VIRGINIA DROUGHT MONITORING TASK FORCE
Drought Status Report
January 9, 2024

Summary

On Tuesday January 9, 2024, the Virginia Drought Monitoring Task Force (DMTF) met to discuss the drought indicators identified by the Virginia Drought Assessment and Response Plan. Indicators have shown widespread improvements throughout the past fourteen-day period. Recent rainfall within much of the Commonwealth provided approximately 0.25-4.0 inches, with the highest amounts along the I-95 corridor, New River Valley, and Southside regions. With increased precipitation over the past fourteen days, indicators have improved significantly compared to previous levels. Below normal streamflow observations have continued only within the Big Sandy drought evaluation region. Groundwater and reservoir recovery are still below normal for the Upper James and Shenandoah drought evaluation regions. The Task Force will continue closely monitoring drought indicators and will meet next on January 25, 2023.

The Task Force recommends lifting the Drought Watch advisories within the Eastern Shore, Middle James, Northern Piedmont, Northern Virginia, Roanoke, and York-James drought evaluation regions.

The Task Force recommends closely monitoring the Big Sandy, and Upper James, drought evaluation regions and maintaining the existing Drought Watch.

The Task Force recommends closely monitoring the Shenandoah drought evaluation region and maintaining the existing Drought Warning.

Observed precipitation over the recent seven and 30-day period show average or above average precipitation amount across the majority of the Commonwealth with the southwest portion at or below normal. Comparison to 30-60-90-day percent of normal precipitation shows improved conditions across the majority of Virginia. Above average precipitation is focused along the I-95 corridor and central Virginia. Long-term precipitation deficits within the 90-120 day period are still present within the Shenandoah Valley and Southwest portions of the Commonwealth. Area-averaged rainfall since the beginning of the current water year (October 1, 2023) has remained below long-term normal values for the Big Sandy drought evaluation region. Significant improvements have occurred for the majority of the Commonwealth due to recent rainfall events. (See DEQ website for more info on drought indicators).

Streamflow over the past 7 to 28-day period has improved from recent precipitation events. Below normal streamflow conditions for the 7 and 28 day period are focused within the Big Sandy drought evaluation region. Short-term hydrologic drought conditions have largely abated due to recent precipitation events. However, ample precipitation is still required over the long term to provide significant recovery of most systems. Flows are currently below the 25th percentile for the Big Sandy, New River, and Upper James drought evaluation regions. Streamflow is expected to continue to increase with significant precipitation events forecasted within the next seven-day period.

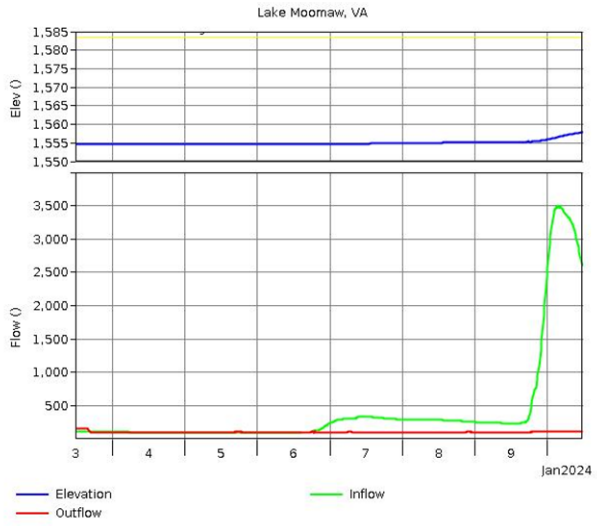
Groundwater levels for monitoring wells in the Climate Response Network have stabilized or have started to recover due to recent precipitation events. Groundwater conditions within the most significantly impacted regions still require significant recharge events to recover to normal levels. Six of 13 drought evaluation regions are below the 25th percentile including the Big Sandy, Middle James, Northern Virginia, Southeast Virginia, Shenandoah, Roanoke, and York-James. Three of 13 drought evaluation regions are currently below the 10th percentile including the Big Sandy, Shenandoah, and York-James. Two of 13 drought evaluation regions are currently below the 5th percentile including the Big Sandy and Shenandoah. Long-term precipitation events are required to provide sufficient recharge to the most impacted groundwater systems within the Shenandoah and Big Sandy evaluation regions.

The most recent weekly U.S. Drought Monitor (USDM) web page map for Virginia (Appendix A, released January 2, 2024) showed abnormally dry (D0) conditions mapped across approximately 68% of the Commonwealth, and moderate drought (D1) conditions mapped across approximately 35% of the Commonwealth. Severe drought (D2) conditions were mapped across approximately 4% 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 Philpott Lake, and J. H. Kerr Reservoir have received 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 above guide curve.

Normal inflows have been observed over the past month and Lake Moomaw has observed increased inflows resulting in slight recovery of lake level. On January 3, 2024 in partnership with the USACE, DEQ, DWR, and other stakeholders, a variance to modify outflows from Gathright Dam to 100cfs was implemented to support recovery of Lake Moomaw. The outflow condition will continue until Lake Moomaw has recovered depleted conservation storage. A graph of current inflow, water level, and outflow is included:



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 (Lake Moomaw remains within the Emergency storage threshold).

Virginia Department of Agriculture and Consumer Services

Producers in the Northern, Valley, and Southwest regions of the Commonwealth report that dry conditions continue and river, stream, and retention pond levels are low. As many producers in the Northern Valley and Northern regions of the Commonwealth began feeding hay during the summer due to dry pastures, hay is now in short supply. Producers have reported hay feeding beginning during the summer due to dry pastures, hay is now in limited supply as we approach winter months.

The U.S. Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency (EM) loans available to producers suffering losses in those counties and in counties that are contiguous to a designated county. In addition to EM loan eligibility, other emergency assistance programs, such as Farm Service Agency (FSA) disaster assistance programs, have historically used disaster designations as an eligibility trigger. The disaster declaration process includes Fast Track Secretarial disaster designations for severe drought, which provide for a nearly automatic designation when, during the growing season, any portion of a county meets the D2 (Severe Drought) drought intensity value for eight consecutive weeks or a higher drought intensity value for any length of time as reported in the U.S. Drought Monitor. For all other natural disaster occurrences, including drought conditions that do not trigger a Fast Track designation, the county must have a 30 percent production loss of at least one crop or a determination must be made by surveying producers that other lending institutions will not be able to provide emergency financing. A representative of a locality should contact the locality's FSA office to initiate the process to seek a disaster designation.

Information regarding the U.S. Department of Agriculture's (USDA) Disaster Assistance Programs is available here: https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/index.

Information regarding the federal disaster designation process is available here: https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/FactSheets/emergency_disaster_designation_declaration_process-factsheet.pdf

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

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 and Lake Moomaw 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 794.68 feet, which is 1.68 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.

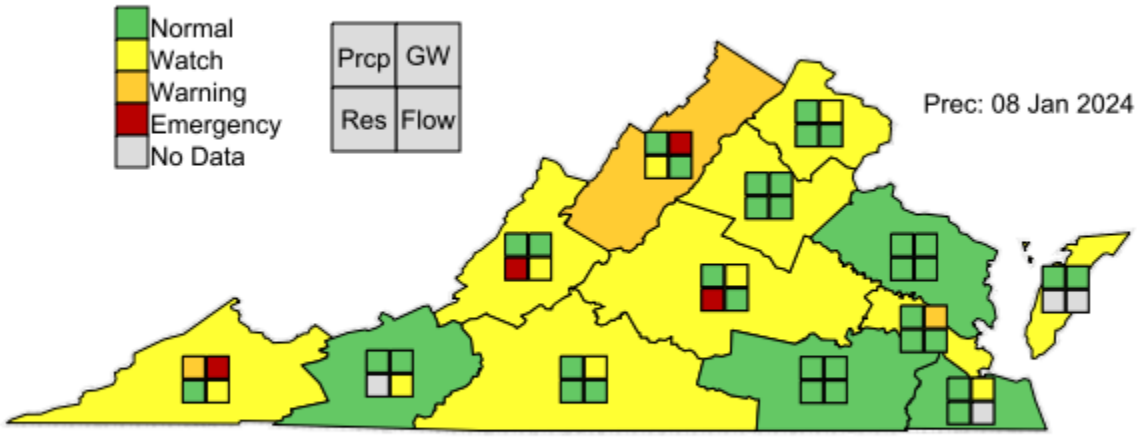
Lake Moomaw at Gathright Dam on the Jackson River in the Upper James drought evaluation region was reported at an elevation of 1558.25 feet, which is 6.75 feet below Watch level (1565 ft). Recent 7, 14, and 28-day average inflows were normal. The current lake level is below the operational average for this date. Recent significant precipitation events and forecasted rainfall over the next 14-day period will continue to provide increase inflows and reservoir recovery. No dam safety concerns are present at this time.

Lake Anna on the North Anna River in the Northern Piedmont drought evaluation region was reported at an elevation of 251.2 feet, which is 3.1ft above Watch level (248 ft). Seven (7) and 14-day inflows were above normal for this time of year.

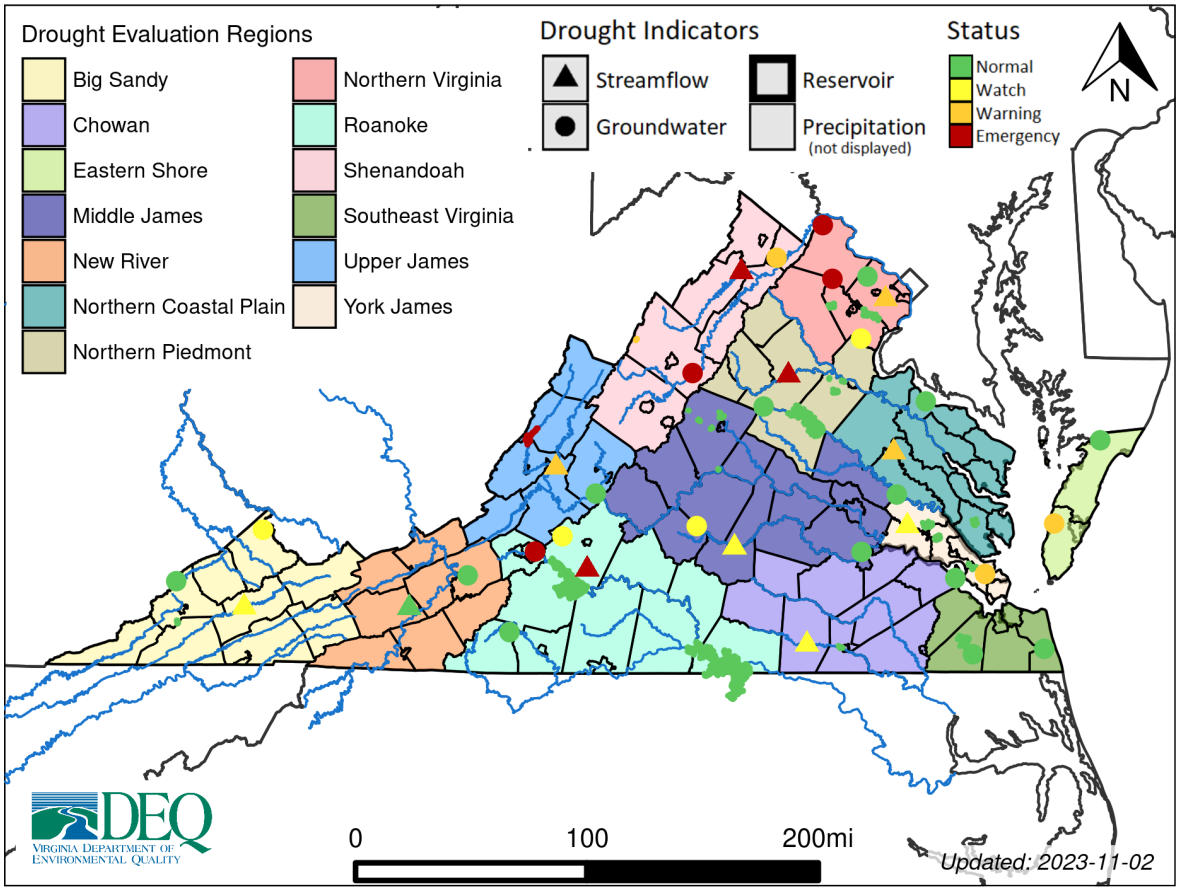
J. H. Kerr Reservoir on the Staunton River in the Roanoke drought evaluation region was reported at an elevation of 298.66 ft, which is 3.16ft above the guide curve elevation for this time period (295.5 feet) and 6ft above the Watch level (Watch level is 3 to 6 ft below guide curve). Recent 7, 14, and 28-day average inflows were normal to above normal for this time of year.

DEQ Daily Drought Status Summary: 01/09/2024

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	Big Sandy	10/1/2023	1/8/2024	64.09	Warning
2	Roanoke	10/1/2023	1/8/2024	81.5	Normal
3	Eastern Shore	10/1/2023	1/8/2024	81.56	Normal
4	New River	10/1/2023	1/8/2024	83.35	Normal
5	Upper James	10/1/2023	1/8/2024	84.66	Normal
6	Shenandoah	10/1/2023	1/8/2024	85.27	Normal
7	Northern Piedmont	10/1/2023	1/8/2024	85.76	Normal
8	Middle James	10/1/2023	1/8/2024	87.65	Normal
9	Southeast Virginia	10/1/2023	1/8/2024	100.47	Normal
10	Northern Virginia	10/1/2023	1/8/2024	104.77	Normal
11	Northern Coastal Plain	10/1/2023	1/8/2024	105.88	Normal
12	Chowan	10/1/2023	1/8/2024	106.21	Normal
13	York James	10/1/2023	1/8/2024	109.13	Normal

Surface Water Indicators:

#	Region	Gage Name	Start Date	End Date	Percentile	Status
1	Big Sandy	CLINCH RIVER AT CLEVELAND, VA	1/2/2024	1/8/2024	12.2	Watch
2	Upper James	COWPASTURE RIVER NEAR CLIFTON FORGE, VA	1/2/2024	1/8/2024	21.52	Watch
3	New River	REED CREEK AT GRAHAMS FORGE, VA	1/2/2024	1/8/2024	22.43	Watch
4	Northern Piedmont	RAPIDAN RIVER NEAR CULPEPER, VA	1/2/2024	1/8/2024	25.73	Normal
5	Shenandoah	N F SHENANDOAH RIVER NEAR STRASBURG, VA	1/2/2024	1/8/2024	30.55	Normal
6	Roanoke	GOOSE CREEK NEAR HUDDLESTON, VA	1/2/2024	1/8/2024	34.82	Normal
7	Chowan	MEHERRIN RIVER NEAR LAWRENCEVILLE, VA	1/2/2024	1/8/2024	42.04	Normal
8	Middle James	APPOMATTOX RIVER AT FARMVILLE, VA	1/2/2024	1/8/2024	66.81	Normal
9	Northern Virginia	ACCOTINK CREEK NEAR ANNANDALE, VA	1/2/2024	1/8/2024	70.38	Normal
10	Northern Coastal Plain	MATTAPONI RIVER NEAR BEULAHVILLE, VA	1/2/2024	1/8/2024	73.84	Normal
11	York James	CHICKAHOMINY RIVER NEAR PROVIDENCE FORGE, VA	1/2/2024	1/8/2024	80.29	Normal

Groundwater Indicators:

#	Region	Well Name	Start Date	End Date	Percentile	Status
1	Big Sandy	Buchanan County USGS Observation Well (15G 19 SOW 222)	1/2/2024	1/8/2024	0.0	Emergency
2	Shenandoah	Blandy Farm USGS Observation Well (46W 175)	1/2/2024	1/8/2024	1.15	Emergency
3	Shenandoah	McGaheysville USGS Observation Well (41Q 1)	1/2/2024	1/8/2024	3.44	Emergency
4	York James	York County DEQ Observation Well (59F74 SOW 184C)	1/2/2024	1/8/2024	6.54	Warning
5	Middle James	Buckingham USGS Observation Well (41H 3)	1/2/2024	1/8/2024	18.03	Watch
6	Northern Virginia	Harper's Ferry DEQ Observation Well (49Y 1 SOW 022)	1/2/2024	1/8/2024	16.49	Watch
7	Roanoke	Bedford County USGS Observation Well (33G 1 SOW 224)	1/2/2024	1/8/2024	17.5	Watch
8	Roanoke	Roanoke-Nelson DEQ Observation Well (31G 1 SOW 008)	1/2/2024	1/8/2024	10.0	Watch
9	Southeast Virginia	Pungo DEQ Observation Well (62B 1 SOW 098A)	1/2/2024	1/8/2024	24.36	Watch
10	Big Sandy	U.S. Forest Service - SOW 223 Cane Patch Well	1/2/2024	1/8/2024	64.55	Normal
11	Chowan	Slade Farm DEQ Observation Well (57E 31 SOW 094C)	1/2/2024	1/8/2024	52.65	Normal
12	Eastern Shore	P. C. Kellam DEQ Observation Well (63H 6 SOW 103A)	1/2/2024	1/8/2024	26.74	Normal
13	Eastern Shore	Withams DEQ Observation Well (66M 19 SOW 110S)	1/2/2024	1/8/2024	64.92	Normal
14	Middle James	Colonial Heights USGS Observation Well (51G 1)	1/2/2024	1/8/2024	80.06	Normal
15	New River	Christiansburg DEQ Observation Well (27F 2 SOW 019)	1/2/2024	1/8/2024	71.88	Normal
16	Northern Coastal Plain	George Washington Birthplace USGS Observation Well (55P 9)	1/2/2024	1/8/2024	92.93	Normal
17	Northern Piedmont	Gordonsville DEQ Observation Well (45P 1 SOW 030)	1/2/2024	1/8/2024	37.22	Normal
18	Northern Virginia	Fairfax County USGS Observation Well (52V 2D)	1/2/2024	1/8/2024	52.11	Normal
19	Northern Virginia	Prince William County USGS Observation Well (49V 1)	1/2/2024	1/8/2024	57.87	Normal
20	Northern Virginia	Prince William County USGS Observation Well (51S 7)	1/2/2024	1/8/2024	25.33	Normal
21	Roanoke	Fairystone State Park USGS Observation Well (30C 1 SOW 010)	1/2/2024	1/8/2024	64.18	Normal
22	Southeast Virginia	Brinkley USGS Observation Well (58B 13)	1/2/2024	1/8/2024	48.84	Normal
23	Upper James	Glasgow DEQ Observation Well (35K 1 SOW 063)	1/2/2024	1/8/2024	47.99	Normal
24	York James	Hanover County DEQ Observation Well (53K 19 SOW 080)	1/2/2024	1/8/2024	90.39	Normal

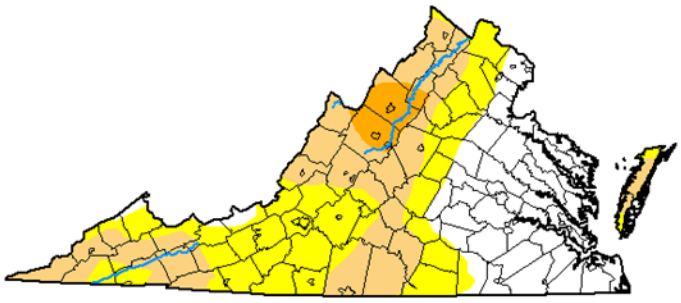
Reservoir Indicators:

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)	01/09/2024	Watch
2	Big Sandy	Big Cherry Reservoir	01/09/2024	Normal
3	Chowan	Emporia Reservoir	01/09/2024	Normal
4	Middle James	Beaver Creek Reservoir	01/09/2024	Normal
5	Middle James	Totier Creek Reservoir	01/09/2024	Normal
6	Middle James	Ragged Mountain	01/09/2024	Normal
7	Middle James	Sugar Hollow	01/09/2024	Normal
8	Middle James	South Fork Rivanna River Reservoir	01/09/2024	Normal
9	Northern Coastal Plain	Beverdam Reservoir	01/09/2024	Normal
10	Northern Piedmont	Hunting Run Reservoir	01/09/2024	Normal
11	Northern Piedmont	Motts Run Reservoir	01/09/2024	Normal
12	Northern Piedmont	Lake Anna	01/09/2024	Normal
13	Northern Piedmont	Ni River Reservoir	01/09/2024	Normal
14	Northern Virginia	Lake Manassas	01/09/2024	Normal
15	Northern Virginia	Occoquan Reservoir	01/09/2024	Normal
16	Roanoke	Smith Mountain Lake	01/09/2024	Normal
17	Roanoke	Kerr Reservoir	01/09/2024	Normal
18	Southeast Virginia	Lake Cohoon	01/09/2024	Normal
19	Southeast Virginia	Lake Kilby	01/09/2024	Normal
20	Southeast Virginia	Speights Run Reservoir	01/09/2024	Normal
21	Southeast Virginia	Lake Meade	01/09/2024	Normal
22	Southeast Virginia	Kerr Reservoir	01/09/2024	Normal
23	York James	Diascund Creek Reservoir	01/09/2024	Normal
24	York James	Lee Hall - City Reservoir	01/09/2024	Normal
25	York James	Harwoods Mill Reservoir	01/09/2024	Normal
26	York James	Little Creek Reservoir	01/09/2024	Normal
27	York James	Skiffes Creek Reservoir	01/09/2024	Normal
28	Middle James	Lake Moomaw	01/09/2024	Emergency
29	Upper James	Lake Moomaw	01/09/2024	Emergency

Appendix A

U.S. Drought Monitor
Virginia



January 2, 2024
(Released Thursday, Jan. 4, 2024)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	31.65	68.35	34.77	4.07	0.00	0.00
Last Week *12-26-2023*	22.37	77.63	50.74	7.90	0.00	0.00
3 Months Ago *10-03-2023*	51.40	48.60	24.99	6.12	0.00	0.00
Start of Calendar Year *01-02-2024*	31.65	68.35	34.77	4.07	0.00	0.00
Start of Water Year *09-26-2023*	51.40	48.60	24.99	6.12	0.00	0.00
One Year Ago *01-03-2023*	89.75	10.25	0.80	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

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National Drought Mitigation Center

droughtmonitor.unl.edu

Appendix B

USGS Drought Status Summary

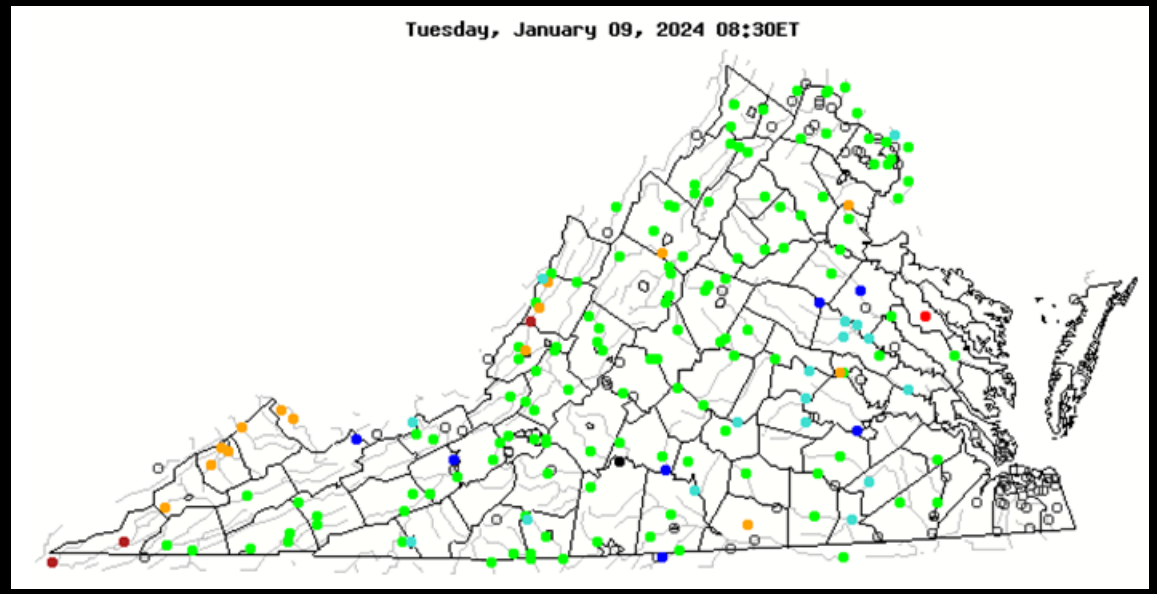
Streamflows and Groundwater Levels in Virginia

Virginia Drought Monitoring Task Force

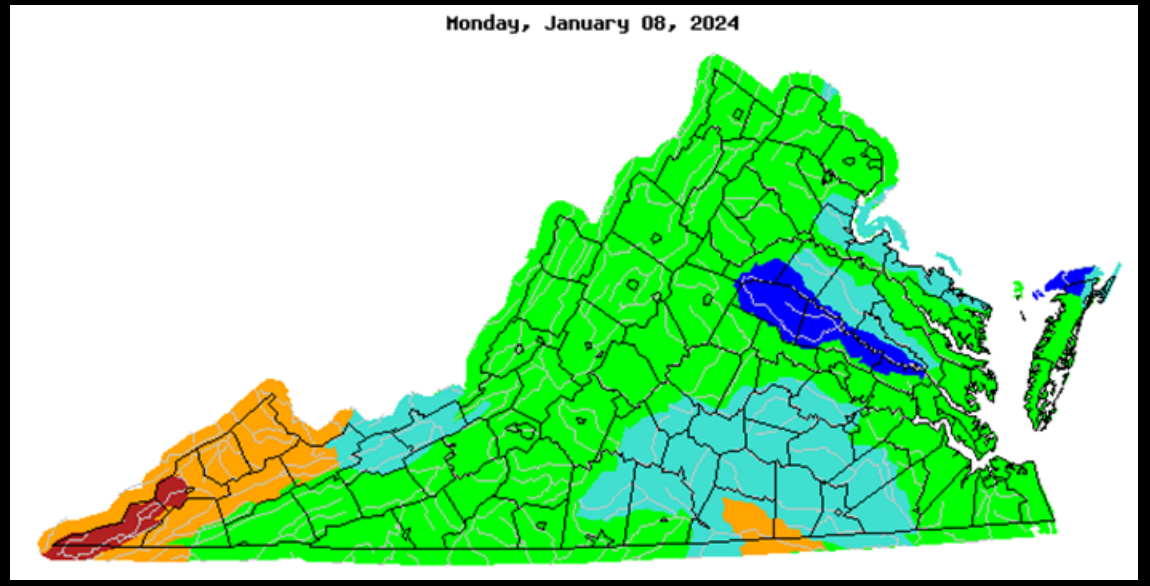
January 9, 2023

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

Current Streamflow Conditions

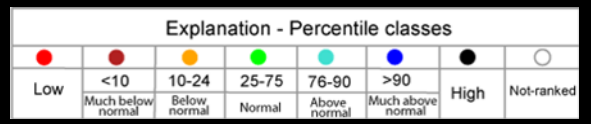


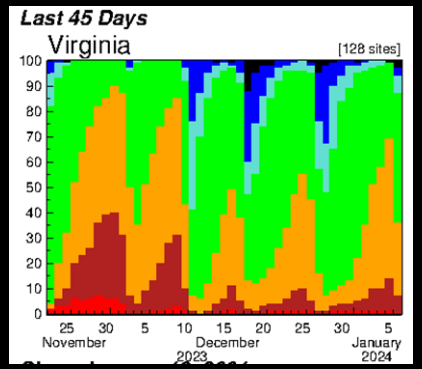
Realtime USGS Streamgages



Daily Flow HUC 8s

- Data from 01/09/2024
- Low flows persist in western Virginia

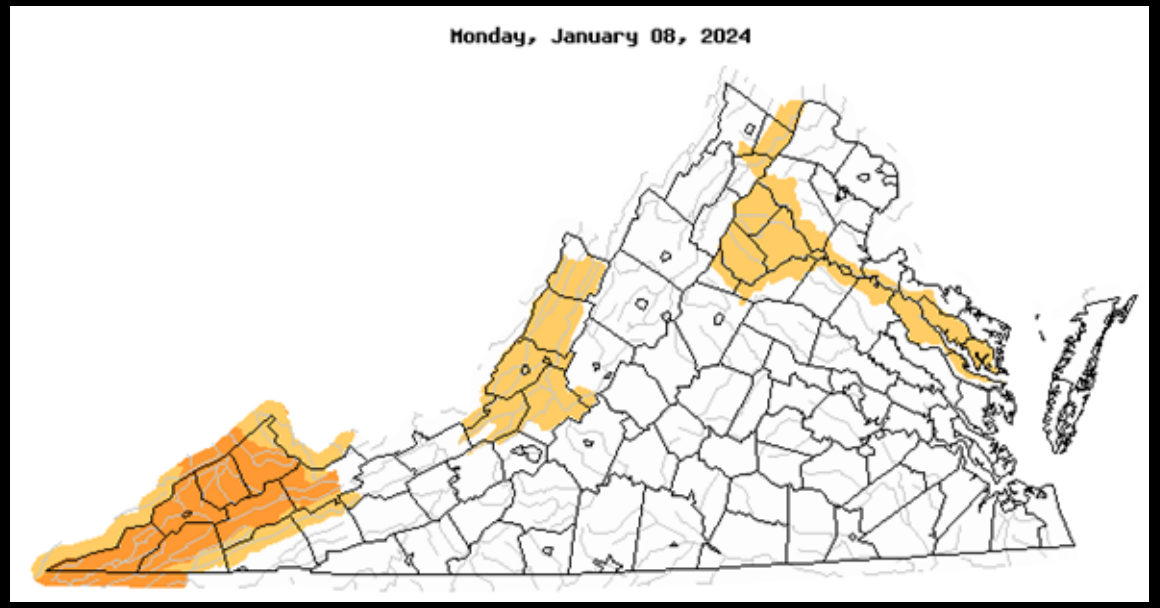




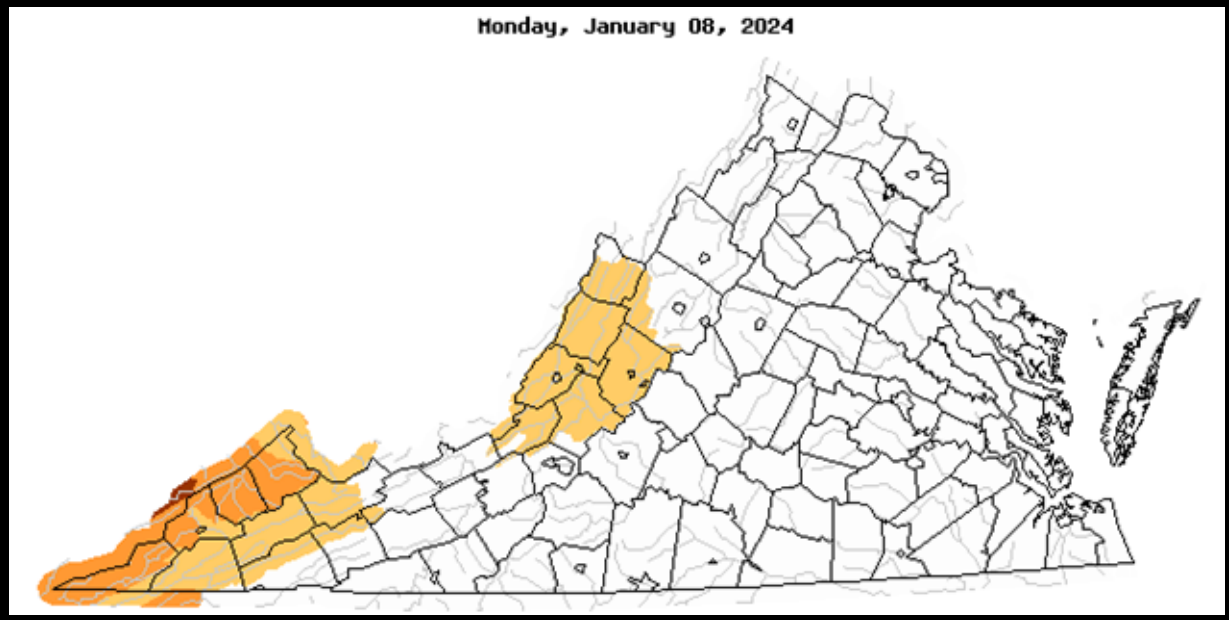
https://waterwatch.usgs.gov/index.php?id=pa01d&sid=w___map|m__pa01d_nwc&r=va

USGS

Below-Normal Streamflow Conditions

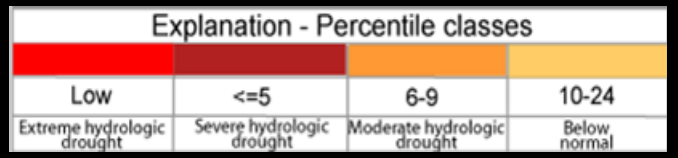


7-Day



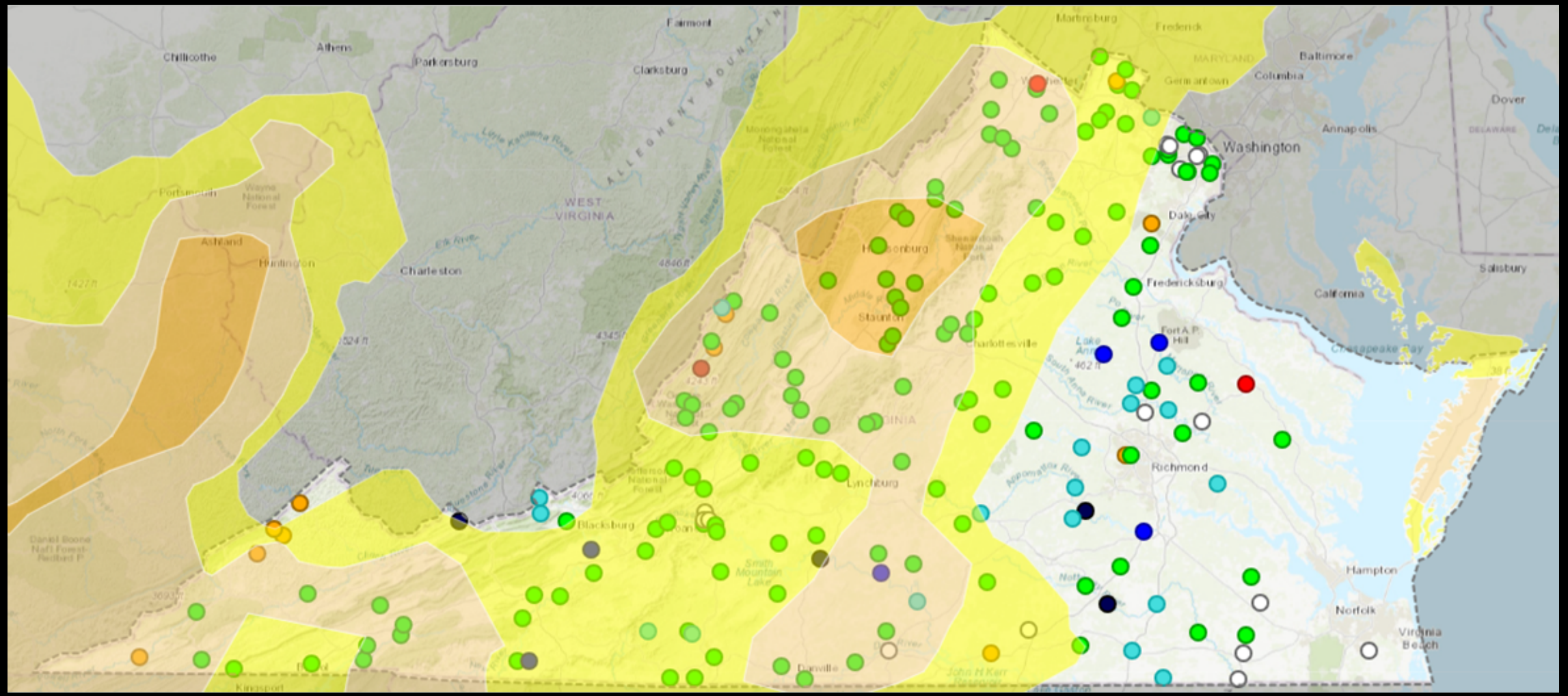
28-Day

- “Moderate drought” signal persists in western mountains



USGS

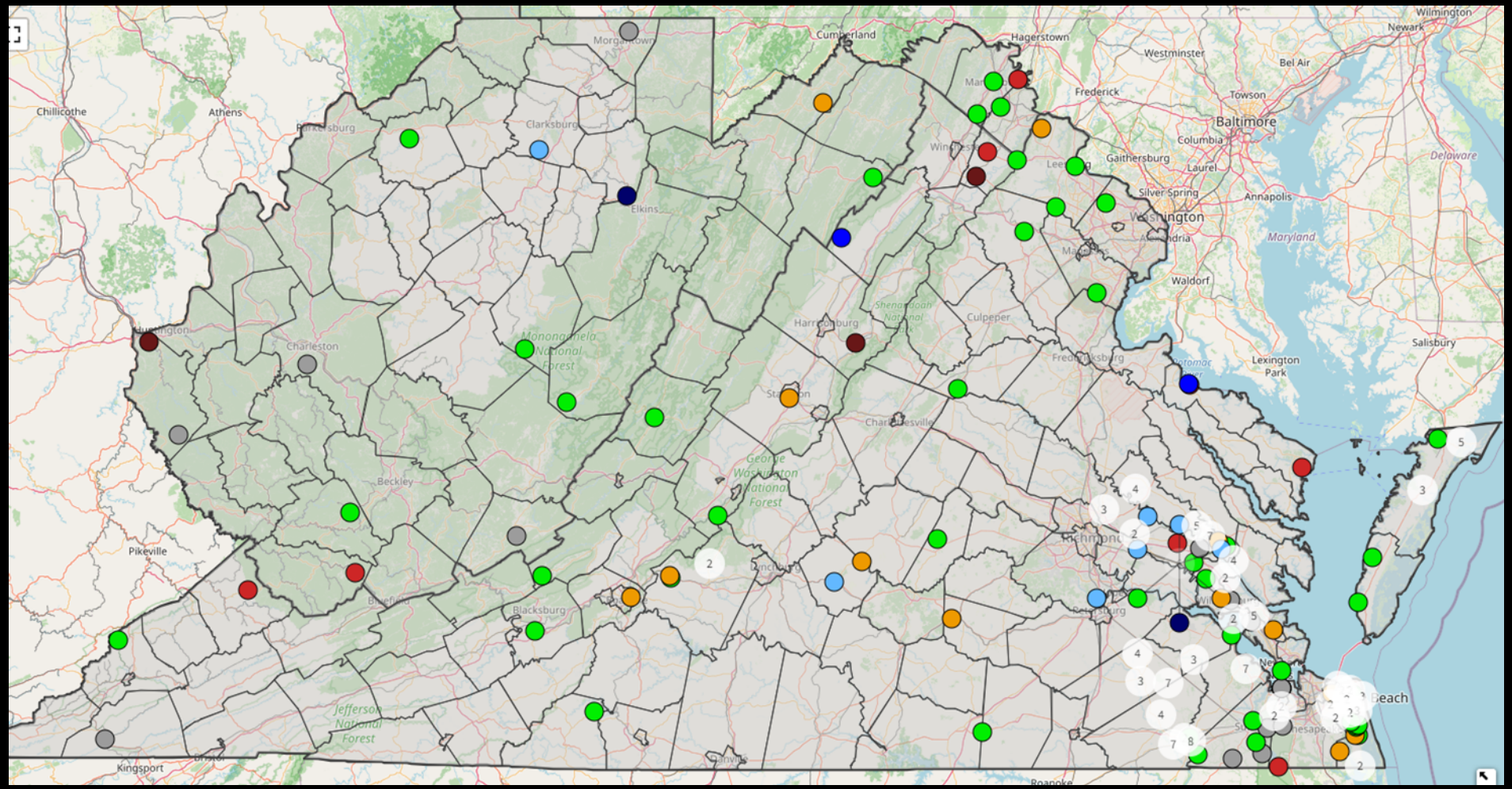
USGS National Water Dashboard



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

USGS

Groundwater Levels – All USGS Wells

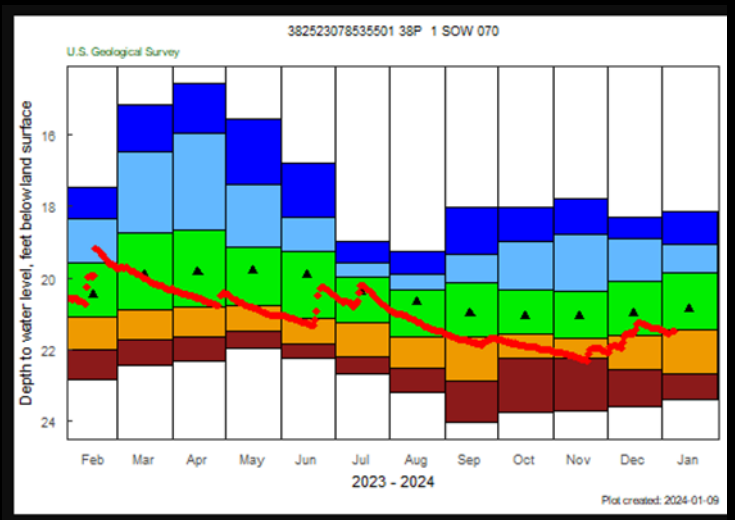


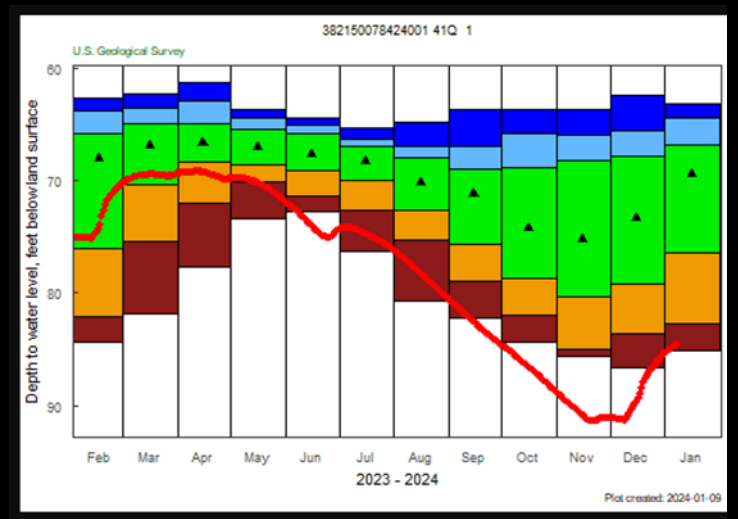
- Shenandoah, western and northern neck wells in lowest percentile ranges

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

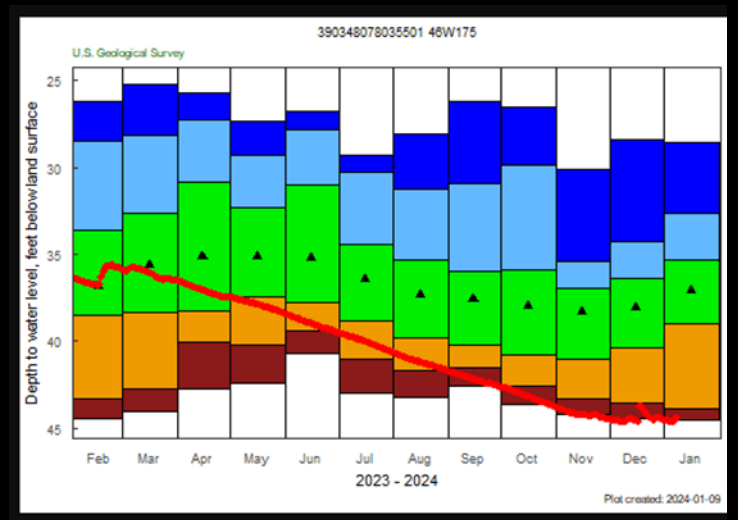
USGS

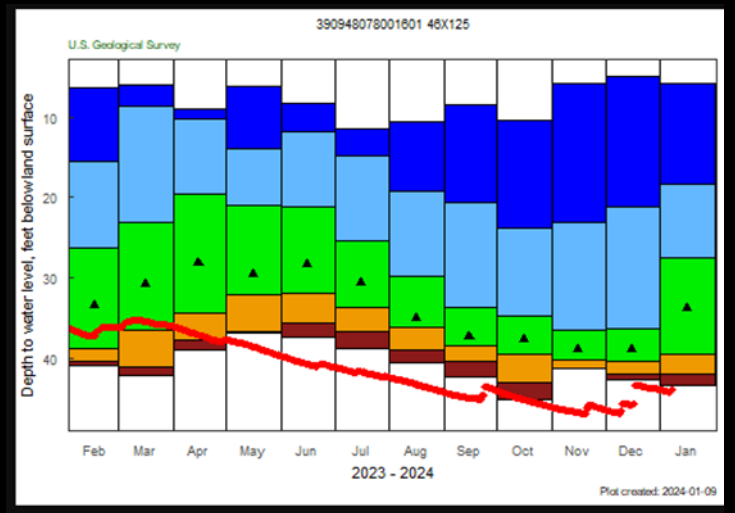
Upper Shenandoah Valley



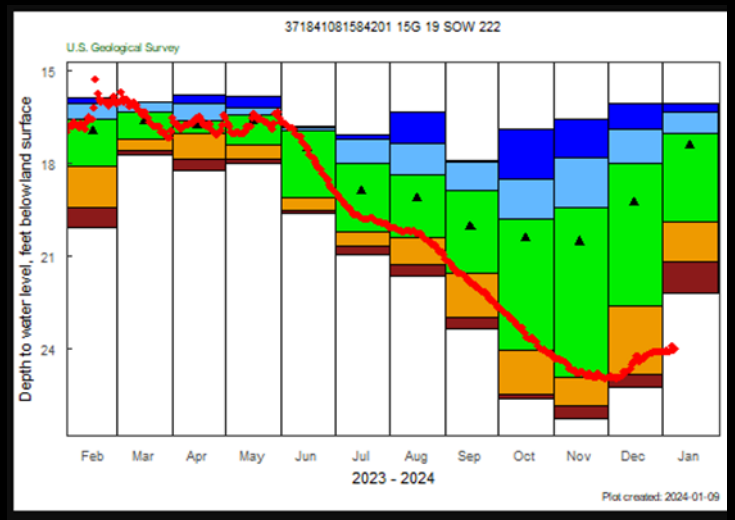


Lower Shenandoah Valley

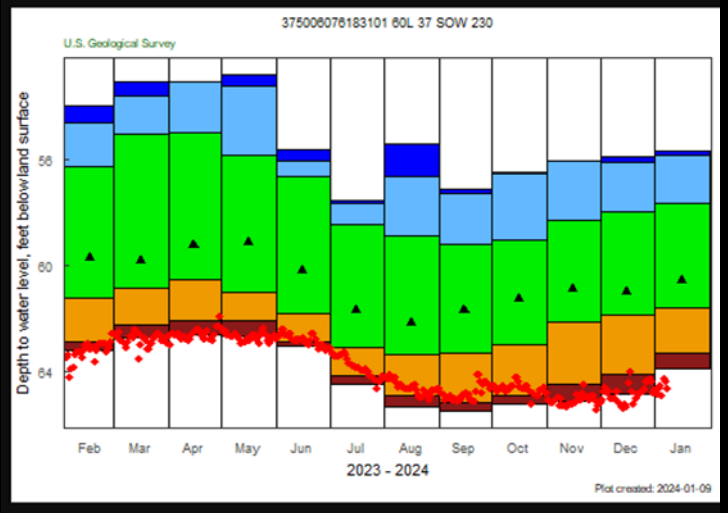




Western VA

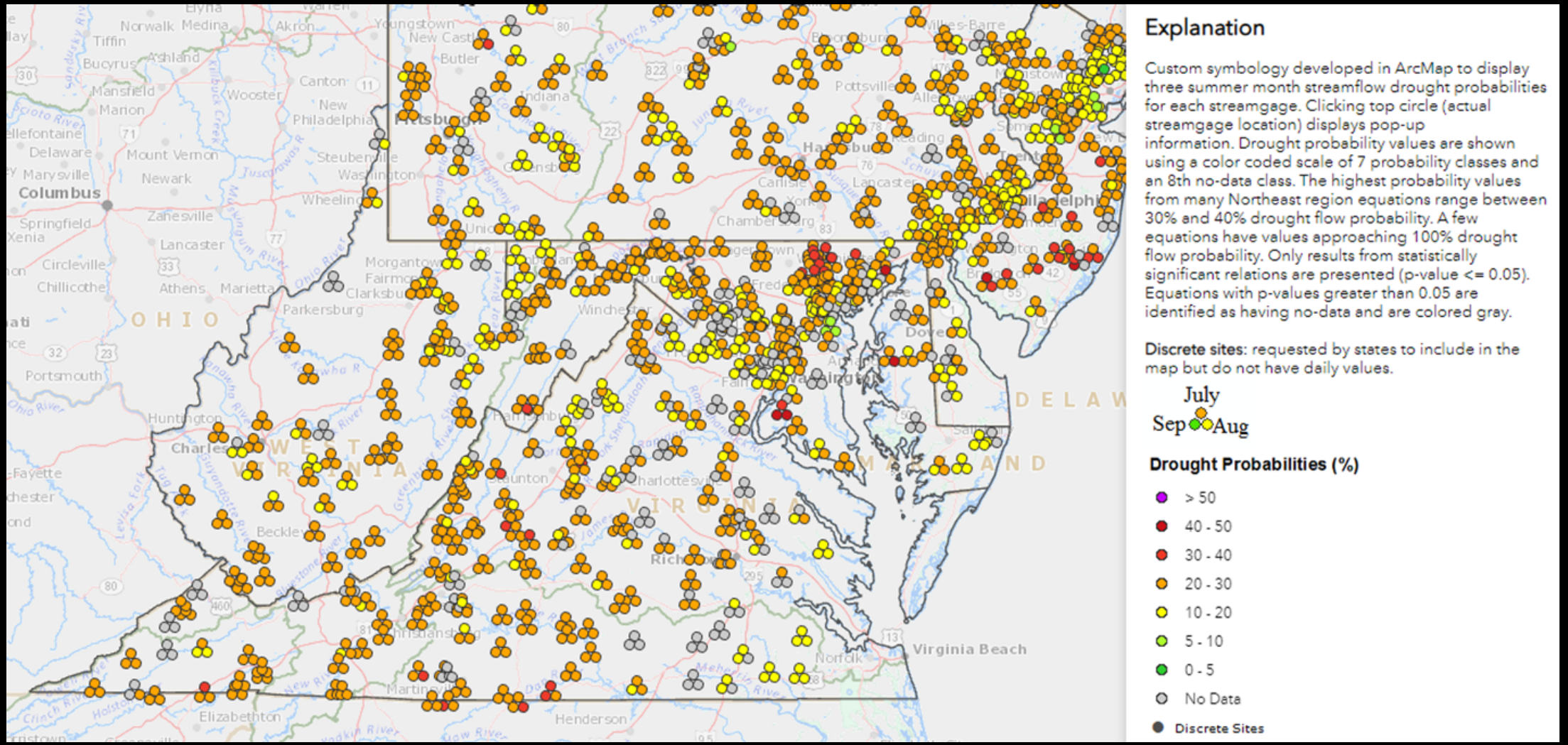


Northern Neck



USGS

USGS NE Drought Streamflow Probabilities



https://vawv-gis.usgs.gov/webapps/drought-ne/

USGS

Questions?

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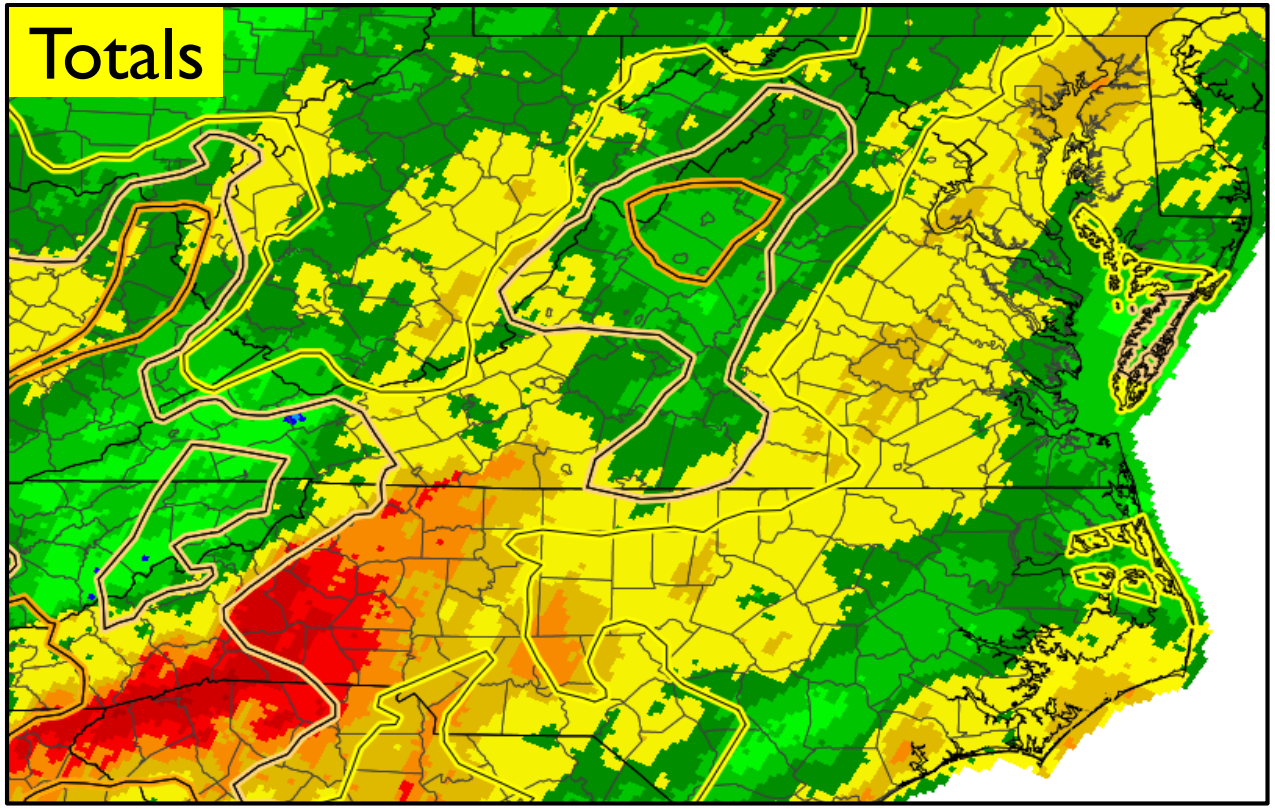
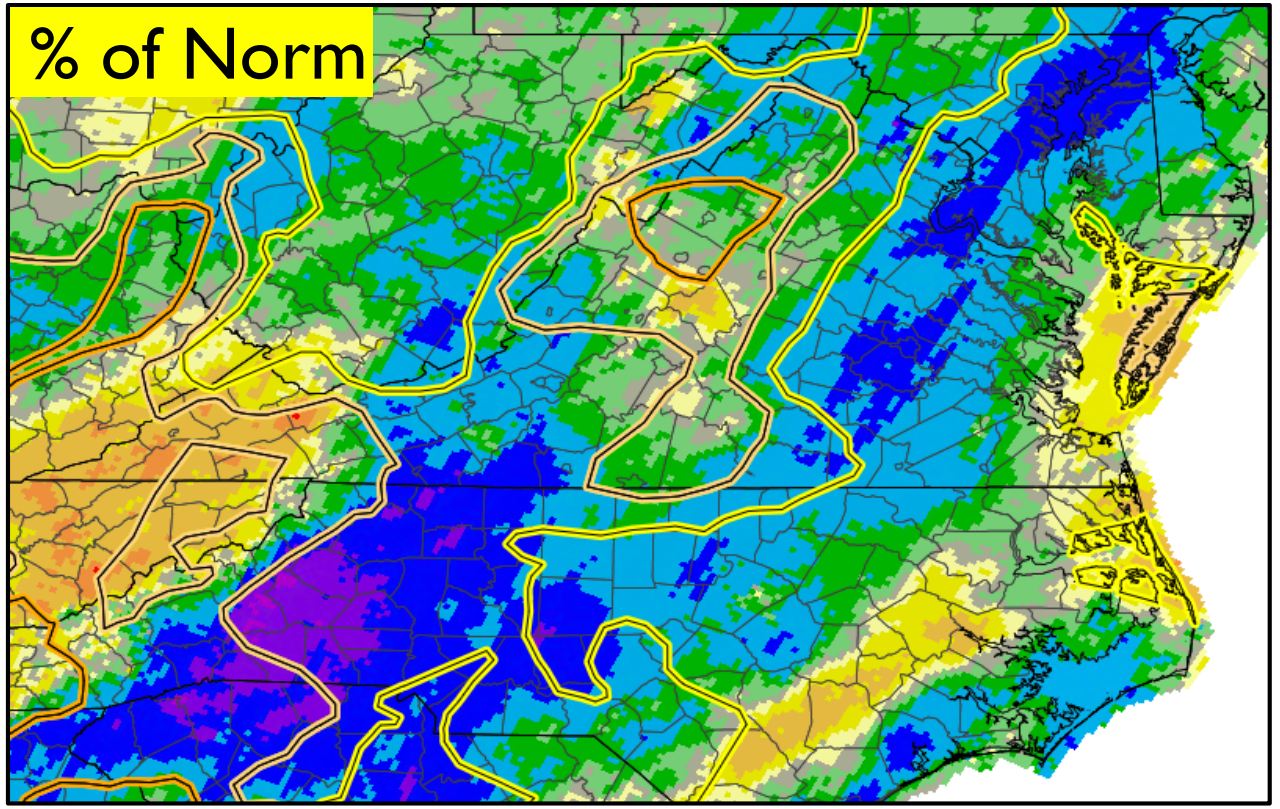
VA Drought Monitoring Task Force

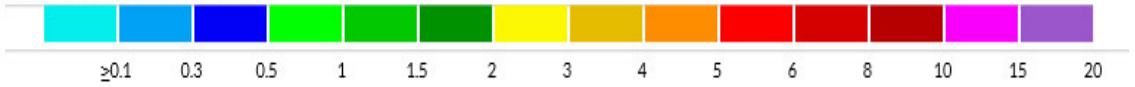
Jonathan McGee
National Weather Service – Wakefield, VA
January 9, 2024

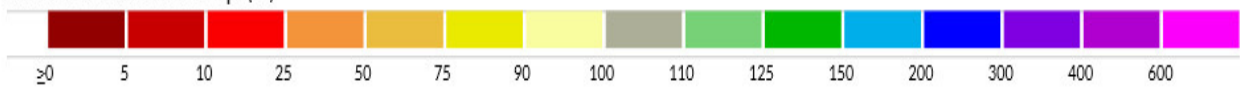
14-Day Precip Totals & Percent of Normal

Wakefield, VA
WEATHER FORECAST OFFICE









SPI Blends

Wakefield, VA
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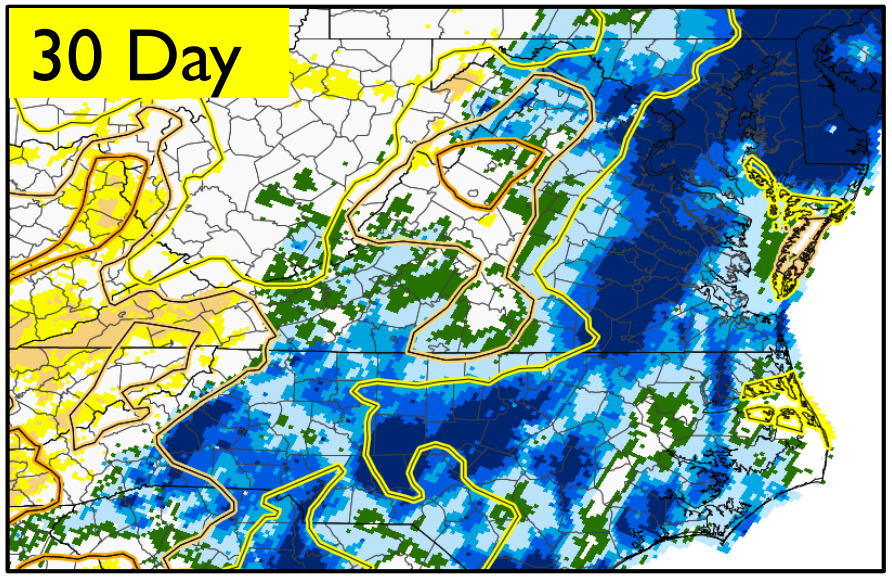

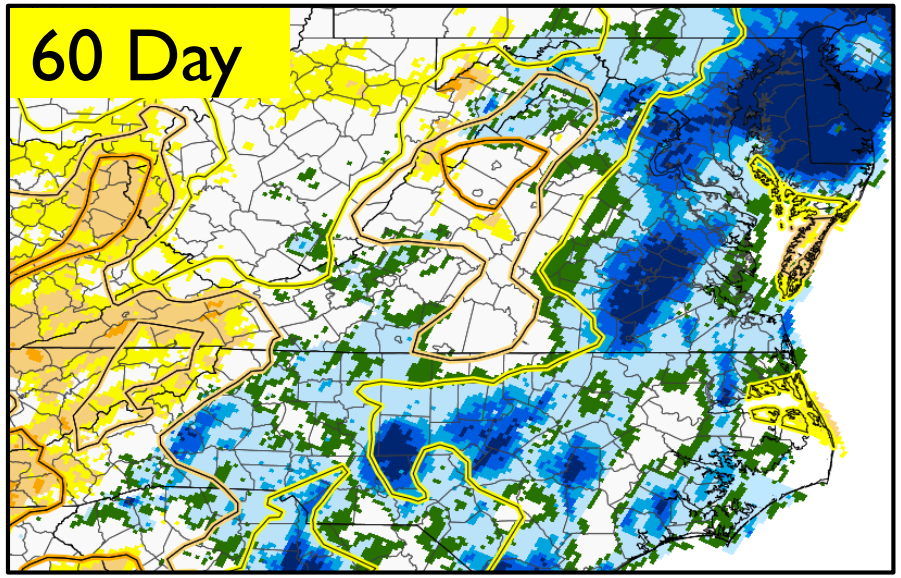

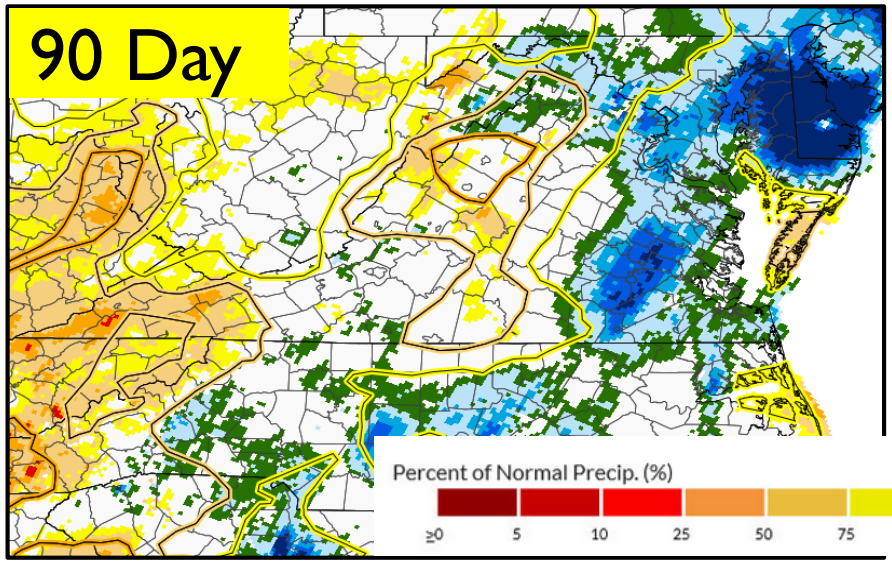

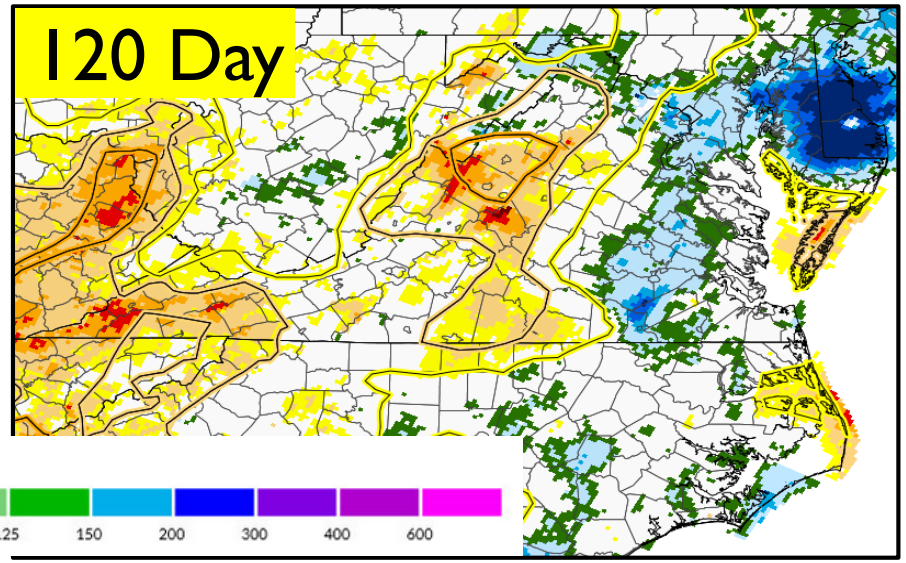

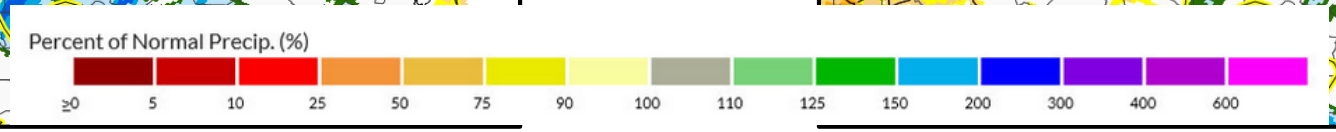

Drought Monitor (As of January 4th)

For more info, visit: droughtmonitor.unl.edu

Wakefield, VA

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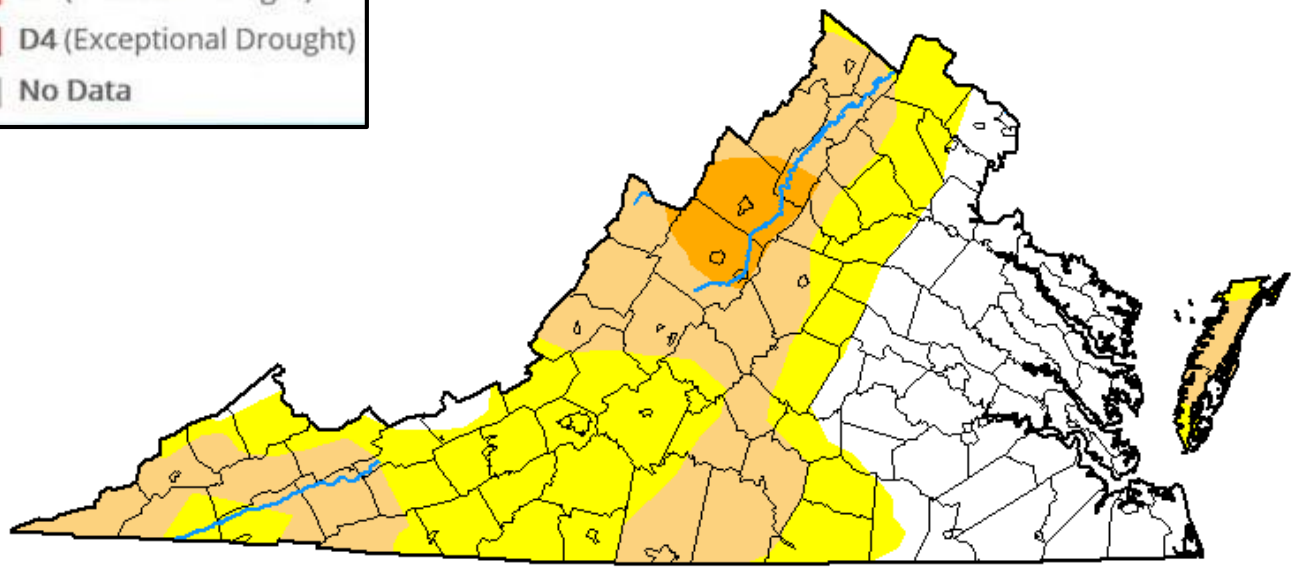
Intensity:

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

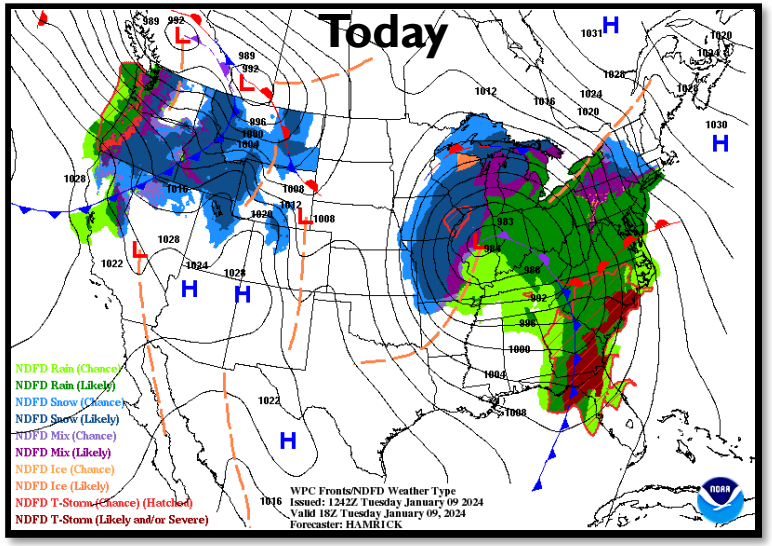


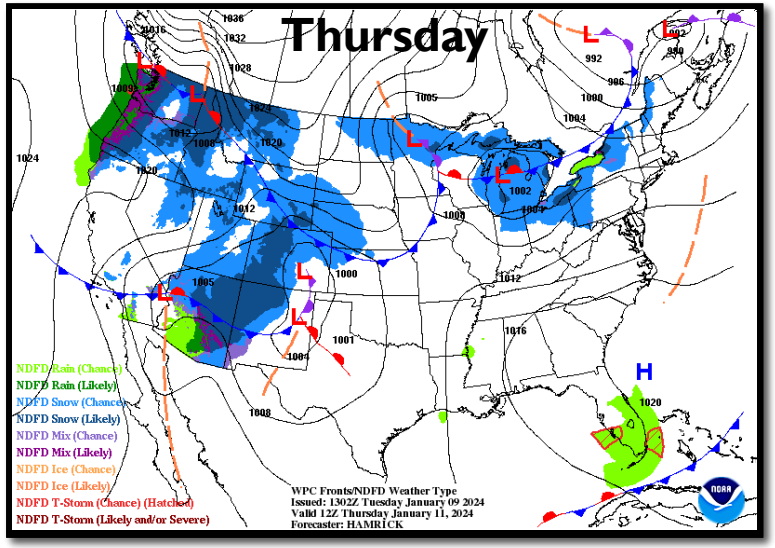
Potential Impacts

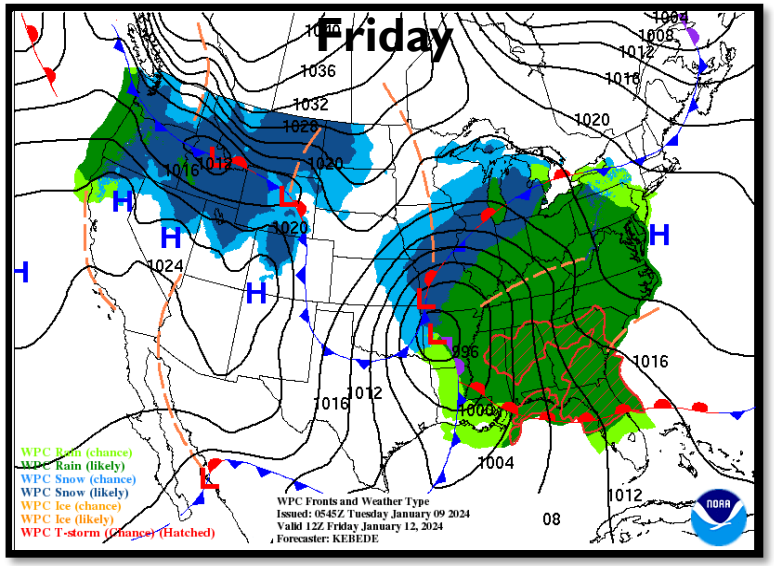
Category	Impact
D0	Crop growth is stunted; planting is delayed
	Fire danger is elevated; spring fire season starts early
	Lawns brown early; gardens begin to wilt
	Surface water levels decline
D1	Irrigation use increases; hay and grain yields are lower than normal
	Honey production declines
	Wildfires and ground fires increase
	Trees and landscaping are stressed; fish are stressed
	Voluntary water conservation is requested; reservoir and lake levels are below normal capacity
D2	Specially crops are impacted in both yield and fruit size
	Producers begin feeding cattle; hay prices are high
	Warnings are issued on outdoor burns; air quality is poor
	Golf courses conserve water
	Trees are brittle and susceptible to insects
	Fish kills occur; wildlife move to farms for food
	Water quality is poor; groundwater is declining; irrigation ponds are dry; outdoor water restrictions are implemented
D3	Crop loss is widespread; Christmas tree farms are stressed; dairy farmers are struggling financially
	Well drillers and bulk water haulers see increased business
	Water recreation and hunting are modified; wildlife disease outbreak is observed
	Extremely reduced flow to ceased flow of water is observed; river temperatures are warm; wells are running dry; people are digging more and deeper wells

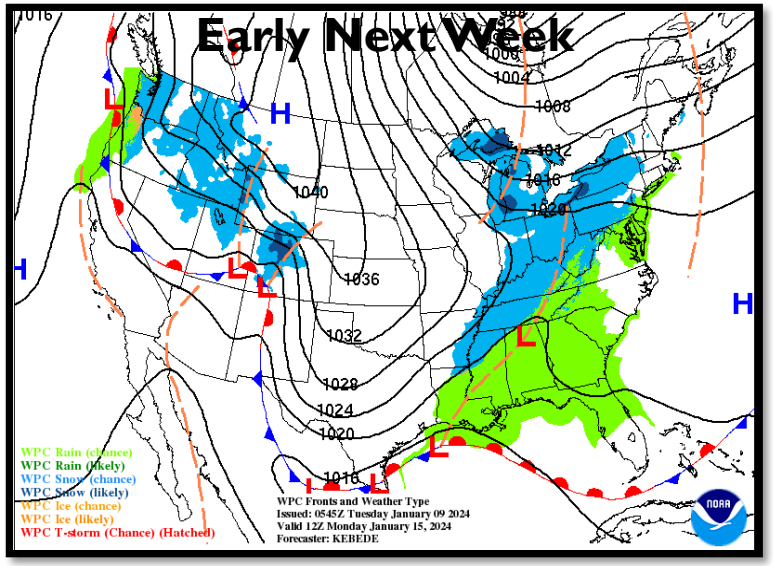
Upcoming Weather Pattern

Wakefield, VA
WEATHER FORECAST OFFICE









Key Points:

- A strong low pressure system will bring heavy rain and strong winds today.
- Dry weather returns Wednesday and Thursday.
- The next system bring widespread rain late Friday and Friday night.
- Another system is expected to bring rain and snow early next week.

Precipitation Forecasts

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

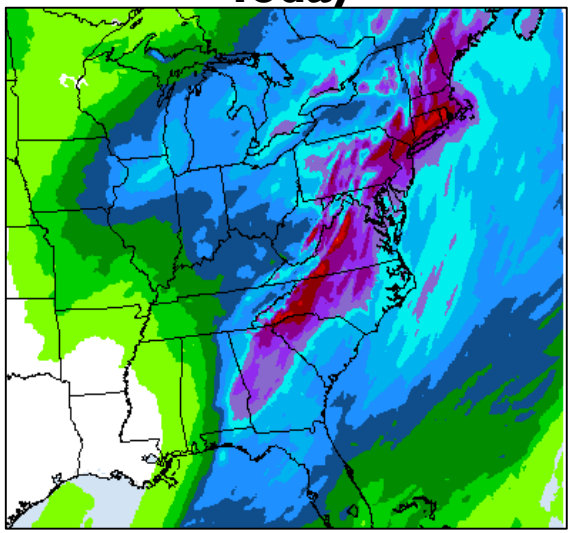
Wakefield, VA

WEATHER FORECAST OFFICE

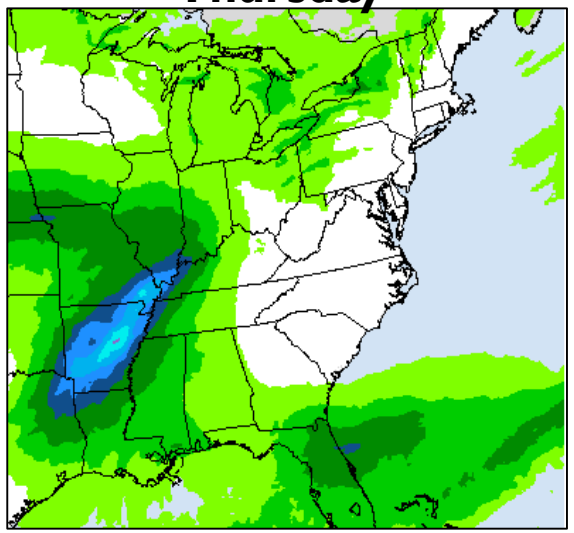
Forecast Daily Rainfall Through Monday (Jan 15th)

- **Generally 1.5-5" of rain through the period.**

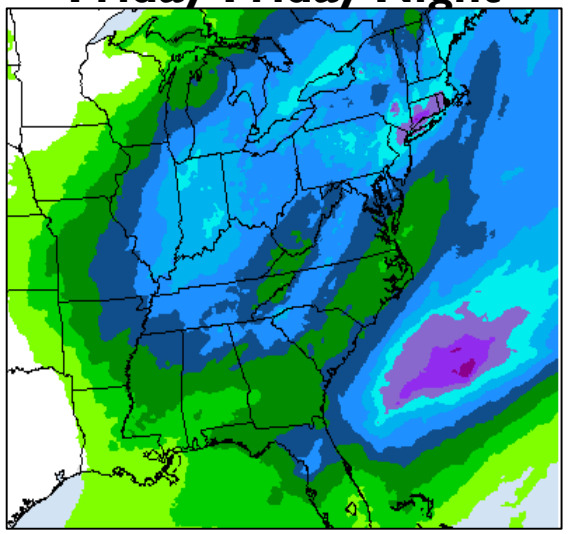
Today



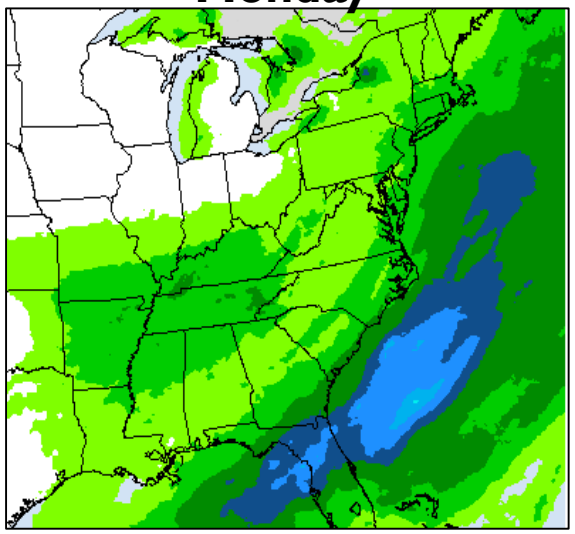
Thursday



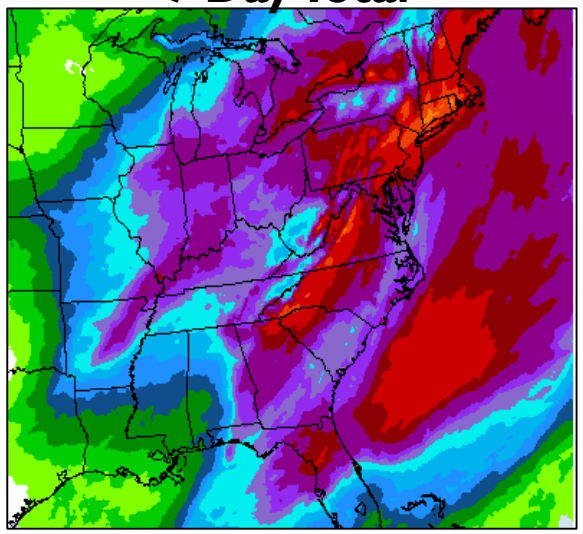
Friday-Friday Night

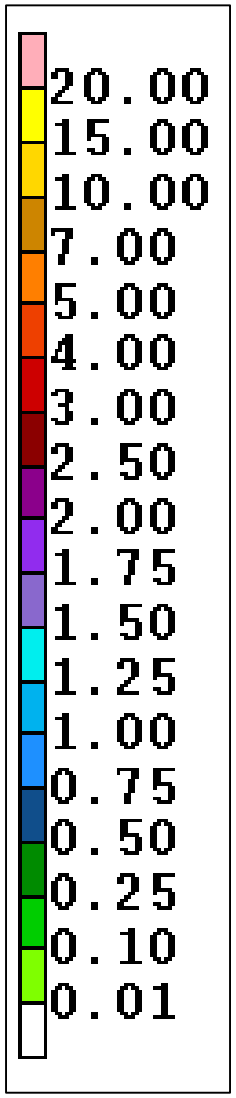


Monday



7 Day Total





6 to 10 Day Outlook: Jan 14th – Jan 18th

Wakefield, VA
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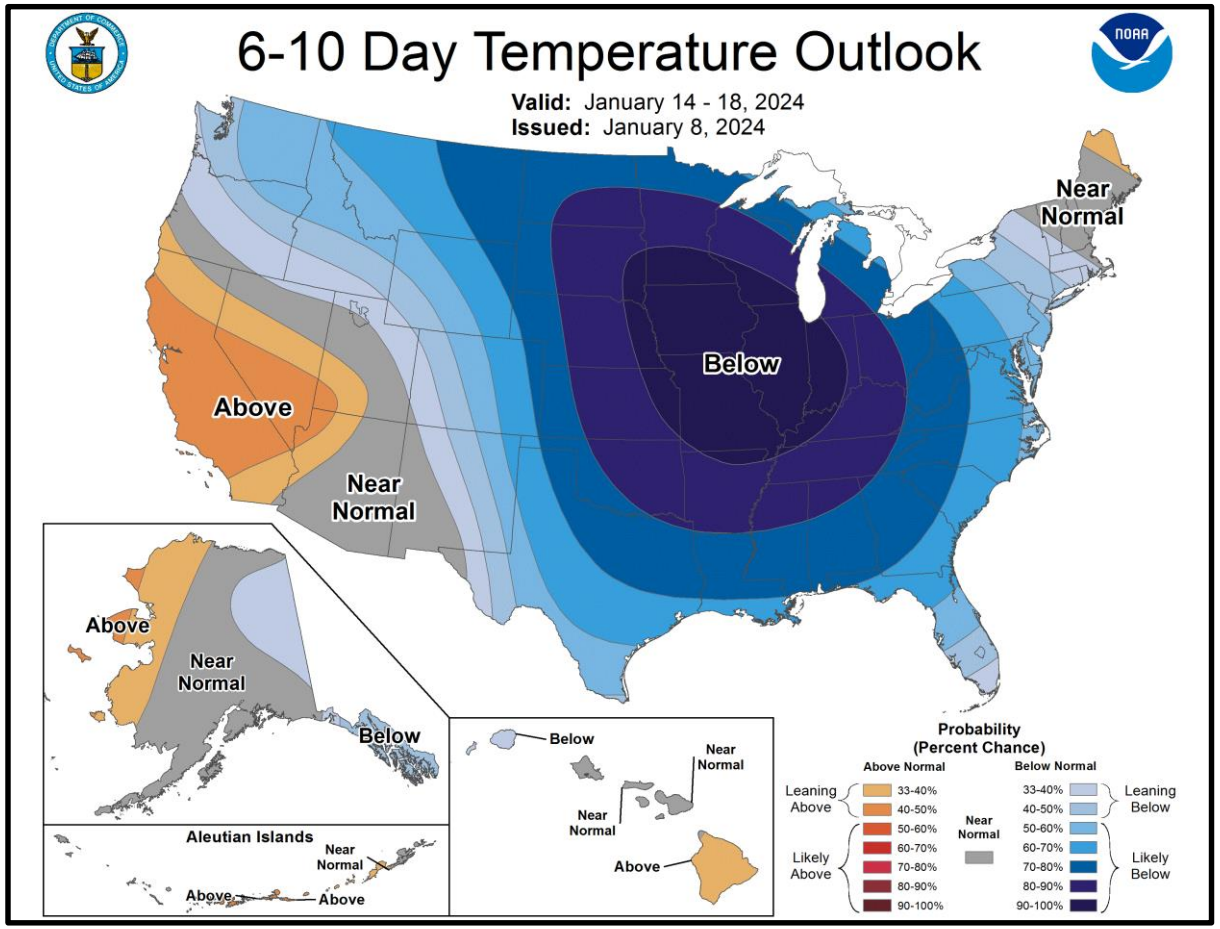

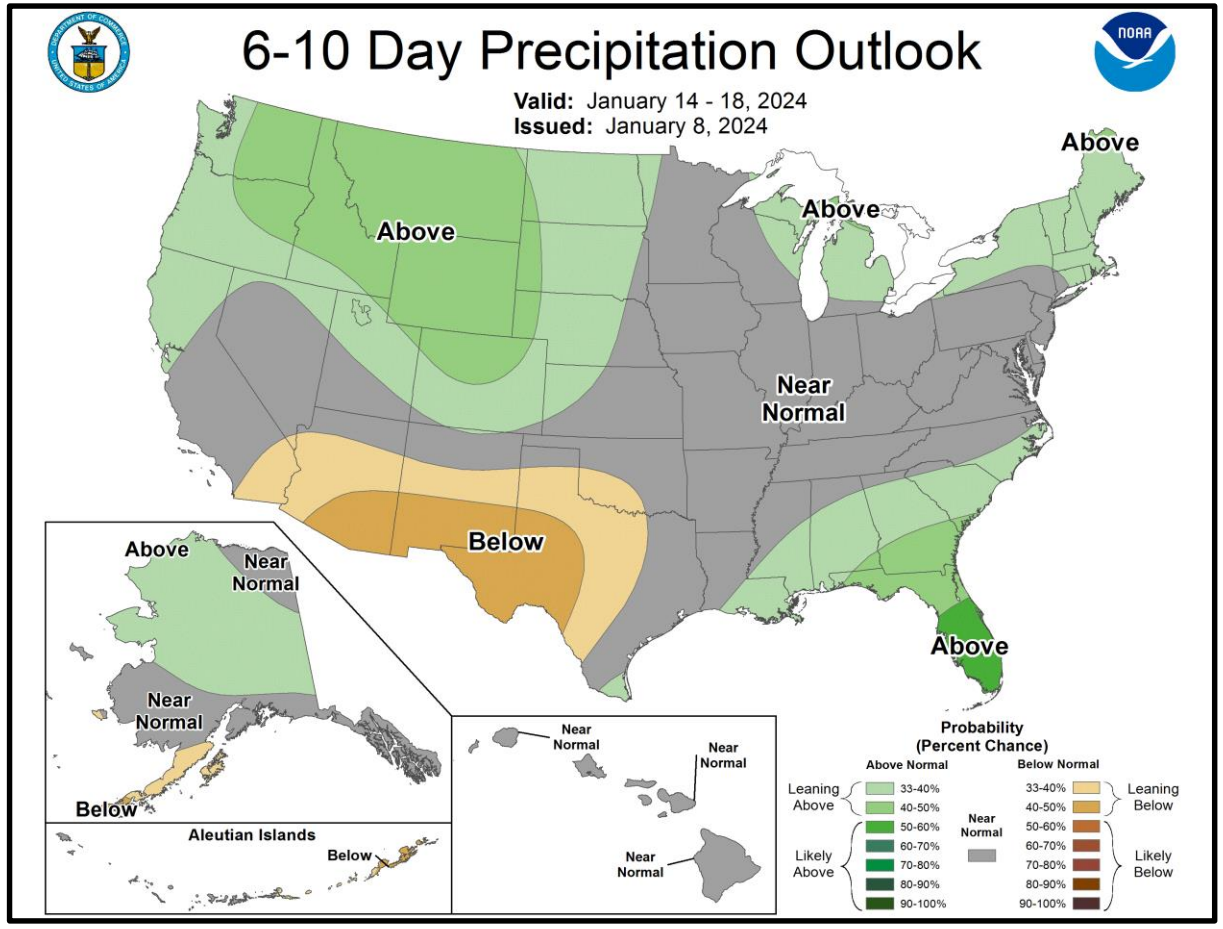

- Below normal temperatures favored.
- Near normal precipitation chances favored.

8 to 14 Day Outlook: Jan 16th – Jan 22nd

Wakefield, VA
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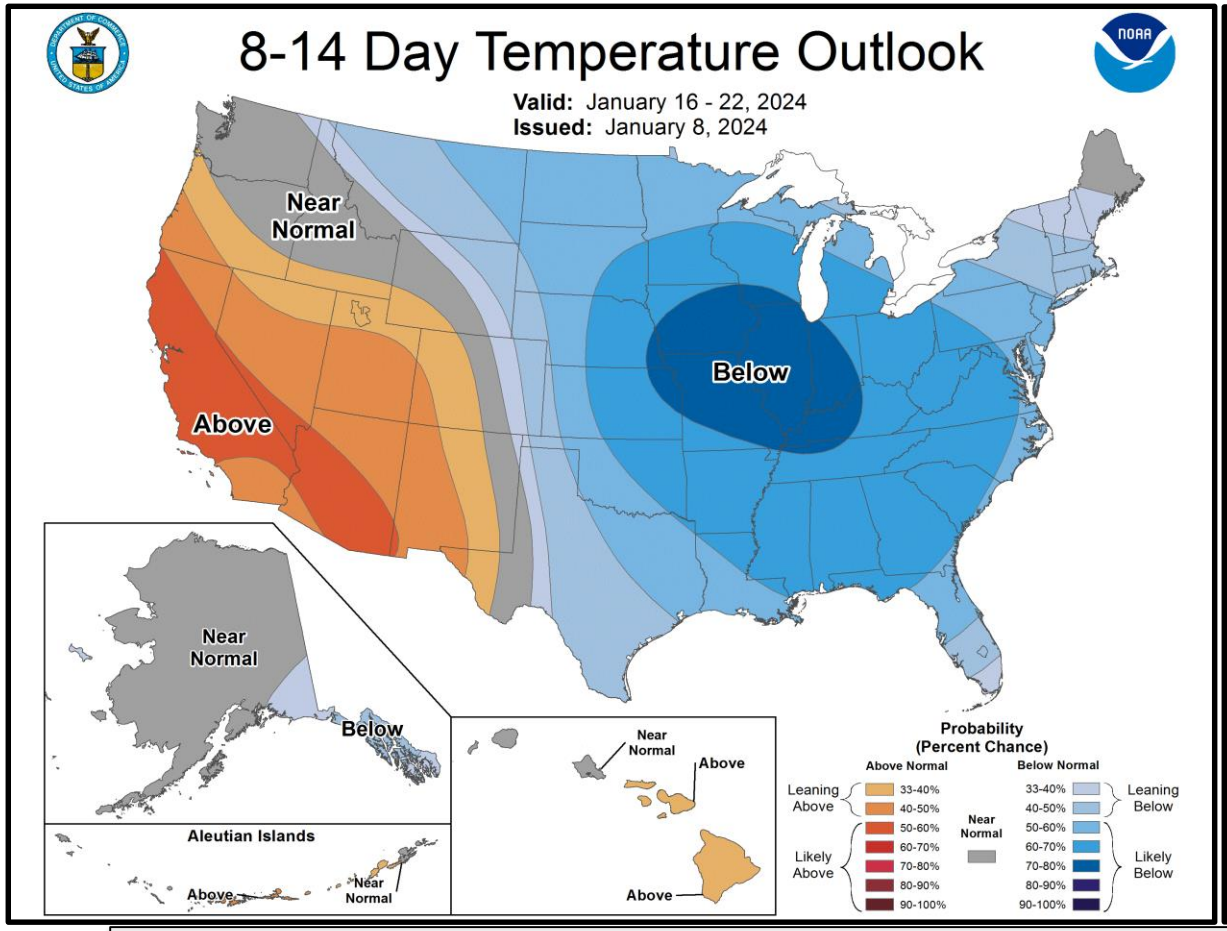
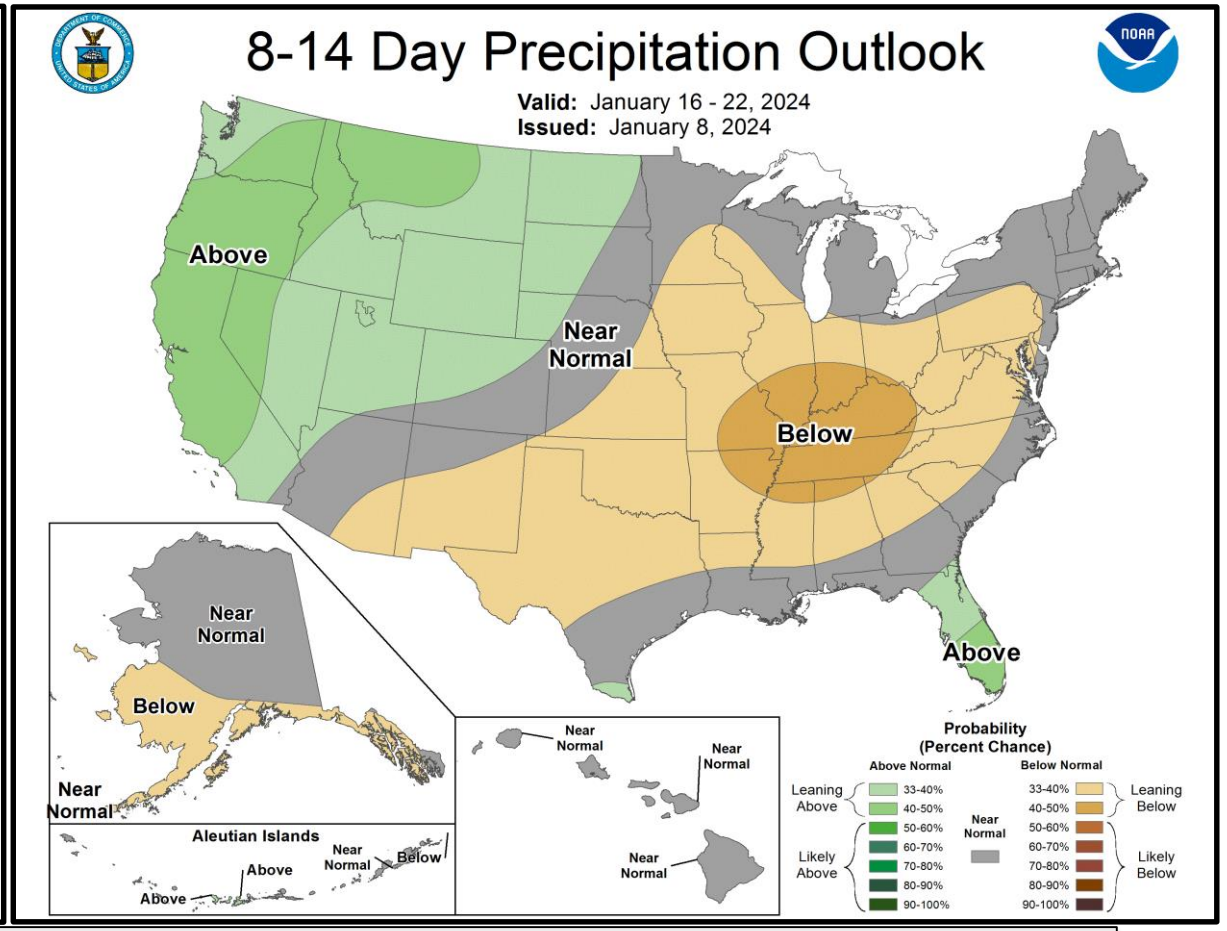
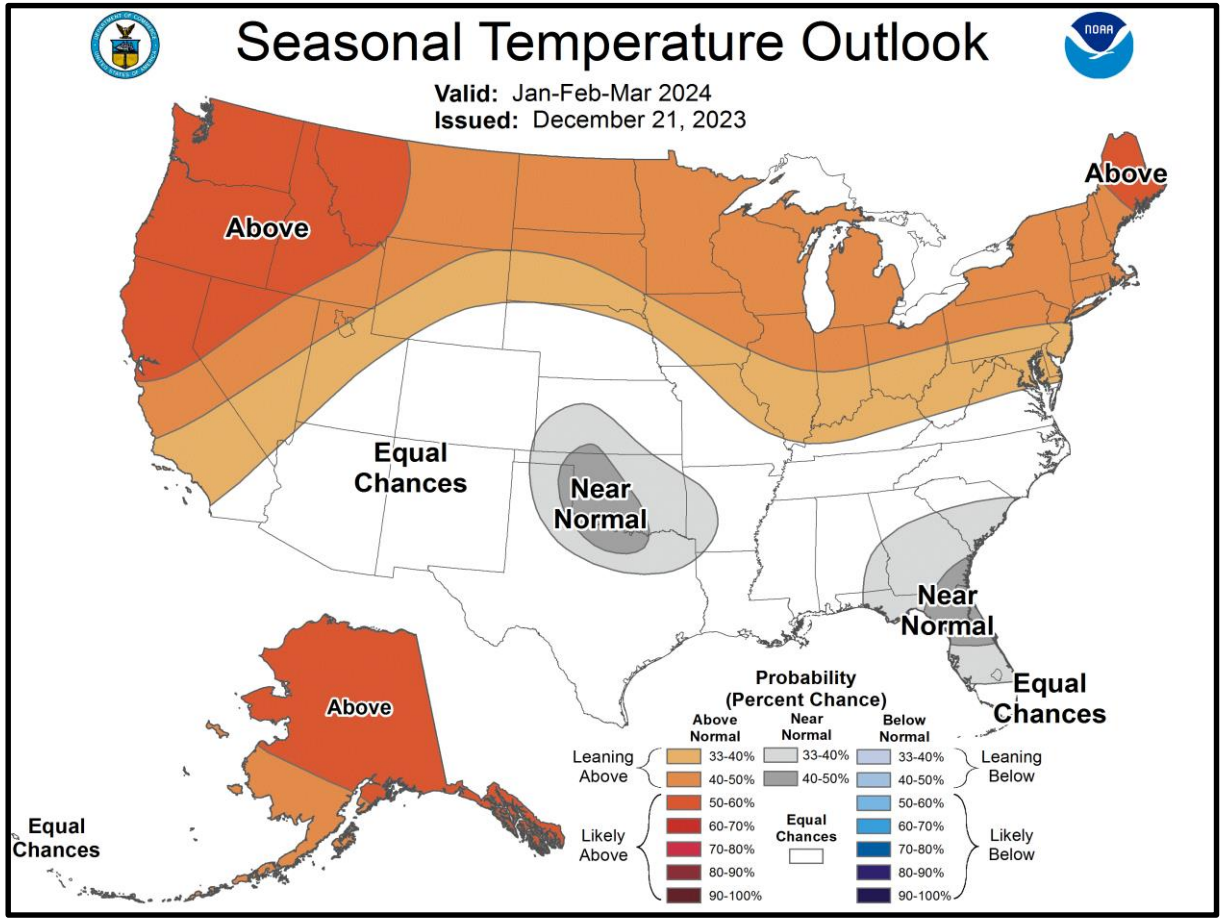


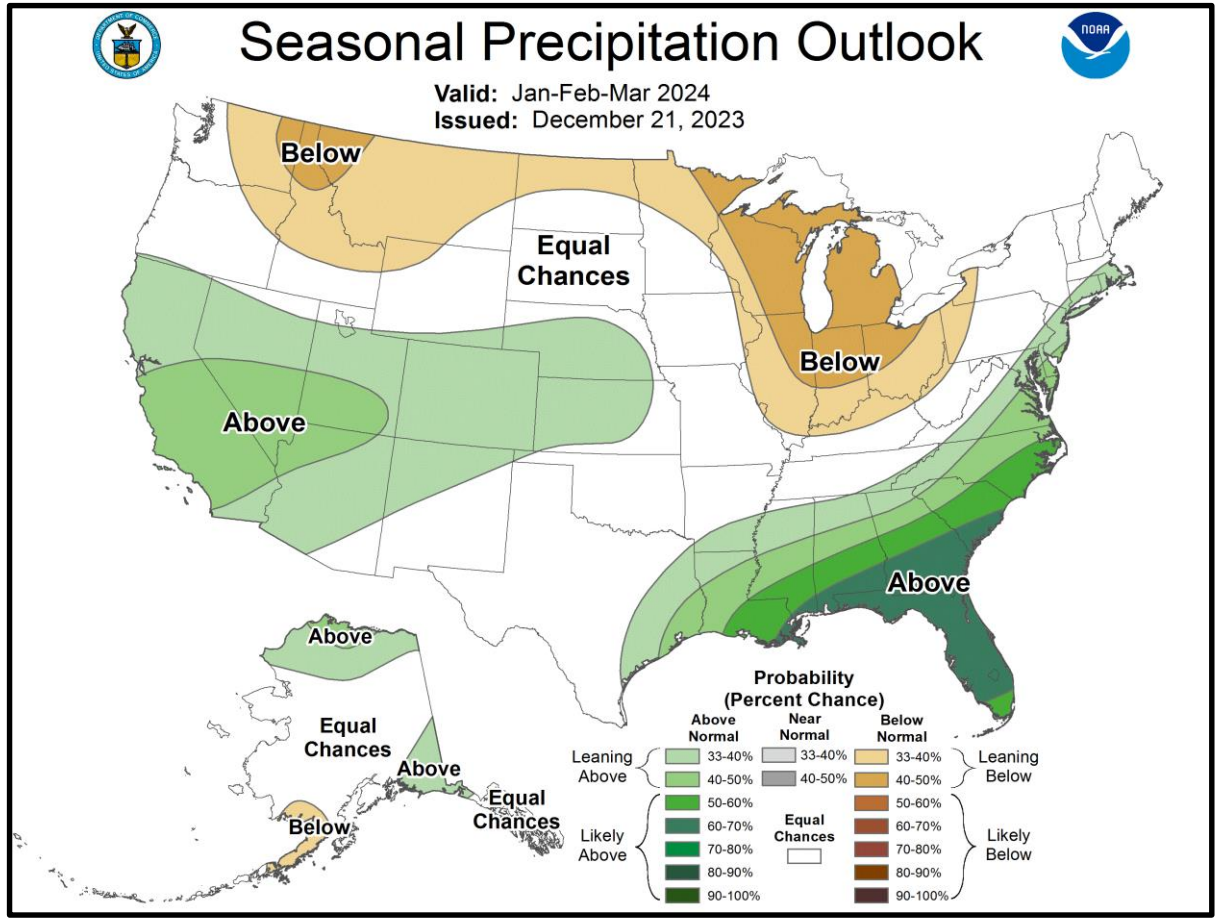


- Below normal temperatures favored.
- Below normal precipitation chances favored.

Three-Month Outlook: Jan-Feb-March

Wakefield, VA
WEATHER FORECAST OFFICE





- Near- to above normal temperatures favored through March.
- Near- to above normal precipitation chances favored through March.