VIRGINIA DROUGHT MONITORING TASK FORCE
Drought Status Report
August 24 2023

Summary

On Thursday August 24, 2023, the Virginia Drought Monitoring Task Force (DMTF) met to discuss the drought indicators identified by the Virginia Drought Assessment and Response Plan. Declines in surface and groundwater indicators have continued throughout the past fourteen-day period, with near record low observations at some stations within Northern Virginia and Shenandoah. The Task Force recommends Drought Watch for the Northern Virginia and York James evaluation regions, and maintaining watch within the Eastern Shore.

Due to continued declines in drought indicators and reported impacts to agriculture and public water supplies, the Task Force recommends elevating the Shenandoah drought evaluation region from Drought Watch to Drought Warning.

The DMTF reviewed the status of drought monitoring and hydrologic conditions in the Commonwealth of Virginia. Precipitation over the past 30-60 day period show focused rainfall events within central and small eastern portions of the state. Precipitation percent of normal over the recent seven and 14-day period show exceptional dryness focused within Shenandoah Valley and the majority of Virginia much below historical average. Area-averaged rainfall since the beginning of the current water year (October 1, 2022) has remained below long-term normal values for the Eastern Shore drought evaluation region. Precipitation for the Eastern Shore is within the 83rd percentile (See DEQ website for more info on drought indicators). The Task Force will continue closely monitoring drought indicator and is scheduled to meet on September 7, 2023.

Streamflow over the past 14-day period has shown widespread declines throughout the Commonwealth. Ranking as "Normal" flows are currently below the 25th percentile for eight of the 11 drought evaluation regions including; Shenandoah, Northern Coastal Plain, Northern Piedmont, Chowan, York James, Upper James, Northern Virginia, and Roanoke. Two drought evaluation regions rank within the "Warning" status including Northern Coastal Plain and Norther Piedmont. The Shenandoah is the only evaluation ranking within "Emergency" status below the 5th 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. Levels are currently below the 10th percentile for four of 11 drought evaluation regions including Shenandoah, Roanoke, York James, and Northern Virginia. Additionally, two of 11 drought evaluation regions are below the 25th percentile including the Eastern Shore and Big Sandy.

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 most recent weekly U.S. Drought Monitor (USDM) web page map for Virginia (Appendix A, released August 24, 2023) showed abnormally dry (D0) conditions mapped across approximately 26% of the Commonwealth, and moderate drought (D1) conditions mapped across approximately 4.8% of the Commonwealth. Appendix B includes presentations from the United States Geological Survey.

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.

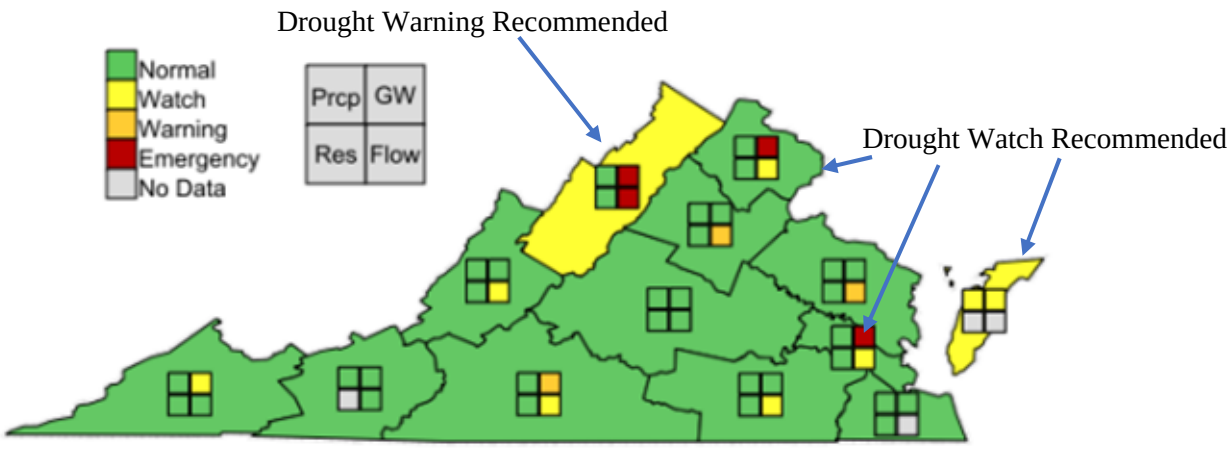
The DEQ report presents a map of current conditions of DEQ Drought Indicators, and summary of current conditions at the four large multi-purpose reservoirs listed as key reservoir storage indicators in the Virginia Drought Assessment and Response Plan (All remain above drought watch levels at this time).

Virginia Department of Agriculture and Consumer Services

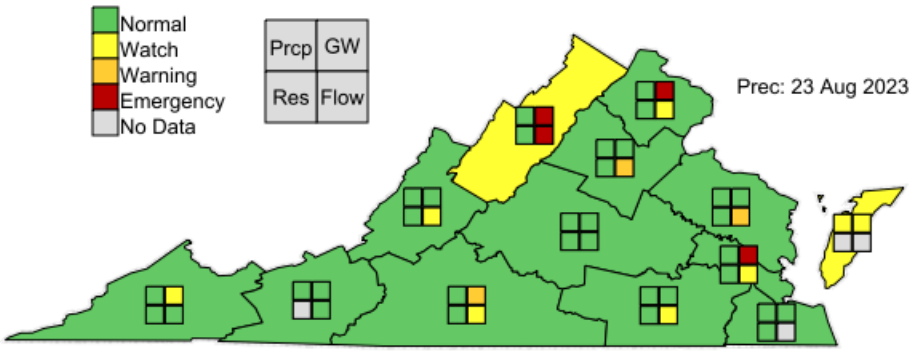
Producers in the Northern and Central Valley areas as well as the Northern region of the Commonwealth report negative impacts from dry conditions. In these areas, pastures are in poor condition. Additionally, corn and soybean crops are showing drought stress, which some producers expect will negatively affect yields.

Virginia Department of Environmental Quality

Conditions of DEQ Drought Indicators: Drought Watch Recommended for Northern Virginia & York-James evaluation regions. Drought Warning Recommended for Shenandoah evaluation region.



DEQ Daily Drought Indicator Status: 08/24/2023



Precipitation Indicators:

#	Region	Start Date	End Date	Water Year % of Normal	Status
1	Eastern Shore	10/1/2022	8/23/2023	83.08	Watch
2	Northern Piedmont	10/1/2022	8/23/2023	90.87	Normal
3	Northern Coastal Plain	10/1/2022	8/23/2023	91.03	Normal
4	Shenandoah	10/1/2022	8/23/2023	92.42	Normal
5	Big Sandy	10/1/2022	8/23/2023	92.68	Normal
6	Northern Virginia	10/1/2022	8/23/2023	95.47	Normal
7	Southeast Virginia	10/1/2022	8/23/2023	97.06	Normal
8	Middle James	10/1/2022	8/23/2023	99.63	Normal
9	York James	10/1/2022	8/23/2023	100.45	Normal
10	Roanoke	10/1/2022	8/23/2023	101.84	Normal
11	Chowan	10/1/2022	8/23/2023	104.38	Normal
12	New River	10/1/2022	8/23/2023	106.03	Normal
13	Upper James	10/1/2022	8/23/2023	106.47	Normal

Surface Water Indicators:

#	Region	Start Date	End Date	Percentile	Status
1	Shenandoah	8/17/2023	8/23/2023	1.83	Emergency
2	Northern Coastal Plain	8/17/2023	8/23/2023	6.5	Warning
3	Northern Piedmont	8/17/2023	8/23/2023	9.6	Warning
4	Chowan	8/17/2023	8/23/2023	11.51	Watch
5	York James	8/17/2023	8/23/2023	15.45	Watch
6	Upper James	8/17/2023	8/23/2023	23.01	Watch
7	Northern Virginia	8/17/2023	8/23/2023	23.01	Watch
8	Roanoke	8/17/2023	8/23/2023	23.33	Watch
9	Big Sandy	8/17/2023	8/23/2023	31.66	Normal
10	Middle James	8/17/2023	8/23/2023	32.93	Normal
11	New River	8/17/2023	8/23/2023	47.73	Normal

Groundwater Indicators:

Note, for regions with multiple indicator wells, the well with the lowest percentile is displayed

#	Region	Start Date	End Date	Percentile	Status
1	Northern Virginia	8/17/2023	8/23/2023	0.0	Emergency
2	York James	8/17/2023	8/23/2023	0.0	Emergency
3	Shenandoah	8/17/2023	8/23/2023	4.48	Emergency
4	Roanoke	8/17/2023	8/23/2023	6.0	Warning
5	Eastern Shore	8/17/2023	8/23/2023	20.33	Watch
6	Big Sandy	8/17/2023	8/23/2023	20.83	Watch
7	Middle James	8/17/2023	8/23/2023	26.43	Normal
8	Southeast Virginia	8/17/2023	8/23/2023	30.94	Normal
9	Northern Coastal Plain	8/17/2023	8/23/2023	31.38	Normal
10	Northern Piedmont	8/17/2023	8/23/2023	51.08	Normal
11	Chowan	8/17/2023	8/23/2023	58.49	Normal
12	New River	8/17/2023	8/23/2023	79.13	Normal
13	Upper James	8/17/2023	8/23/2023	89.21	Normal

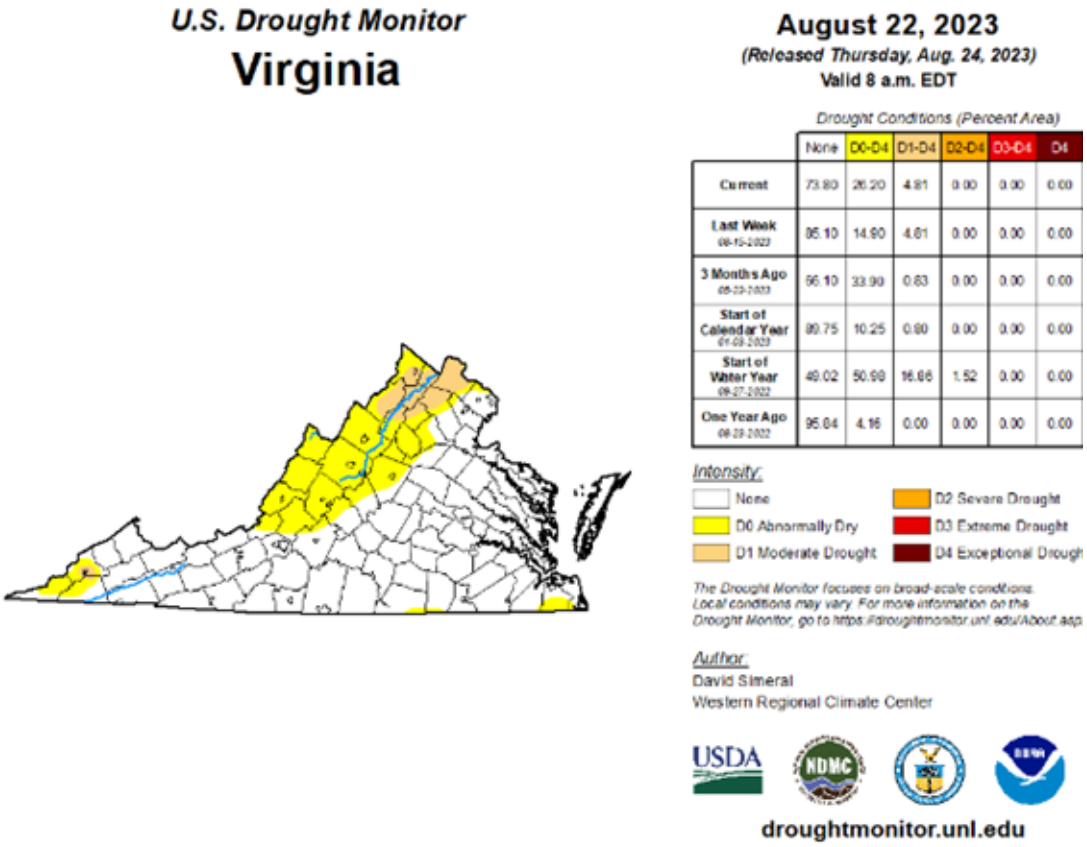
Reservoir Indicators:

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

#	Region	Reservoir	Date	Status
1	Shenandoah	Skidmore Fork Lake (Switzer Lake)	08/24/2023	Watch
2	Big Sandy	Big Cherry Reservoir	08/24/2023	Normal
3	Chowan	Emporia Reservoir	08/24/2023	Normal
4	Middle James	Sugar Hollow	08/24/2023	Normal
5	Middle James	Lake Moomaw	08/24/2023	Normal
6	Middle James	Beaver Creek Reservoir	08/24/2023	Normal
7	Middle James	Totier Creek Reservoir	08/24/2023	Normal
8	Middle James	South Fork Rivanna River Reservoir	08/24/2023	Normal
9	Middle James	Ragged Mountain	08/24/2023	Normal
10	Northern Coastal Plain	Beverdam Reservoir	08/24/2023	Normal
11	Northern Piedmont	Ni River Reservoir	08/24/2023	Normal
12	Northern Piedmont	Lake Anna	08/24/2023	Normal
13	Northern Piedmont	Motts Run Reservoir	08/24/2023	Normal
14	Northern Piedmont	Hunting Run Reservoir	08/24/2023	Normal
15	Northern Virginia	Occoquan Reservoir	08/24/2023	Normal
16	Northern Virginia	Lake Manassas	08/24/2023	Normal
17	Roanoke	Smith Mountain Lake	08/24/2023	Normal
18	Roanoke	Kerr Reservoir	08/24/2023	Normal
19	Southeast Virginia	Kerr Reservoir	08/24/2023	Normal
20	Southeast Virginia	Lake Cohoon	08/24/2023	Normal
21	Southeast Virginia	Lake Meade	08/24/2023	Normal
22	Southeast Virginia	Lake Kilby	08/24/2023	Normal
23	Southeast Virginia	Speights Run Reservoir	08/24/2023	Normal
24	Upper James	Lake Moomaw	08/24/2023	Normal
25	York James	Harwoods Mill Reservoir	08/24/2023	Normal
26	York James	Lee Hall - City Reservoir	08/24/2023	Normal
27	York James	Little Creek Reservoir	08/24/2023	Normal
28	York James	Diascund Creek Reservoir	08/24/2023	Normal
29	York James	Skiffes Creek Reservoir	08/24/2023	Normal

(Reservoir drought status is based on the "number of days of usable storage remaining" (emergency < 60 days, warning 60-90 days, watch 90-120 days, normal >120 days).

APPENDIX A


U.S. Drought Monitor
Virginia
August 22, 2023
(Released Thursday, Aug. 24, 2023)
Valid 8 a.m. EDT
Drought Conditions (Percent Area)
None D0-D4 D1-D4 D2-D4 D3-D4 D4
Current 73.80 26.20 4.81 0.00 0.00 0.00
Last Week 08-15-2023 85.10 14.90 4.81 0.00 0.00 0.00
3 Months Ago 05-23-2023 66.10 33.90 0.63 0.00 0.00 0.00
Start of Calendar Year 01-03-2023 89.75 10.25 0.00 0.00 0.00 0.00
Start of Water Year 09-27-2022 49.02 50.98 16.66 1.52 0.00 0.00
One Year Ago 08-23-2022 95.84 4.16 0.00 0.00 0.00 0.00
Intensity:
None
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drough
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.asp
Author:
David Simeral
Western Regional Climate Center
USDA
NDMC
droughtmonitor.unl.edu

APPENDIX B

USGS Drought Status Summary

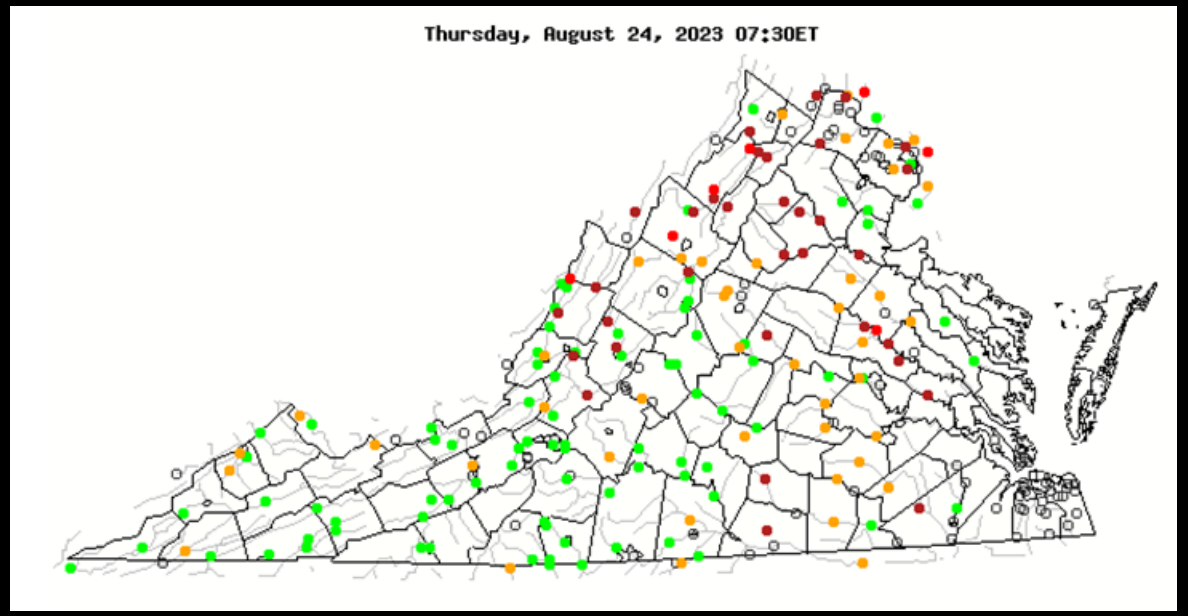
Streamflows and Groundwater Levels in Virginia

Virginia Drought Monitoring Task Force

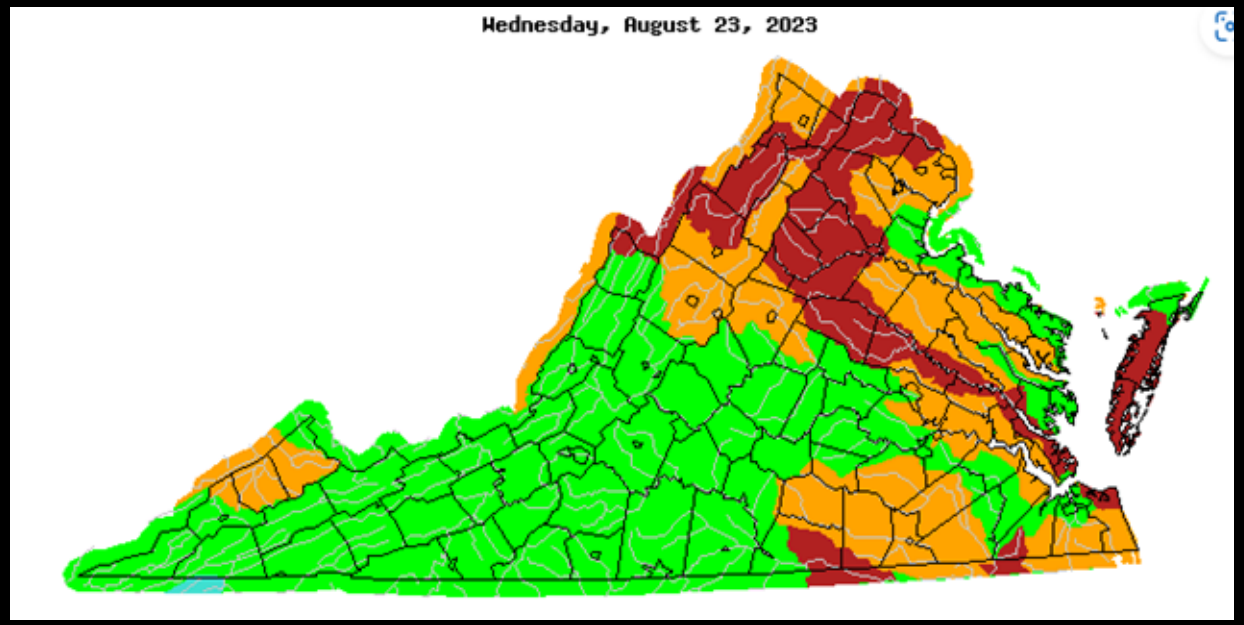
August 24, 2023

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

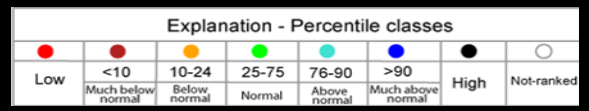
Current Streamflow Conditions

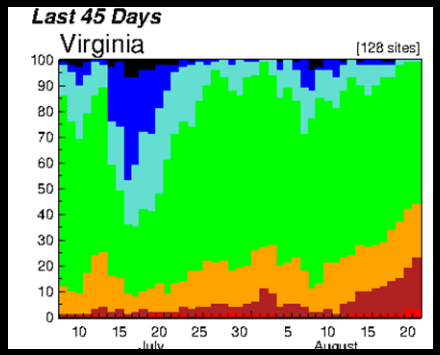


Realtime USGS Streamgages



Daily Flow HUC 8s



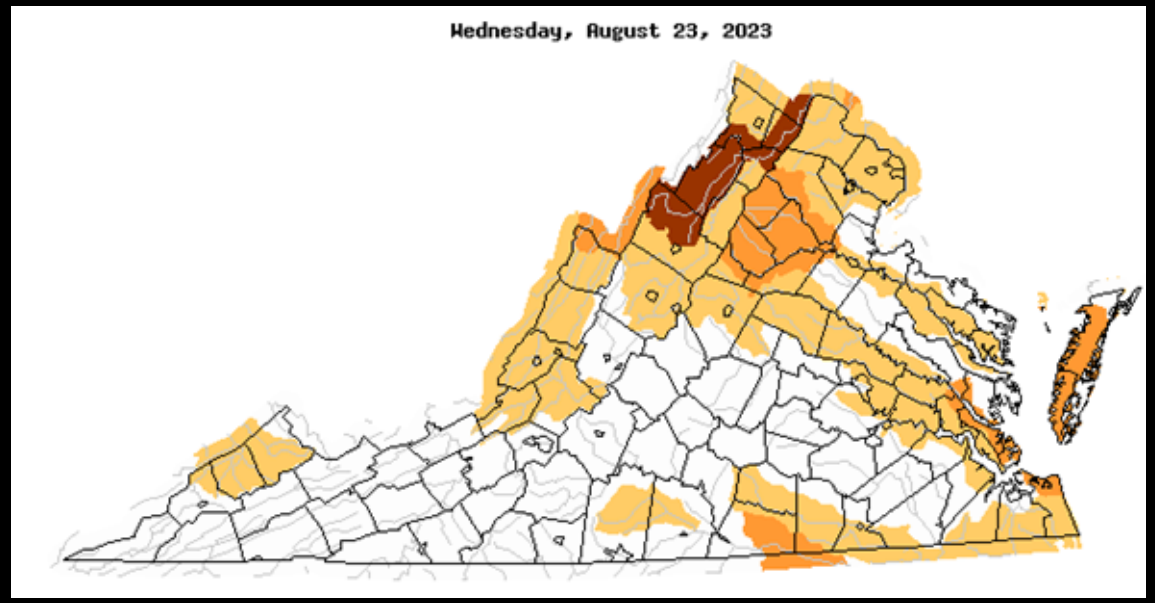


- Data from 08/24/2023
- Low flows return to north/central and eastern Virginia. Shenandoah especially low-flow

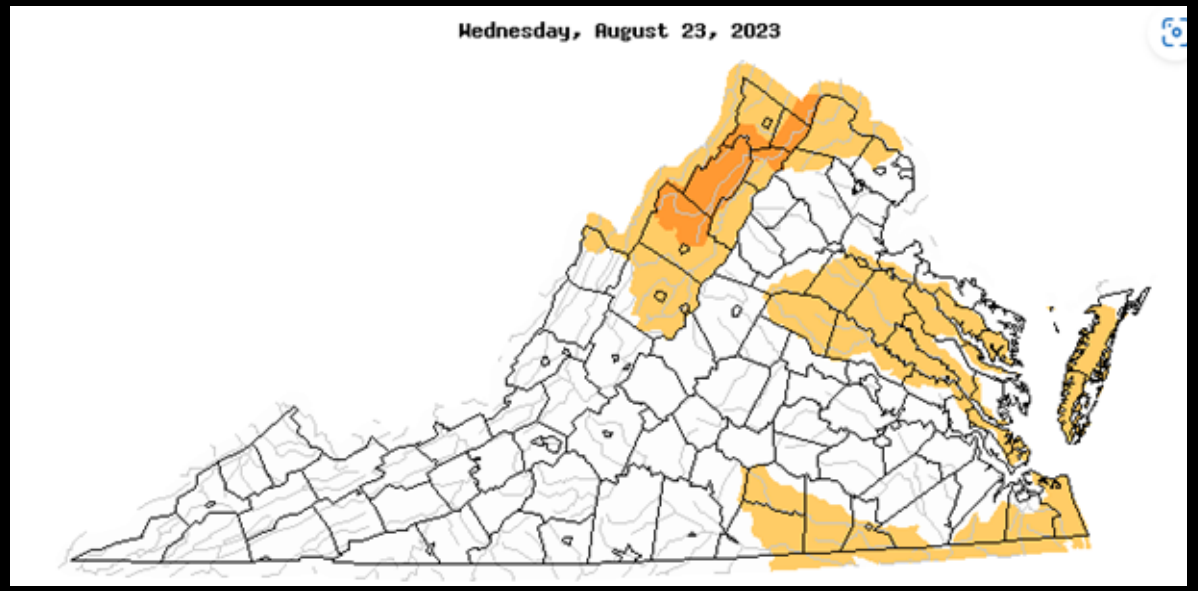
https://waterwatch.usgs.gov/index.php?id=pa01d&sid=w___map|m__pa01d_nwc&r=va

USGS

Below-Normal Streamflow Conditions

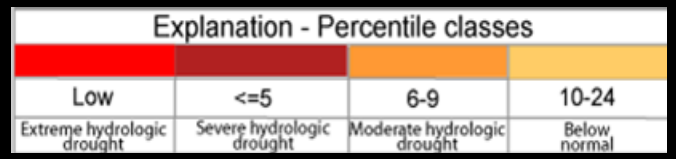


7-Day



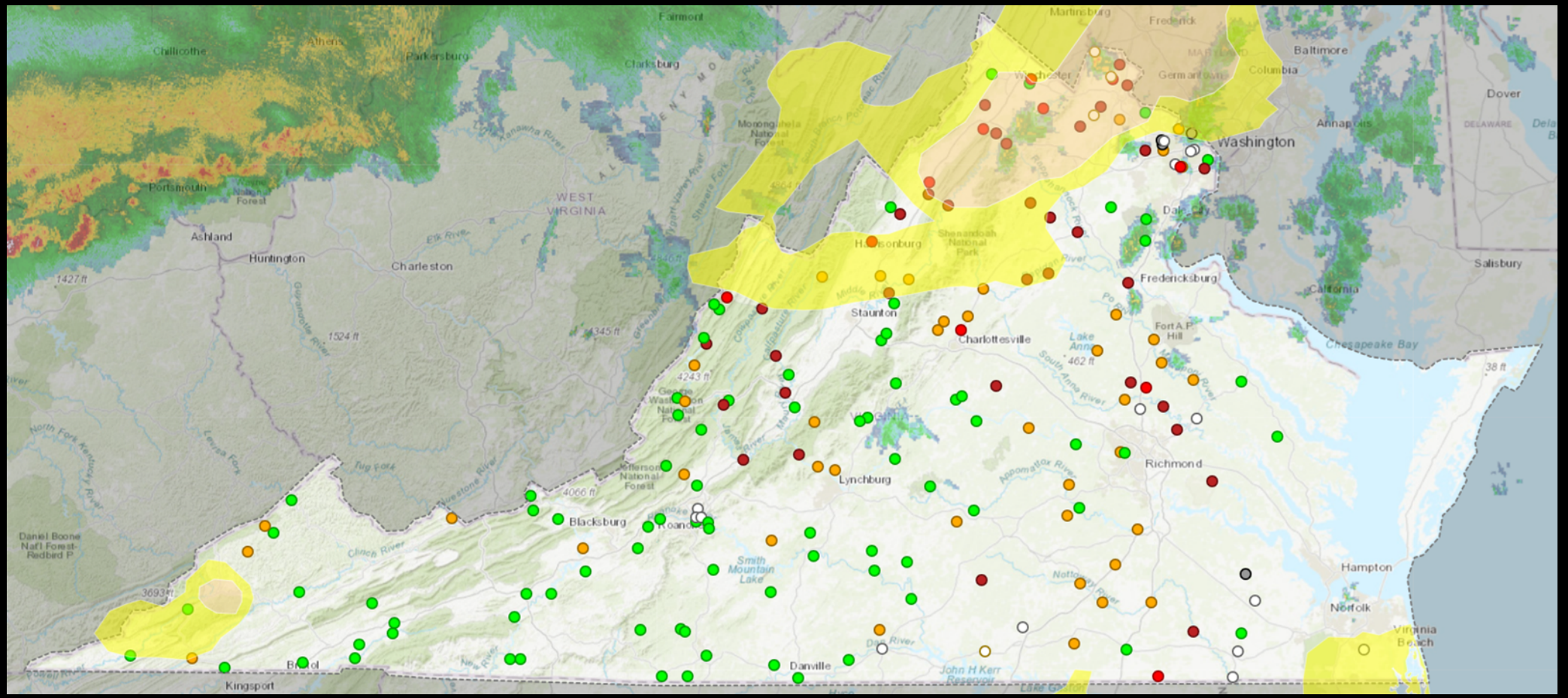
28-Day

- 40% of VA below normal, mostly north and east
- Shenandoah in severe hydrologic drought with 7-day flows



USGS

USGS National Water Dashboard

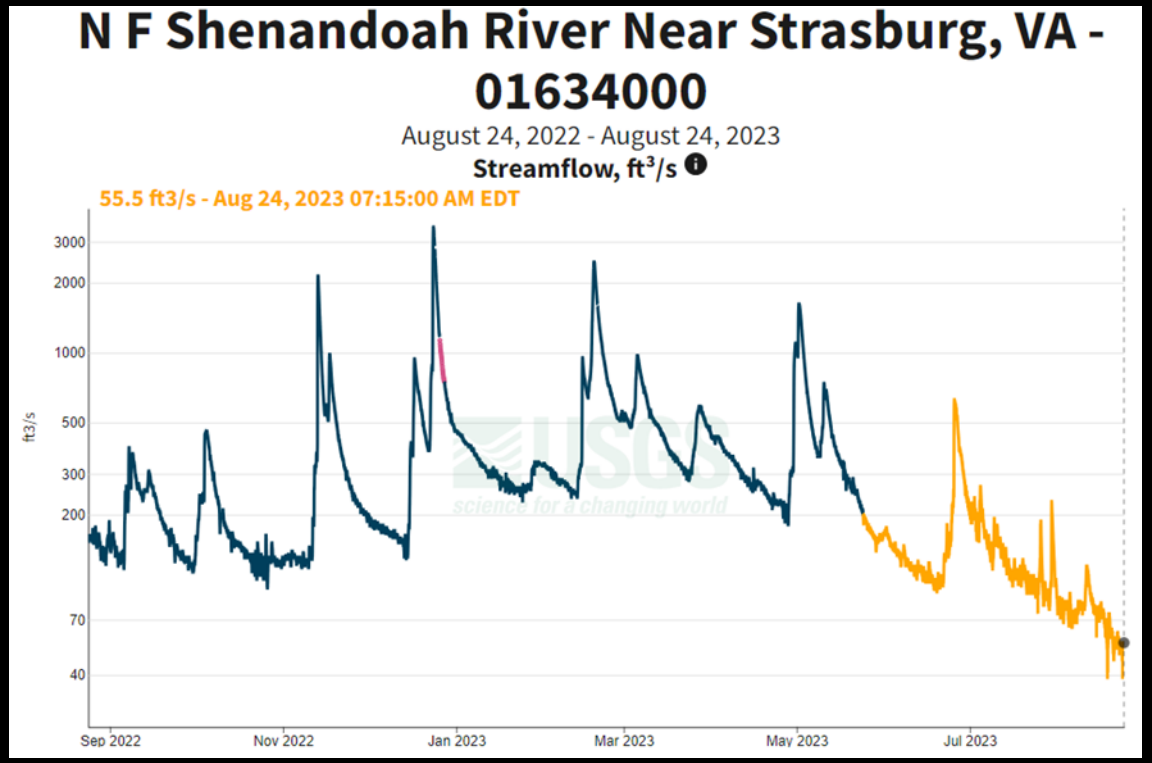


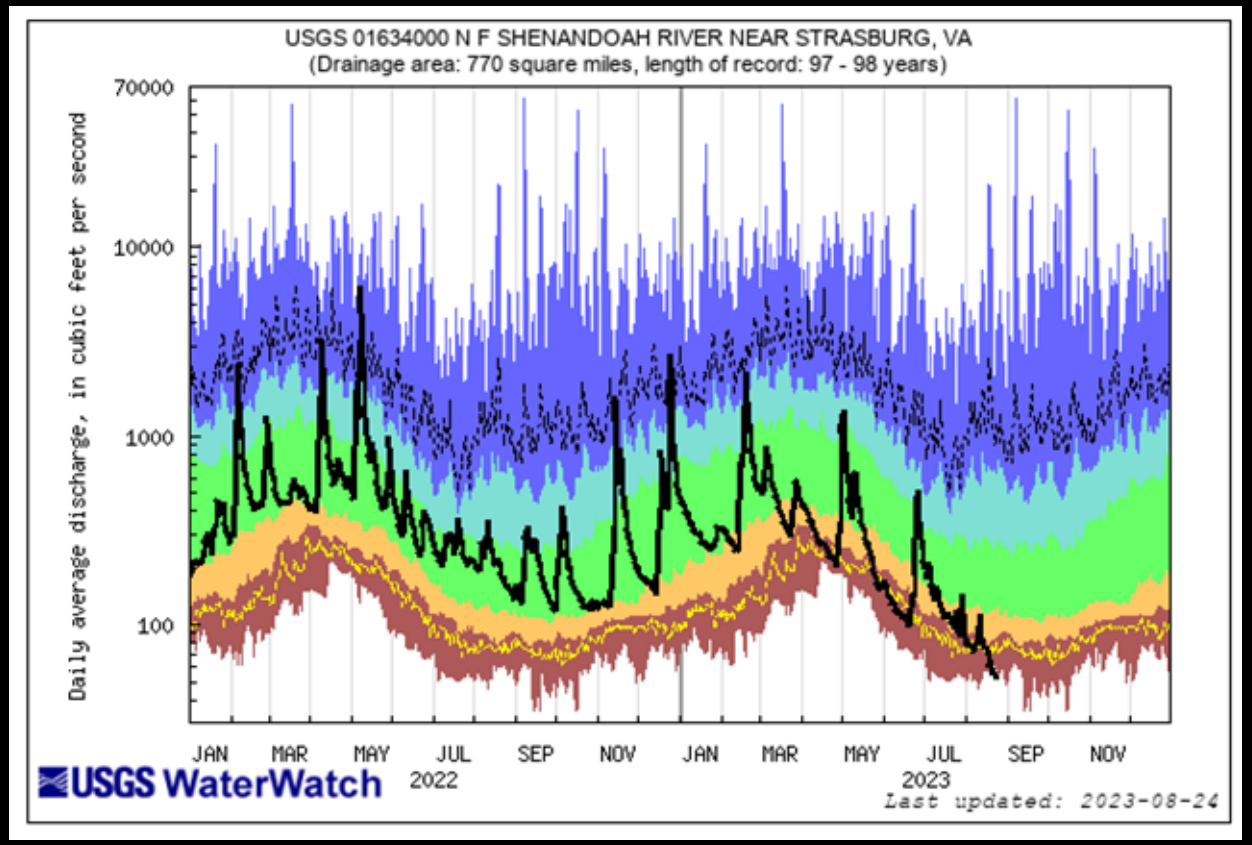
Northern/Central Virginia and Shenandoah/Potomac Valley have most drought and low-flow impact

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

USGS

Streamflow Conditions for 01634000 NF Shenandoah River at Strasburg, VA

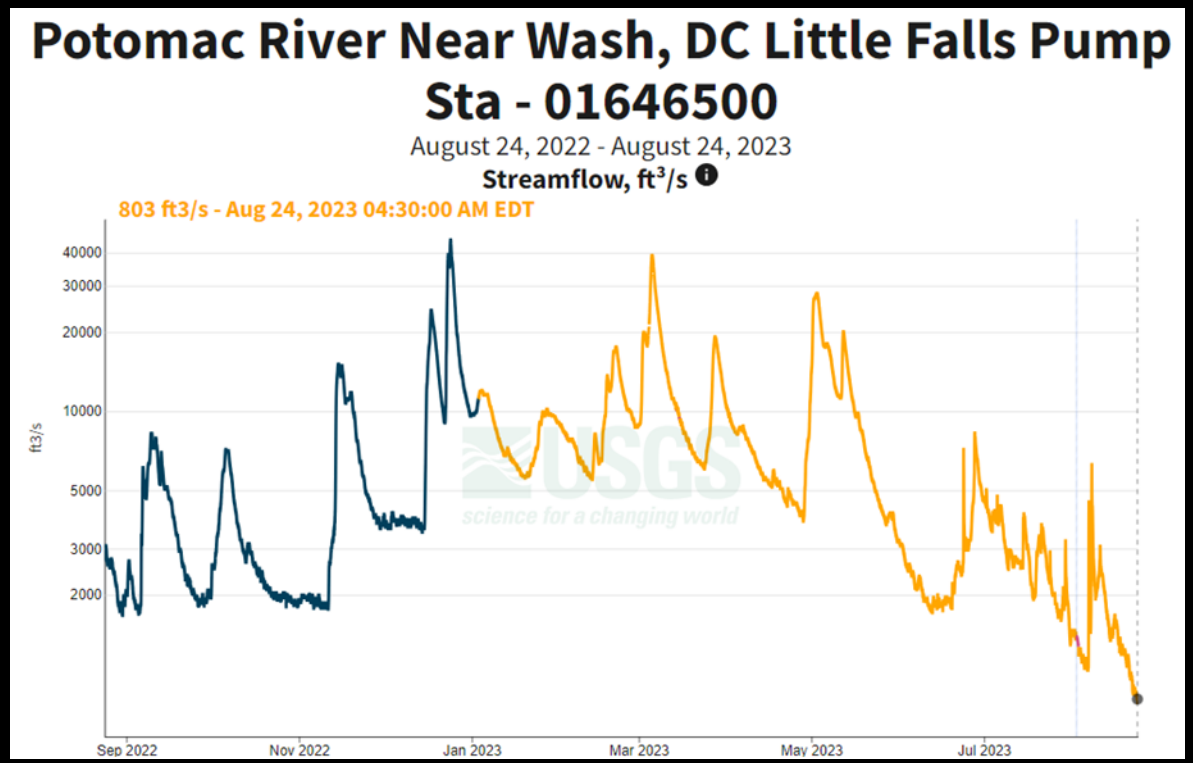


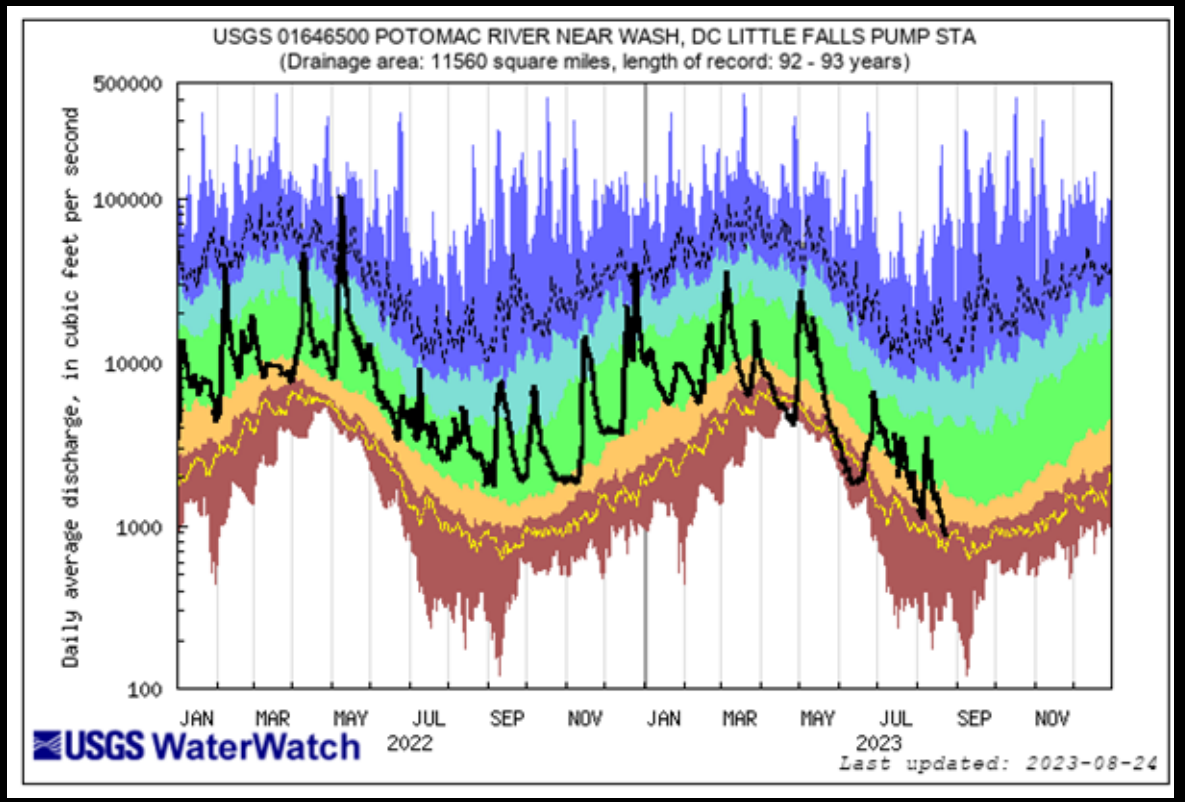


- 770 sq miles
- 98 years of data

USGS

Streamflow Conditions for 01646500 Potomac River near Wash. DC, Little Falls

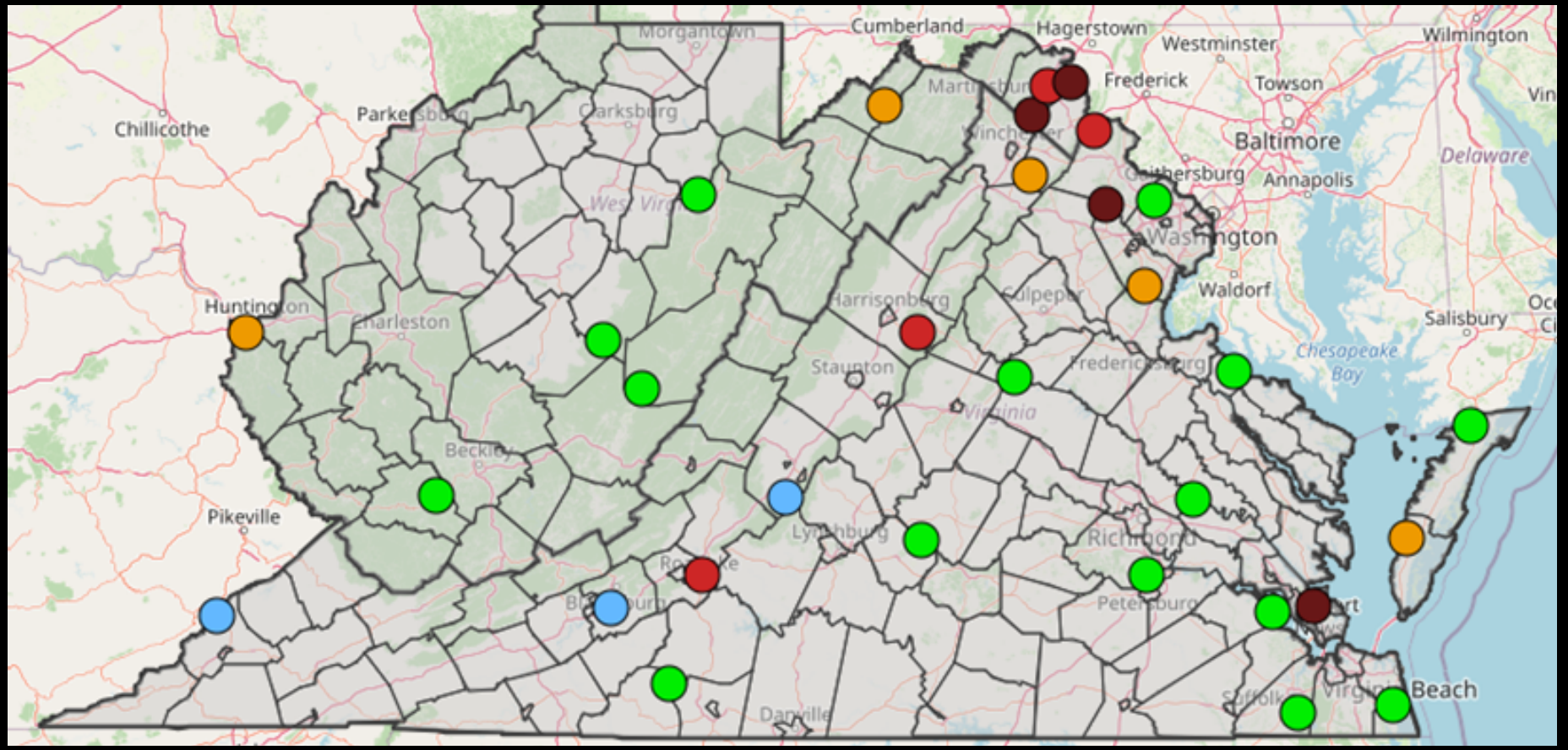




- 11560 sq miles
- 92 years of data

USGS

Groundwater Levels - Climate Response Network

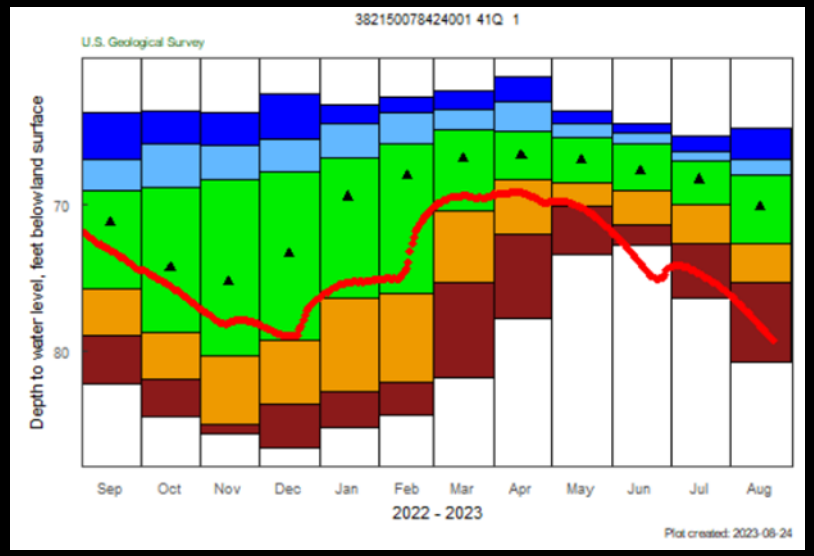


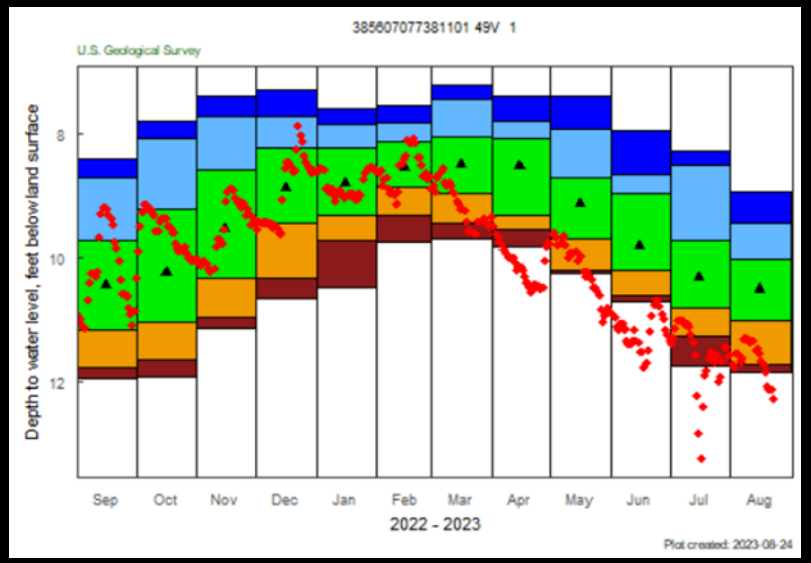
- Northern VA monitoring wells in the lowest percentile ranges

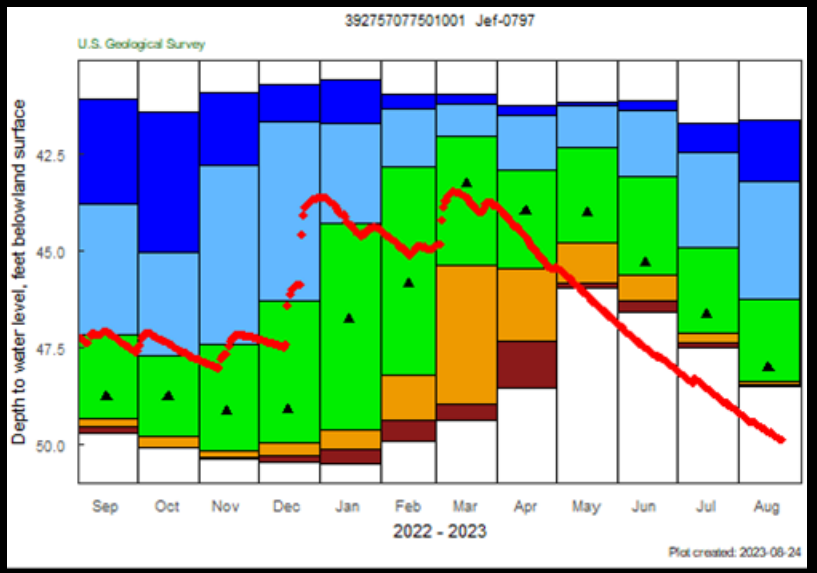
New VA-WV WSC Developed Page: https://rconnect.usgs.gov/vawv- groundwater/

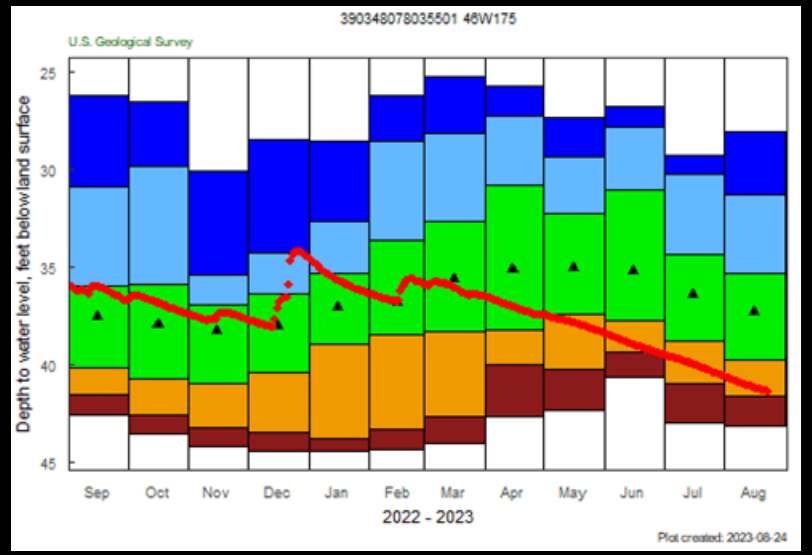
USGS

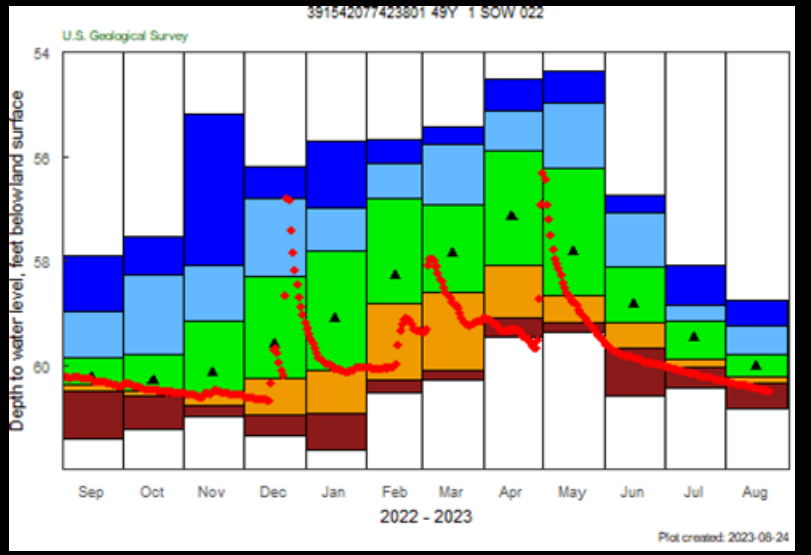
Groundwater Levels - Climate Response Network

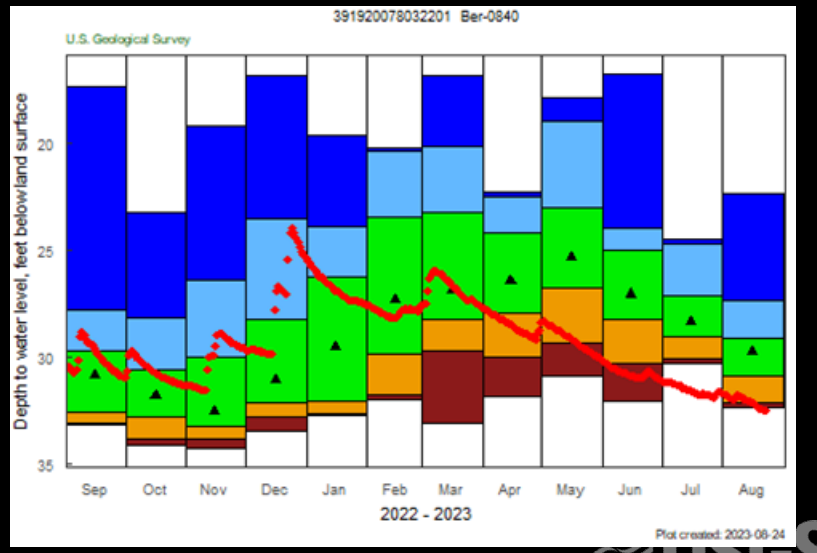












Questions?

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