Here is the *Virginia Water Central* News Grouper's **monthly water-status report on precipitation, stream flow, flooding, and drought,** as of the end of February 2025. The Virginia Water Resources Research Center thanks the agencies mentioned below for providing the data and maps used in this post. Icons for precipitation, stream flow, groundwater, and drought are by George Wills of Blacksburg, Va. (https://www.etsy.com/shop/BlacksburgArt). For previous monthly water status reports, please see this link: http://vawatercentralnewsgrouper.wordpress.com/?s=Water+Status.

Here are National Weather Service (NWS) *preliminary* (still needing verification, as of 3-4-25) precipitation totals for February 2025 at 12 Virginia or near-Virginia locations, along with the "normal" (three-decade average) for this month of the year at each location. Also shown are the precipitation totals at each location for the previous 12 months and the annual precipitation normals for each location. The values are in inches.

Location	February 2025 Observed	Monthly Normal	March 2024 – February 2025 Observed	Annual Normal based on 1991-2020
Blacksburg	5.71	2.83	38.61	42.64
Bluefield	4.85	2.90	42.70	41.24
Bristol	4.14	3.81	41.68	43.97
Charlottesville	3.45	2.35	32.84	41.61
Danville	3.90	2.73	47.33	43.73
Lynchburg	5.92	2.91	43.48	42.76
Norfolk	5.91	2.90	50.89	49.18
Richmond	5.43	2.61	46.79	45.50
Roanoke	6.00	2.89	41.88	42.82
Wallops Island	5.99	2.81	39.79	43.25
Washington-Dulles Airport	2.42	2.61	31.34	43.24
Washington-National Airport	2.84	2.62	35.07	41.82

The normal values used by the National Weather Service (NWS) in these provisional reports are based on the period from 1991 to 2020, and were released on May 4, 2021. For information on the normal values, see the "U.S. Climate Normals" page at https://www.ncei.noaa.gov/products/land-based-station/us-climate-normals.

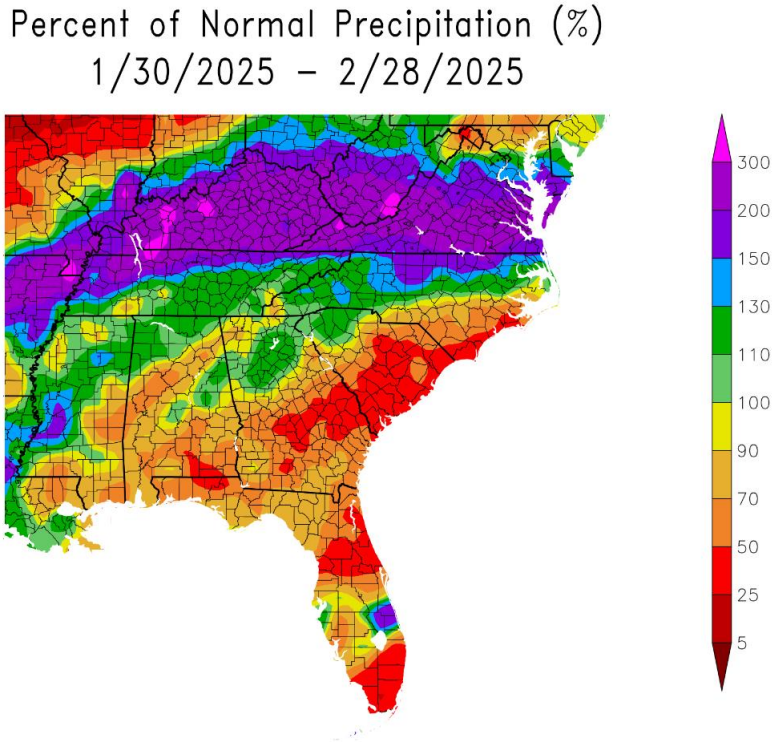
Location Notes

The Blacksburg location is the Blacksburg National Weather Service Office.
The Bluefield location is the Mercer County, W. Va., airport, near the Va.-W.Va. state line.
The Bristol location is the Tri-Cities Airport in Tenn., about 20 miles from Bristol, Va./Tenn.
The Charlottesville location is the Charlottesville-Albemarle Airport.
The Danville location is the Danville Regional Airport.
The Lynchburg location is the Lynchburg Regional Airport.
The Norfolk location is the Norfolk International Airport.
The Richmond location is the Richmond International Airport.
The Roanoke location is the Roanoke-Blacksburg Regional Airport.
The Wallops Island is in Accomack County; the location is the NASA Test Facility.
Washington-Dulles Airport is in Loudoun County, Va.
Washington-National Airport is in Arlington County, Va.

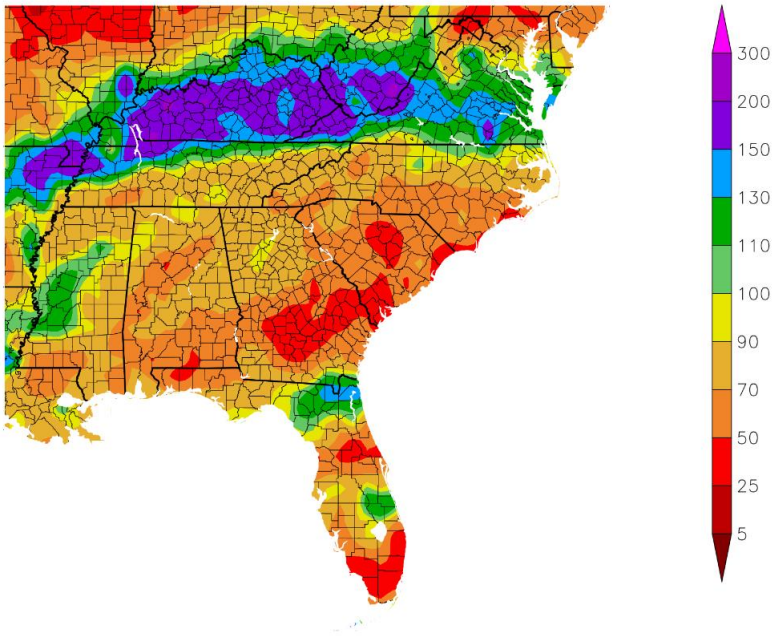
Precipitation Sources

Climate pages of the following National Weather Service Forecast Offices:
Blacksburg, Va., online at https://www.weather.gov/wrh/climate?wfo=rnk, for Blacksburg, Bluefield, Danville, Lynchburg, and Roanoke;
Morristown, Tenn., online at https://www.weather.gov/wrh/climate?wfo=mrx for Bristol;
Baltimore-Washington, online at https://www.weather.gov/wrh/climate?wfo=lwx, for Charlottesville, Reagan-National, and Dulles;
Wakefield, Va., online at https://www.weather.gov/wrh/climate?wfo=akq, for Norfolk, Richmond, and Wallops Island.

For **graphs** of precipitation, visit the High Plains Regional Climate Center at https://hprcc.unl.edu/maps.php?map=ACISClimateMaps), where you can find maps of total precipitation and percent of normal precipitation for the past 7 days or longer periods (up to five years) for all U.S. regions; or the NWS' Advanced Hydrologic Prediction Service at http://water.weather.gov/precip/ for a map of precipitation nationwide or by state, with capability to show county boundaries, and archives available for specific days, months, or years. Shown below are the preliminary maps from the High Plains Center of the percent-of-normal precipitation for the southeastern United States for the previous 30 days, 60 days, and 90 days, through February 28, 2025; and for Virginia, the precipitation and the departure from normal precipitation, both in inches, for the previous 30 days, also through February 28.



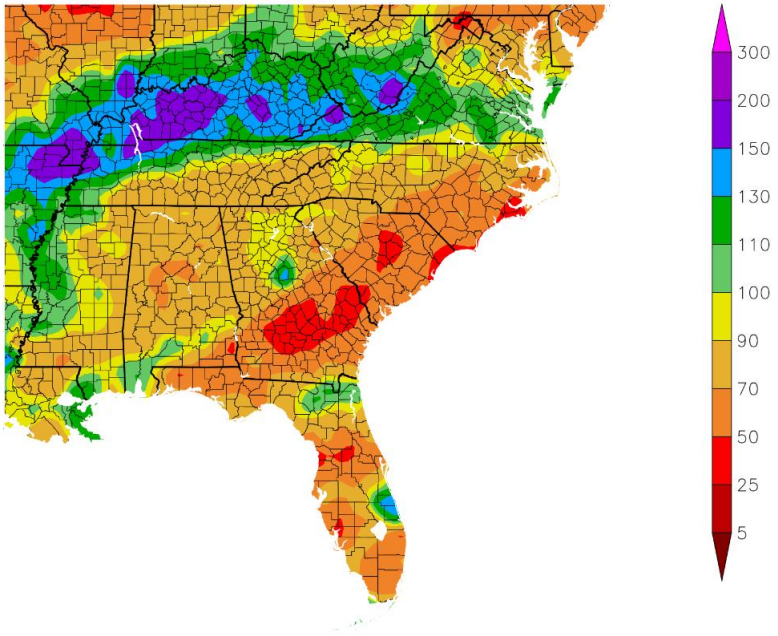
Percent of Normal Precipitation (%)
12/31/2024 – 2/28/2025



Generated 3/1/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

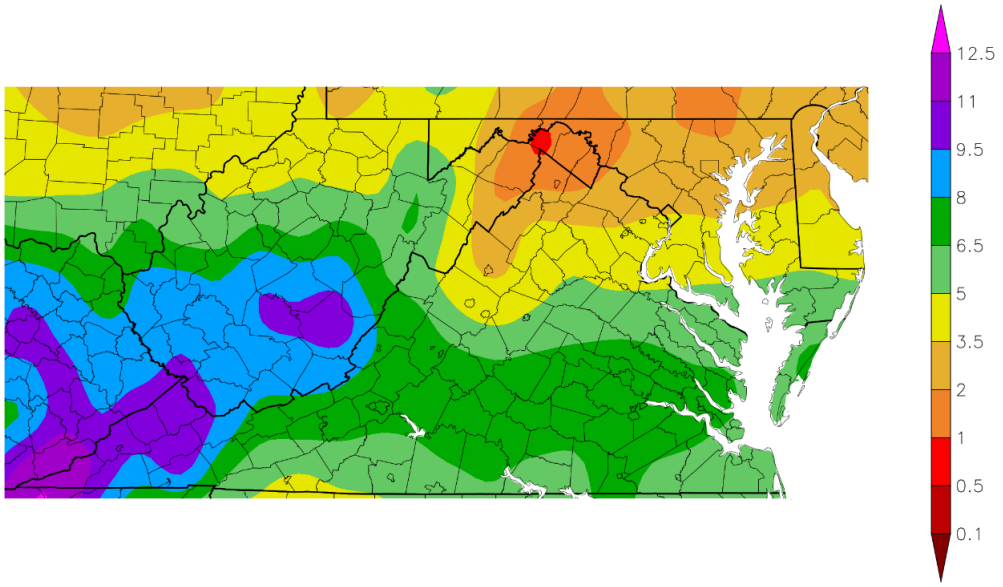
Percent of Normal Precipitation (%)
12/1/2024 – 2/28/2025



Generated 3/1/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

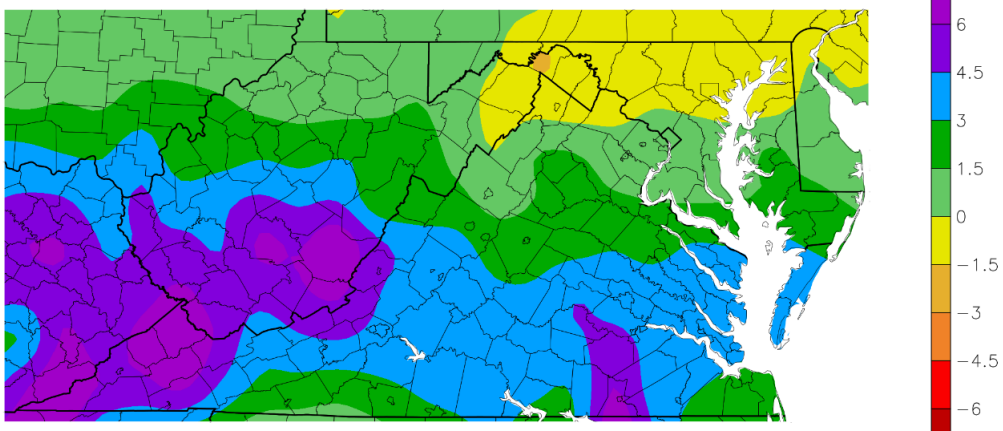
Precipitation (in)
1/30/2025 – 2/28/2025



Generated 3/1/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
1/30/2025 – 2/28/2025

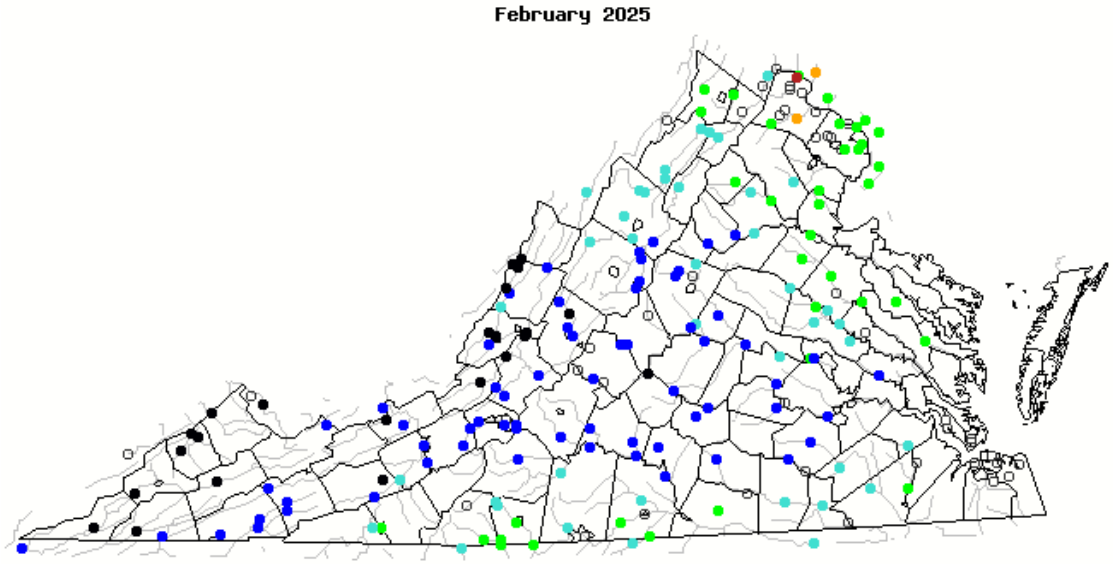


Generated 3/1/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

Stream flow

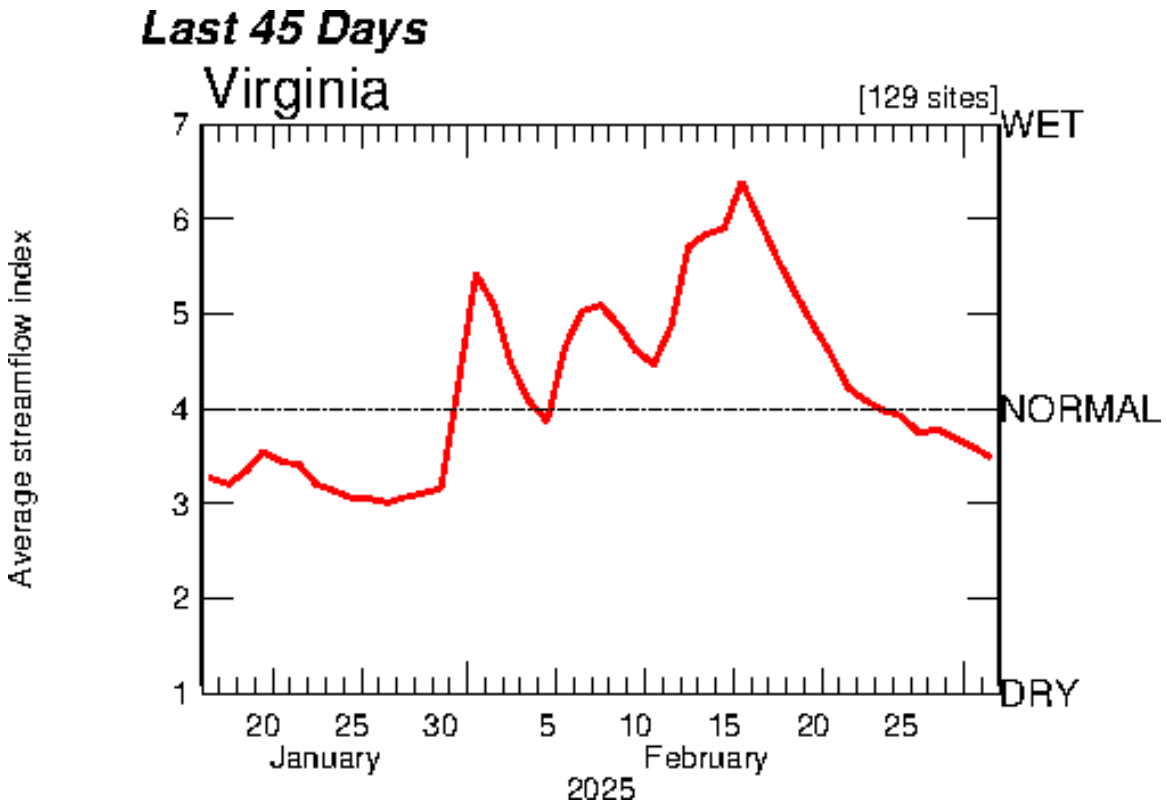
Shown below is a color-coded percentile map of ***monthly*** **average stream flow values** for February 2025 at stream gages in Virginia and just beyond the state border, **compared to the historical range for each gage**. The map is from the **U.S. Geological Survey (USGS) WaterWatch for Virginia**, accessed online at https://waterwatch.usgs.gov/index.php?m=mv01d&r=va&w=map. The chart below the map shows the color codes/percentile classes used by USGS to compare flows to historical records for the month.



USGS

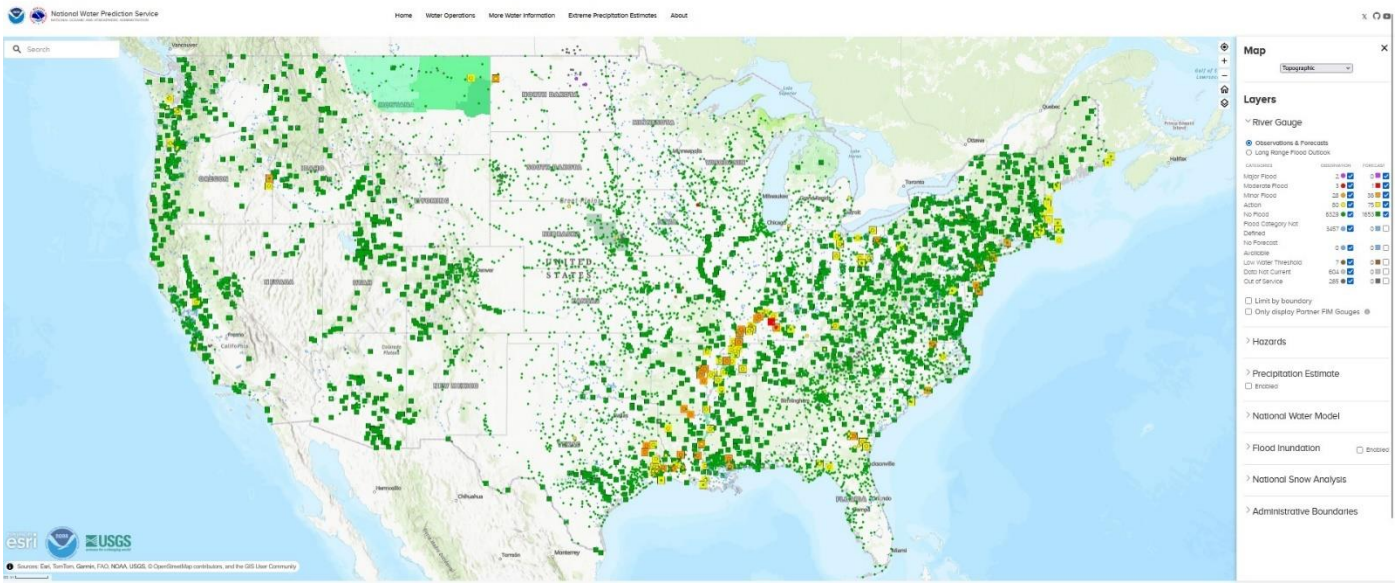
Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

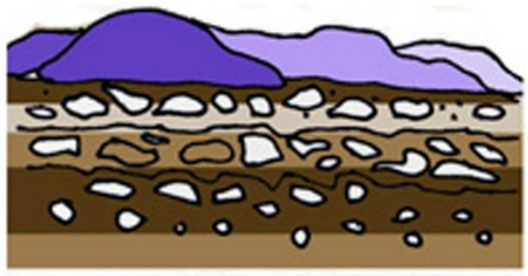
An overall look at Virginia streamflow conditions is provided in the USGS WaterWatch **summary plot of *daily* average** streamflow conditions, compared to historical records for any given date. Below is the summary plot for 129 Virginia sites during the 45-day period ending March 1, 2025, accessed on March 4, 2025, at https://waterwatch.usgs.gov/index.php?id=pa01d&sid=w__plot&r=va.



NATIONWIDE FLOODING OVERVIEW

Following is the **National Weather Service's Advanced Hydrologic Prediction Service's (AHPS) map of stream and river levels relative to flood stage** (color-coded) for the continental United States, as of 1:45 p.m. EST on February 28, 2025. The current map is available online at this link; at that site, one can use the search tool to select Virginia or any other state of interest.





Groundwater levels

Information on **current groundwater levels** in Virginia monitoring wells is available from the U.S. Geological Survey's National Water Information System online at this link, as of March 4, 2025.

Drought watch

DROUGHT IN VIRGINIA

The weekly **U.S. Drought Monitor report** from the University of Nebraska-Lincoln (http://droughtmonitor.unl.edu/) report of February 27, 2025, for conditions as of February 25, 2025, categorized about 28.0% of Virginia as abnormally dry or worse and about 7.0% in moderate drought.

Drought Monitor categories are as follows:
D0 = abnormally dry;
D1 = moderate drought;
D2 = severe drought;
D3 = extreme drought;
D4 = exceptional drought.

The Drought Monitor notes that it "focuses on broad-scale conditions [and] local conditions may vary."

For comparison, here are Virginia ratings from previous Drought Monitors for conditions as about one month, two months, three months, and one year ago:
1/28/25 – 95.6% abnormally dry or worse; 54.9% in moderate drought or worse; 9.4% in severe drought.
12/31/24 – 92.5% abnormally dry or worse; 29.8% in moderate drought or worse; 6.6% in severe drought.
11/26/24 – 99.7% abnormally dry or worse, 49.6% in moderate drought or worse, 10.1% in severe drought.
2/27/24 – 0.02% abnormally dry.

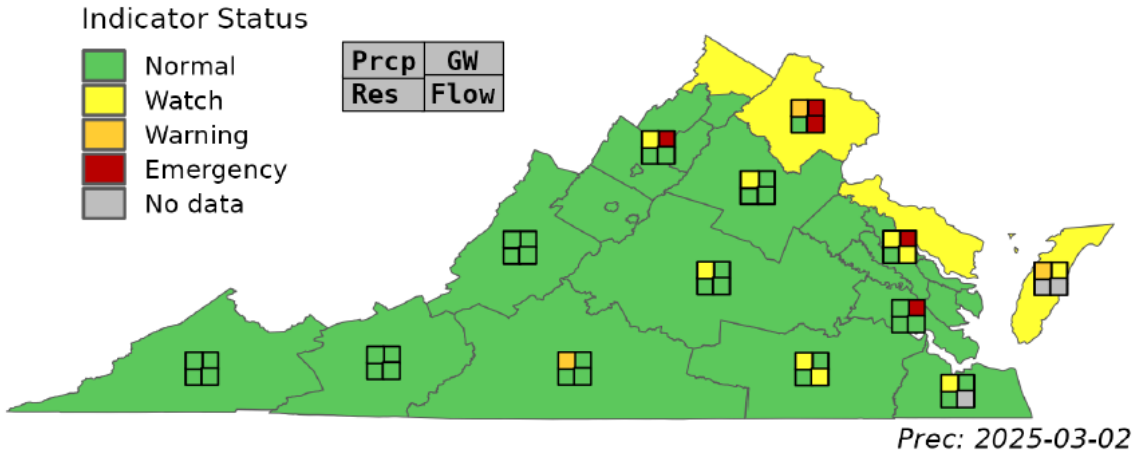
On February 18, 2025, the **Virginia Drought Monitoring Task Force (DMTF)**, a collaboration of state and federal agencies, issued its most recent report (as of 3.4-25). A link to that report, along with other current drought-status information, is available online at https://www.deq.virginia.gov/our-programs/water/water-quantity/drought. The DMTF's reports typically include information on weather, surface water, and groundwater from some or all of the following agencies: National Weather Service, U.S. Geological Survey (USGS), and the Virginia departments of Agriculture and Consumer Services, Health, and Environmental Quality.

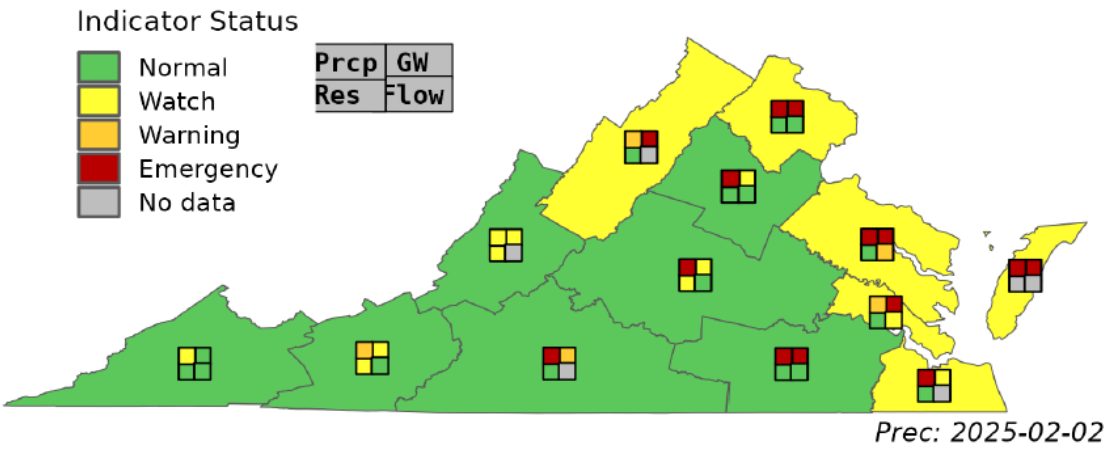
Following is an **excerpt from the summary of the February 18 report.**

"On Tuesday, February 18, the Virginia Drought Monitoring Task Force (DMTF) met to review drought indicators outlined in the Virginia Drought Assessment and Response Plan. Recent 14-day observed precipitation show totals of six to eight inches throughout central Virginia and down into the Big Sandy and New River regions, with decreasing amounts radiating to the north and south. The northernmost reaches of the Northern Virginia and Shenandoah regions, as well as the southernmost reaches of the Southeast Virginia and Chowan regions only received two to three inches of precipitation during this 14-day period. Statewide, these precipitation totals represent above 200% of normal amounts for virtually the entire Commonwealth, and areas receiving the highest precipitation totals had up to 600% of normal precipitation. Soil moisture has improved significantly during the last two weeks with a majority of the Commonwealth seeing a 12-16 percentile increase in the zero-to-two-meter range. The northernmost areas in the Shenandoah and Northern Virginia regions, the Northern Neck, and areas of Southeast Virginia and the Chowan regions are still below the 30th percentile for soil moisture. Current streamflows throughout nearly the entire Commonwealth were above normal due to the recent precipitation. The seven and 28-day below-normal streamflow has been virtually eliminated, with exceptions in the northernmost areas of the Commonwealth. All drought monitoring groundwater wells are now showing recharge signals, though some wells in the Coastal Plain are still below normal levels."

[END EXCERPT]

The Virginia DEQ produces a **daily map rating drought-status indicators**, also online at https://www.deq.virginia.gov/our-programs/water/water-quantity/drought. Shown below is the map for March 2, 2025, followed by the map from about a month earlier. The status-indicator abbreviations on that map are as follows: GW = groundwater levels, Prcp = precipitation deficits, Res - reservoir storage, and Flow = stream flow conditions. For each region of Virginia, the indicators are color coded for "normal," "watch," "warning," or "emergency" conditions.





DROUGHT ELSEWHERE

The February 27, 2025, U.S. Drought Monitor, for conditions as of February 25, 2025, categorized about 57.2% of the United States (including all or parts of 48 states) as being abnormally dry or worse. (The highest percentage in the abnormally or worse categories—that is, in all categories—reported by the Drought Monitor since it began in 2000 was 72.38% of the country for conditions as of July 17, 2012.) The Drought Monitor categorized about 14.6% of the country (including parts of 28 states) as being in severe drought or worse (categories D2, D3, and D4). (The highest percentage in the severe-or-worse categories reported by the Drought Monitor since it began in 2000 was 38.49% of the country in the report for conditions as of August 7, 2012.)

The nationwide percentages for abnormally dry or worse (categories D0-D4) and severe or worse (categories D2-D4) for conditions in the previous three months and one year ago were as follows:
1/28/25 – 53.5% abnormally dry or worse; 14.0% in severe drought or worse;
12/31/24 – 56.8% abnormally dry or worse; 12.1% in severe drought or worse;
11/26/24 – 61.9% abnormally dry or worse; 13.7% in severe drought or worse;
2/27/24 – 39.4% abnormally dry or worse, 6.5% in severe drought or worse.

The following states had over 50% land area categorized by the Drought Monitor as being in severe-or-worse drought, as of February 25:
Delaware = 54%;
Wyoming = 51%.

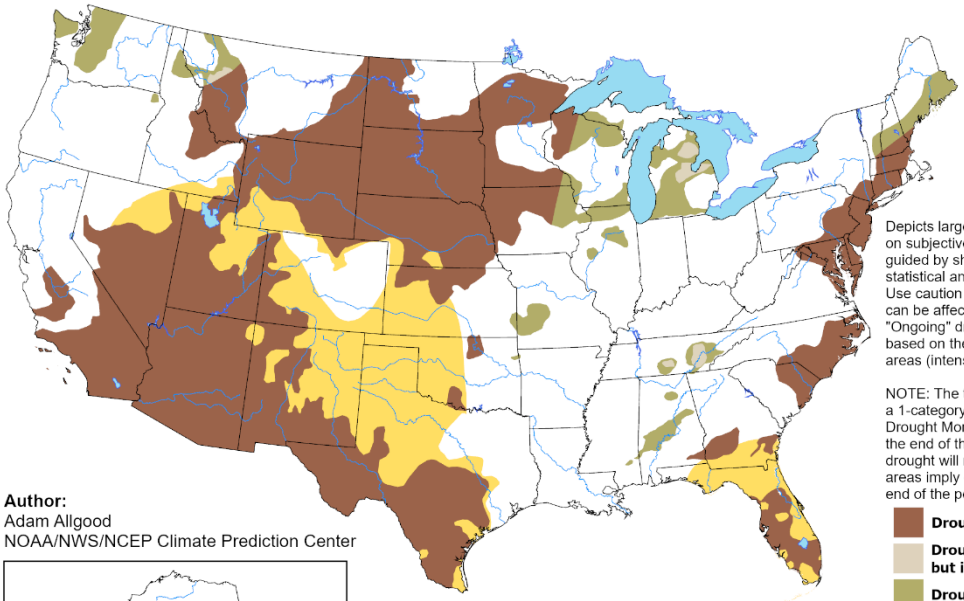
3-MONTH DROUGHT OUTLOOK

For a look ahead, the National Weather Service/Climate Prediction Center's "U.S. Seasonal Drought Outlook" is available at http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.php. Shown below is the outlook map available on February 28, 2025.

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for February 20 - May 31, 2025
Released February 20, 2025



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Drought persists

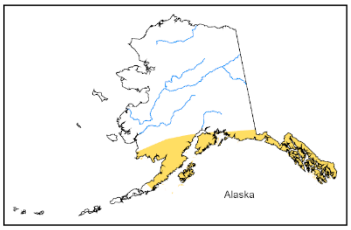
Drought remains, but improves

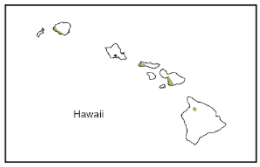
Drought removal likely

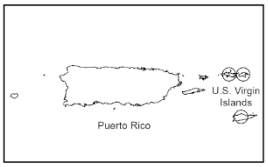
Drought development likely

No drought

Author:
Adam Allgood
NOAA/NWS/NCEP Climate Prediction Center







https://go.usa.gov/3eZ73