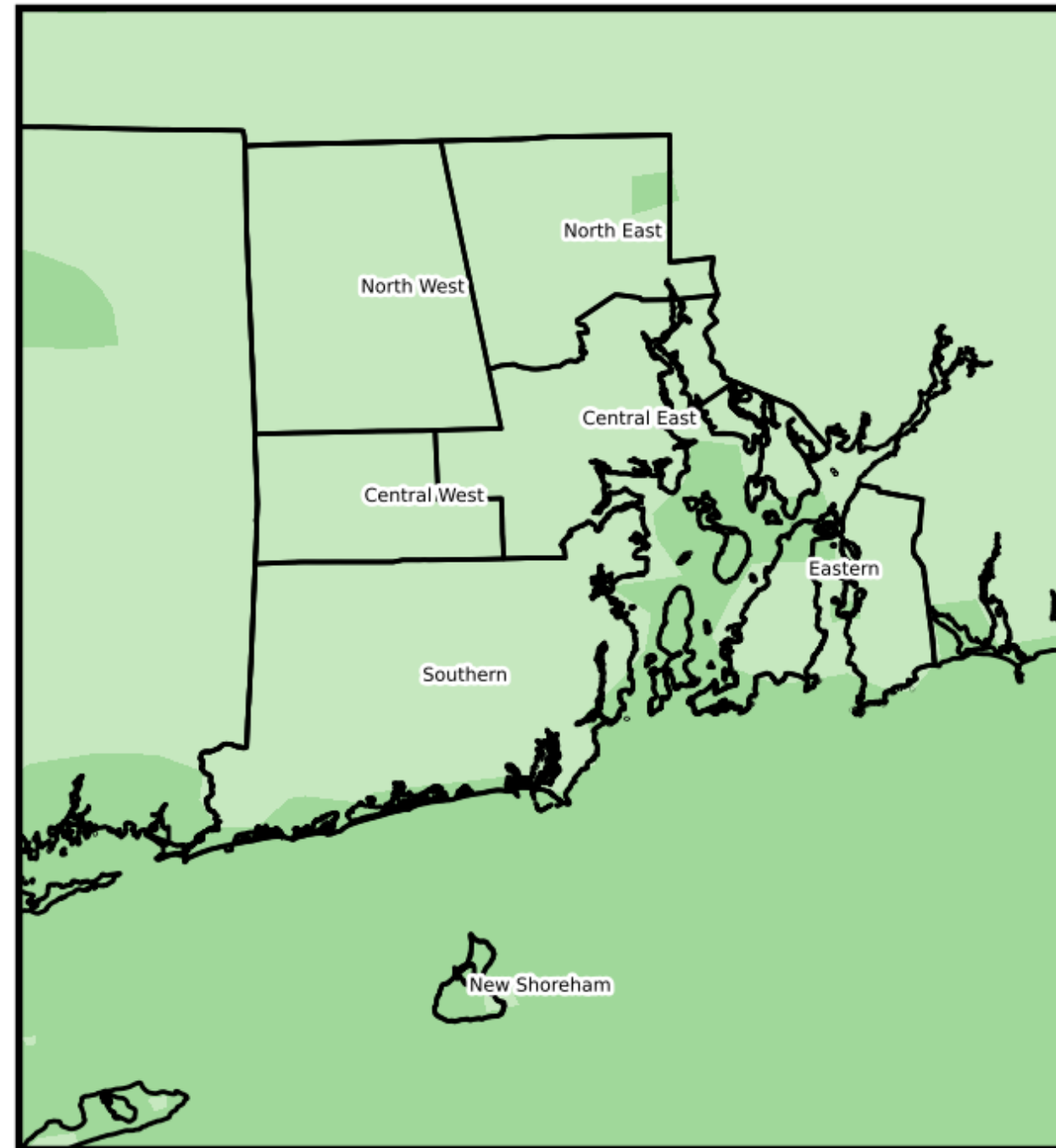
February Precipitation

Valid Through February 12th

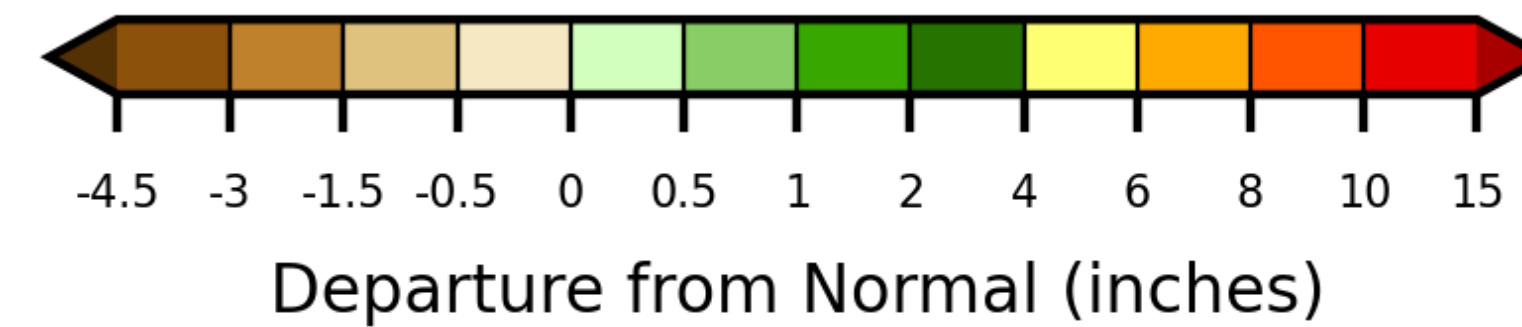
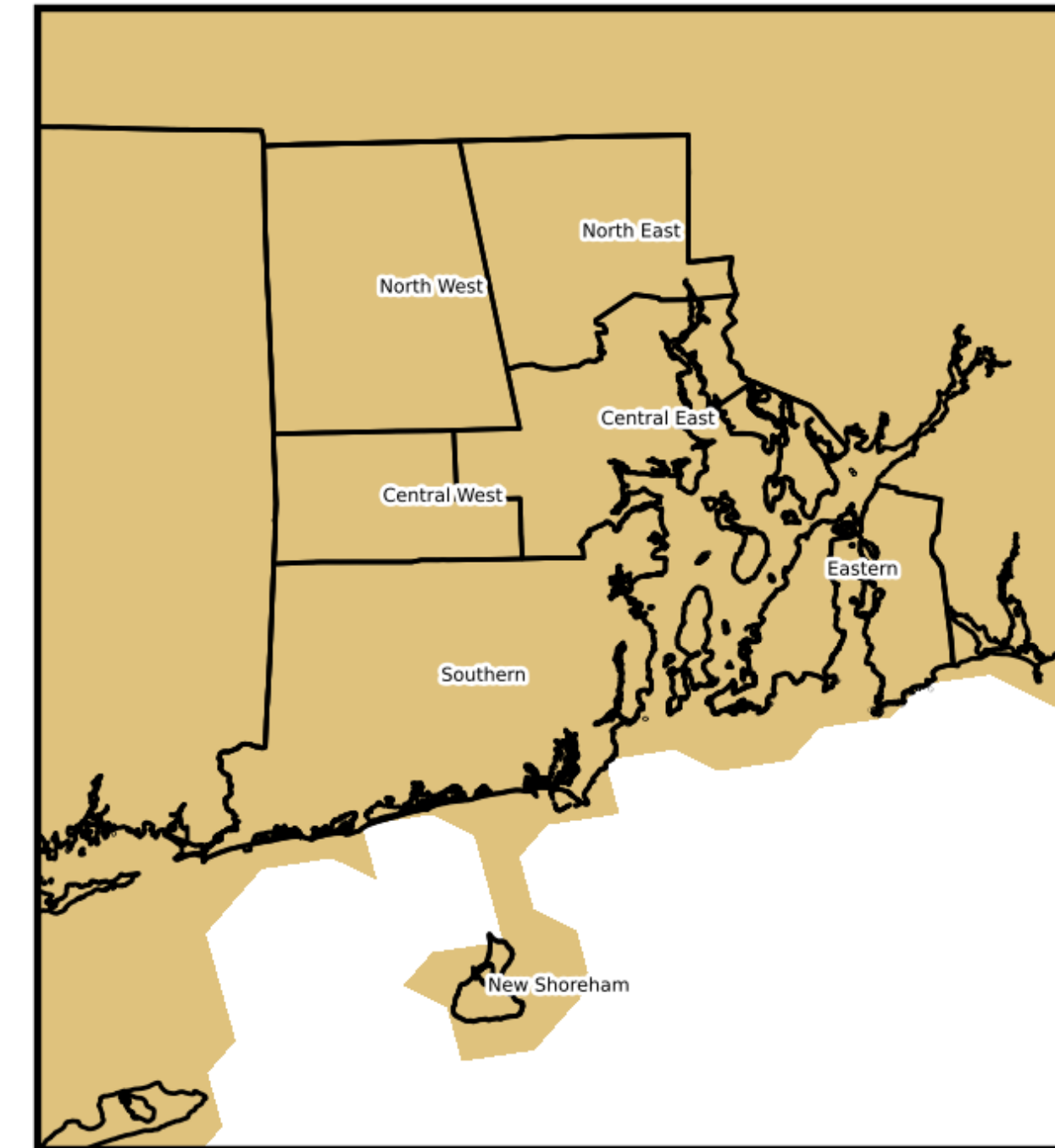


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Accumulated Precipitation (inches)
February 01, 2023 to February 12, 2023



Precipitation Departure from Normal (inches)
February 01, 2023 to February 12, 2023



Forecast Through 7 am Tuesday 02/14

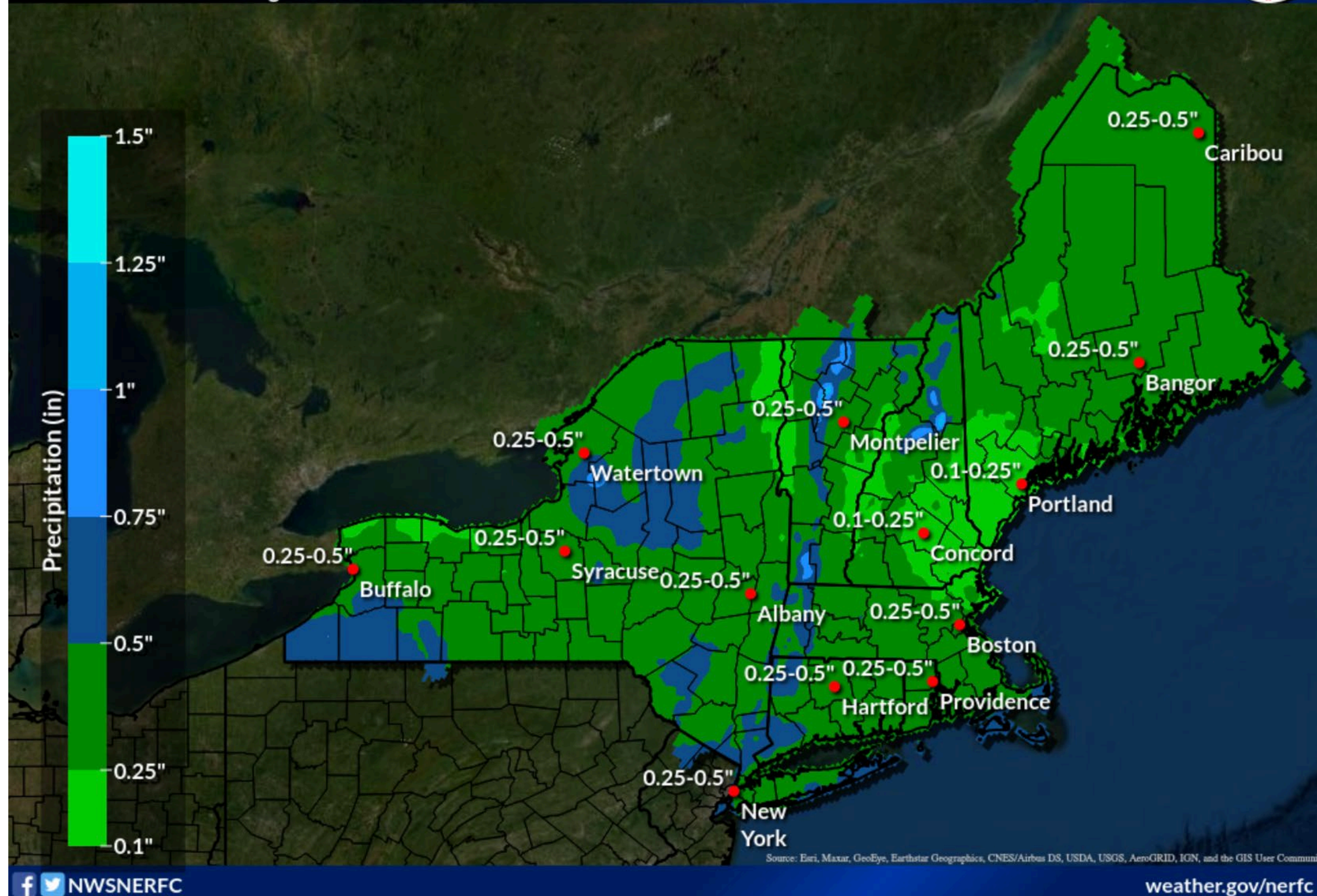


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7 Day WPC Precipitation Forecast

Valid Mon 7:00AM through Mon 7:00AM EST

River Forecast Center
Northeast RFC
Issued Feb 13, 2023 7:05 AM EST



Forecast through Tuesday

- Widespread 0.25 to 0.5 inches of liquid precipitation is forecast for southern New England over the next 7 days
- Bulk of precipitation over the next 7 days will be from a low-pressure system set to move through the region Thursday night into Friday.

CPC 8-14 Day Outlook

February 20-26 2023

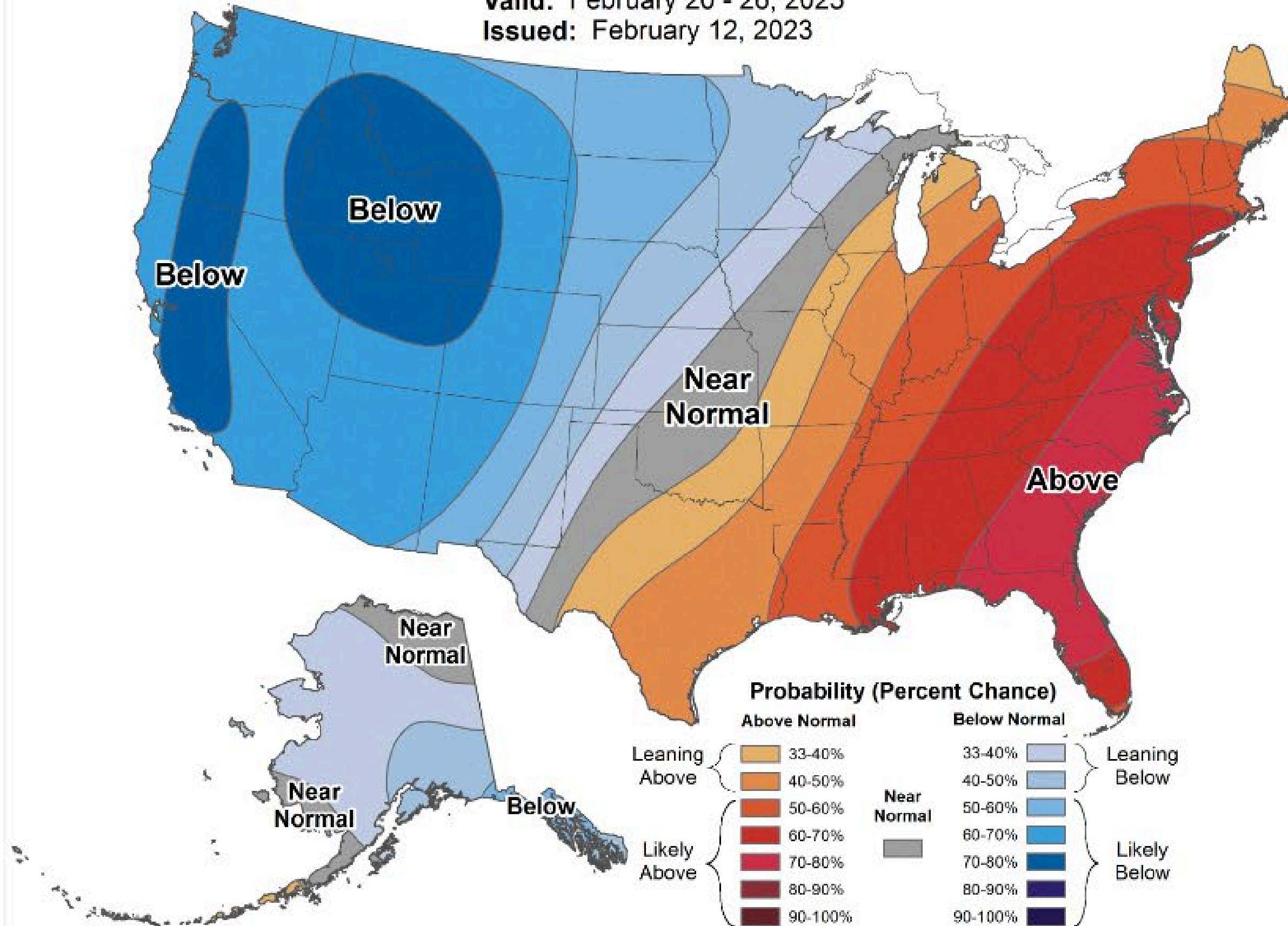


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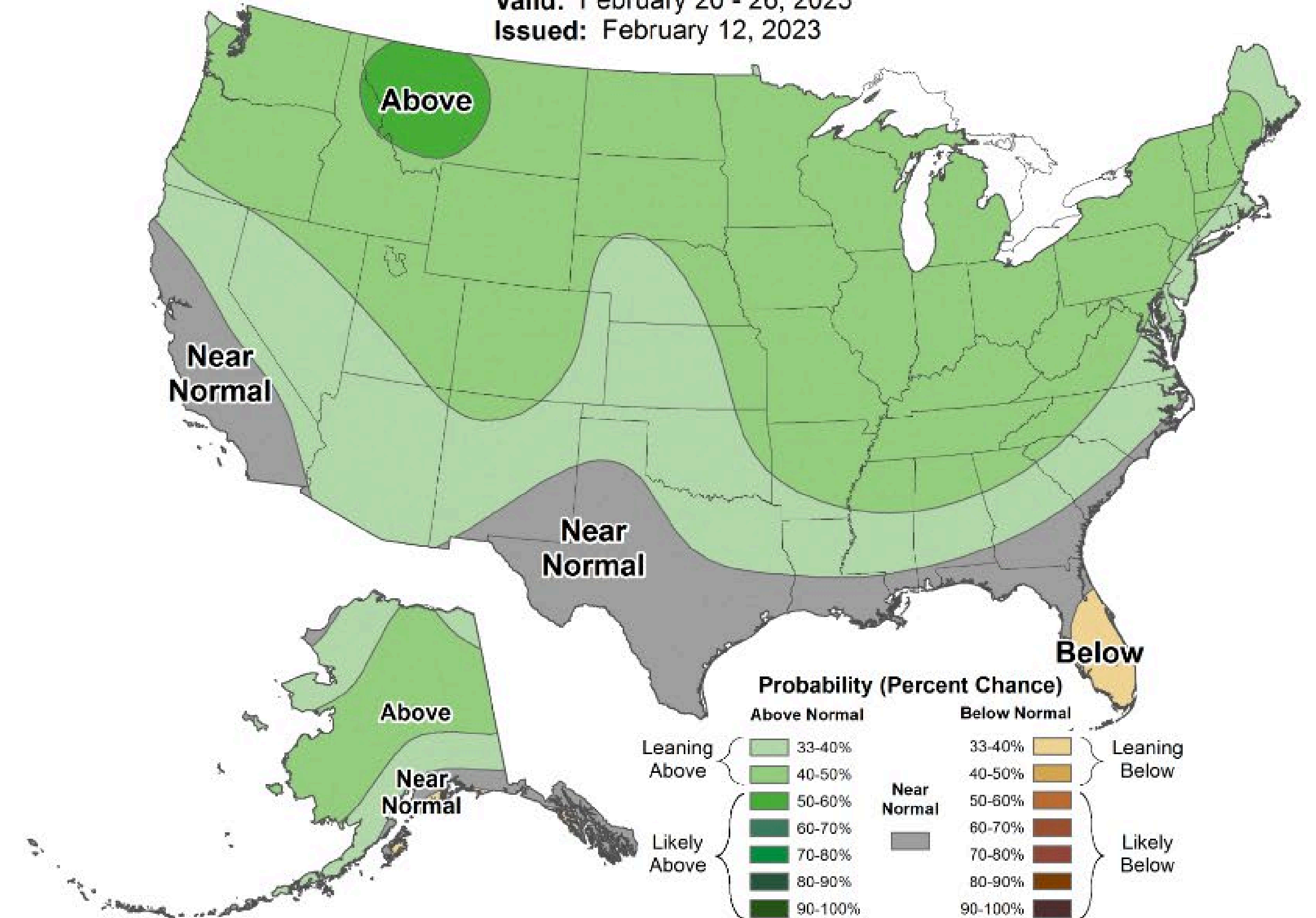
8-14 Day Temperature Outlook

Valid: February 20 - 26, 2023
Issued: February 12, 2023



8-14 Day Precipitation Outlook

Valid: February 20 - 26, 2023
Issued: February 12, 2023



CPC Outlook for Feb/Mar/Apr



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