

VIRGINIA DROUGHT MONITORING TASK FORCE

Drought Status Report

October 10, 2023

Summary

On Tuesday October 10, 2023, the Virginia Drought Monitoring Task Force (DMTF) met to discuss the drought indicators identified by the Virginia Drought Assessment and Response Plan. Surface and groundwater indicators have shown minimal improvements throughout the past fourteen-day period, with near record low observations at some stations within the Northern Virginia and Shenandoah drought evaluation regions. The Task Force recommends maintaining the Drought Watch declaration for the Eastern Shore, Northern Virginia, and York James evaluation regions.

Due to continued declines in drought indicators and reported impacts to agriculture and public water supplies, the Task Force recommends maintaining the Drought Warning declaration within the Shenandoah drought evaluation region. The Task Force will continue closely monitoring drought indicators and will meet on October 26, 2023.

The DMTF reviewed the status of drought monitoring and hydrologic conditions in the Commonwealth of Virginia. Precipitation over the past 30-60 day period showed localized events within the eastern portions of the state along the I-95 corridor. Precipitation percent of normal over the recent seven and 14-day period show exceptional dryness focused within Shenandoah Valley and the majority of Virginia below historical averages. Area-averaged rainfall since the beginning of the current water year (October 1, 2023) has remained below long-term normal values for the majority of the Commonwealth. (See [DEQ website](#) for more info on drought indicators).

Streamflow over the past 14-day period has remained stable with no significant improvements throughout regions impacted by drought conditions. Flows are currently below the 25th percentile for four of the 11 drought evaluation regions including; Upper James, Northern Piedmont, Shenandoah, and Roanoke. Three regions are currently ranked within “Warning” including the Shenandoah, Northern Piedmont, and Roanoke with streamflow observed below the 10th percentile. Groundwater levels for monitoring wells in the Climate Response Network have shown continued declines within many northern, central, and eastern portions of the state. Six of 11 drought evaluation regions are below the 25th percentile including the Eastern Shore, Middle James, Northern Virginia, Shenandoah, Roanoke, and York-James. Levels are currently below the 10th percentile for three of 11 drought evaluation regions including the Northern Virginia, Roanoke, Shenandoah, and Roanoke.

The most recent weekly [U.S. Drought Monitor \(USDM\)](#) web page map for Virginia ([Appendix A](#), released October 10, 2023) showed abnormally dry (D0) conditions mapped across approximately 64% of the Commonwealth, and moderate drought (D1) conditions mapped across approximately 25% of the Commonwealth. Severe drought (D2) conditions mapped across approximately 8% of the Commonwealth. Appendix B includes presentations from the United States Geological Survey and National Weather Service.

Reports:

The U.S. Army Corps of Engineers (USACE) reported that Lake Moomaw (Philpott Lake) and J. H. Kerr Reservoir have received below normal inflows over the past month. As Philpott hydropower units remain out of service, USACE continues coordinating with fisheries experts to maintain sufficient releases at Philpott to support downstream aquatic life. Currently, Kerr Reservoir is approximately 1.0ft below guide curve, and dropping approximately a third of a foot per week. Power generation is operating at minimum weekly energy, with inflows approximately 1000cfs less than minimum energy releases. The USACE will continue to generate minimum energy as long as the reservoir level is below guide curve to conserve power pool storage.

The DEQ report presents a map of current conditions of DEQ Drought Indicators, and summary of current conditions at the four large multi-purpose reservoirs listed as key reservoir storage indicators in the [Virginia Drought Assessment and Response Plan](#) (All remain above drought watch levels at this time).

Virginia Department of Agriculture and Consumer Services

Producers in the Northern and Valley regions of the Commonwealth report that yields for numerous crops, including soybeans, corn, and direct market crops, are below average. Pasture conditions continue to be poor in these regions and pond and stream levels are below normal.

Producers in Southwest Virginia report pond and stream levels are slightly below normal and crop yields are expected to be average to slightly below average. Pasture conditions are poor with hay yields lower than normal.

As widespread impacts to producers throughout the Commonwealth have been experienced information regards assistance programs was provided by VDACS. Information regarding the U.S. Department of Agriculture's Disaster Assistance Programs is available here: <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/index>.

Information regarding the federal disaster declaration process is available

here: <https://www.fsa.usda.gov/Assets/USDA-FSA->

[Public/usdfiles/FactSheets/emergency_disaster_designation_declaration_process-factsheet.pdf](https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/FactSheets/emergency_disaster_designation_declaration_process-factsheet.pdf)

Contact information for each locality's USDA Farm Service Agency office can be found by clicking-through the map available here: <https://offices.sc.egov.usda.gov/locator/ap>

Virginia Department of Environmental Quality

Conditions of Major Drought Indicator Reservoirs

Four large multi-purpose reservoirs are identified as drought indicators in the Virginia Drought Assessment and Response Plan. Below is a snapshot of reported conditions at these reservoirs and the subsequent table provides status of reservoirs used to monitor drought conditions. Storage at major water supply reservoirs throughout Virginia remain within normal ranges at this time, with exception of the Skidmore Fork Lake (Switzer Lake) located within the Shenandoah drought evaluation region reported below normal. The City of Harrisonburg continues to report withdrawals and reservoir conditions daily.

[Smith Mountain Lake](#) on the Staunton River in the Roanoke drought evaluation region was at an adjusted elevation of 793.26 feet, which is 0.26 feet above Watch level (793 ft). The adjusted elevation is the level the lake would be if the water currently held in the lower Leesville Lake for reuse were pumped back into Smith Mountain Lake. Recent 7,14, and 28-day inflows were normal for this time of year.

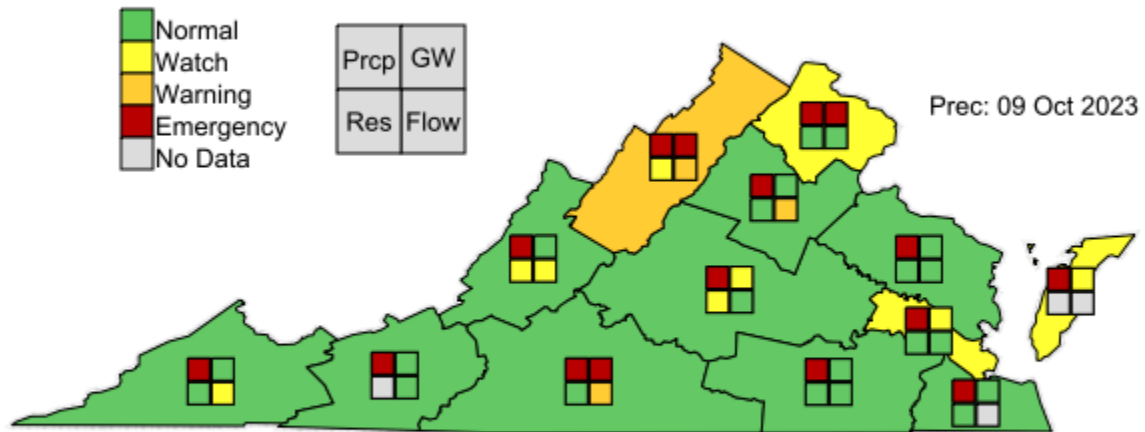
[Lake Moomaw](#) at Gathright Dam on the Jackson River in the Upper James drought evaluation region was reported at an elevation of 1561.14 feet, which is 3.86 feet below Watch level (1565 ft). Recent 7, 14, and 28-day average inflows were much below normal for this time of year. Approximately 23% of conservation storage is remaining.

[Lake Anna](#) on the North Anna River in the Northern Piedmont drought evaluation region was reported at an elevation of 249.2 feet, which is 1.2 feet above Watch level (248 ft). Seven (7) and 14 day inflows were below normal for this time of year.

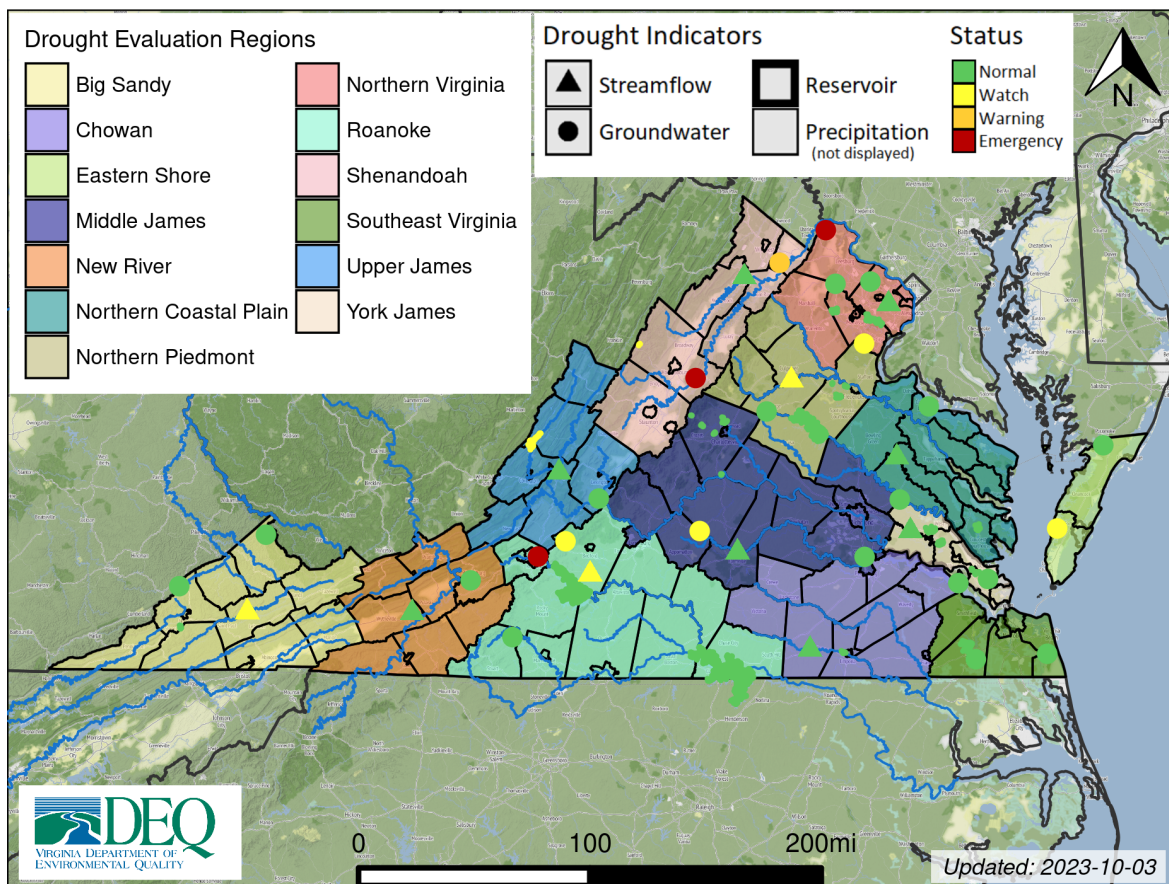
[J. H. Kerr Reservoir](#) on the Staunton River in the Roanoke drought evaluation region was reported at an elevation of 298.14 ft, which was 1.04ft below the guide curve elevation for this time period (299.18 feet) and 2ft above the Watch level (Watch level is 3 to 6 ft below guide curve). Recent inflows were reported at approximately 5th lowest recorded over the 70 year record.

DEQ Daily Drought Status Summary: 10/10/2023

Drought Summary Map:



Drought Indicator Map:



Regional Drought Response:

#	Region	Reduction Type	Target Reduction %
1	Shenandoah	voluntary	5-10%
2	Eastern Shore	none	none
3	Big Sandy	none	none
4	Upper James	none	none
5	Roanoke	none	none
6	Southeast Virginia	none	none
7	Northern Coastal Plain	none	none
8	New River	none	none
9	Middle James	none	none
10	Chowan	none	none
11	York James	none	none
12	Northern Virginia	none	none
13	Northern Piedmont	none	none

Precipitation Indicators:

#	Region	Start Date	End Date	Water Year % of Normal	Status
1	Eastern Shore	10/1/2023	10/9/2023	4.21	Emergency
2	Chowan	10/1/2023	10/9/2023	7.25	Emergency
3	Southeast Virginia	10/1/2023	10/9/2023	8.25	Emergency
4	York James	10/1/2023	10/9/2023	10.36	Emergency
5	Roanoke	10/1/2023	10/9/2023	12.97	Emergency
6	Middle James	10/1/2023	10/9/2023	16.4	Emergency
7	Northern Coastal Plain	10/1/2023	10/9/2023	18.13	Emergency
8	New River	10/1/2023	10/9/2023	24.08	Emergency
9	Big Sandy	10/1/2023	10/9/2023	27.11	Emergency
10	Northern Piedmont	10/1/2023	10/9/2023	27.51	Emergency
11	Shenandoah	10/1/2023	10/9/2023	34.94	Emergency
12	Upper James	10/1/2023	10/9/2023	38.8	Emergency
13	Northern Virginia	10/1/2023	10/9/2023	45.06	Emergency

Note: The start of a new water year October 1, 2023 results in few days of precipitation data to compare to historical trends. As a result, percent of normal precipitation can vary widely as the water year continues the dataset will continue to stabilize.

Surface Water Indicators:

#	Region	Gage Name	Start Date	End Date	Percentile	Status
1	Northern Piedmont	RAPIDAN RIVER NEAR CULPEPER, VA	10/3/2023	10/9/2023	5.69	Warning
2	Shenandoah	N F SHENANDOAH RIVER NEAR STRASBURG, VA	10/3/2023	10/9/2023	8.24	Warning
3	Roanoke	GOOSE CREEK NEAR HUDDLESTON, VA	10/3/2023	10/9/2023	9.62	Warning
4	Big Sandy	CLINCH RIVER AT CLEVELAND, VA	10/3/2023	10/9/2023	16.59	Watch
5	Upper James	COWPASTURE RIVER NEAR CLIFTON FORGE, VA	10/3/2023	10/9/2023	22.18	Watch
6	New River	REED CREEK AT GRAHAMS FORGE, VA	10/3/2023	10/9/2023	25.46	Normal
7	Northern Virginia	ACCOTINK CREEK NEAR ANNANDALE, VA	10/3/2023	10/9/2023	28.24	Normal
8	Chowan	MEHERRIN RIVER NEAR LAWRENCEVILLE, VA	10/3/2023	10/9/2023	29.49	Normal
9	Northern Coastal Plain	MATTAPONI RIVER NEAR BEULAHVILLE, VA	10/3/2023	10/9/2023	36.7	Normal
10	Middle James	APPOMATTOX RIVER AT FARMVILLE, VA	10/3/2023	10/9/2023	42.78	Normal
11	York James	CHICKAHOMINY RIVER NEAR PROVIDENCE FORGE, VA	10/3/2023	10/9/2023	58.51	Normal

Groundwater Indicators:

#	Region	Well Name	Start Date	End Date	Percentile	Status
1	Northern Virginia	Harper's Ferry DEQ Observation Well (49Y 1 SOW 022)	10/3/2023	10/9/2023	3.25	Emergency
2	Roanoke	Roanoke-Nelson DEQ Observation Well (31G 1 SOW 008)	10/3/2023	10/9/2023	0.63	Emergency
3	Shenandoah	Blandy Farm USGS Observation Well (46W 175)	10/3/2023	10/9/2023	4.55	Emergency
4	Shenandoah	McGaheysville USGS Observation Well (41Q 1)	10/3/2023	10/9/2023	3.95	Emergency
5	Eastern Shore	P. C. Kellam DEQ Observation Well (63H 6 SOW 103A)	10/3/2023	10/9/2023	16.91	Watch
6	Middle James	Buckingham USGS Observation Well (41H 3)	10/3/2023	10/9/2023	23.64	Watch
7	Northern Virginia	Prince William County USGS Observation Well (51S 7)	10/3/2023	10/9/2023	16.53	Watch
8	Roanoke	Bedford County USGS Observation Well (33G 1 SOW 224)	10/3/2023	10/9/2023	20.5	Watch
9	York James	York County DEQ Observation Well (59F74 SOW 184C)	10/3/2023	10/9/2023	20.45	Watch
10	Big Sandy	Buchanan County USGS Observation Well (15G 19 SOW 222)	10/3/2023	10/9/2023	30.6	Normal
11	Big Sandy	U.S. Forest Service - SOW 223 Cane Patch Well	10/3/2023	10/9/2023	74.42	Normal
12	Chowan	Slade Farm DEQ Observation Well (57E 31 SOW 094C)	10/3/2023	10/9/2023	58.41	Normal
13	Eastern Shore	Withams DEQ Observation Well (66M 19 SOW 110S)	10/3/2023	10/9/2023	52.6	Normal
14	Middle James	Colonial Heights USGS Observation Well (51G 1)	10/3/2023	10/9/2023	71.13	Normal
15	New River	Christiansburg DEQ Observation Well (27F 2 SOW 019)	10/3/2023	10/9/2023	73.9	Normal
16	Northern Coastal Plain	George Washington Birthplace USGS Observation Well (55P 9)	10/3/2023	10/9/2023	43.47	Normal
17	Northern Piedmont	Gordonsville DEQ Observation Well (45P 1 SOW 030)	10/3/2023	10/9/2023	47.66	Normal
18	Northern Virginia	Prince William County USGS Observation Well (49V 1)	10/3/2023	10/9/2023	28.87	Normal
19	Northern Virginia	Fairfax County USGS Observation Well (52V 2D)	10/3/2023	10/9/2023	75.0	Normal
20	Roanoke	Fairystone State Park USGS Observation Well (30C 1 SOW 010)	10/3/2023	10/9/2023	72.28	Normal
21	Southeast Virginia	Brinkley USGS Observation Well (58B 13)	10/3/2023	10/9/2023	43.84	Normal
22	Southeast Virginia	Pungo DEQ Observation Well (62B 1 SOW 098A)	10/3/2023	10/9/2023	44.59	Normal
23	Upper James	Glasgow DEQ Observation Well (35K 1 SOW 063)	10/3/2023	10/9/2023	56.22	Normal
24	York James	Hanover County DEQ Observation Well (53K 19 SOW 080)	10/3/2023	10/9/2023	57.98	Normal

Reservoir Indicators:

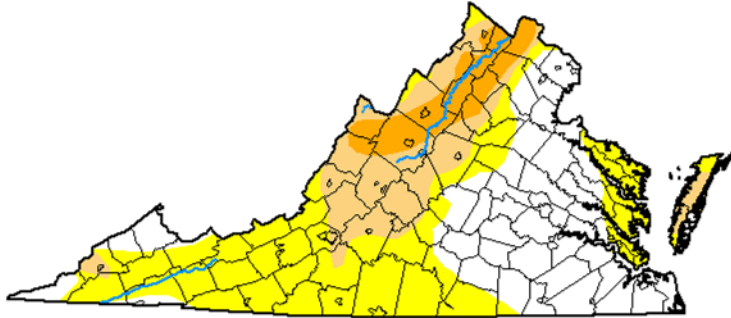
Note, these reservoir statuses require manual review as they are NOT automated at this time

#	Region	Reservoir	Date	Status
1	Middle James	Lake Moomaw	10/10/2023	Watch
2	Shenandoah	Skidmore Fork Lake (Switzer Lake)	10/10/2023	Watch
3	Upper James	Lake Moomaw	10/10/2023	Watch
4	Big Sandy	Big Cherry Reservoir	10/10/2023	Normal
5	Chowan	Emporia Reservoir	10/10/2023	Normal
6	Middle James	Sugar Hollow	10/10/2023	Normal
7	Middle James	Beaver Creek Reservoir	10/10/2023	Normal
8	Middle James	Totier Creek Reservoir	10/10/2023	Normal
9	Middle James	South Fork Rivanna River Reservoir	10/10/2023	Normal
10	Middle James	Ragged Mountain	10/10/2023	Normal
11	Northern Coastal Plain	Beverdam Reservoir	10/10/2023	Normal
12	Northern Piedmont	Ni River Reservoir	10/10/2023	Normal
13	Northern Piedmont	Lake Anna	10/10/2023	Normal
14	Northern Piedmont	Motts Run Reservoir	10/10/2023	Normal
15	Northern Piedmont	Hunting Run Reservoir	10/10/2023	Normal
16	Northern Virginia	Occoquan Reservoir	10/10/2023	Normal
17	Northern Virginia	Lake Manassas	10/10/2023	Normal
18	Roanoke	Smith Mountain Lake	10/10/2023	Normal
19	Roanoke	Kerr Reservoir	10/10/2023	Normal
20	Southeast Virginia	Kerr Reservoir	10/10/2023	Normal
21	Southeast Virginia	Lake Cohoon	10/10/2023	Normal
22	Southeast Virginia	Lake Meade	10/10/2023	Normal
23	Southeast Virginia	Lake Kilby	10/10/2023	Normal
24	Southeast Virginia	Speights Run Reservoir	10/10/2023	Normal
25	York James	Harwoods Mill Reservoir	10/10/2023	Normal
26	York James	Lee Hall - City Reservoir	10/10/2023	Normal
27	York James	Little Creek Reservoir	10/10/2023	Normal
28	York James	Diascund Creek Reservoir	10/10/2023	Normal
29	York James	Skiffes Creek Reservoir	10/10/2023	Normal

Appendix A

U.S. Drought Monitor Virginia

October 10, 2023
(Released Thursday, Oct. 12, 2023)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	35.83	64.17	24.99	8.16	0.00	0.00
Last Week <small>10-03-2023</small>	51.40	48.60	24.99	6.12	0.00	0.00
3 Months Ago <small>07-11-2023</small>	67.53	32.47	5.22	0.04	0.00	0.00
Start of Calendar Year <small>01-03-2023</small>	89.75	10.25	0.80	0.00	0.00	0.00
Start of Water Year <small>09-26-2023</small>	51.40	48.60	24.99	6.12	0.00	0.00
One Year Ago <small>10-11-2022</small>	87.12	12.88	1.52	0.00	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Brad Pugh
CPC/NOAA



droughtmonitor.unl.edu

Appendix B



USGS Drought Status Summary

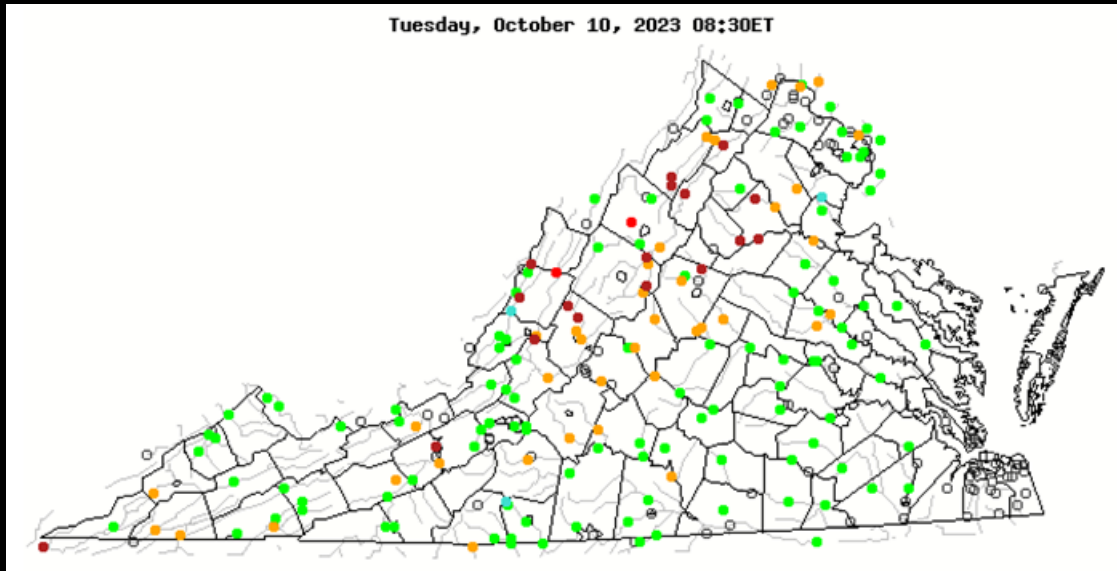
Streamflows and Groundwater Levels in Virginia

Virginia Drought Monitoring Task Force

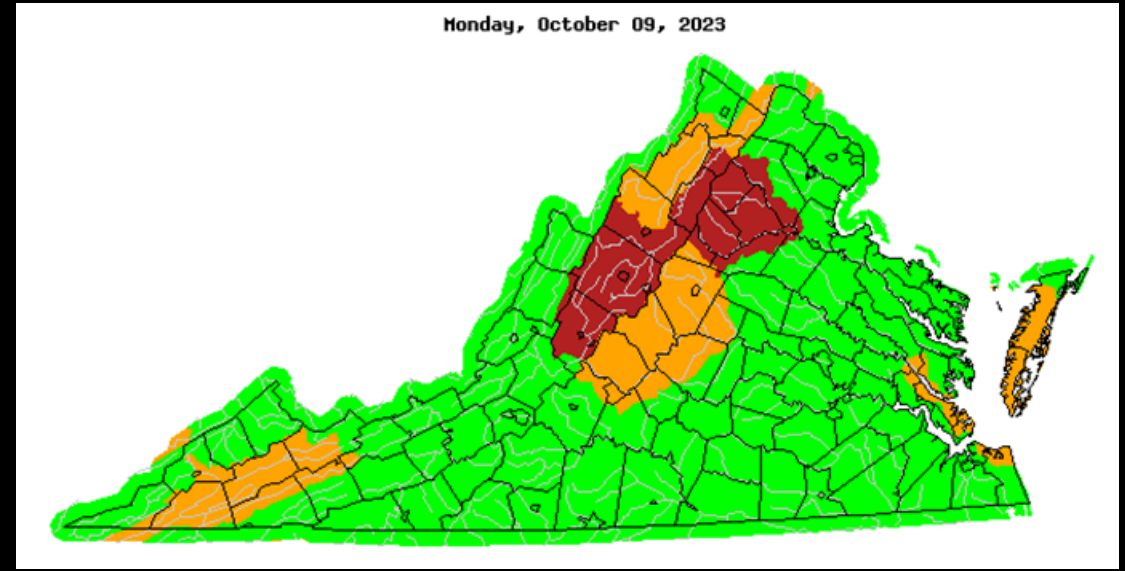
October 10, 2023

U.S. Department of the Interior
U.S. Geological Survey

Current Streamflow Conditions



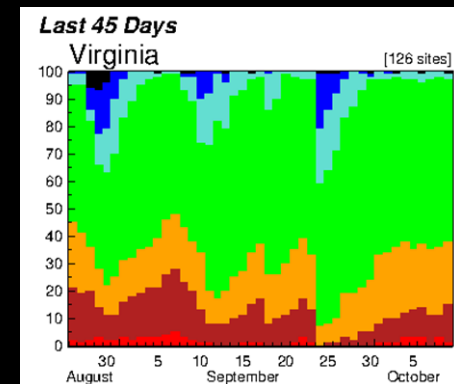
Realtime USGS Streamgages



Daily Flow HUC 8s

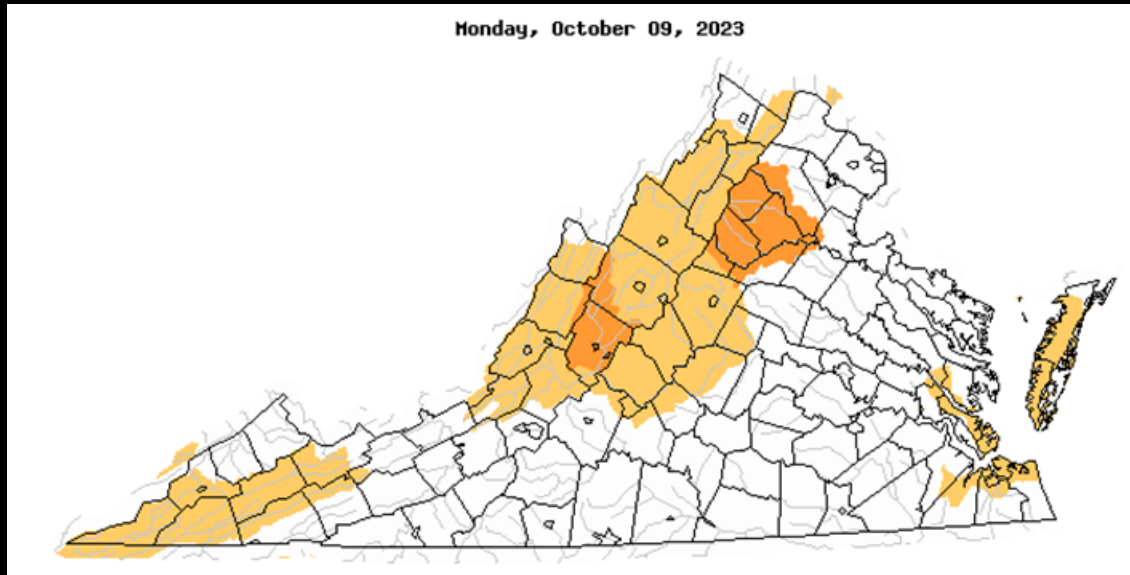
- Data from 10/10/2023
- Low flows persist in north/central Virginia.

Explanation - Percentile classes							
●	●	●	●	●	●	●	○
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

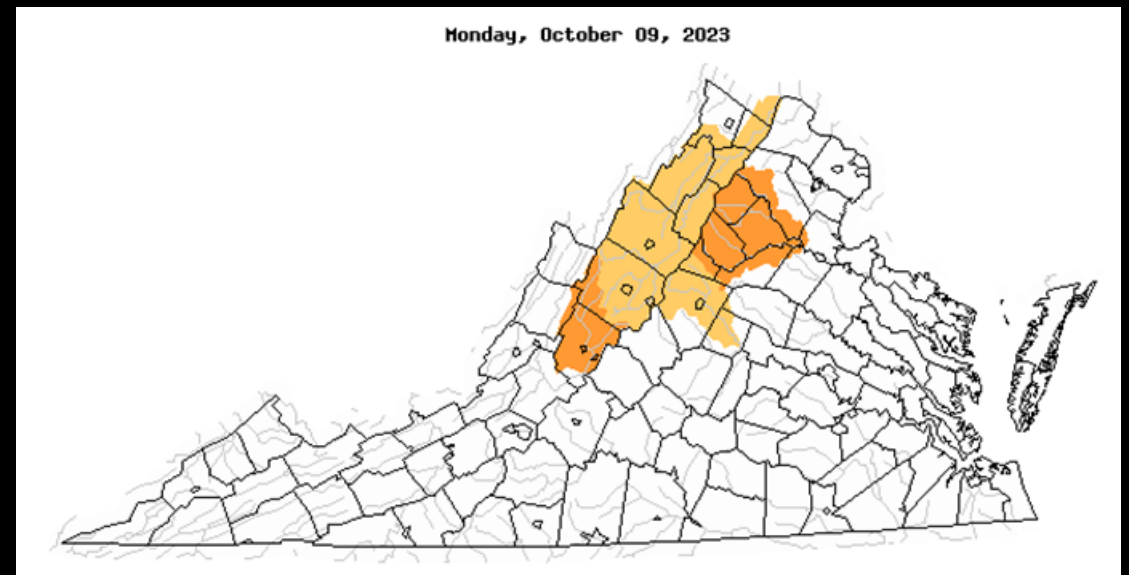


https://waterwatch.usgs.gov/index.php?id=pa01d&sid=w__map|m__pa01d_nwc&r=va

Below-Normal Streamflow Conditions



7-Day

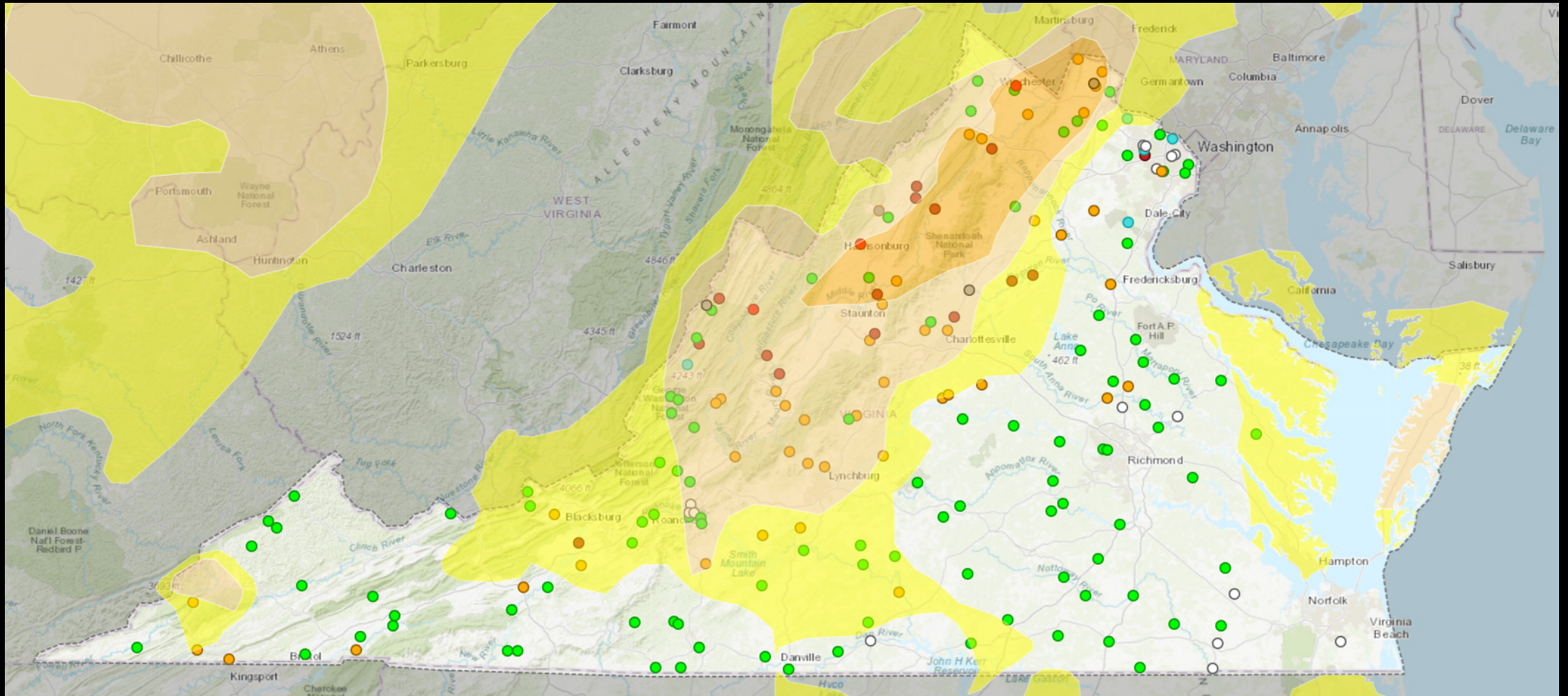


28-Day

- 20% of VA below normal, mostly north and central
- Shenandoah still below normal
- Rapidan/Rappahannock and Maury in moderate drought

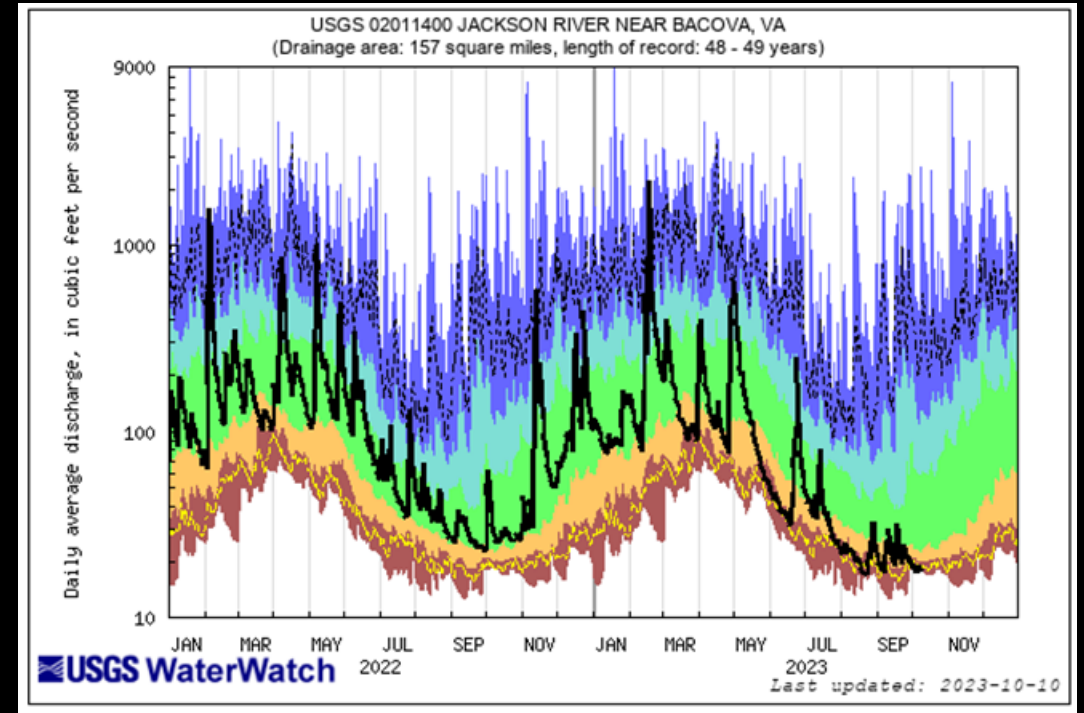
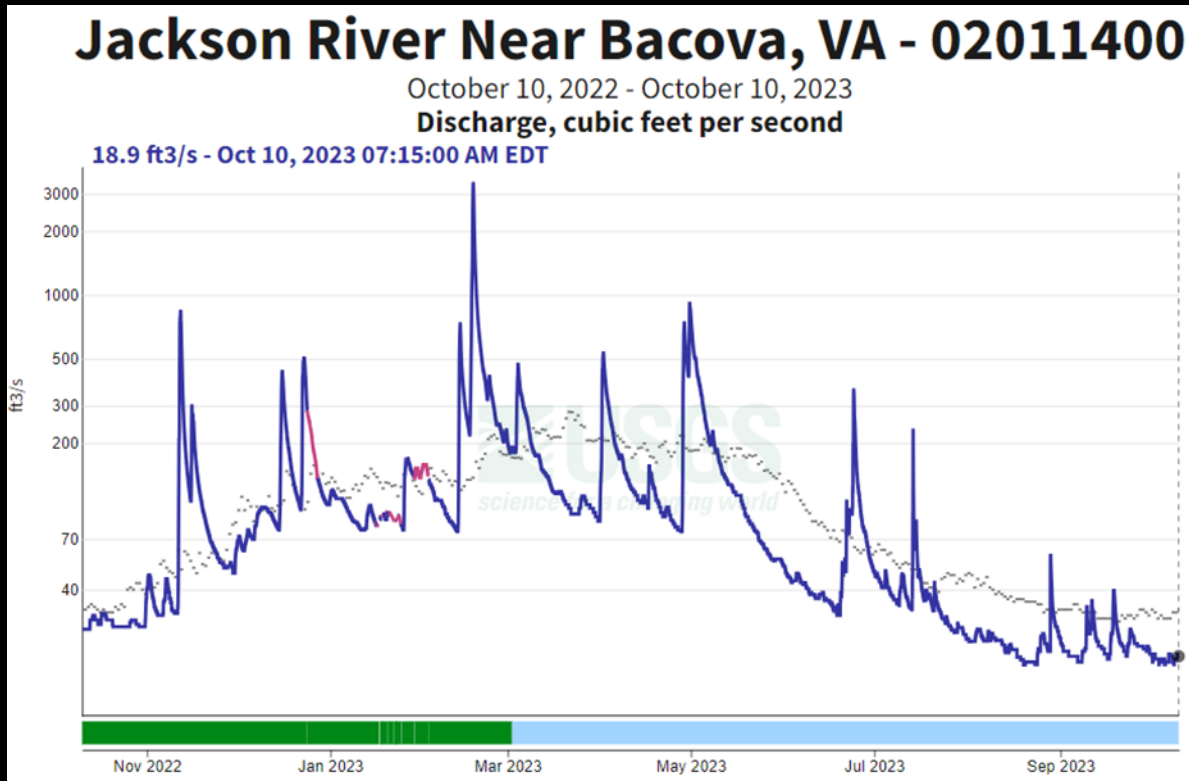
Explanation - Percentile classes			
Low	<=5	6-9	10-24
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal

USGS National Water Dashboard



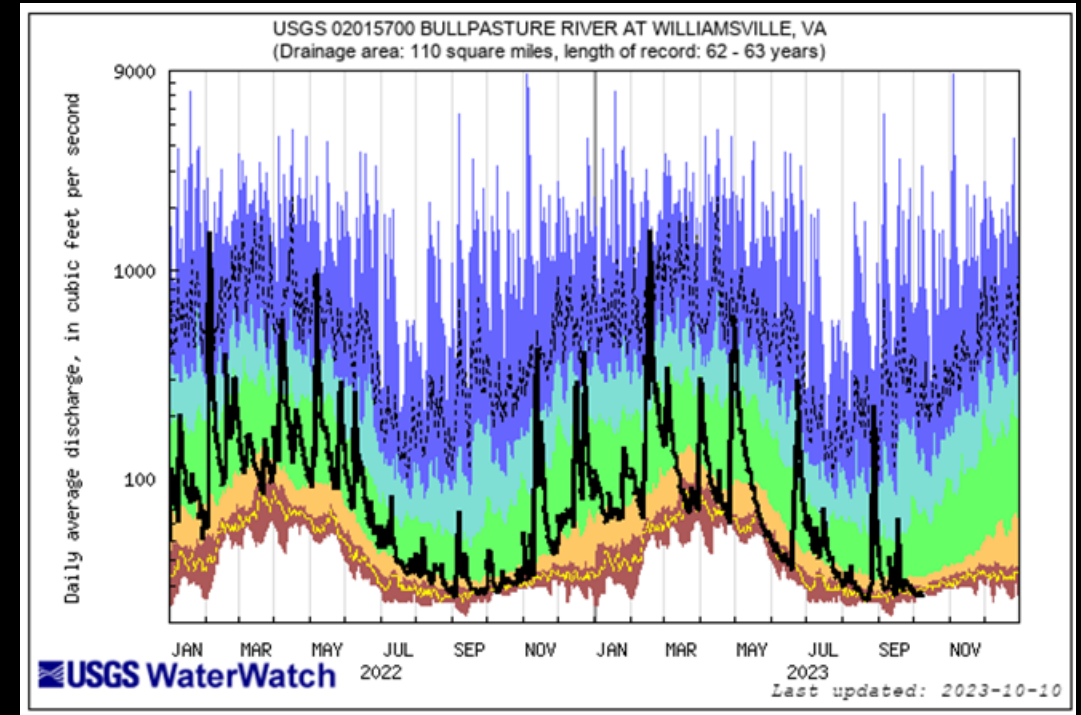
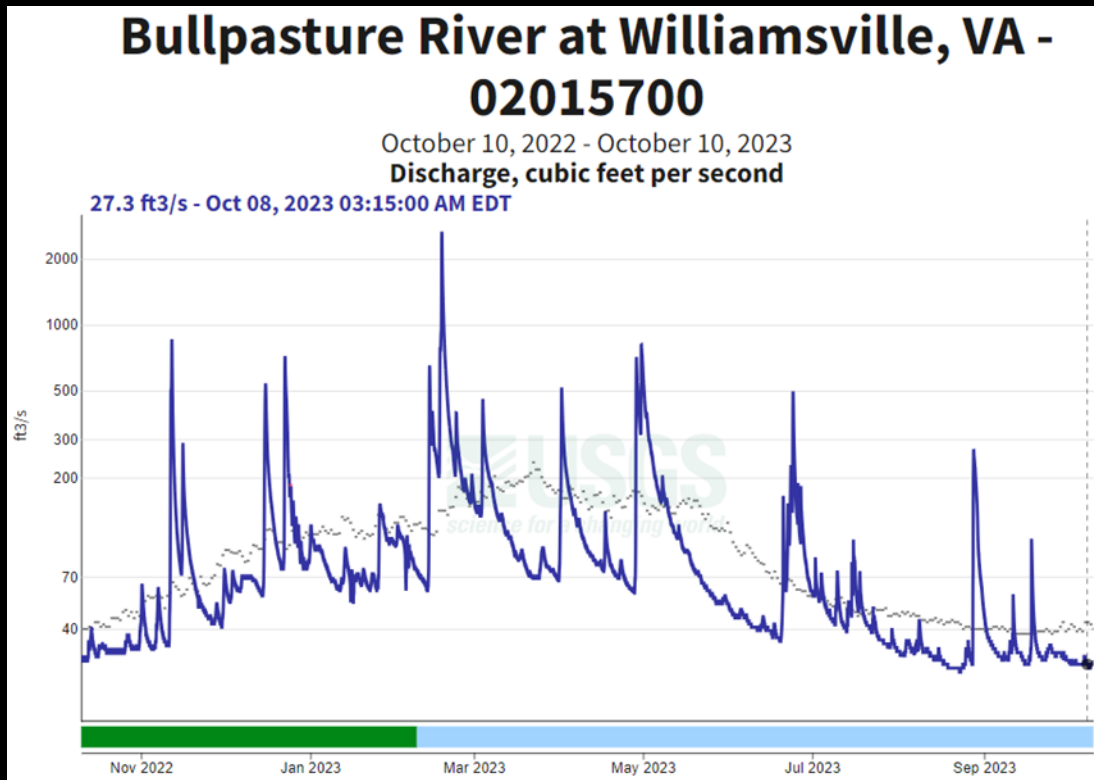
<https://dashboard.waterdata.usgs.gov/app/nwd/?region=lower48&aoi=state-va>

Streamflow Conditions for 02011400 Jackson River near Bacova, VA



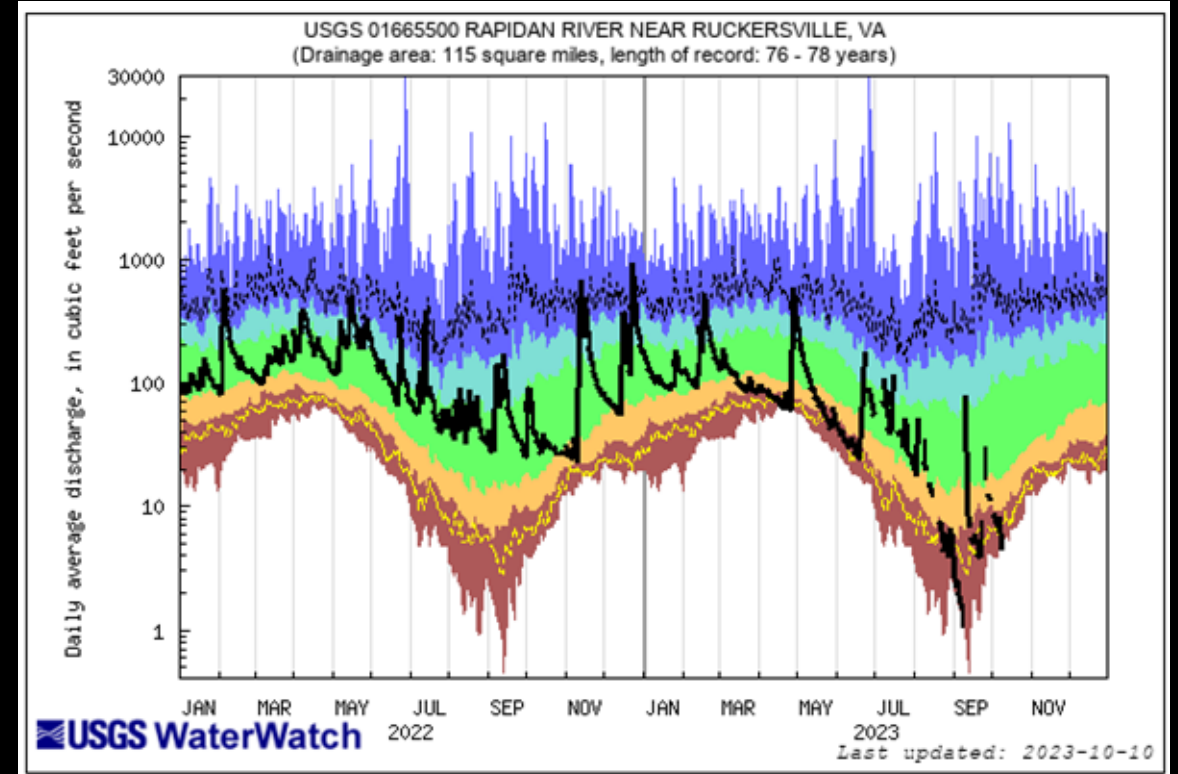
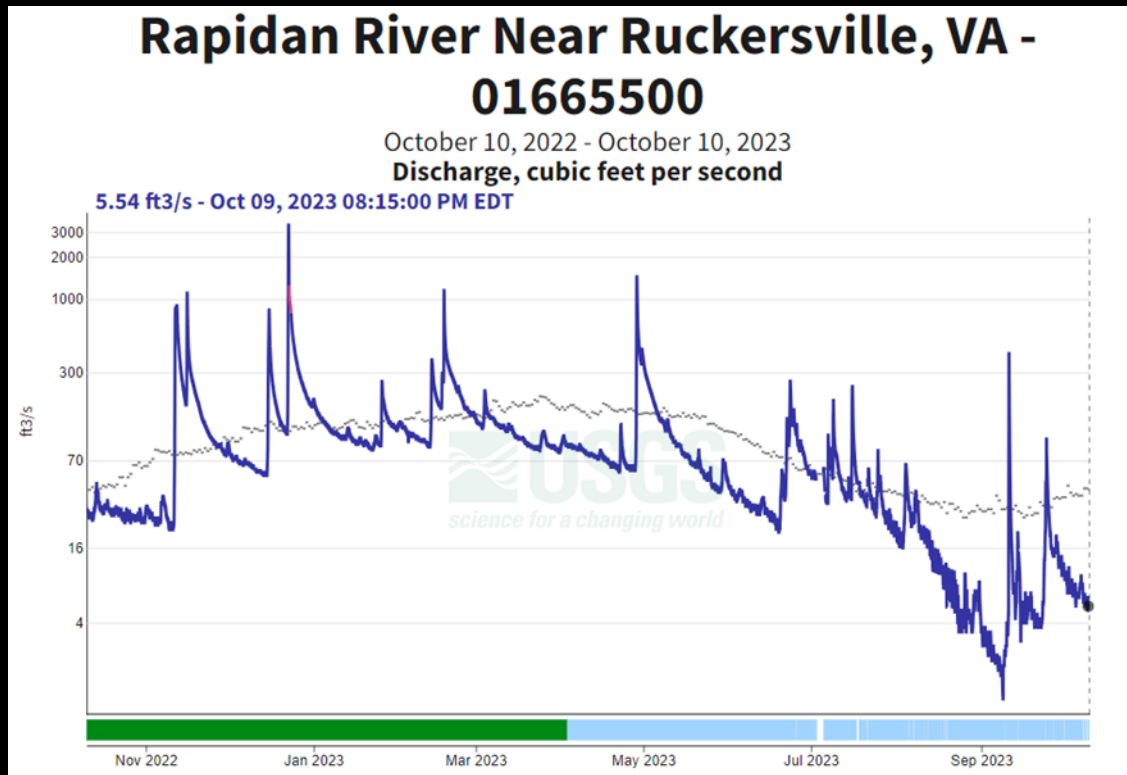
- 157 sq miles
- 49 years of data

Streamflow Conditions for 02015700 Bullpasture River near Williamsville, VA



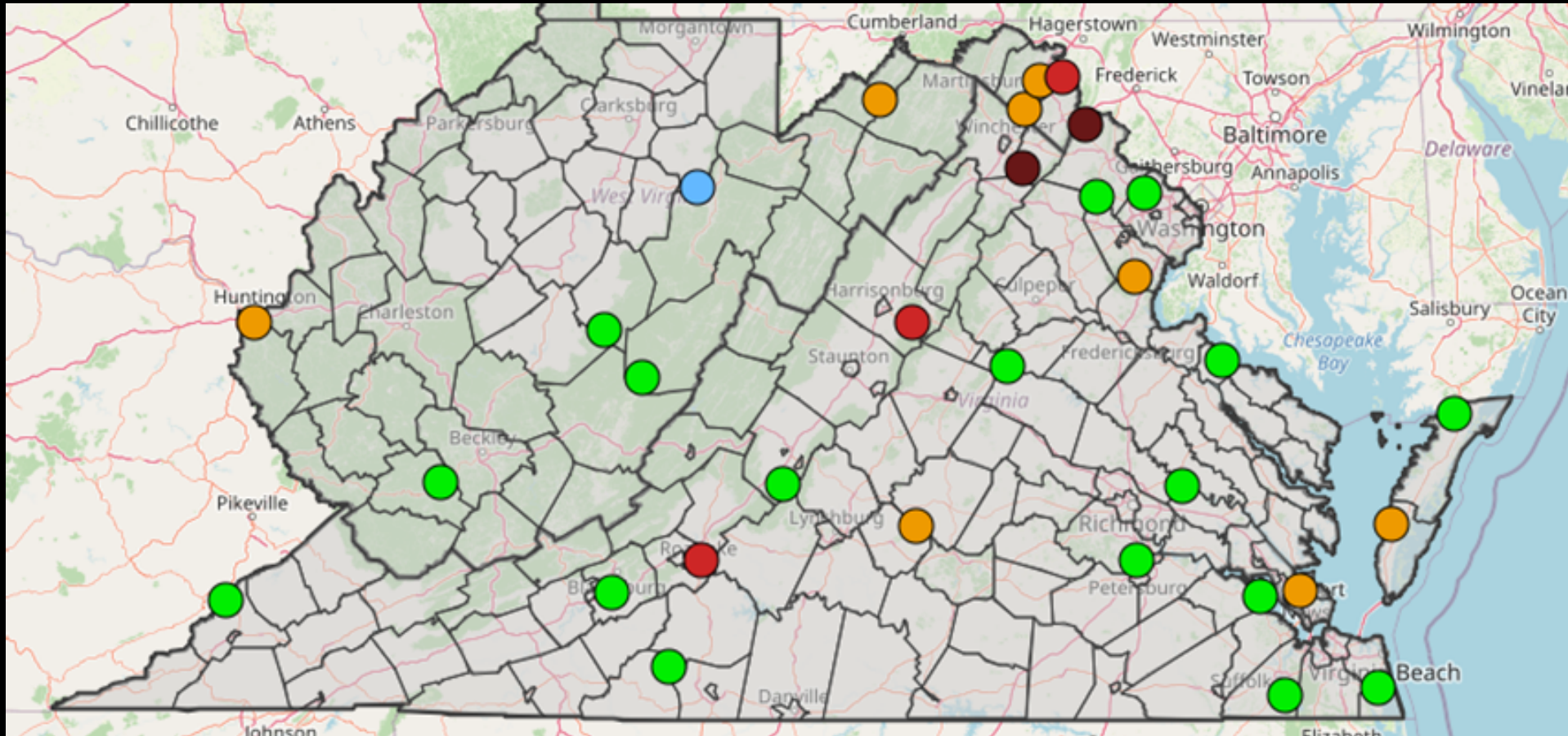
- 110 sq miles
- 63 years of data

Streamflow Conditions for 01665500 Rappahannock River near Ruckersville, VA



- 115 sq miles
- 78 years of data

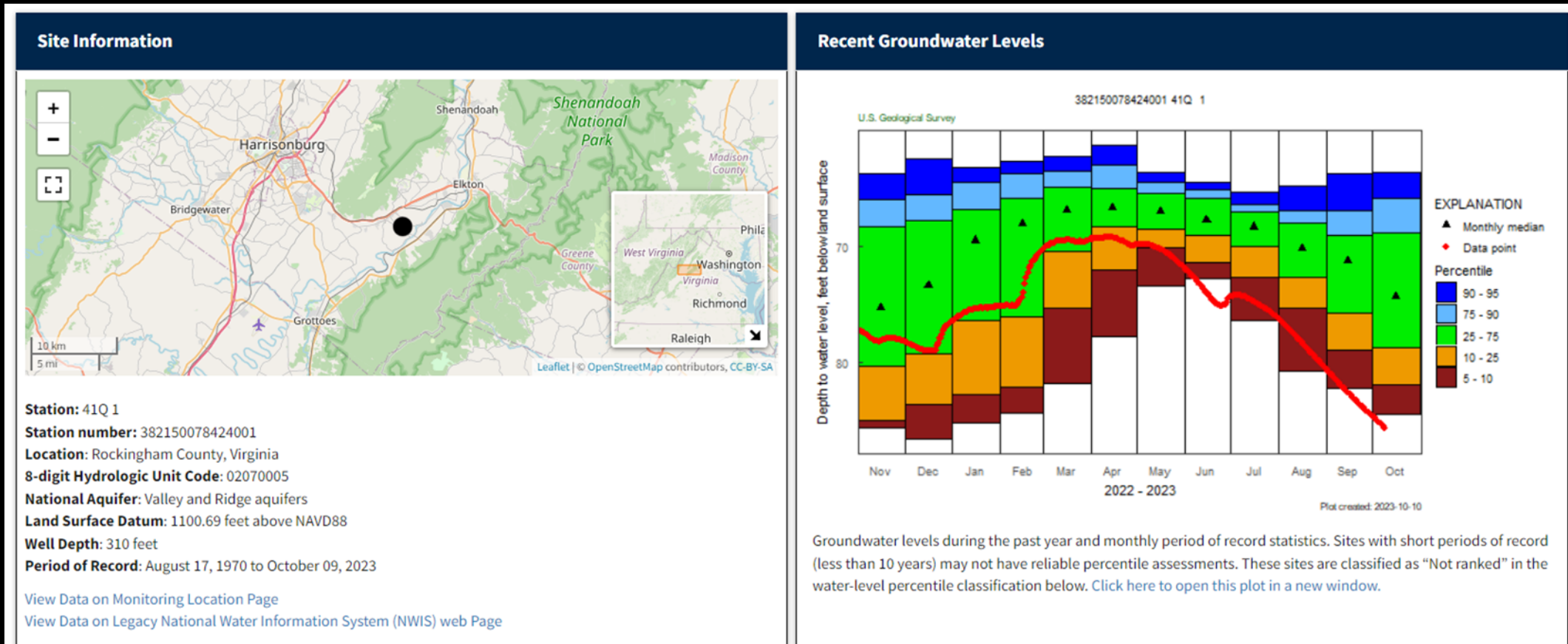
Groundwater Levels - Climate Response Network



- Valley & Ridge monitoring wells in the lowest percentile ranges

New VA-WV WSC Developed Page: <https://rconnect.usgs.gov/vawv-groundwater/>

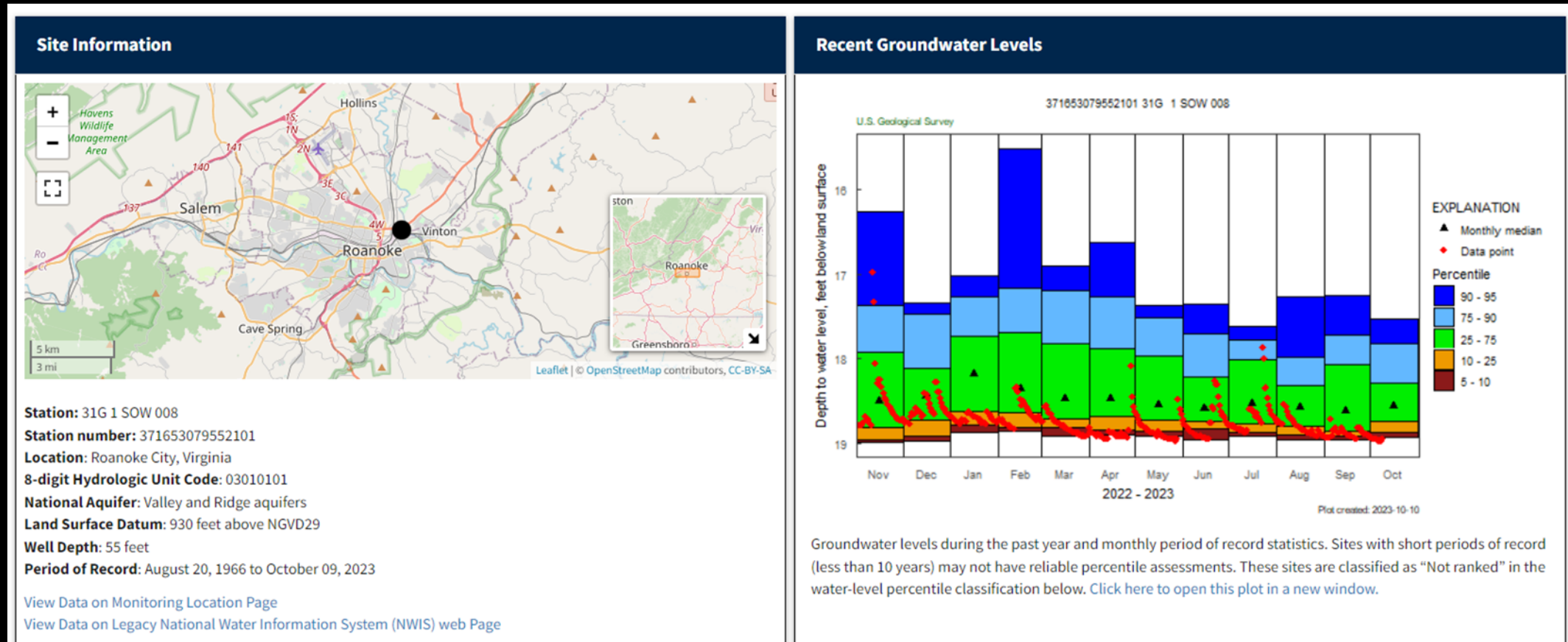
Groundwater Levels - Climate Response Network



- 41Q 1
- Rockingham County
- 310 ft deep

- 53 year record
- Well below 5th percentile

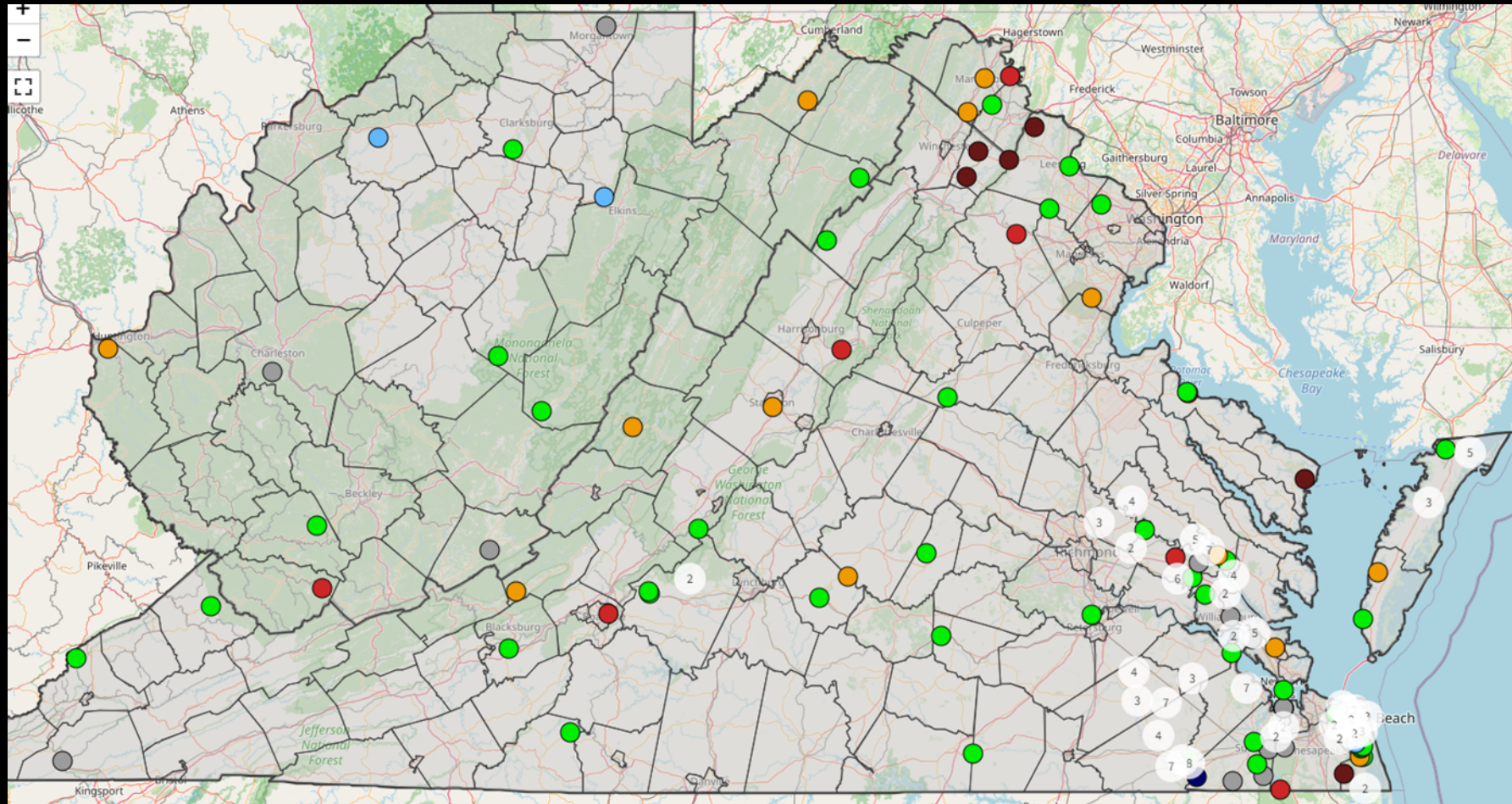
Groundwater Levels - Climate Response Network



- 31G 1 SOW 008
- Roanoke City
- 55 ft deep

- 57 year record
- Below 5th percentile

Groundwater Levels – All USGS Wells



- Valley & Ridge monitoring wells in the lowest percentile ranges

New VA-WV WSC Developed Page: <https://rconnect.usgs.gov/vawv-groundwater/>



Questions?

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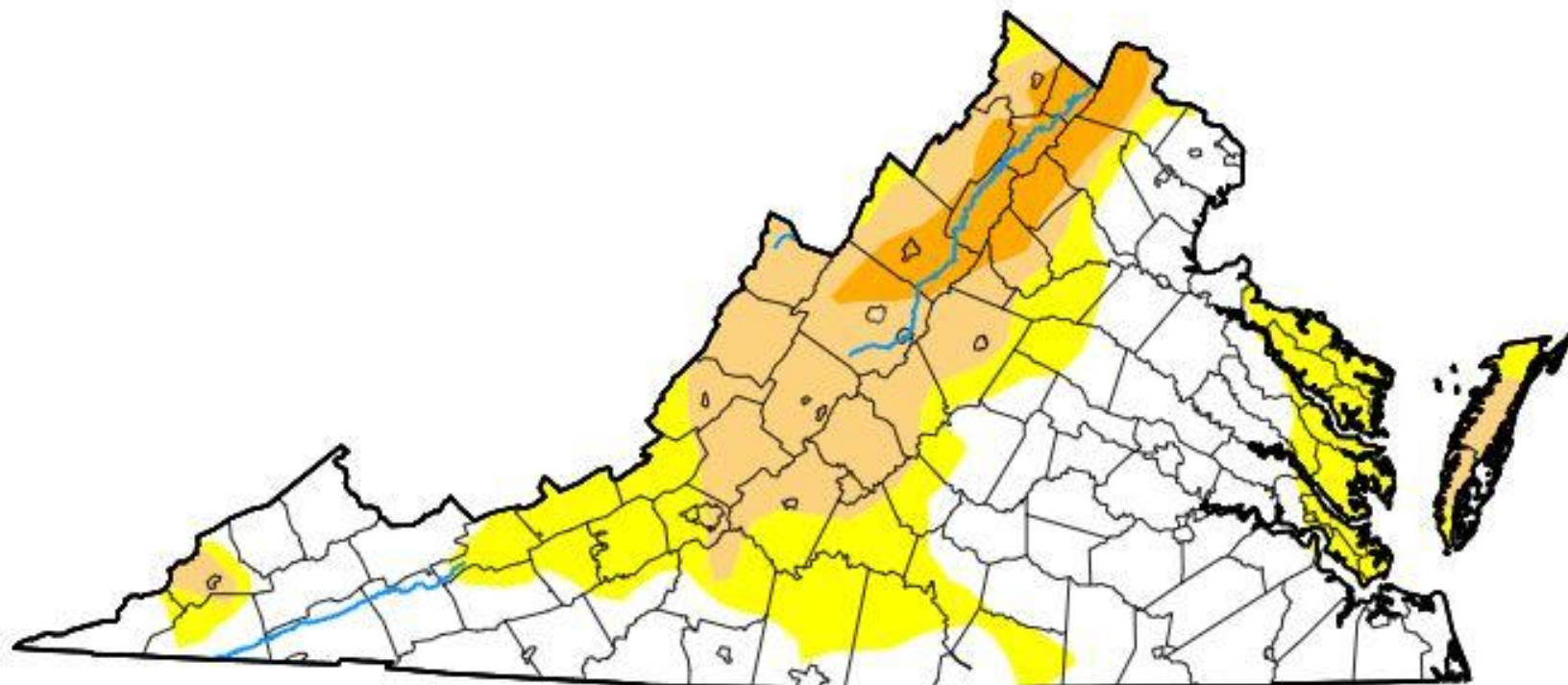
VA Drought Monitoring Task Force

Erik Taylor & Nick Fillo

National Weather Service – Baltimore/Washington DC/Blacksburg, VA

October 10, 2023

U.S. Drought Monitor



Map released: Thurs. October 5, 2023

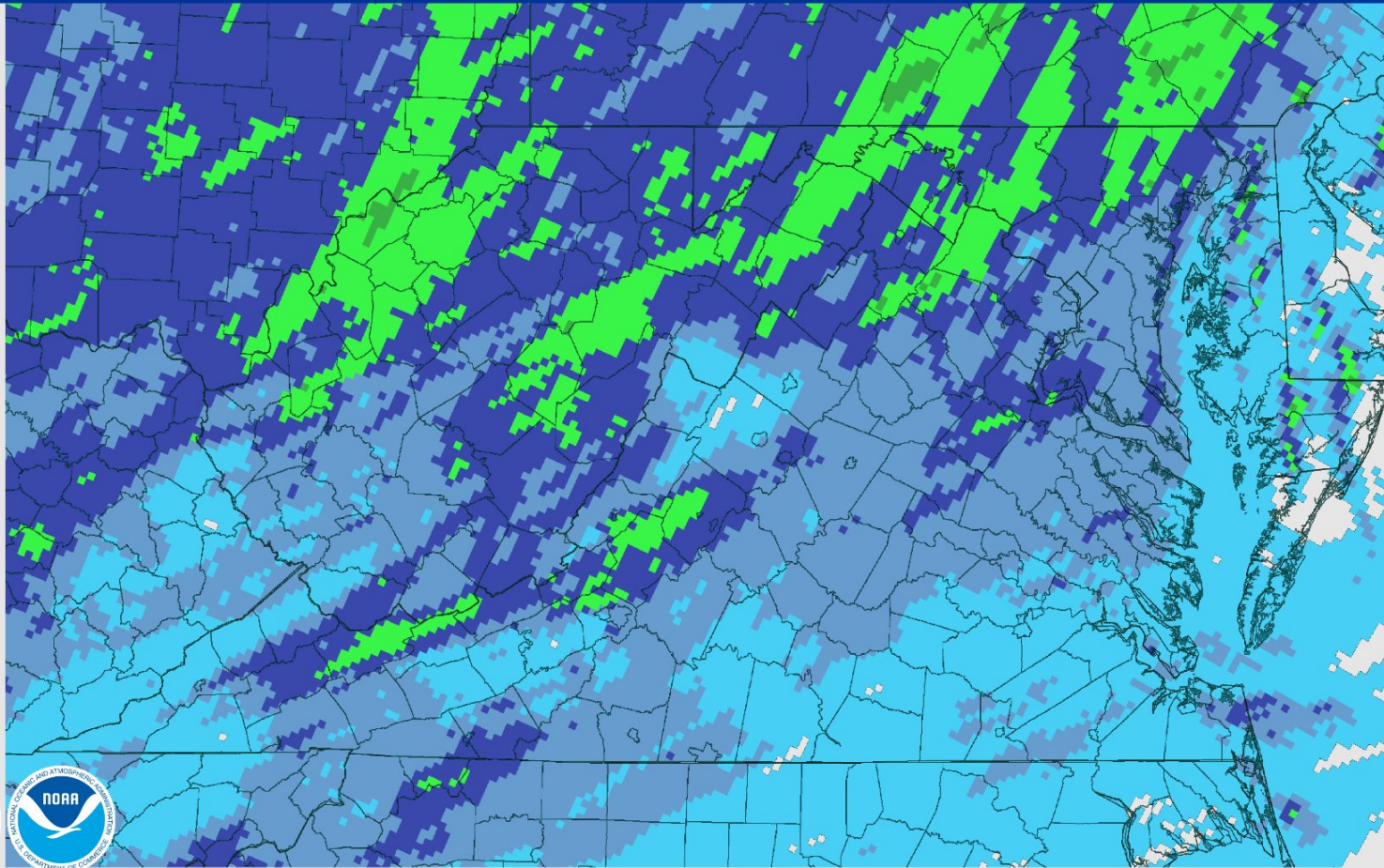
Data valid: October 3, 2023 at 8 a.m. EDT

7-Day Observed Precipitation

October 09, 2023 7-Day Observed Precipitation

Created on: October 10, 2023 - 13:23 UTC

Valid on: October 09, 2023 12:00 UTC

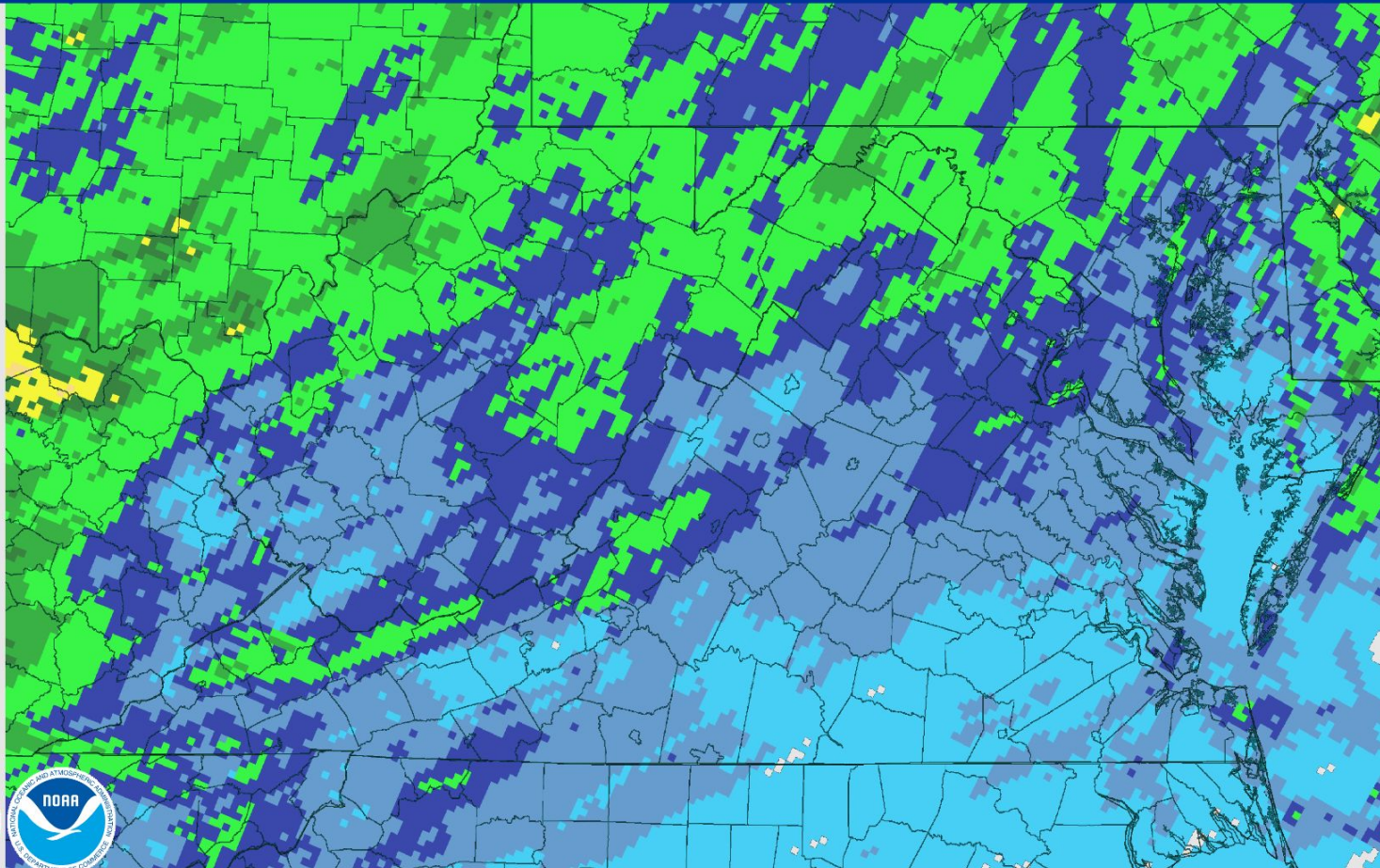


14-Day Observed Precipitation

October 09, 2023 14-Day Observed Precipitation

Created on: October 10, 2023 - 13:23 UTC

Valid on: October 09, 2023 12:00 UTC

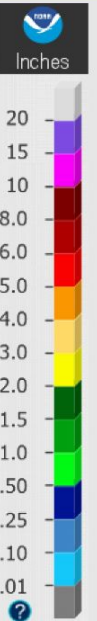
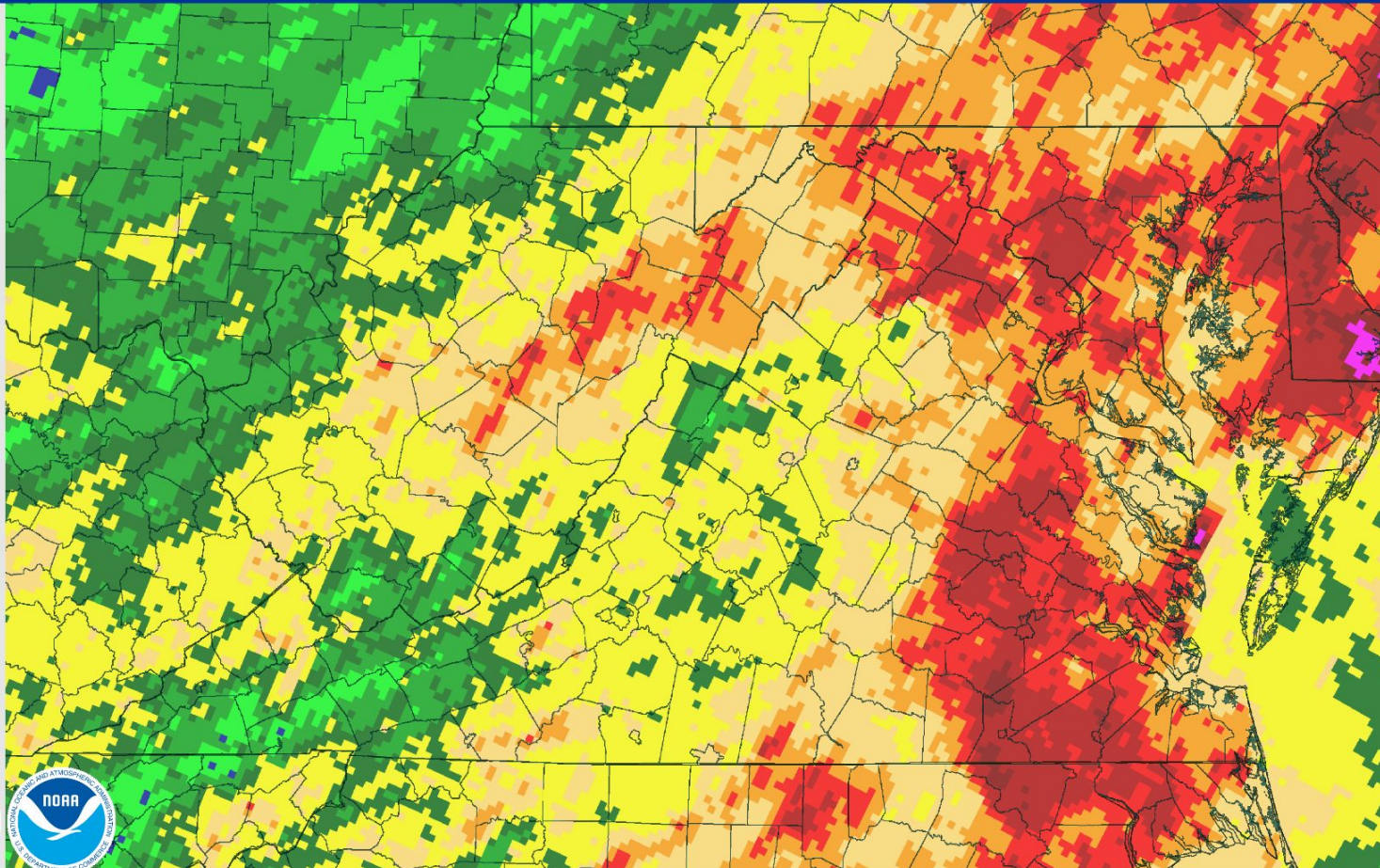


30-Day Observed Precipitation

October 09, 2023 30-Day Observed Precipitation

Created on: October 10, 2023 - 13:24 UTC

Valid on: October 09, 2023 12:00 UTC

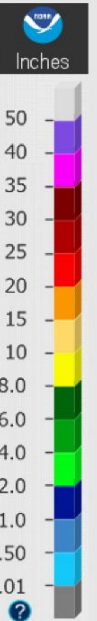
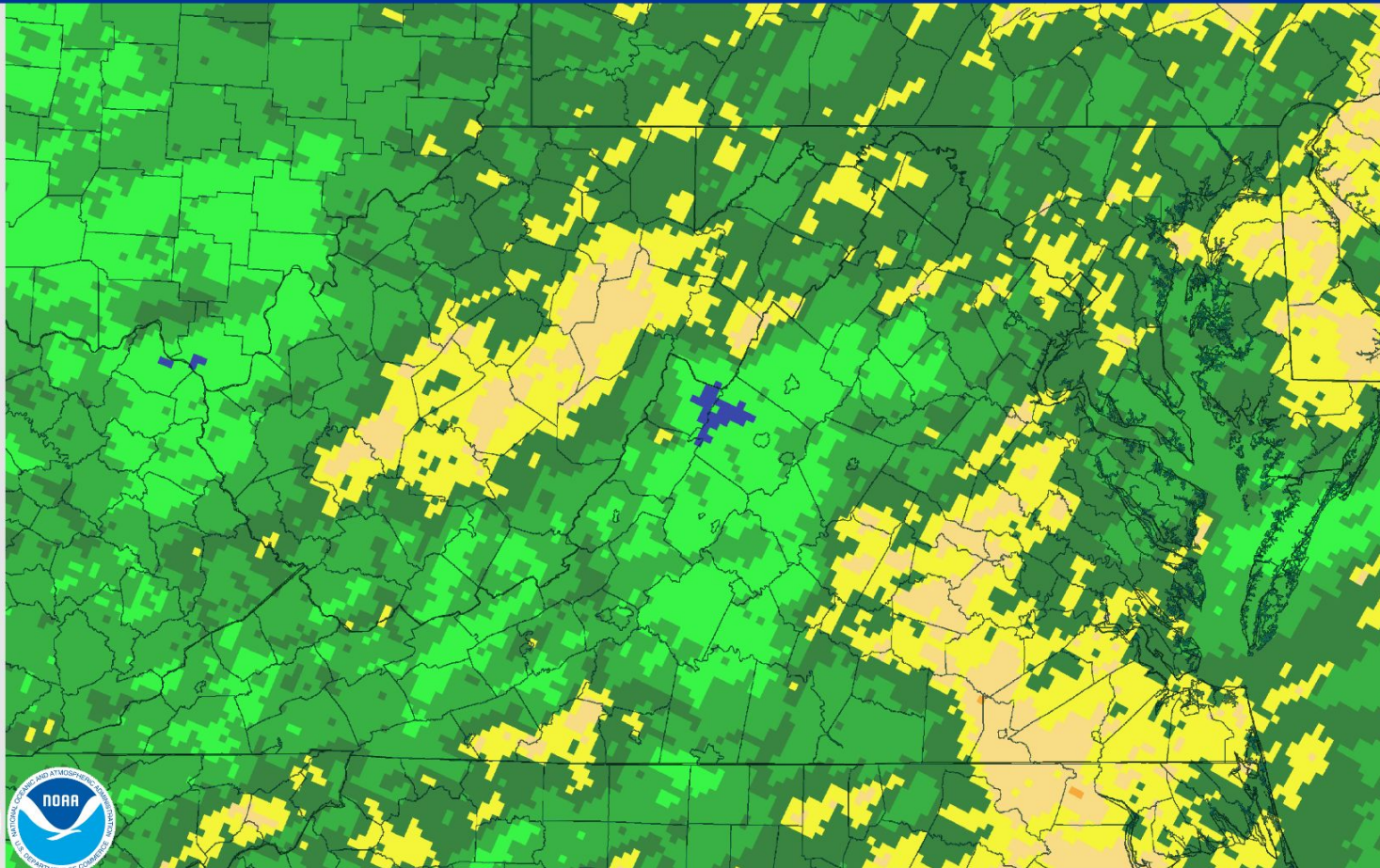


60-Day Observed Precipitation

October 09, 2023 60-Day Observed Precipitation

Created on: October 10, 2023 - 13:25 UTC

Valid on: October 09, 2023 12:00 UTC

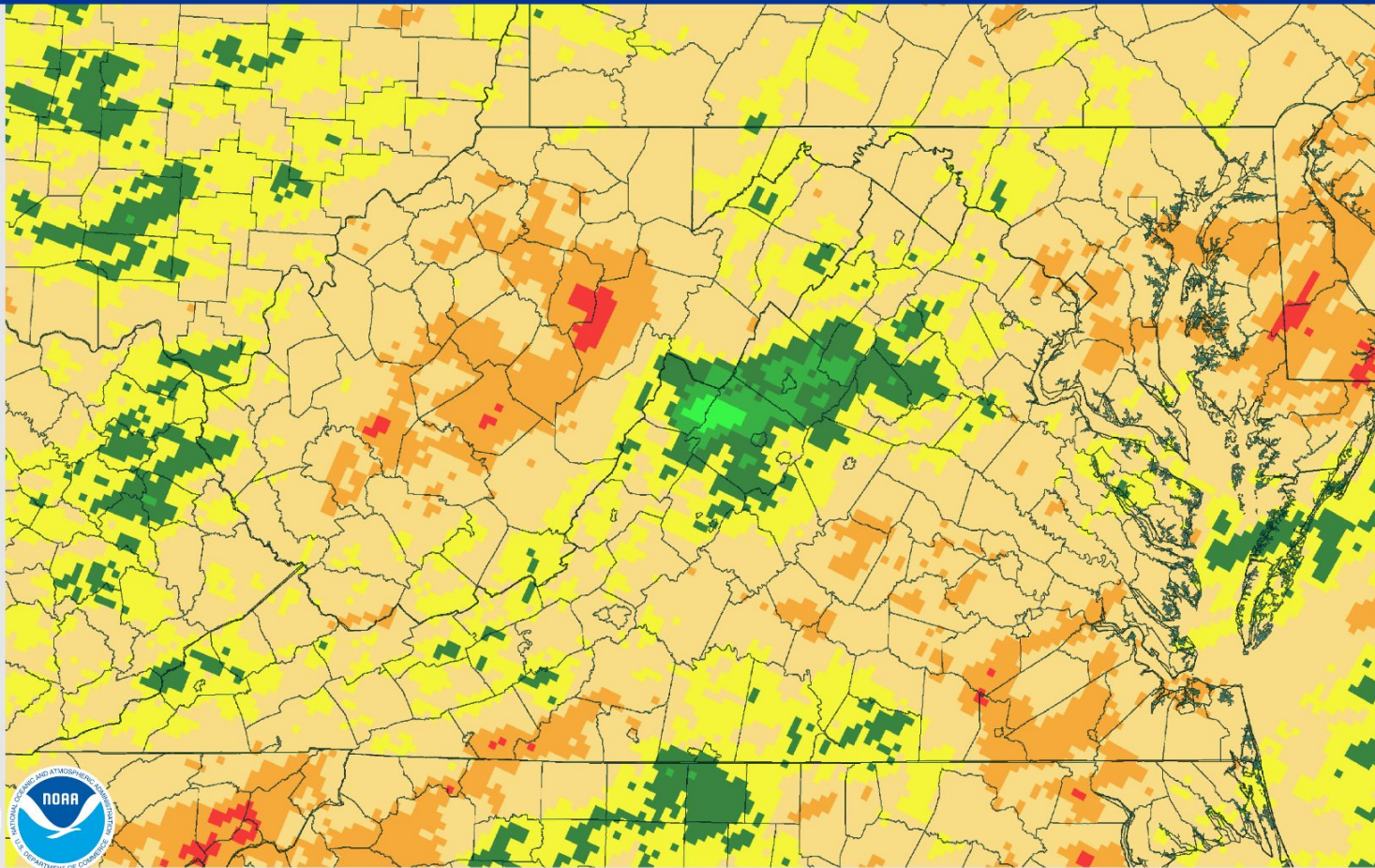


90-Day Observed Precipitation

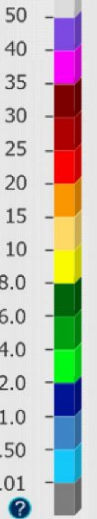
October 09, 2023 90-Day Observed Precipitation

Created on: October 10, 2023 - 13:25 UTC

Valid on: October 09, 2023 12:00 UTC



Inches

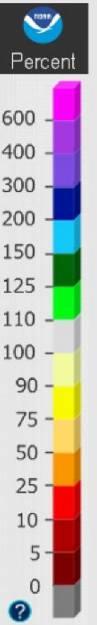
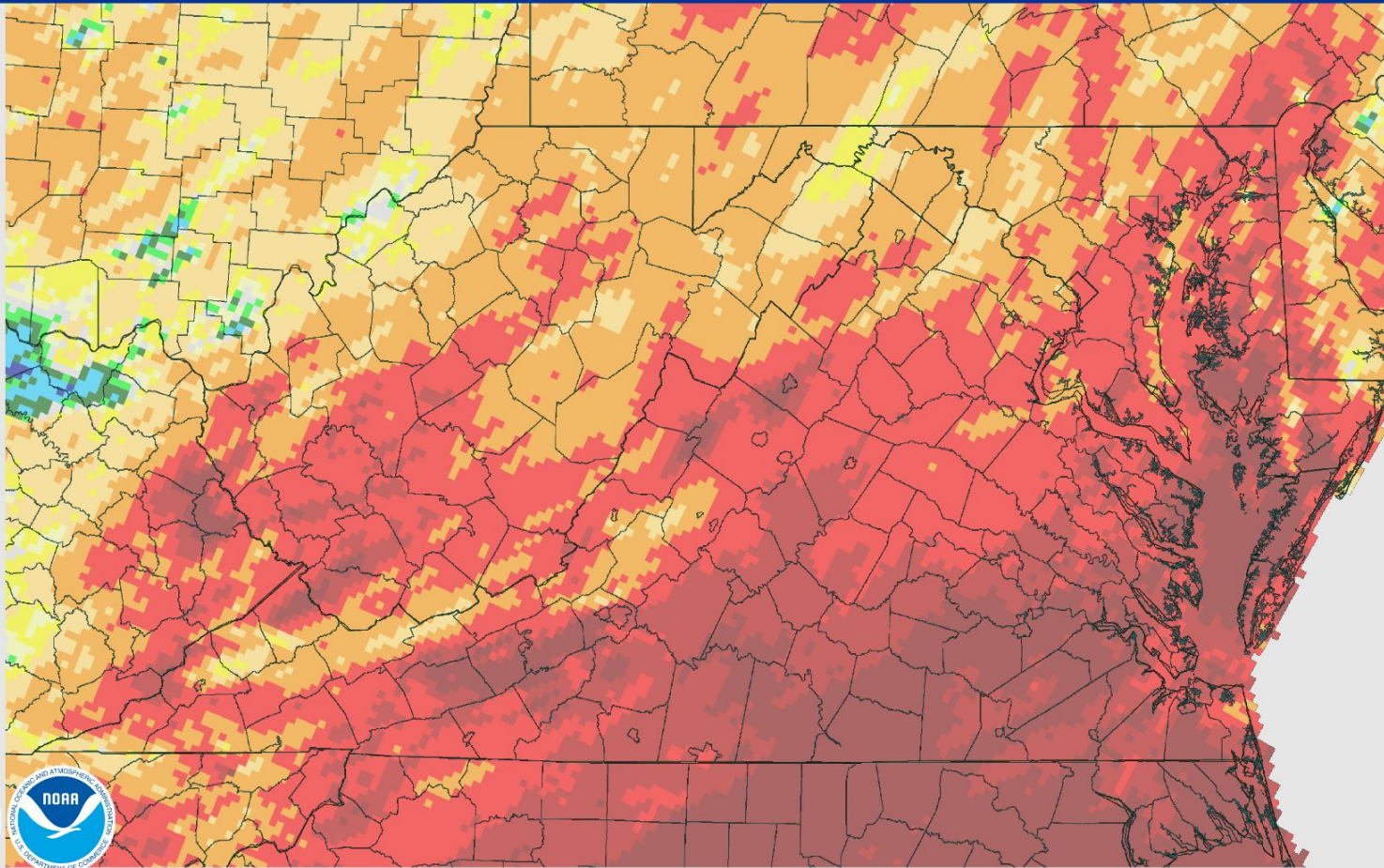


14-Day Percent of Normal Precipitation

October 09, 2023 14-Day Percent Precipitation

Created on: October 10, 2023 - 13:26 UTC

Valid on: October 09, 2023 12:00 UTC

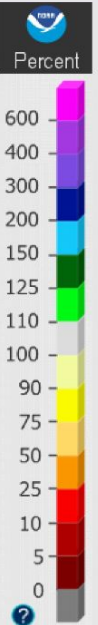
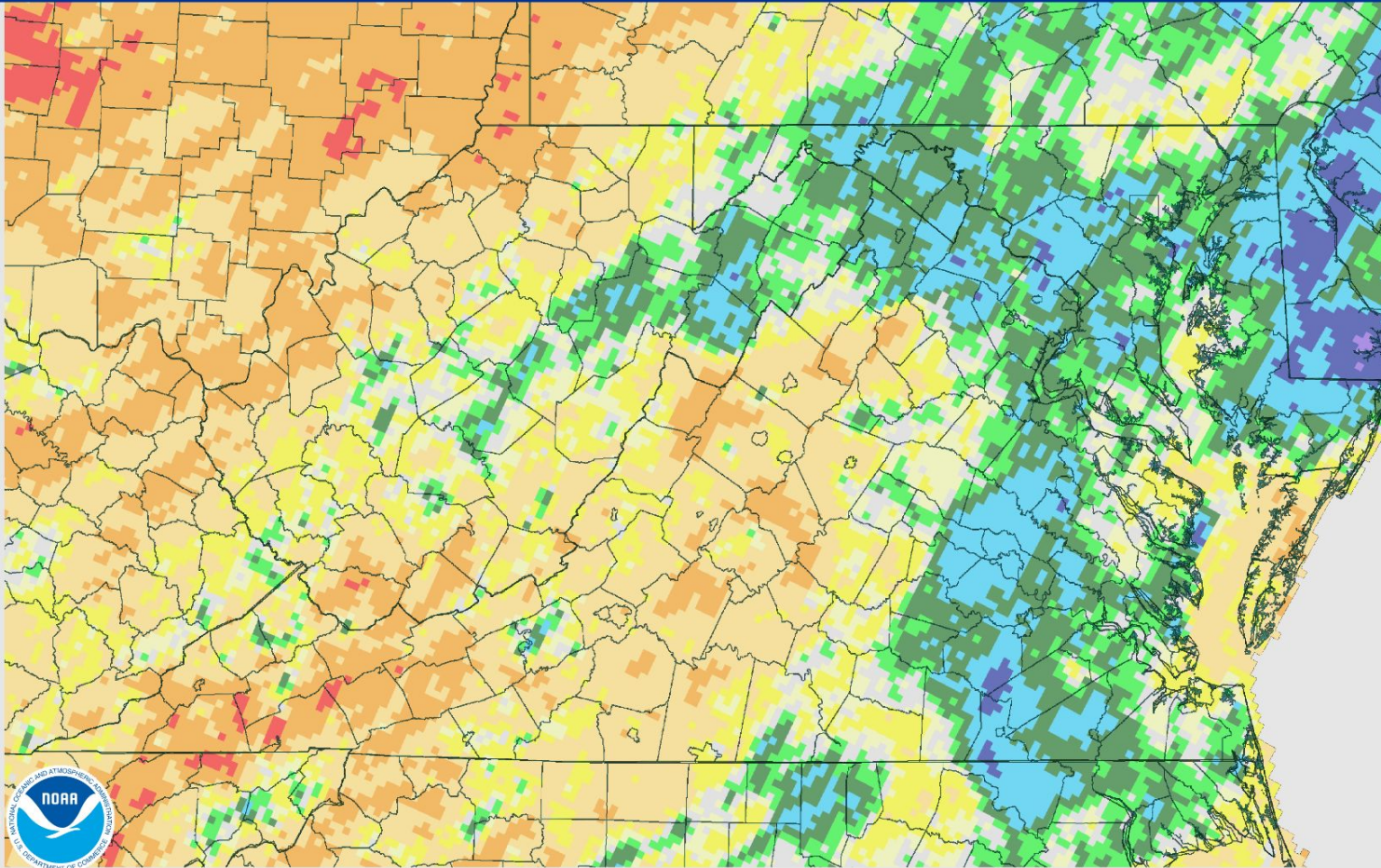


30-Day Percent of Normal Precipitation

October 09, 2023 30-Day Percent Precipitation

Created on: October 10, 2023 - 13:27 UTC

Valid on: October 09, 2023 12:00 UTC

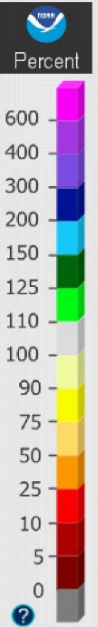
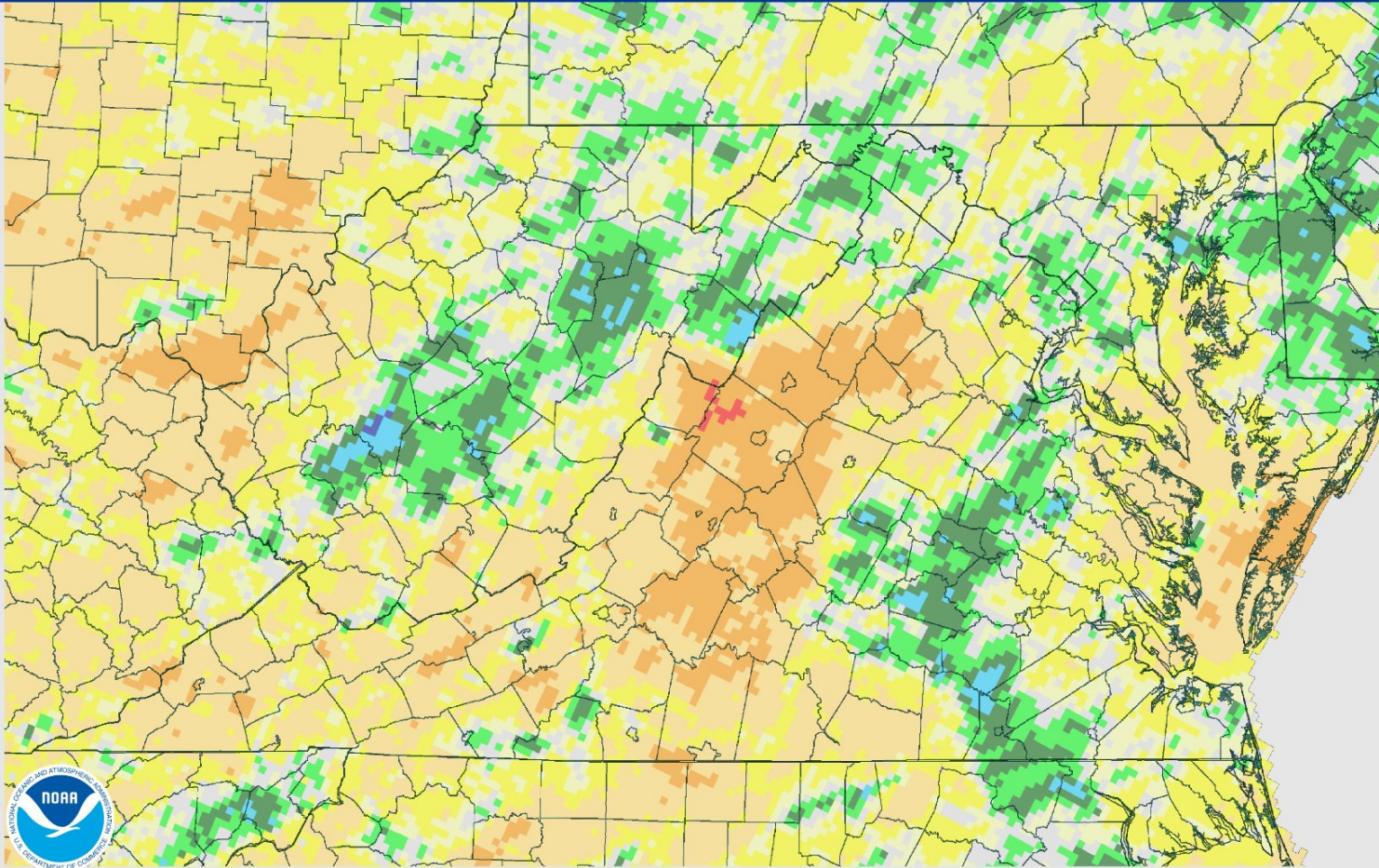


60-Day Percent of Normal Precipitation

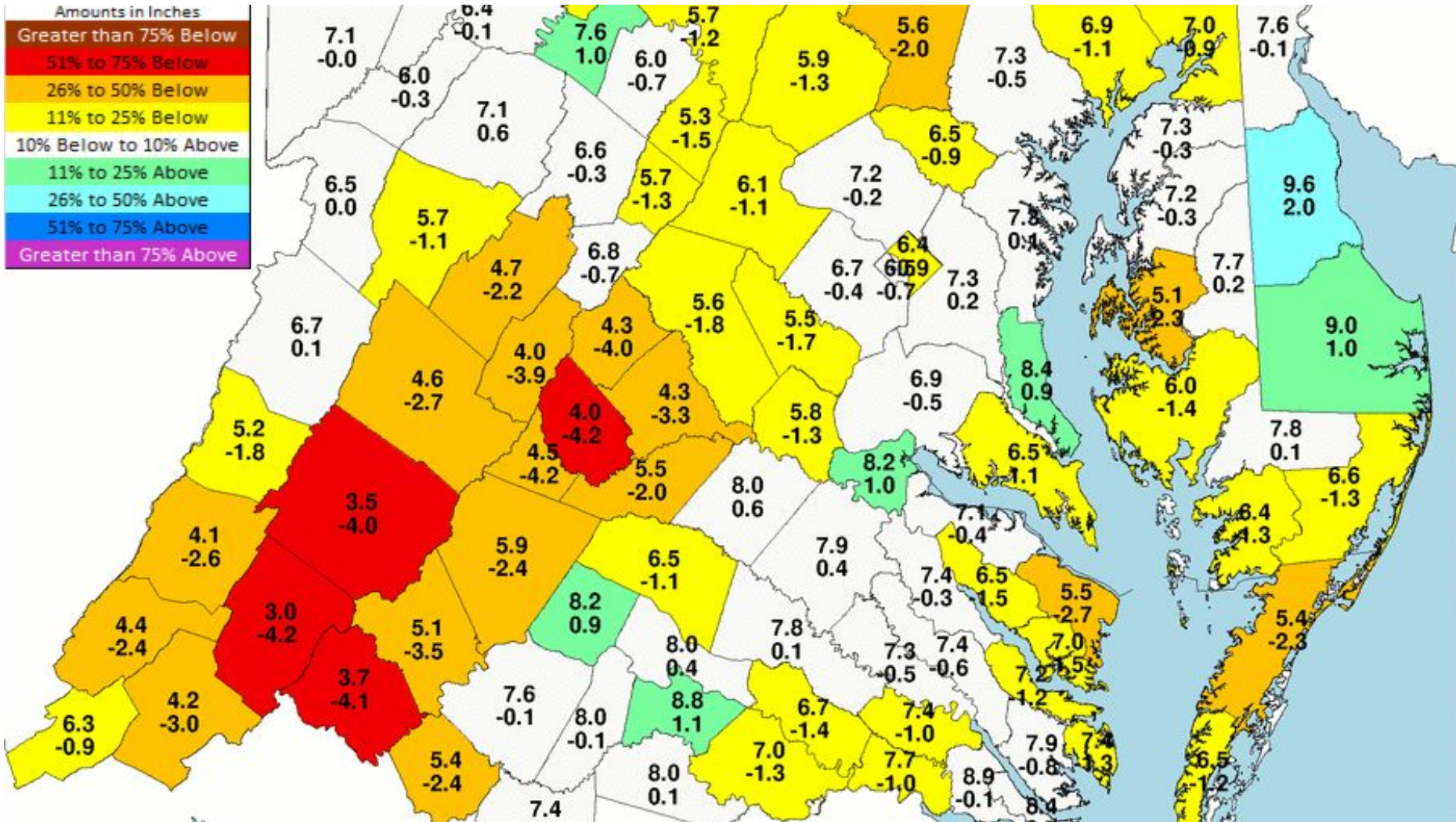
October 09, 2023 60-Day Percent Precipitation

Created on: October 10, 2023 - 13:28 UTC

Valid on: October 09, 2023 12:00 UTC



60-Day Departure Of Precipitation

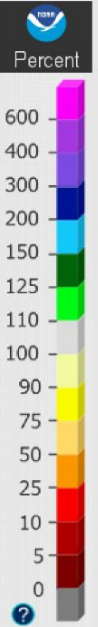
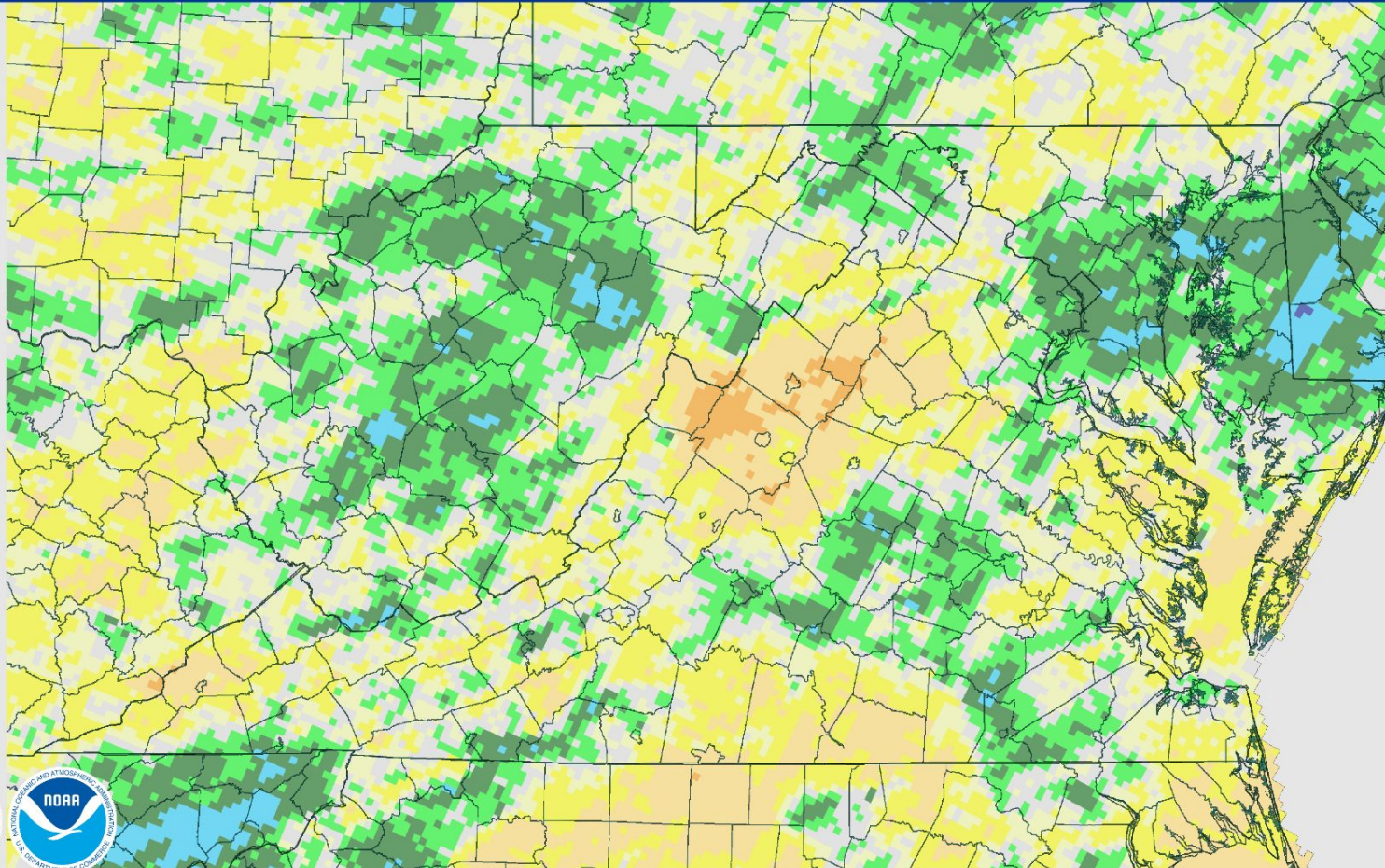


90-Day Percent of Normal Precipitation

October 09, 2023 90-Day Percent Precipitation

Created on: October 10, 2023 - 13:28 UTC

Valid on: October 09, 2023 12:00 UTC

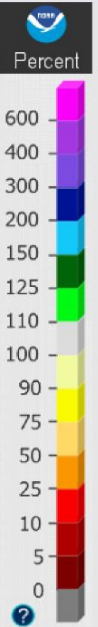
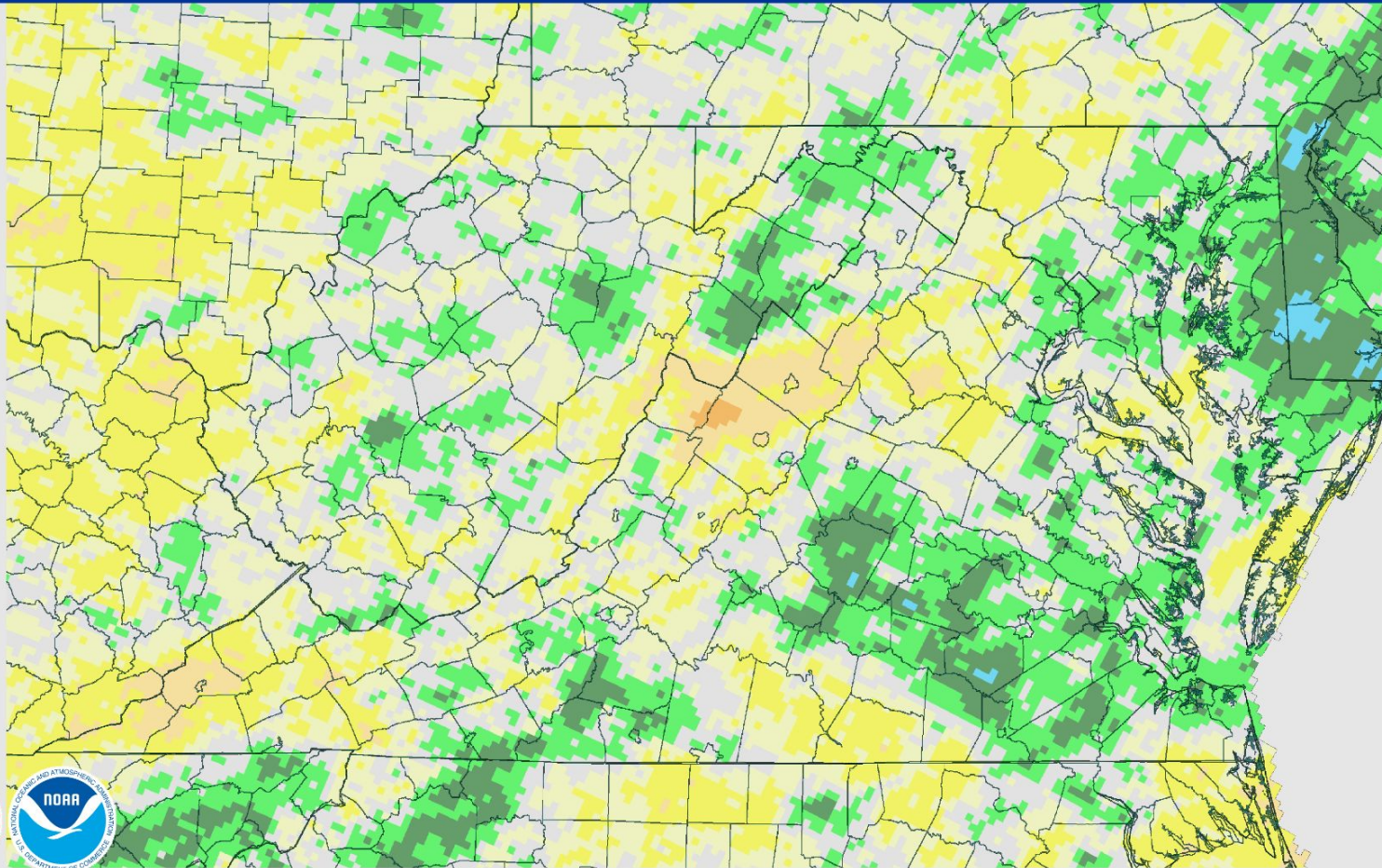


180-Day Percent of Normal Precipitation

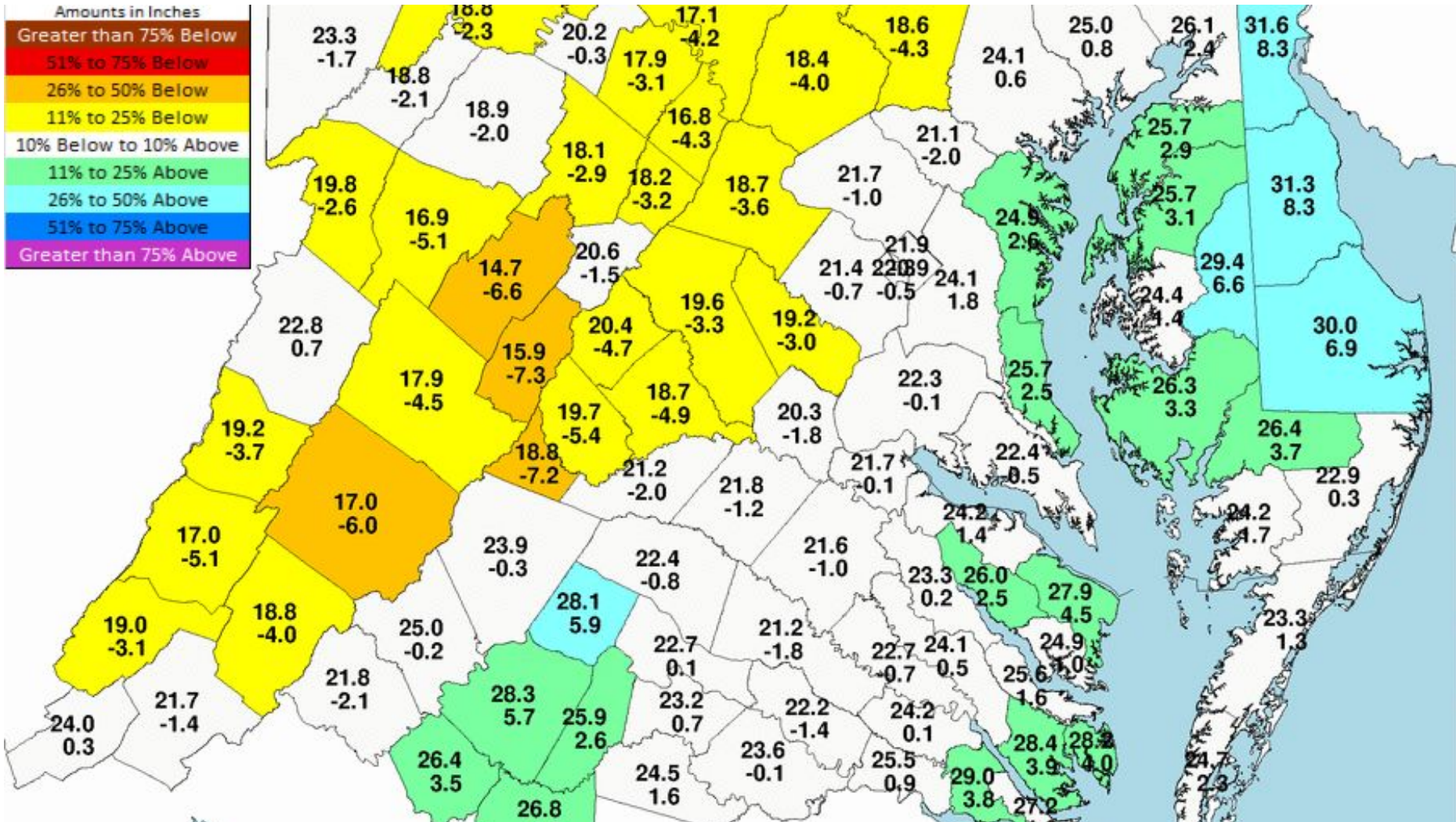
October 09, 2023 180-Day Percent Precipitation

Created on: October 10, 2023 - 13:30 UTC

Valid on: October 09, 2023 12:00 UTC



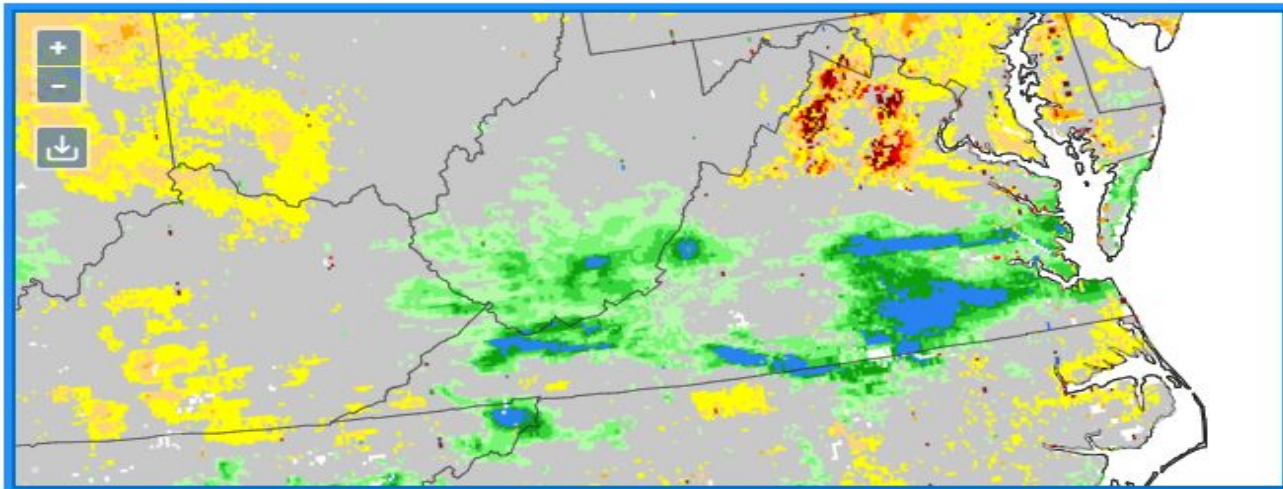
180-Day Departure Of Precipitation



NASA SPoRT LIS Soil Moisture

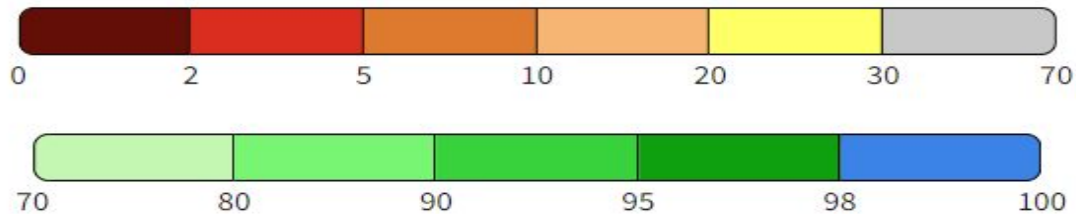
Valid June 1st, 2023

INTERACTIVE MAP: 0-100 CM SOIL MOISTURE PERCENTILE

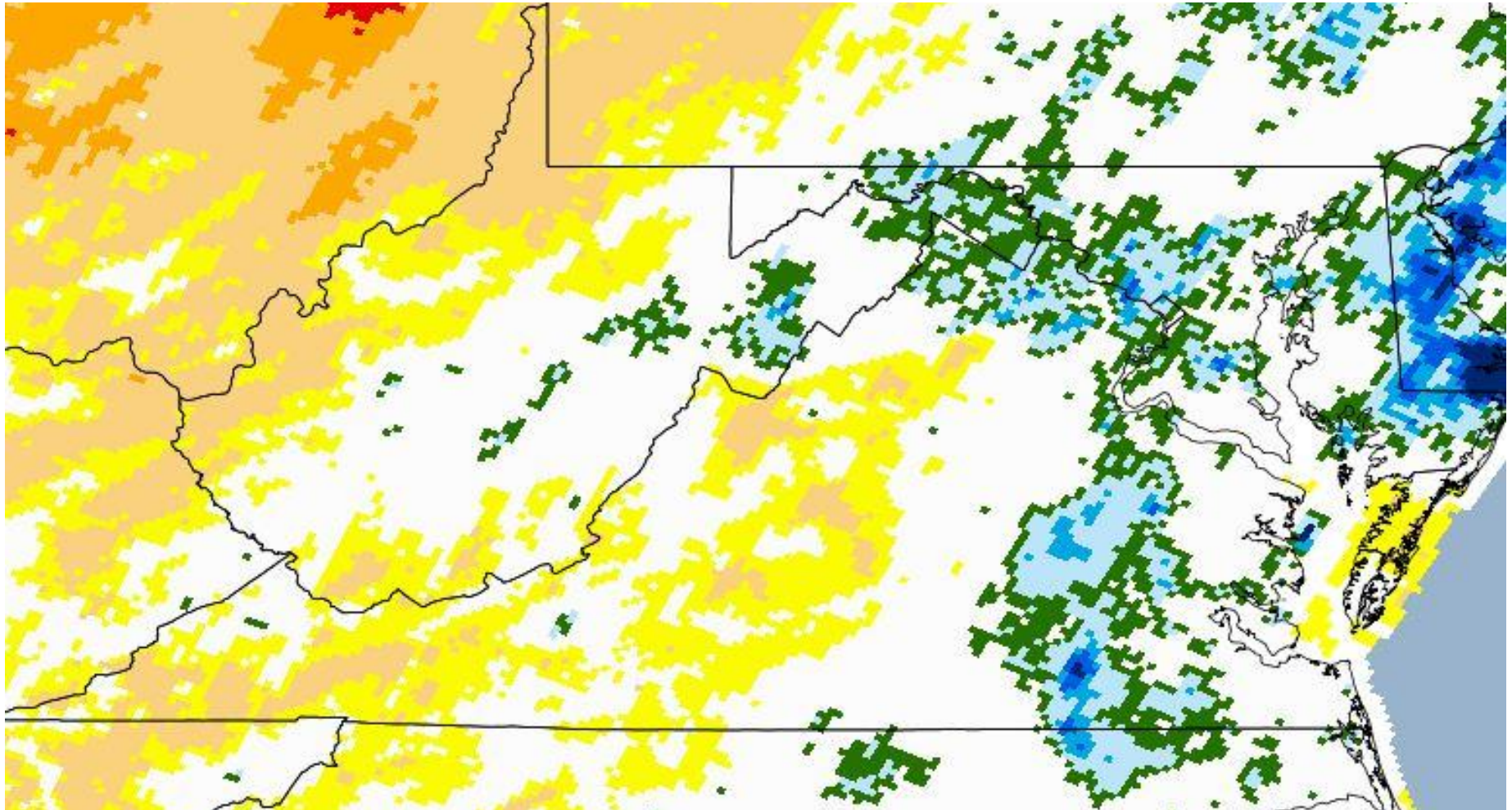


Legend

0-100 cm Soil Moisture Percentile



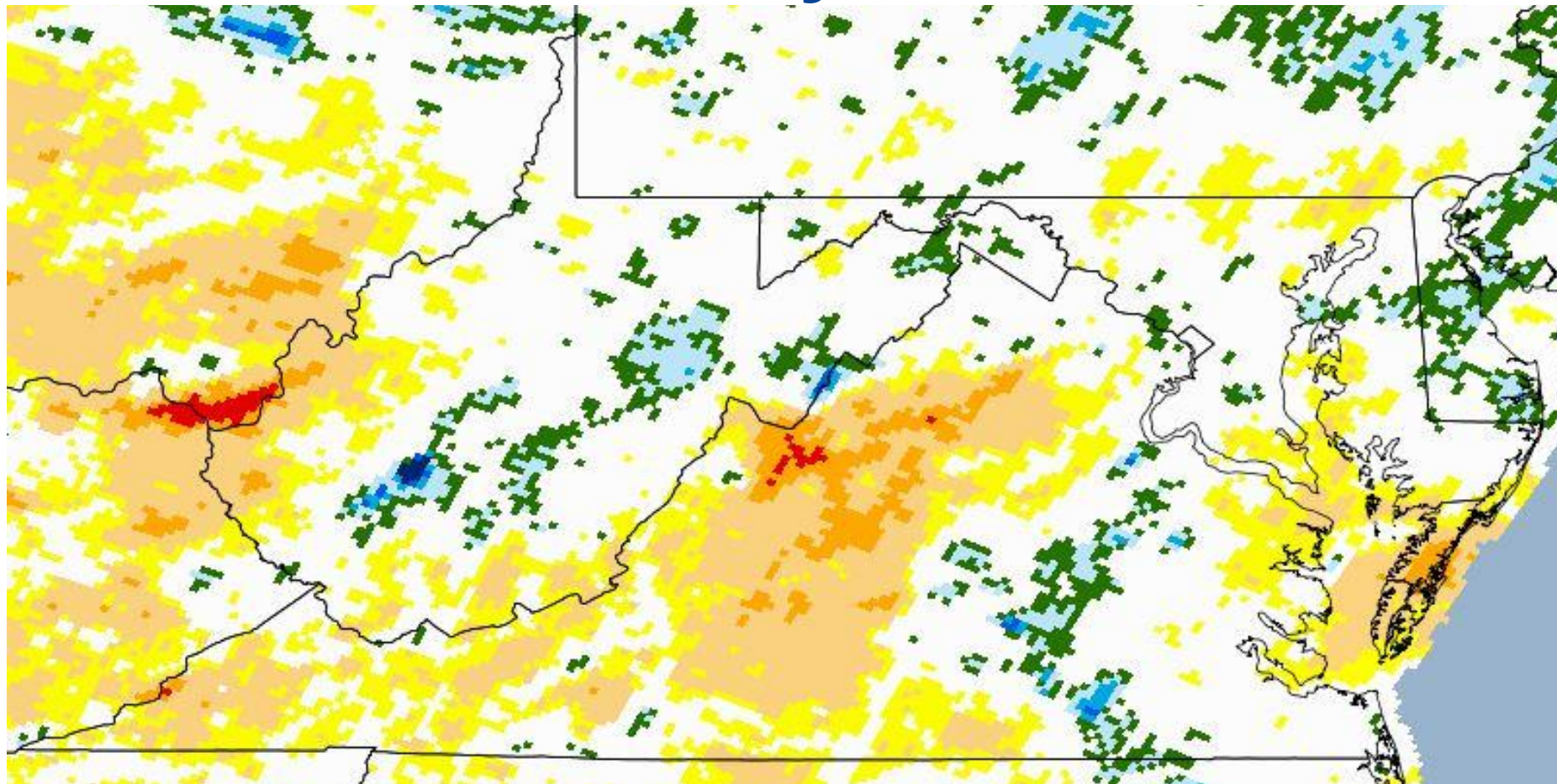
30-Day SPI



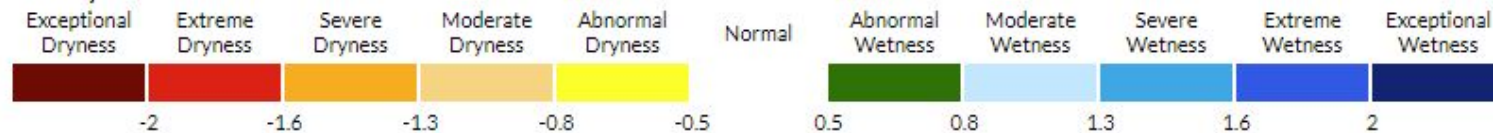
30-day SPI



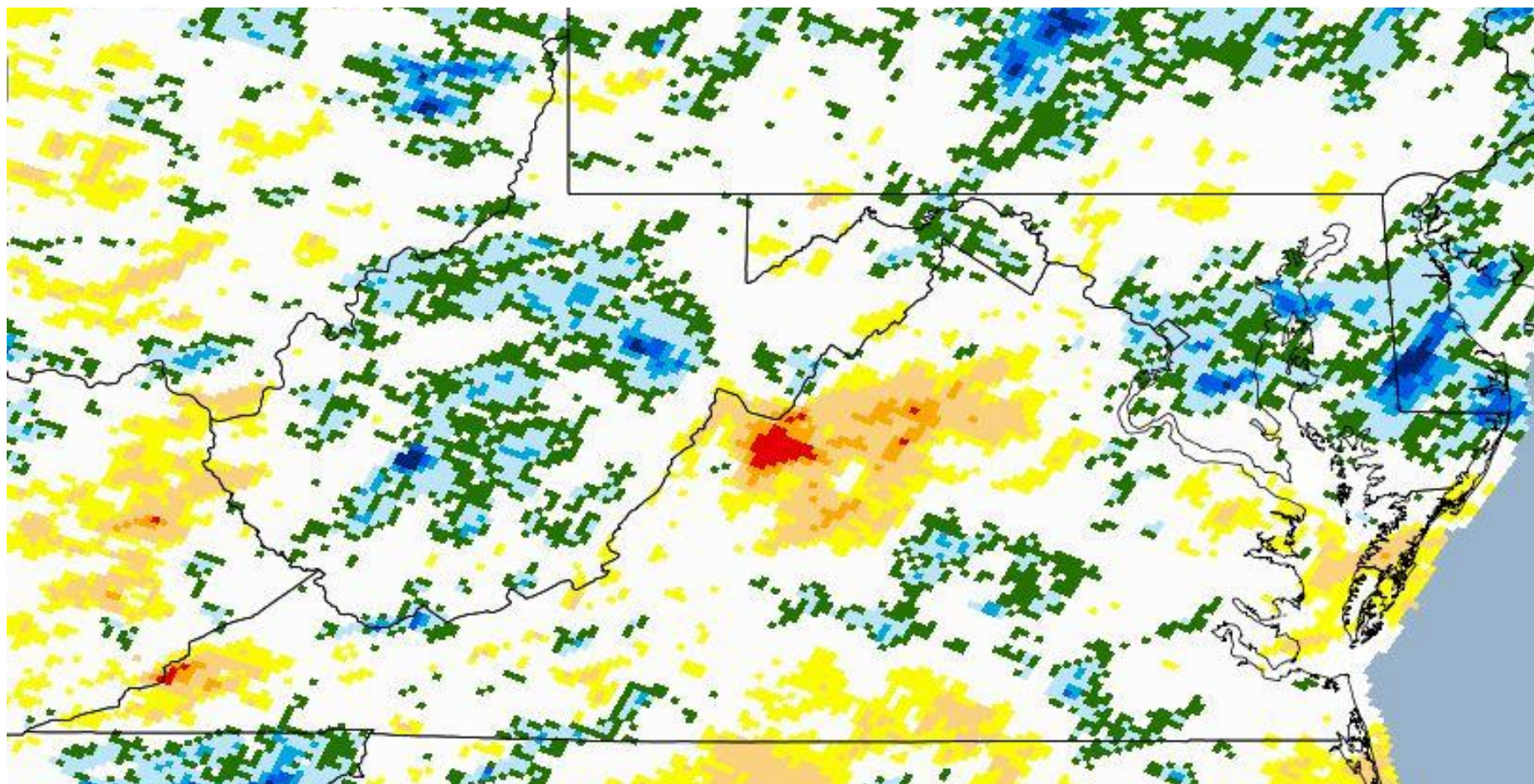
60-Day SPI



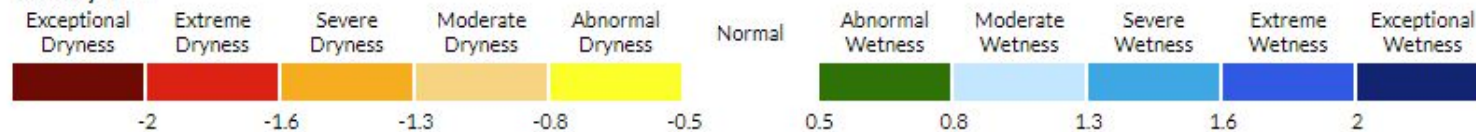
60-day SPI



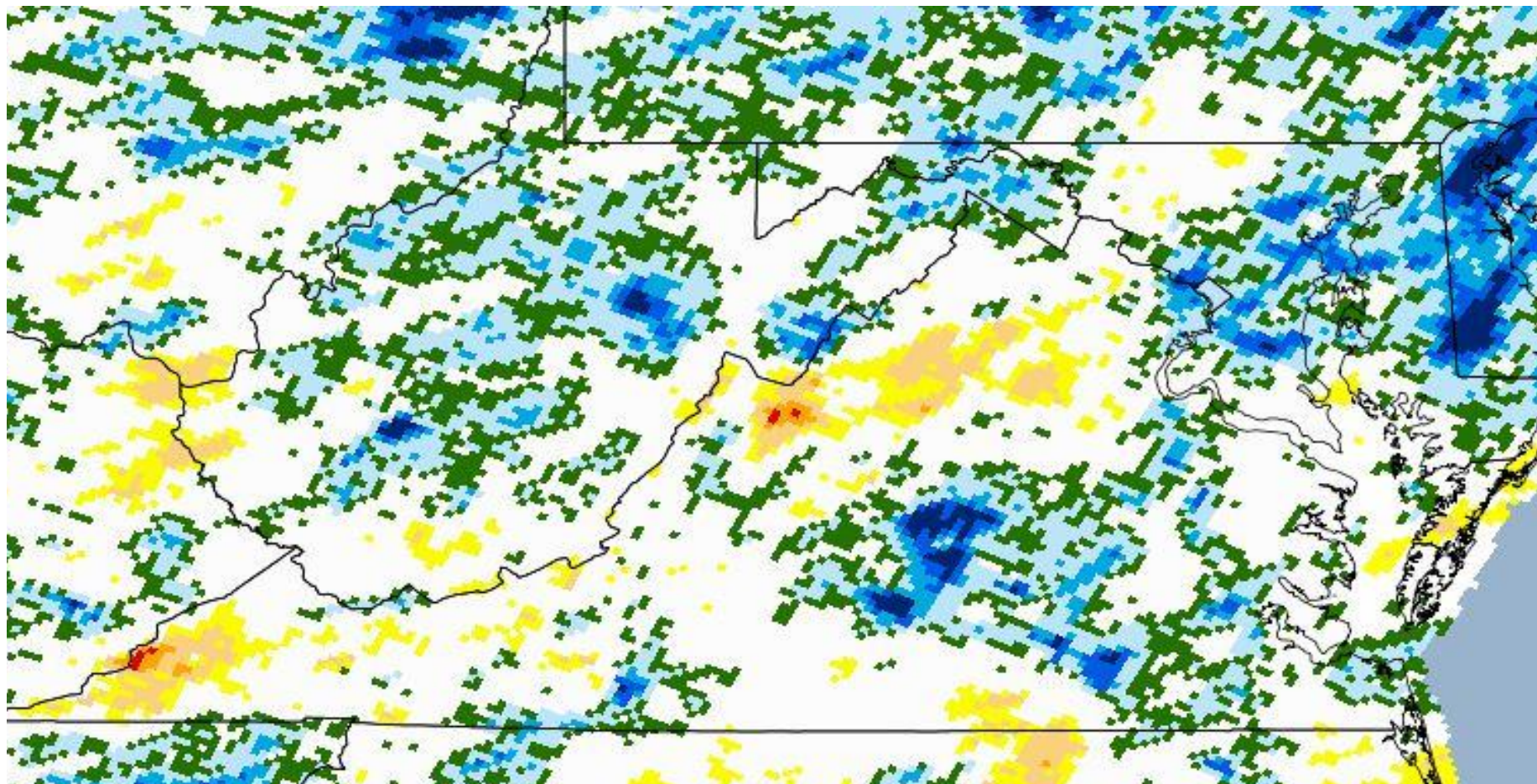
90-Day SPI



90-day SPI



120-Day SPI



120-day SPI

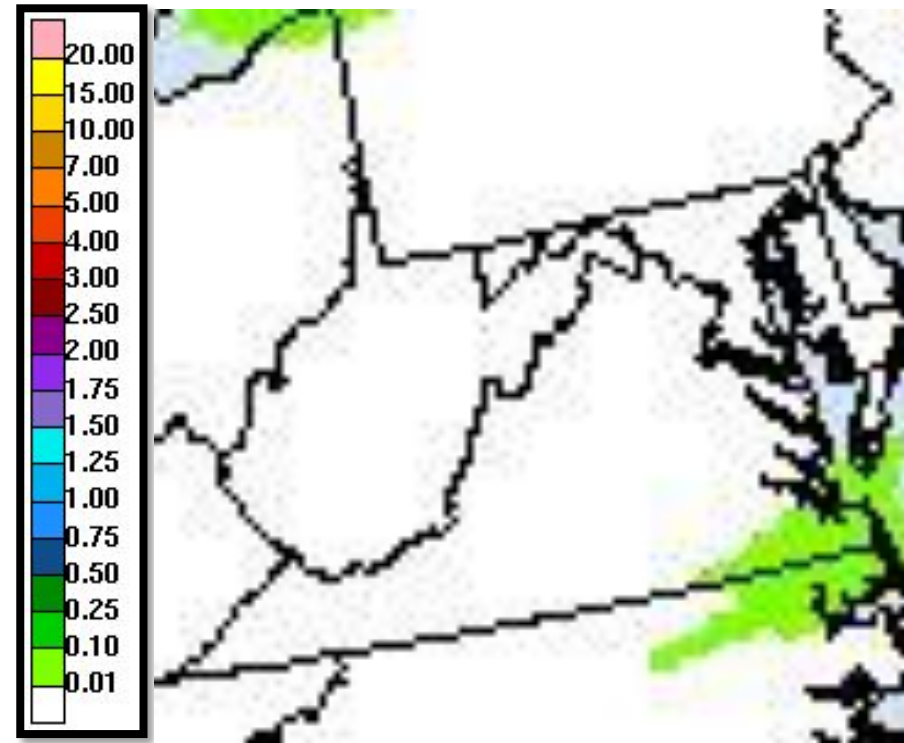
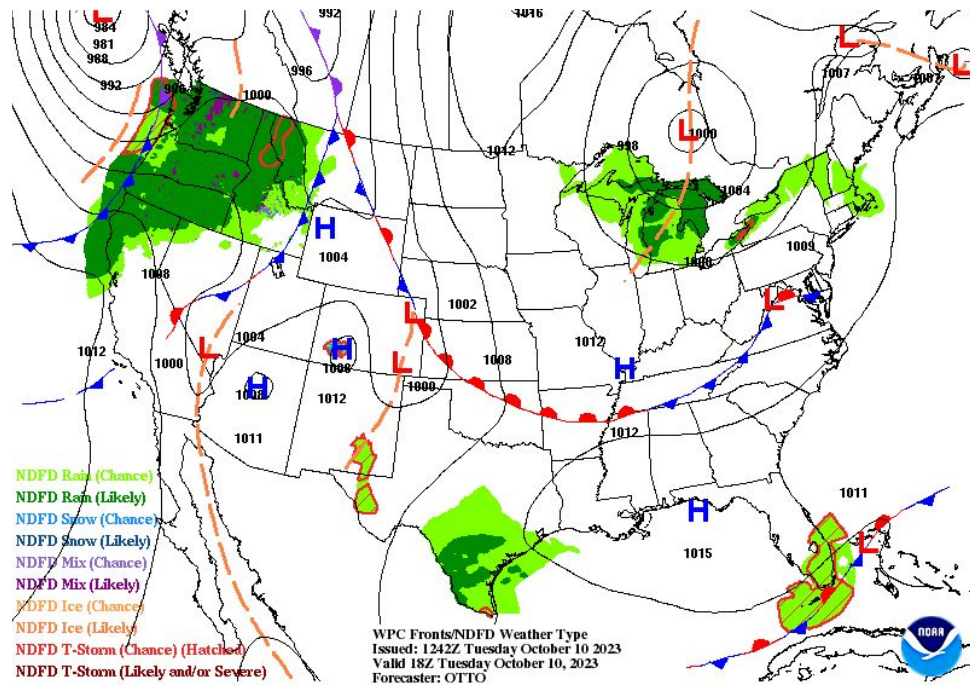


Upcoming Weather Pattern

Today

Fronts and Weather

Accumulated Precipitation Forecasts

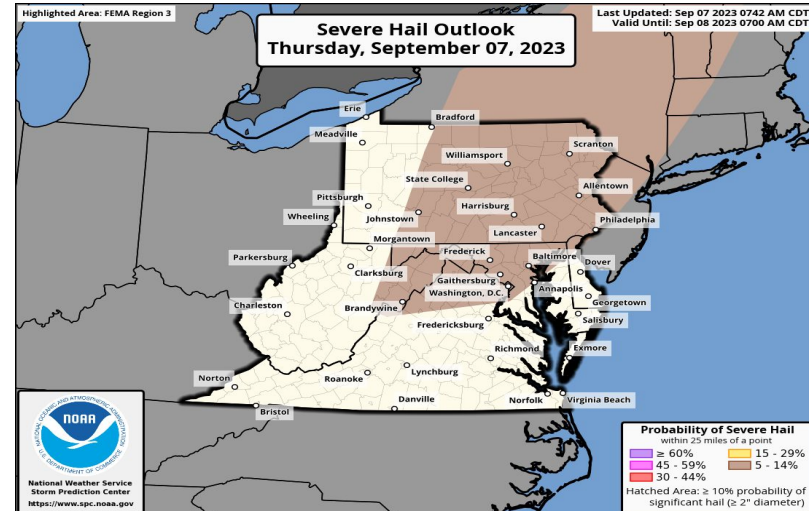
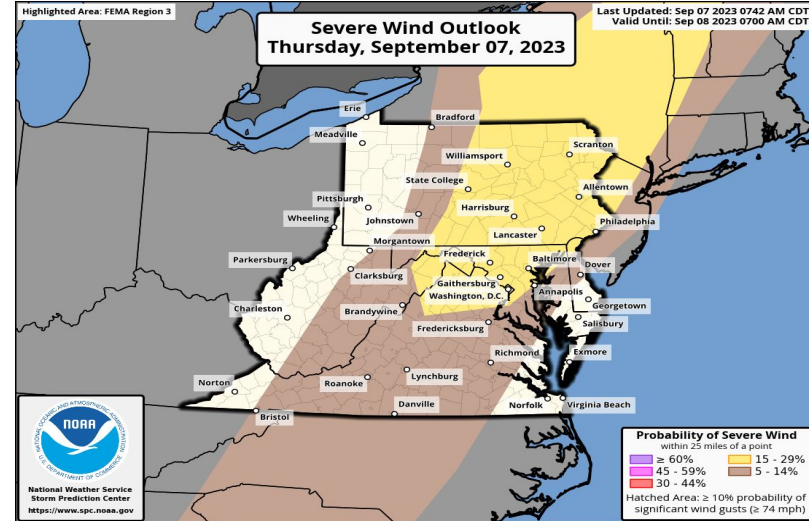
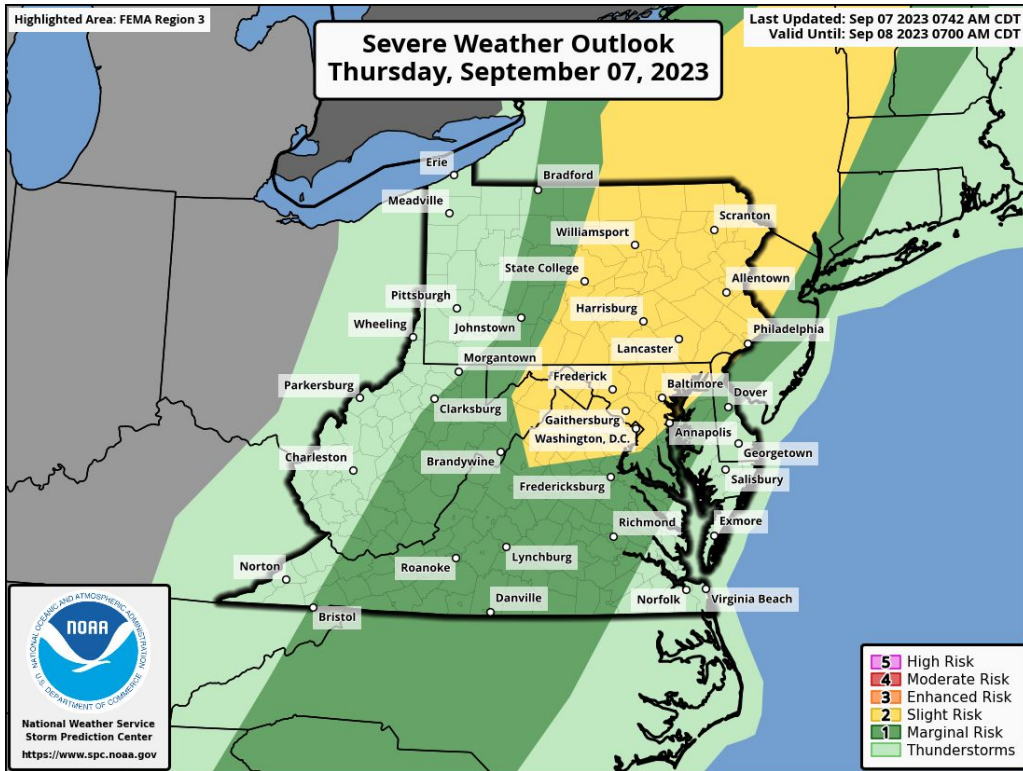


Upcoming Weather Pattern

Today

Impacts

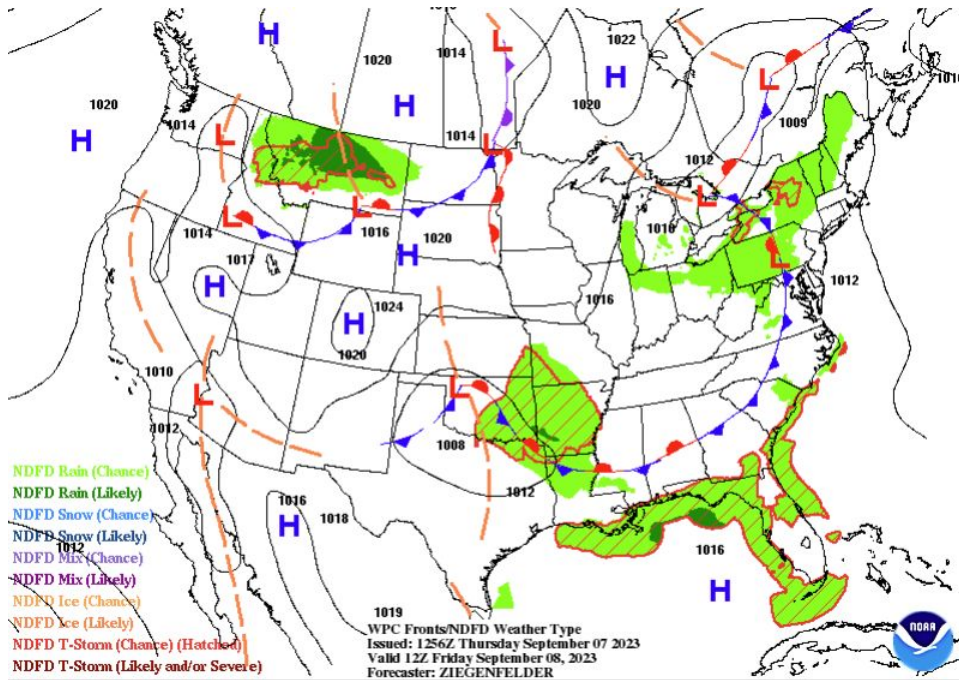
Severe Weather Risk



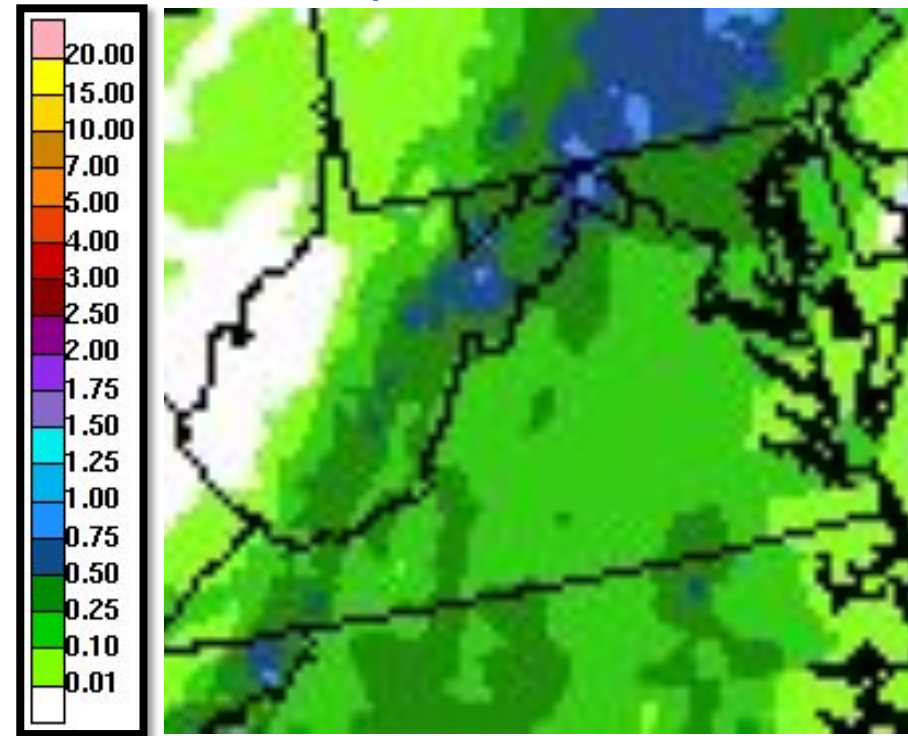
Upcoming Weather Pattern

Friday

Fronts and Weather



Accumulated Precipitation Forecasts

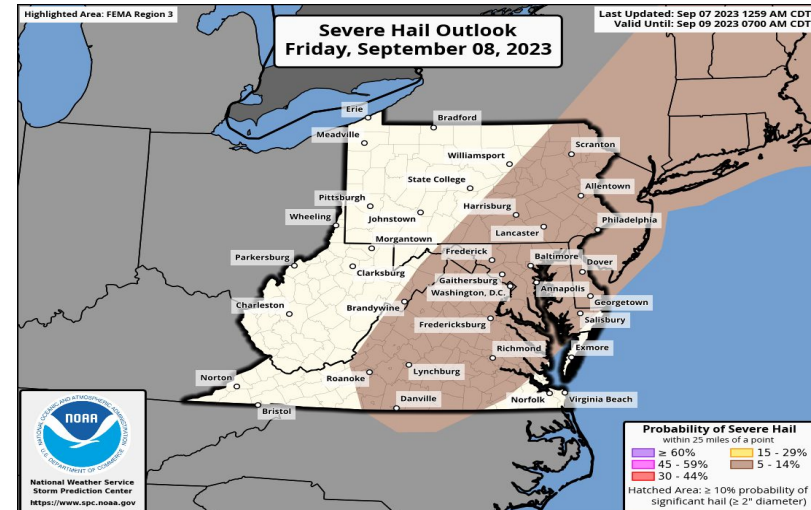
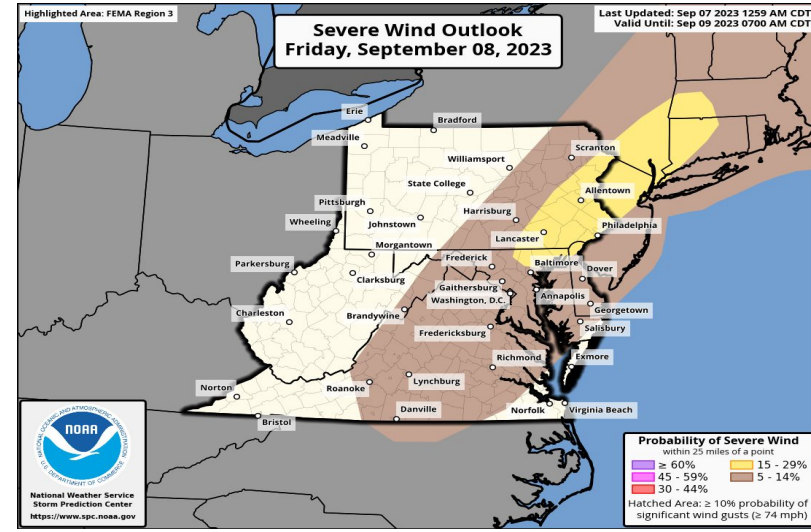
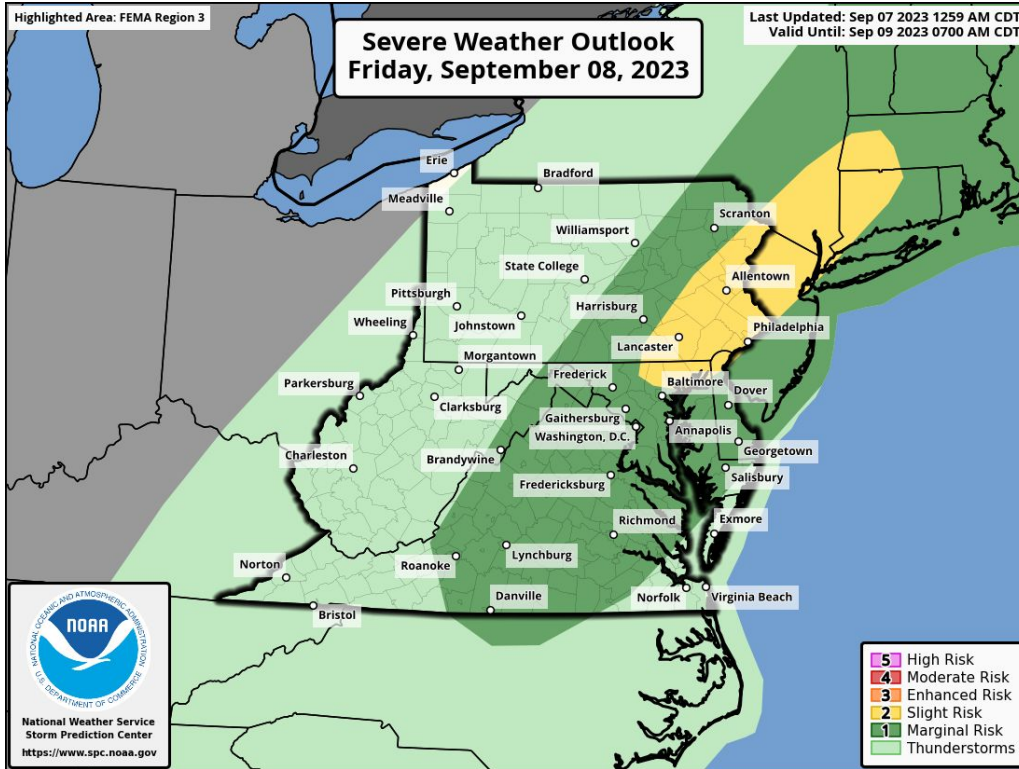


Upcoming Weather Pattern

Friday

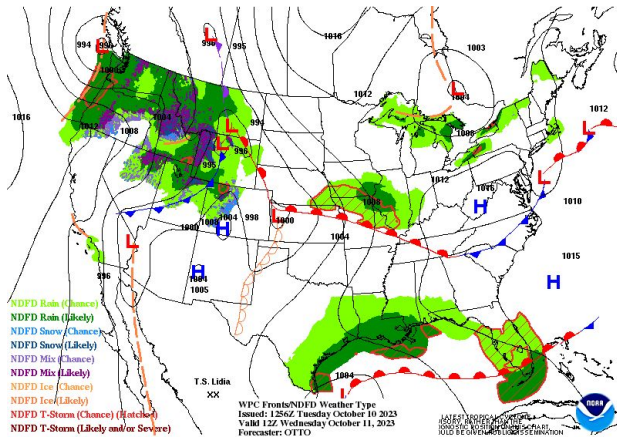
Impacts

Severe Weather Risk

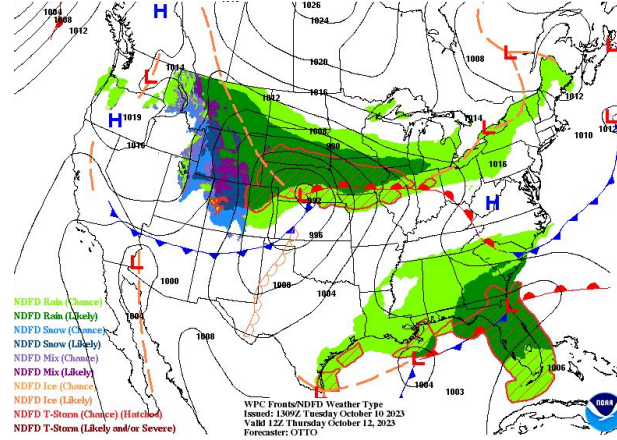


Upcoming Weather Pattern

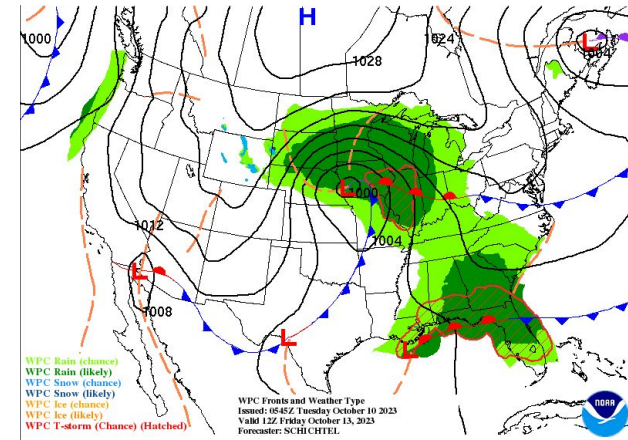
Wednesday



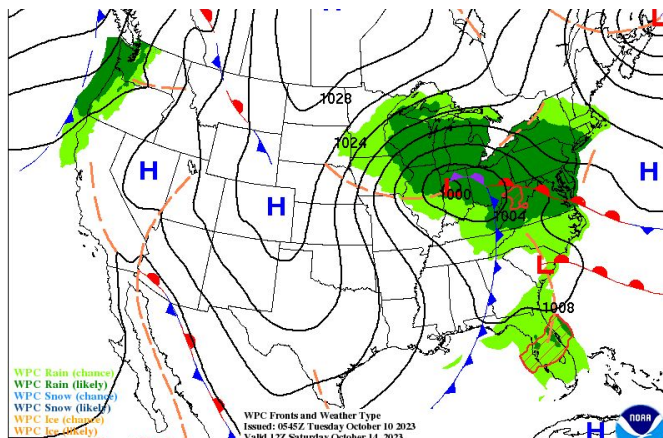
Thursday



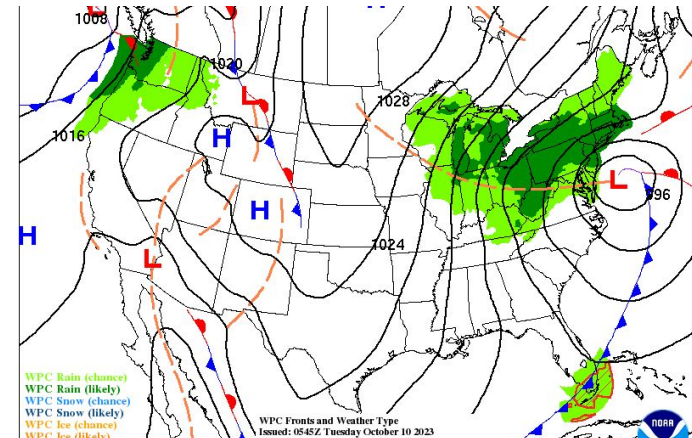
Friday



Saturday



Sunday



Precipitation Forecasts

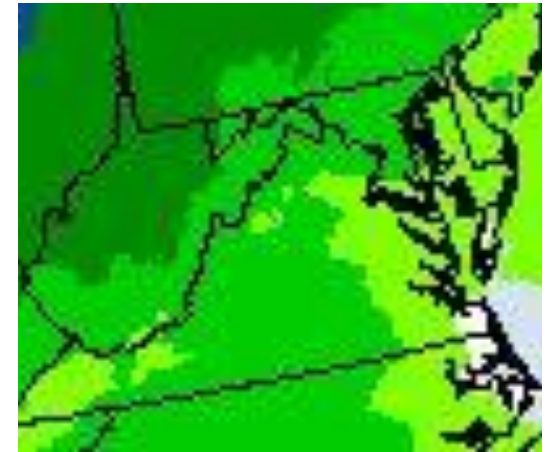
Wednesday



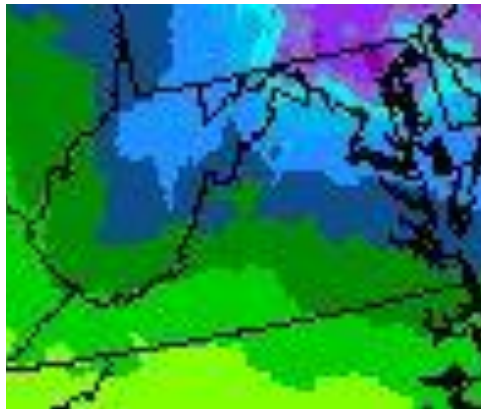
Thursday



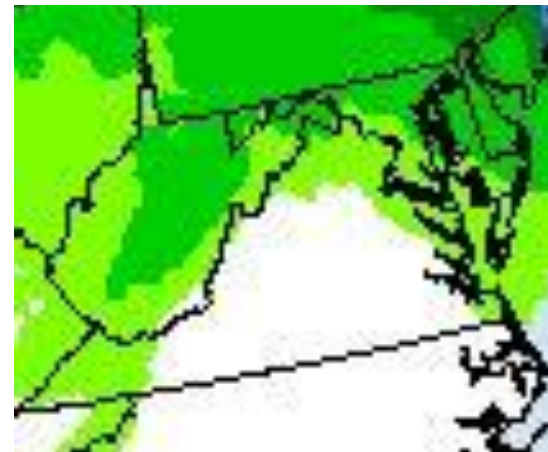
Friday



Saturday

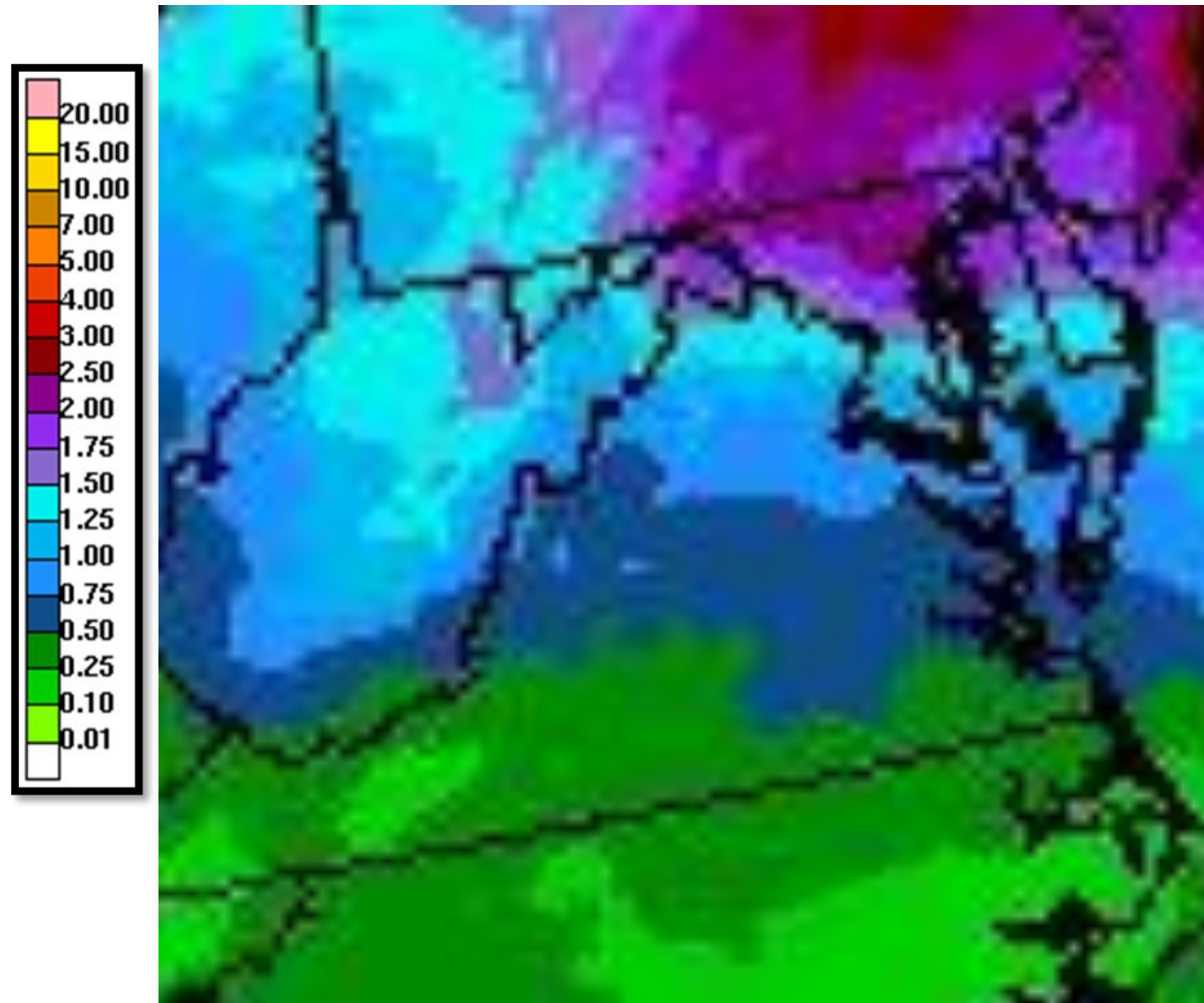


Sunday



Courtesy of the Weather Prediction Center (www.wpc.ncep.noaa.gov)

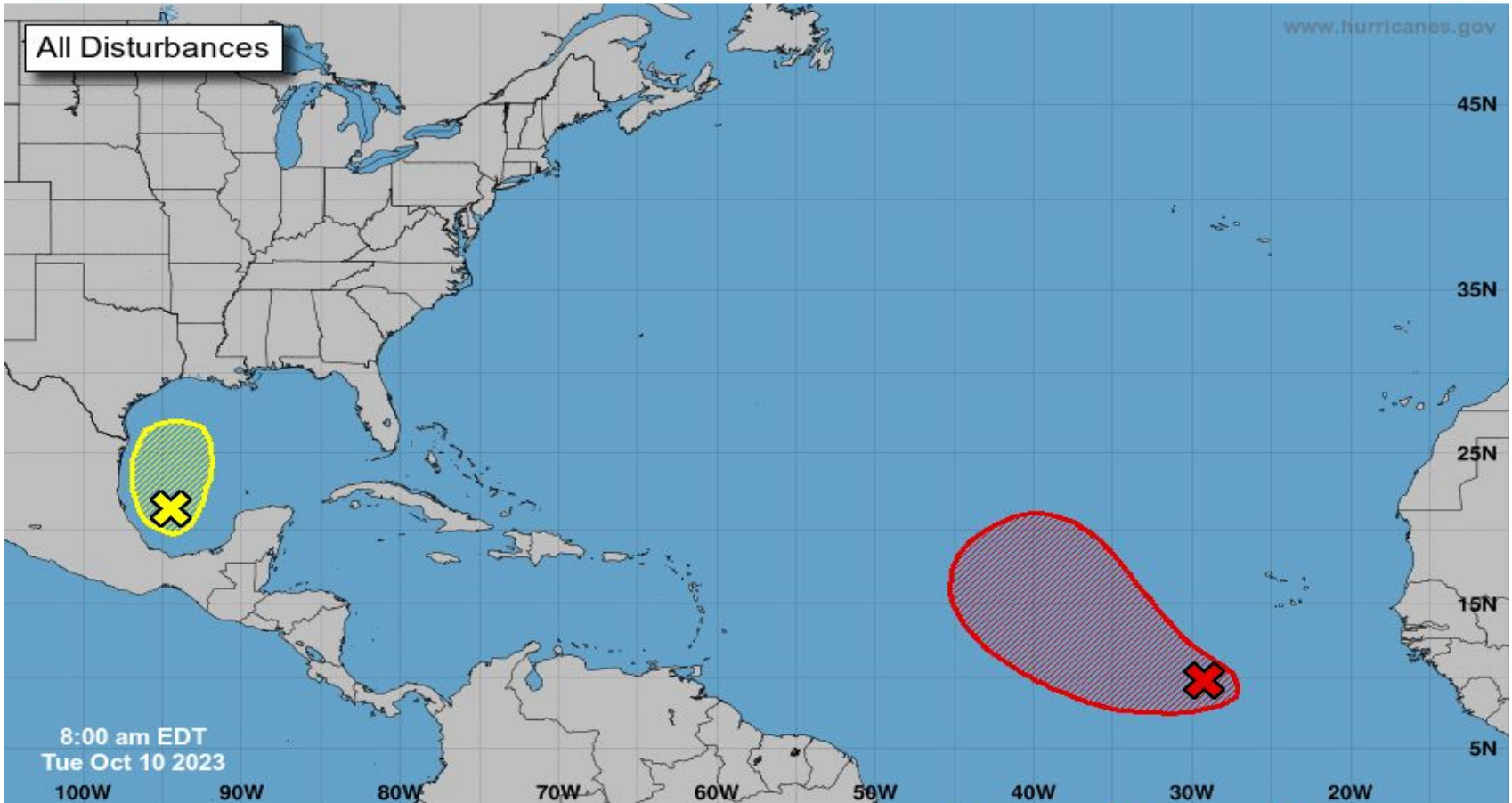
Seven-Day Total Precipitation Forecast



Tropical Outlook

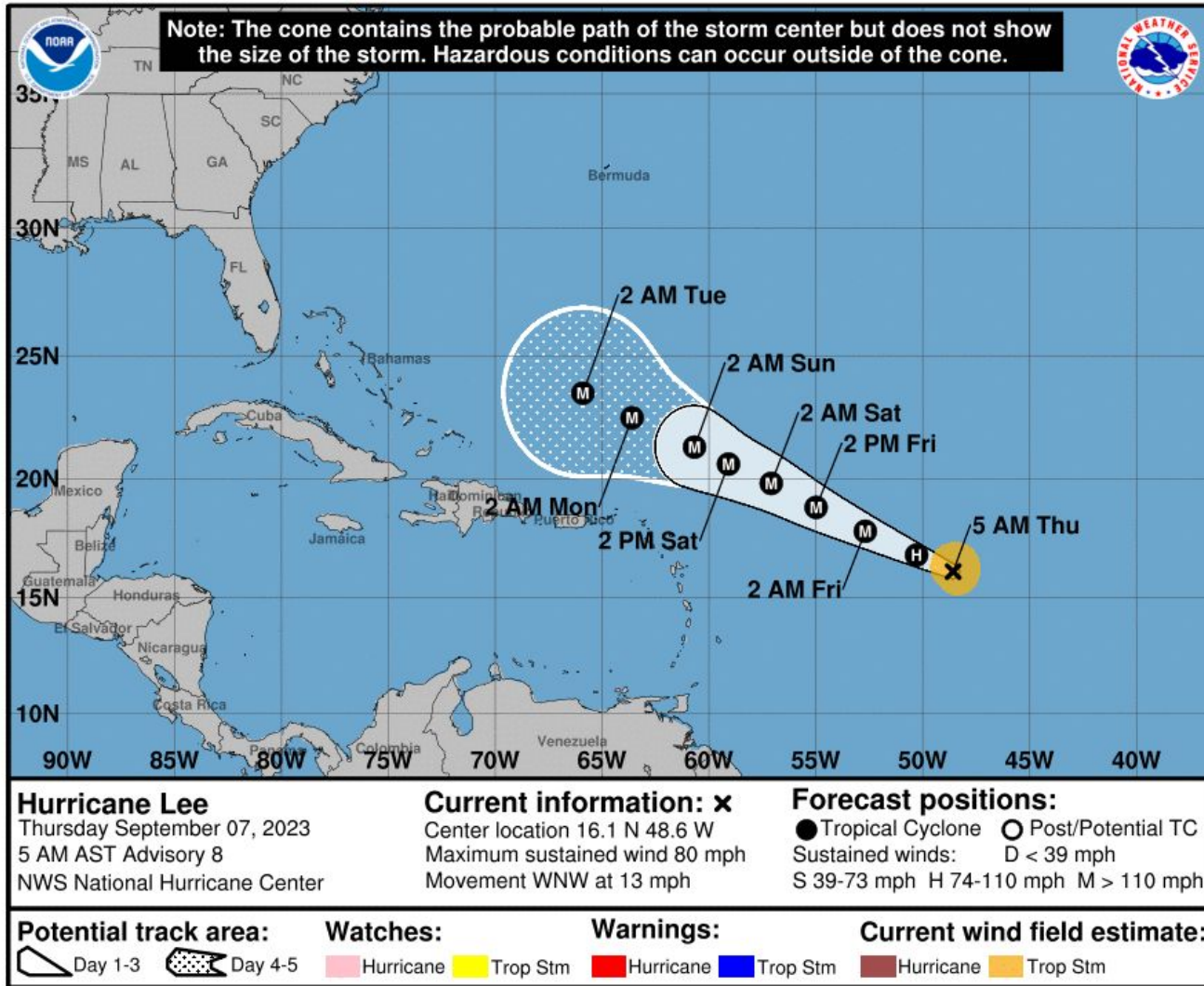


Seven-Day Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida



Current Disturbances and Seven-Day Cyclone Formation Chance: < 40% 40-60% > 60%
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane
 Post-Tropical Cyclone or Remnants

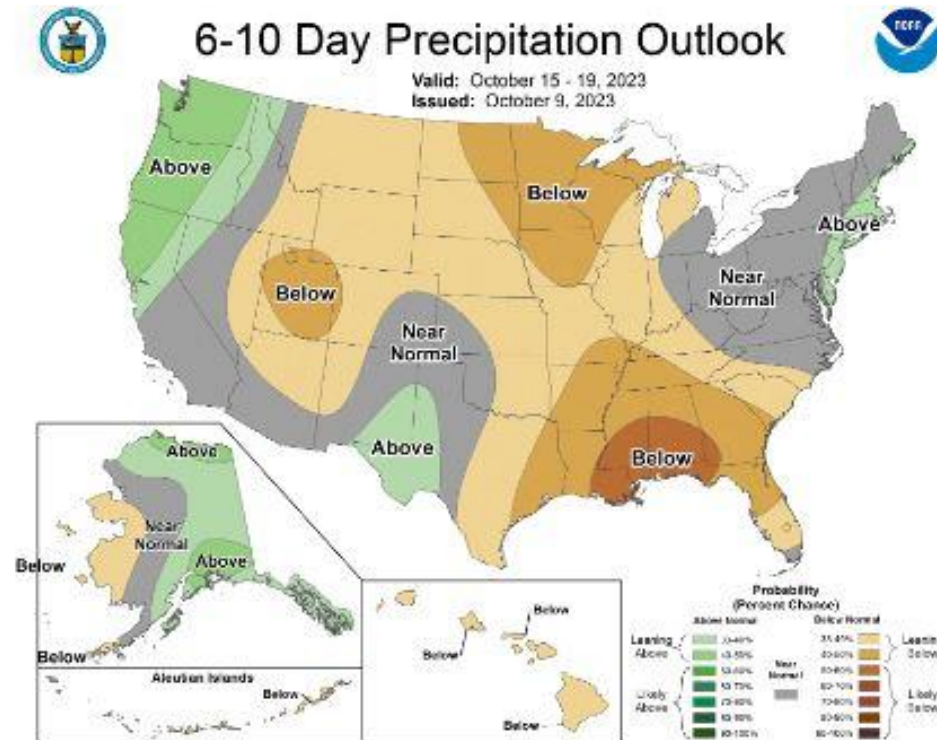
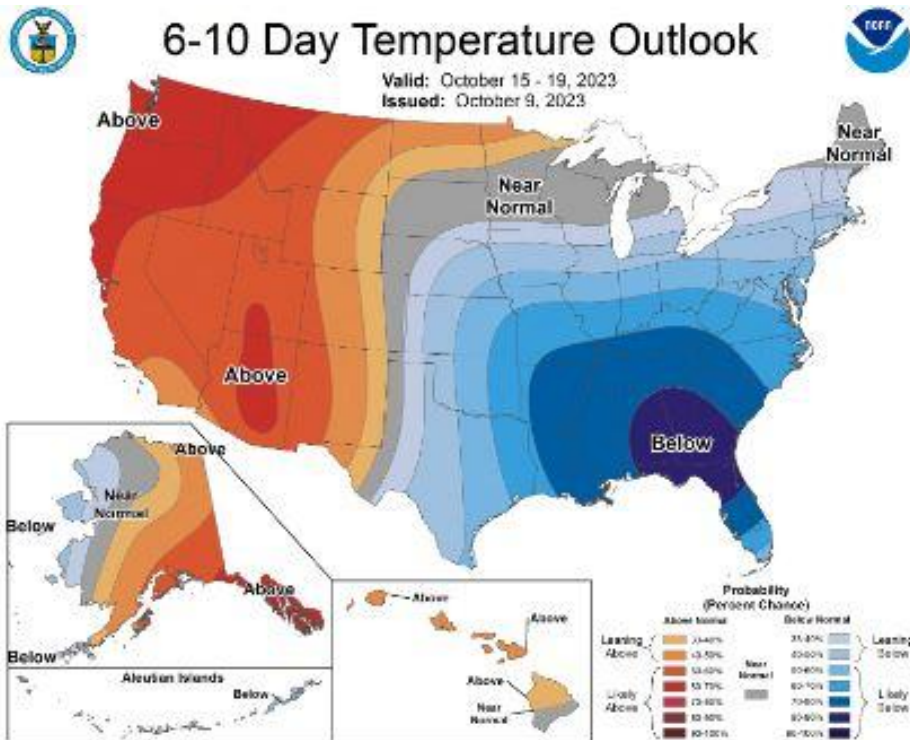
Hurricane Lee



6-10 Day Outlook

Temperature

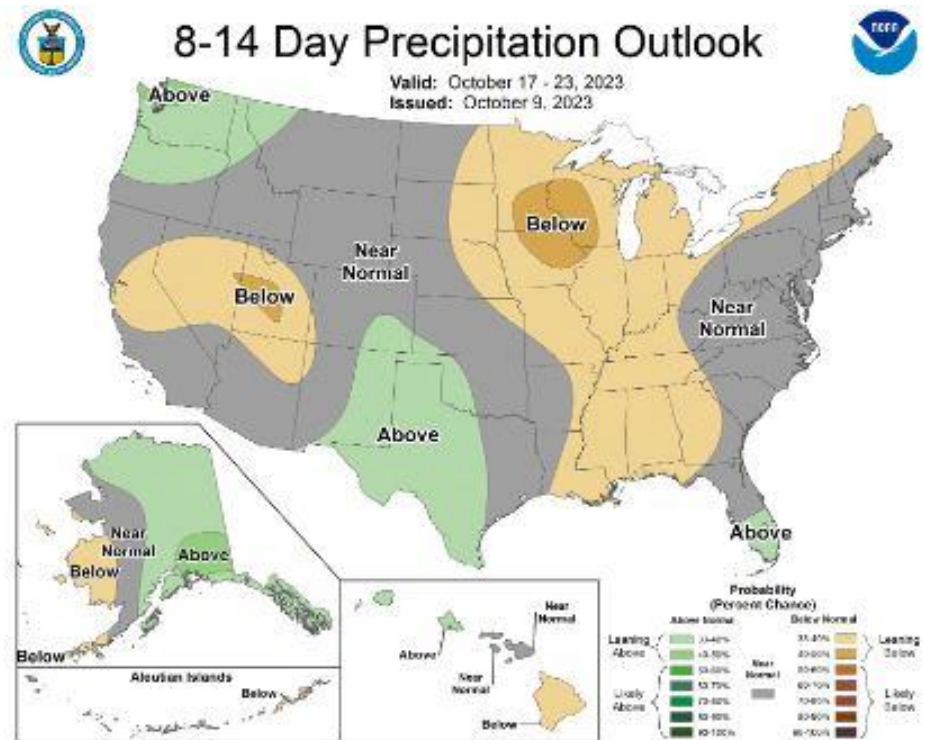
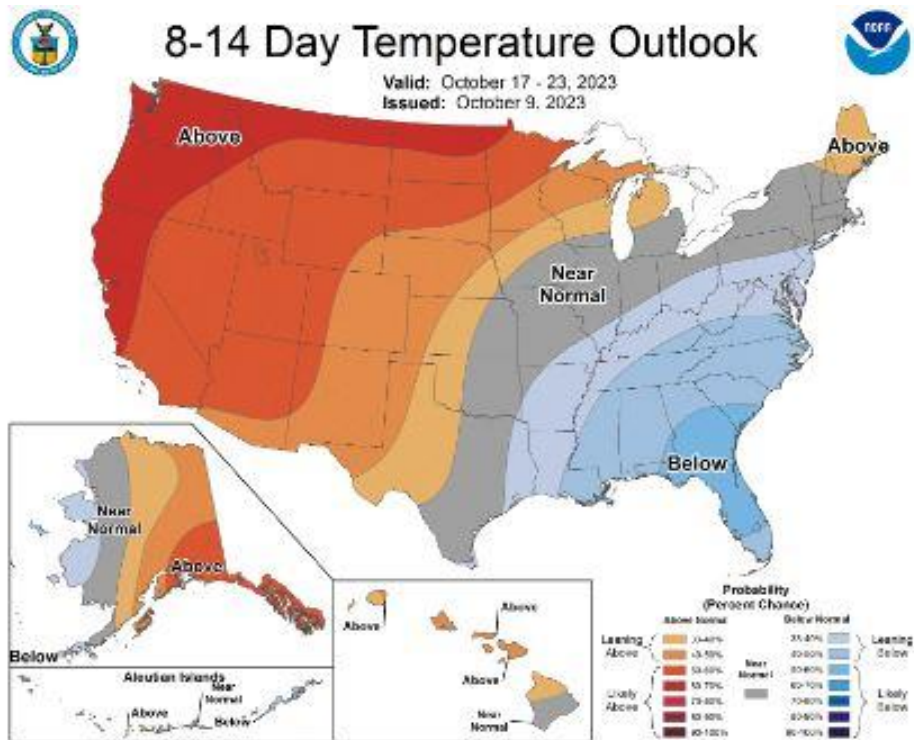
Precipitation



8-14 Day Outlook

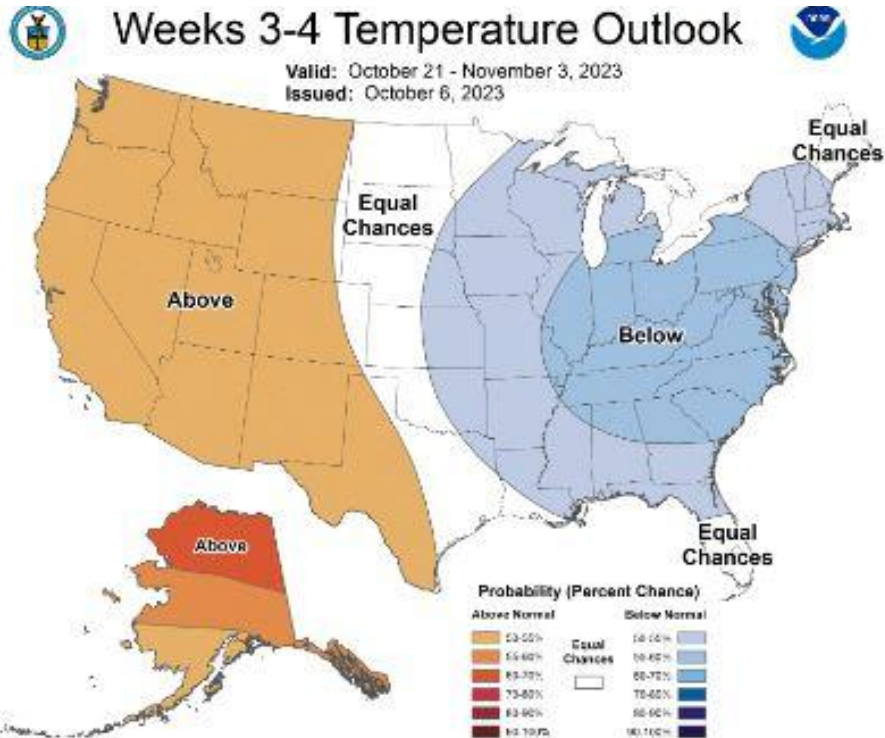
Temperature

Precipitation

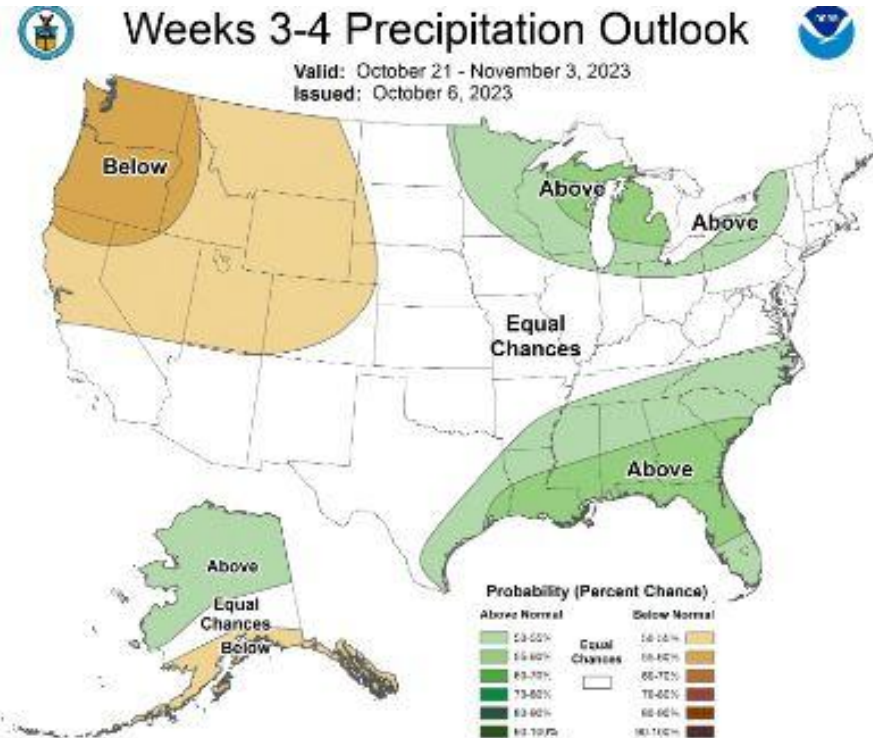


3-4 Week Outlook

Temperature



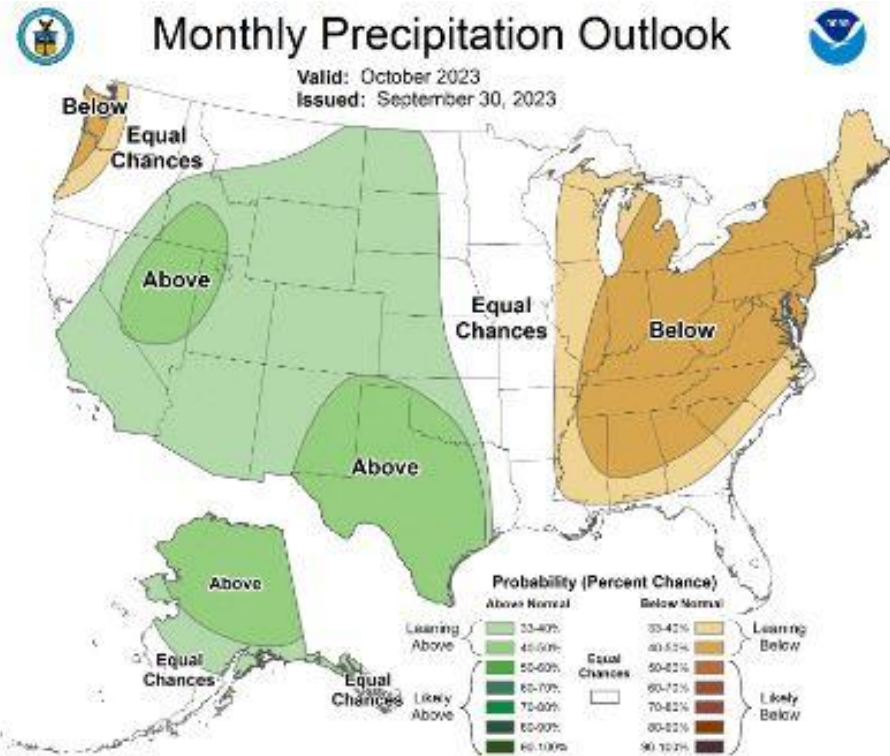
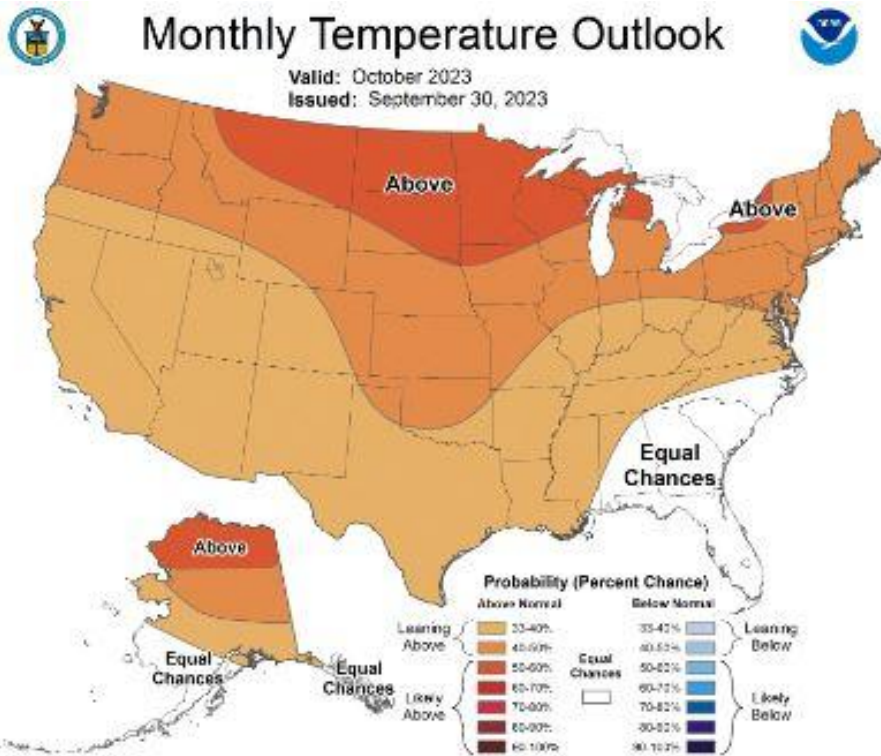
Precipitation



One-Month Outlook: Sep/Oct 2023

Temperature

Precipitation

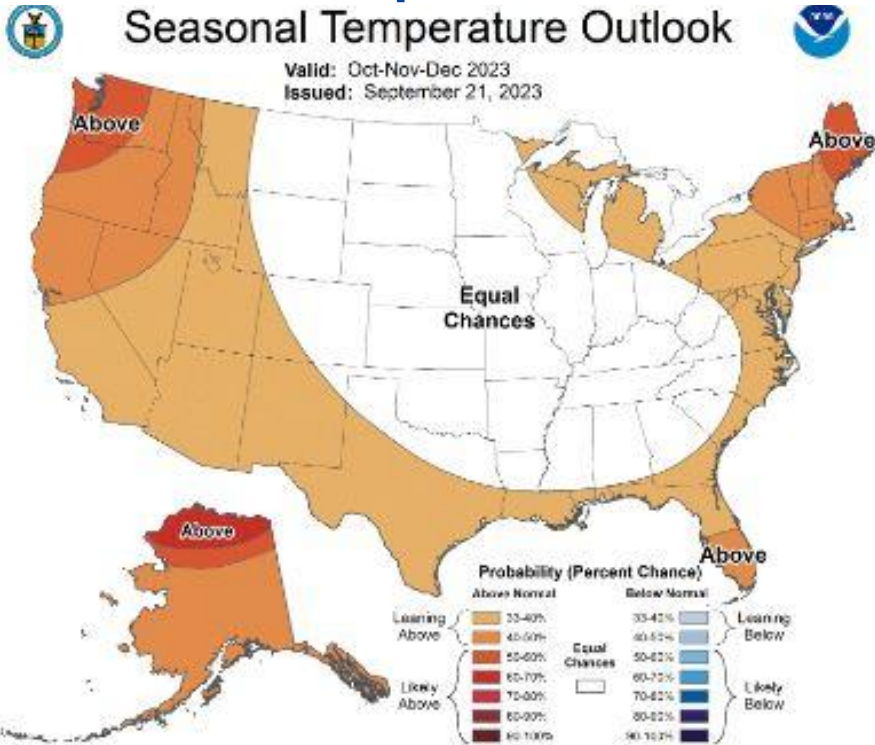


Three-Month Outlook: Sep-Oct-Nov 2023

Temperature

Seasonal Temperature Outlook

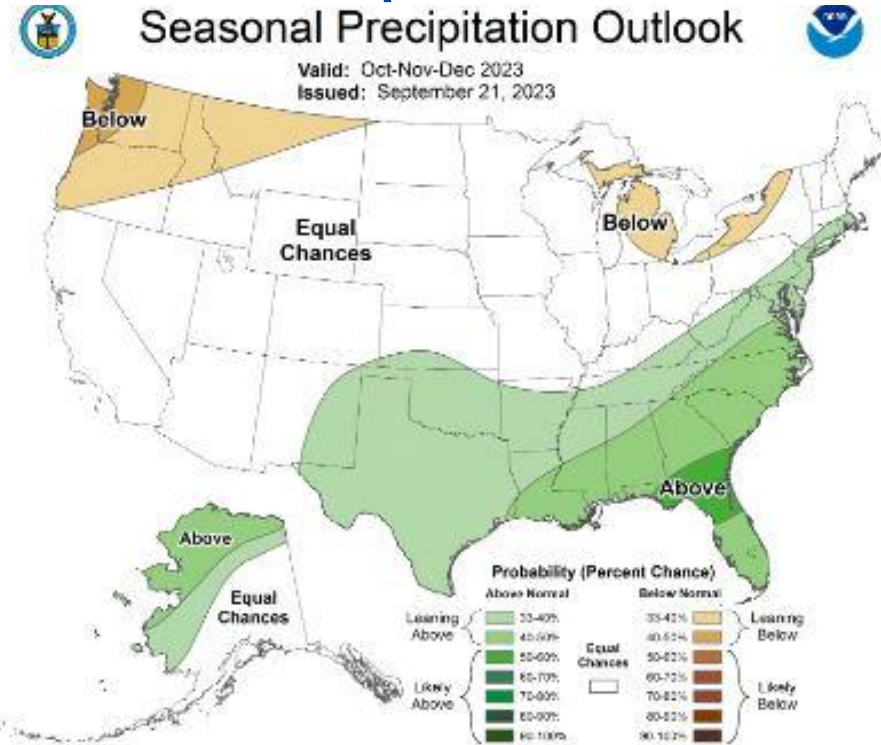
Valid: Oct-Nov-Dec 2023
Issued: September 21, 2023



Precipitation

Seasonal Precipitation Outlook

Valid: Oct-Nov-Dec 2023
Issued: September 21, 2023



Monthly Drought Outlook: Sep/Oct 2023

U.S. Monthly Drought Outlook
Drought Tendency During the Valid Period

Valid for October 2023
Released September 30, 2023

