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Maryland Climate Bulletin
February 2025

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DEPARTMENT OF ATMOSPHERIC & OCEANIC SCIENCE
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Summary

Statewide averages indicate that February 2025 was warmer and wetter than normal (i.e., 1991-2020 averages). Regionally, monthly mean temperatures were between 28 and 41°F, maximum temperatures were in the 37−52°F range, and minimum temperatures were between 20 and 31°F. Monthly total precipitation was in the 1.8−5.7 inches range.

Maryland Regional Features (Figures 1-6, C1, and D1)

- The mean temperature was warmer than normal in most of the state, particularly over Calvert, Charles, Saint Mary's, and southern Prince George's counties (1.5 to 1.8°F), and Garrett County (0.9 to 1.2°F). Colder-than-normal conditions were observed in portions of the Eastern Shore and Piedmont, especially over Harford and Kent counties (0.9 to 1.2°F lower).

- The maximum temperature was warmer than normal over approximately half of the state, notably over Garrett, Charles, Calvert, Saint Mary's, Talbot, and Dorchester counties (1.5 to 1.8°F). It was colder than normal in northern counties and northern Eastern Shore, particularly in Kent, Harford, Baltimore, and Queen Anne's counties (1.5 to 1.8°F lower).

- The minimum temperature was warmer than normal over the majority of the state, especially in Montgomery, Prince George's, and Charles counties (1.8 to 2.4°F), and portions of Frederick and Carroll counties (1.8°F). Colder-than-normal conditions were observed in portions of the Eastern Shore and northeastern Piedmont, particularly in Wicomico (0.9 to 1.2°F lower) and Harford and Cecil counties (0.9°F lower).

- Precipitation was below normal in approximately half of the state, over the Piedmont and northern coastal plains, notably over Harford, Cecil, Kent, and Queen Anne's counties (0.9 to 1.2 inches deficit). It was wetter than normal over western counties and the southern coastal plains, particularly in Somerset and Worcester counties (1.8 to 2.4 inches deficit). Harford and Kent counties received between 60 and 70% of their climatological precipitation for the month, while the rest of the Piedmont and northern Eastern Shore counties received between 70 and 90%. On the other hand, Wicomico, Somerset, and Worcester counties received between 40 and 80% more precipitation than their climatological amount for the month, while Garrett, Calvert, Charles, and Saint Mary's got between 20 and 30% more.

- Drought conditions still impact almost the entire state at the end of February 2025. However, conditions seem to be slightly improving. There was a reduction of around 5% in the extent of the drought. Conditions improved over Garrett County, which was nearly back to normal by the end of February, and southern Maryland on both sides of the Bay, which transitioned from Severe to Moderate Drought. Severe drought conditions prevailed in the counties around the northern part of the Bay, including Caroline and Prince Georges counties. A moderate drought continued to impact the western Piedmont counties, extending to Washington and eastern Allegany counties. Abnormally dry conditions were present in the western half of Allegany County and southeastern Garrett County. Streams and rivers had below-normal streamflow in the severe drought areas

along the northern half of the Piedmont and Eastern Shore. Streams and rivers in Garrett County had much above-normal streamflow. Normal streamflow was observed in several streams of the central Piedmont and western Maryland.

Maryland Climate Divisions (Figures 7-8, B1, and B2)

- Except for Climate Division 5, Northeastern Shore, the other climate divisions were warmer than normal. And half of them, Climate Divisions 4 to 7, were drier than normal. The Northeastern Shore, Climate Division 5, had the coldest anomaly (0.7°F below normal), and Climate Division 3, Lower Southern, had the warmest anomaly (1.7°F above normal). The Northeastern Shore, Climate Division 5, had the driest anomaly (0.80 inches below normal), and Climate Division 1, Southeastern Shore, had the wettest anomaly (1.58 inches above normal).

- The statewide temperature was warmer than normal (0.54°F) again after colder-than-normal January and December 2024. Statewide precipitation was above normal (0.13 in) after below-normal January and December 2024. The February warm and wet anomalies were very small when compared to those in January. Climate Divisions 4 to 7 have experienced drier-than-normal conditions over the past three months.

Extreme daily minimum temperatures and precipitation (Figures 9-10)

- The statewide minimum daily temperatures indicated that the number of freezing days below 32, 28, and 24°F (the 28th, 19th, and 12th percentiles in 1951−2000) were larger than normal. In contrast, the number of freezing spells (i.e., two or more consecutive days with freezing days) was fewer than normal by the end of February; this was also the case in January. There were 6 more days with minimum temperatures colder than 32°F (51 vs. 45) and 2 fewer spells (3 vs. 5) than normal; 4 more days with minimum temperatures colder than 28°F (38 vs. 34) and 1 fewer spell (5 vs. 6) than normal; and 7 more days with minimum temperatures colder than 24°F (30 vs. 23) and 1 fewer spell (4 vs. 5) than normal. However, the mean duration of these spells was longer than normal.

- The statewide daily total precipitation showed that there were no days with extreme precipitation (at least 0.64 inches; the 95th percentile in 1951−2000) when normally there are 3 by the end of February. The number of dry spells (two or more consecutive days with daily precipitation of no more than 0.04 inches) was fewer than normal by 1 spell (7 vs. 8) by the end of the month. However, the mean duration of the dry spells was 1 day longer than normal (6 vs. 5). The longest dry spell in February started on February 18 and lasted 1 day longer than normal (11 vs. 10).

Historical Context (Figure 11, Tables A1 and A2)

- Statewide mean, maximum, and minimum temperatures in February 2025 (36.7, 45.9, 27.5°F) were above their long-term means (1895-2024) but far from their historical record highs of 43.7, 54.8, and 32.6°F in 2017, respectively. Statewide precipitation (2.89 inches) in February was very close to the long-term mean and far from the record low of 0.51 inches in 2009.

- Statewide mean, maximum, and minimum temperatures showed that February 2025 was the thirty-ninth, forty-second, and thirty-sixth warmest February since 1895, respectively, for the mean, maximum, and minimum temperatures.

- Statewide precipitation indicated that February 2025 was the sixty-first wettest February since 1895. Among the counties, February was the twenty-fifth wettest for Garrett County, the twenty-second for Worcester County, and the twenty-first for Somerset County. In contrast, February was the twenty-fifth driest month for Harford County, the twenty-fourth for Cecil County, and the twenty-second for Kent County.

Century-Plus Trends, 1895-2025 (Figures 12, 13)

- Statewide mean temperature and heating degree days in February showed significant trends: a warming trend (4.4°F/century) and a decreasing trend (−127.3°FDD/century), respectively. On the other hand, statewide precipitation exhibited a non-significant drying trend (−0.29 in/century).

- Regionally, February mean temperatures indicated significant warming trends throughout the state. Notably, in the Piedmont, between portions of northern Montgomery, Howard, and Anne Arundel counties and the southern portions of Frederick, Carroll, and Baltimore counties, and over the northern parts of Harford and Cecil counties (4.8–5.0°F/century).

- Regionally, February precipitation had drying trends over most of the state. However, significant drying trends were found only over Cecil County and portions of Harford, Kent, and Queen Anne's counties, as well as portions of Somerset, Wicomico, and Dorchester counties (around −0.6 in/century). Non-significant wetting trends were found over Garrett County (around 0.4 in/century).

Contents

1. Introduction

The Maryland Climate Bulletin is issued by the Maryland State Climatologist Office (MDSCO), which resides in the Department of Atmospheric and Oceanic Science at the University of Maryland, College Park. It documents the surface climate conditions observed across the state in a calendar month and is issued in the second week of the following month.

Maryland's geography is challenging, with the Allegheny and Blue Ridge mountains to the west, the Piedmont Plateau in the center, the Chesapeake Bay, and the Atlantic Coastal Plain to the east. The range of physiographic features and the state's eastern placement within the expansive North American continent contribute to a comparatively wide range of climatic conditions.

The bulletin seeks to document and characterize monthly surface climate conditions in the state, placing them in the context of regional and continental climate variability and change to help Marylanders interpret and understand recent climate conditions.

The monthly surface climate conditions for February 2025 are presented via maps of key variables, such as average surface air temperature, maximum surface air temperature, minimum surface air temperature, total precipitation, and their anomalies (i.e., departures from normal); they are complemented by drought conditions for the state, as given by the U.S. Drought Monitor, and streamflow anomalies as given by the U.S. Geological Survey Water Watch in Section 3. Statewide and climate division averages for the month are compared against each other via scatter plots in Section 4. Extreme daily minimum temperatures and precipitation are presented from the analysis of daily statewide averaged temperatures and precipitation in Section 5. Monthly statewide averages are placed in the context of the historical record via box and whisker plots in Section 6. Century-plus trends in statewide air temperature, heating degree days, precipitation, and state maps of air temperature and precipitation are presented in Section 7. Ancillary statewide, climate division, and county-level information is provided via tables and plots in Appendices A-B; climatology and variability maps are in Appendices C-D, including the percent of normal precipitation and normalized anomalies for the month.

2. Data & Methods

Surface air temperatures, total precipitation, and degree-days data in this report are from the following sources:

- NOAA Monthly U.S. Climate *Gridded* Dataset at 5-km horizontal resolution (NClimGrid – Vose et al., 2014). It is available in a preliminary status at https://www.ncei.noaa.gov/data/nclimgrid-monthly/access/
  Data was downloaded on 3/13/2025.

- NOAA Monthly U.S. Climate *Divisional* Dataset (NClimDiv – Vose et al., 2014). It is available in a preliminary status (v1.0.0-20250306) at:

https://www.ncei.noaa.gov/pub/data/cirs/climdiv/
Data was downloaded on 3/11/2025.

- NOAA area averages of daily temperatures and precipitation dataset (nClimGrid−Daily −Durre et al., 2022). It is available in a preliminary status, v1.0.0, at:
https://www.ncei.noaa.gov/products/land-based-station/nclimgrid-daily
Data labeled as "scaled" was downloaded on 3/8/2025.

Drought conditions are from the U.S. Drought Monitor website:
https://droughtmonitor.unl.edu/Maps/MapArchive.aspx

Streamflow conditions are from the U.S. Geological Survey Water Watch website:
https://waterwatch.usgs.gov/index.php

Some definitions:

About climate and climatology. Weather and climate are closely related, but they are not the same. Weather represents the state of the atmosphere (temperature, precipitation, etc.) at any given time. On the other hand, climate refers to the time average of the weather elements when the average is over long periods. If the average period is long enough, we can start to characterize the climate of a particular region.

It is customary to follow the World Meteorological Organization (WMO) recommendation and use 30 years for the average. The 30-year averaged weather data is traditionally known as Climate Normal (Kunkel and Court, 1990) and is updated every ten years (WMO, 2017). Establishing a climate normal or climatology is important as it allows one to compare a specific day, month, season, or even another normal period with the current normal. Such comparisons characterize anomalous weather and climate conditions, climate variability and change, and help define extreme weather and climate events (Arguez et al., 2012). The current climate normal, or just the climatology, is defined for 1991–2020.

About the anomalies: Anomalies for a given month (e.g., February 2025) are the departures of the monthly value from the corresponding month's 30-year average (i.e., from the average of 30 Februaries) during 1991-2020. When the observed monthly value exceeds its climatological value, it is referred to as above normal (e.g., warmer than normal or wetter than normal) or a positive anomaly. In contrast, when this value is smaller than its climatological value, it is referred to as below normal (e.g., colder than normal or drier than normal) or negative anomaly.

About variability. The monthly standard deviation of a climate variable measures its dispersion relative to its monthly mean and assesses its year-to-year, or interannual, variability. Anomalies are sometimes compared against that variability to identify extremes in the climate record. When the anomalies are divided by the standard deviation, they are named standardized anomalies.

About freezing days. Freezing temperatures affect people's health, comfort, and livelihood by impacting crops, livestock, infrastructure, water and energy resources, etc. Here, freezing temperatures are tracked by the count of days when daily minimum temperatures are equal to or below 32°F, 28°F, and 24°F (originally used to categorize agricultural impacts USDA, 2024) and their consecutive occurrence. When these conditions persist for two or more days, they define freezing day spells. These threshold values correspond to the 28th, 19th, and 12th percentiles of statewide daily minimum temperature for the period 1951−2000.

About degree days. Degree days represent the difference between the daily mean temperature (calculated by averaging the high and low temperatures) and a predefined base temperature. Since energy demand is cumulative, degree-day totals are typically calculated on a daily, monthly, seasonal, and annual basis.

- *Heating and cooling degree days.* These are used to obtain a general idea of the amount of energy required to warm or cool buildings. The base temperature used for this purpose is 65°F, considered tolerable for human comfort (CPC, 2023).

About extreme precipitation. A day with extreme precipitation is defined as a day with daily total precipitation equal to or greater than a given value. In this case, when the statewide averaged daily total precipitation is analyzed, the threshold value is 0.64 inches, which represents its 95th percentile for 1951-2000.

About the dry day spells. A dry day is defined as a day with precipitation of less than 0.04 inches. These conditions are referred to as dry spells if they persist for two or more consecutive days. The number of dry spells and their duration are particularly important during the vegetation period (Tschurr et al., 2020).

About NOAA's Climate Divisions. The term "climate division" refers to one of the eight divisions in the state that represent climatically homogeneous regions, as determined by NOAA: https://www.ncei.noaa.gov/access/monitoring/dyk/us-climate-divisions

The eight climate divisions in Maryland are:

- Climate Division 1: Southeastern Shore. It includes the counties of Somerset, Wicomico, and Worcester.
- Climate Division 2: Central Eastern Shore. It includes the counties of Caroline, Dorchester, and Talbot.
- Climate Division 3: Lower Southern. It includes the counties of Calvert, Charles, and St. Mary's.
- Climate Division 4: Upper Southern. It includes the counties of Anne Arundel and Prince George's.

- Climate Division 5: Northeastern Shore. It includes the counties of Kent and Queen Anne's.
- Climate Division 6: North Central. It includes the counties of Baltimore, Carroll, Cecil, Frederick, Harford, Howard, Montgomery, and the city of Baltimore.
- Climate Division 7: Appalachian Mountains. It includes the counties of Allegany and Washington.
- Climate Division 8: Allegheny Plateau. It includes Garrett County.

Note that these Climate Divisions do not correspond with the *Physiographic Provinces* in the state, as the former follow county lines. Climate Division 8 follows the *Appalachian Plateau Province*, Climate Division 7 follows the *Ridge and Valley Province*; however, Climate Division 6 includes the *Blue Ridge and the Piedmont Plateau provinces*, Climate Divisions 3, 4, and a portion of 6 include the *Upper Coastal Plain Province*, and Climate Divisions 1, 2, 5, and a portion of 6 include the *Lower Coastal Plain (or Atlantic Continental Shelf) Province*.

3. February 2025 Maps

A. Mean Temperatures

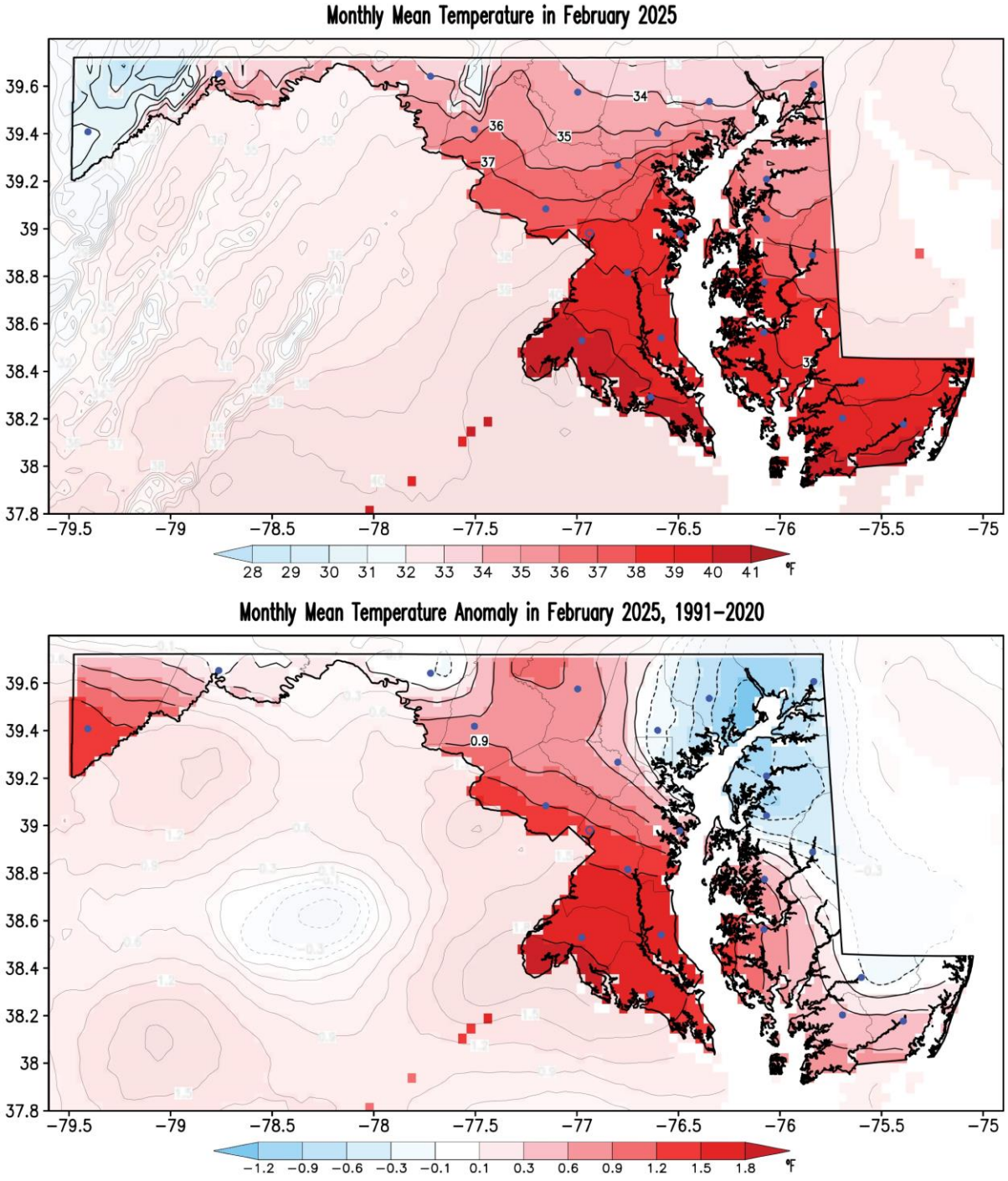

Figure 1. Monthly mean surface air temperature (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for February 2025. Temperatures are in °F following the color bar. Blue/red shading in the temperature map shows temperatures below/above 32°F. Blue/red shading in the anomaly map marks colder/warmer than normal conditions. Note shading outside the state has been washed out to facilitate focusing on Maryland. Filled blue circles mark the county seats.

B. Maximum Temperatures

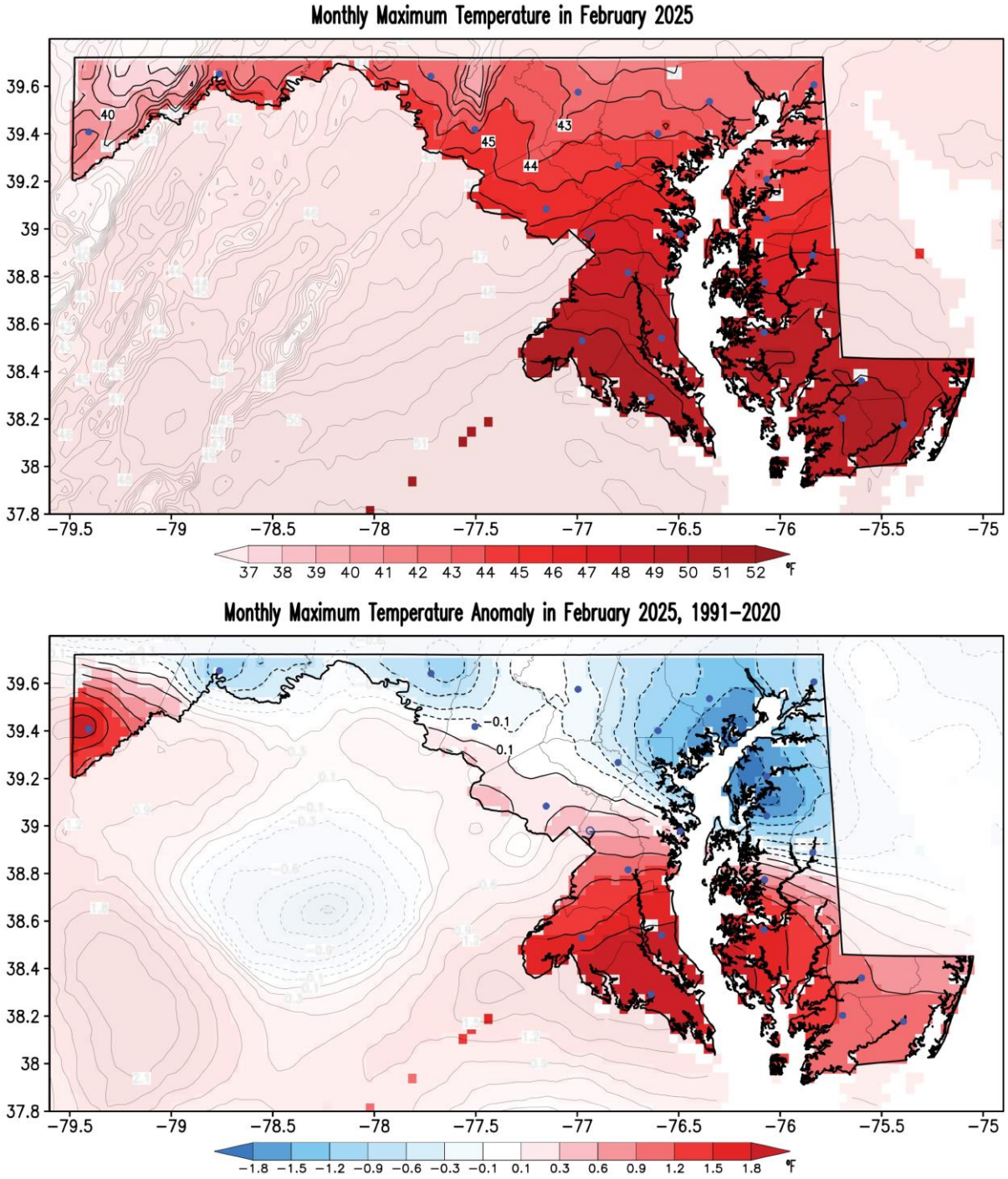

Figure 2. Monthly maximum surface air temperature (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for February 2025. Temperatures are in °F following the color bar. Blue/red shading in the anomaly map marks colder/warmer than normal conditions. Note shading outside the state has been washed out to facilitate focusing on Maryland. Filled blue circles mark the county seats.

C. Minimum Temperatures

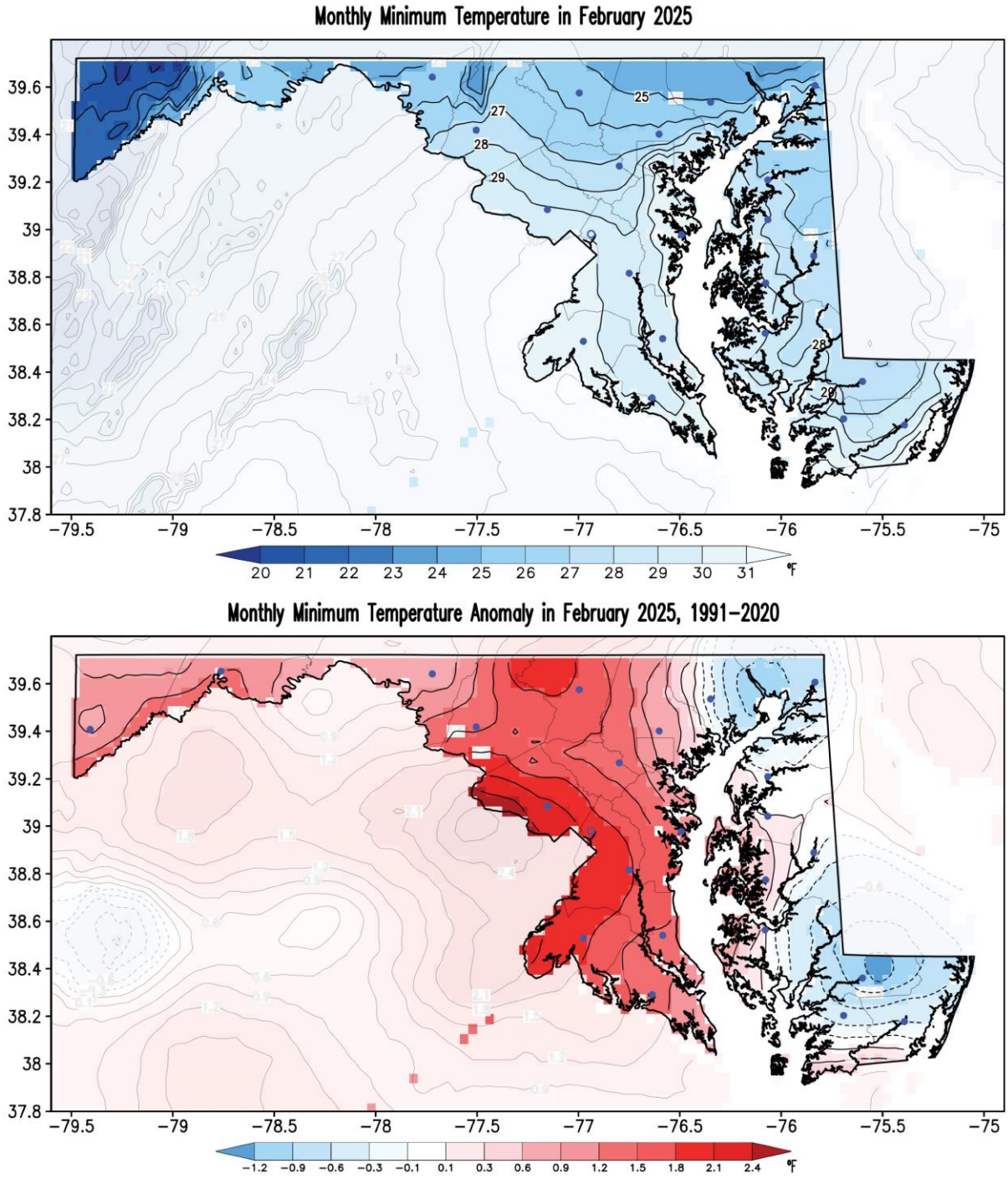

Figure 3. Monthly minimum surface air temperature (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for February 2025. Temperatures are in °F following the color bar. Blue/red shading in the anomaly map marks colder/warmer than normal conditions. Note shading outside the state has been washed out to facilitate focusing on Maryland. Filled blue circles mark the county seats.

D. Precipitation

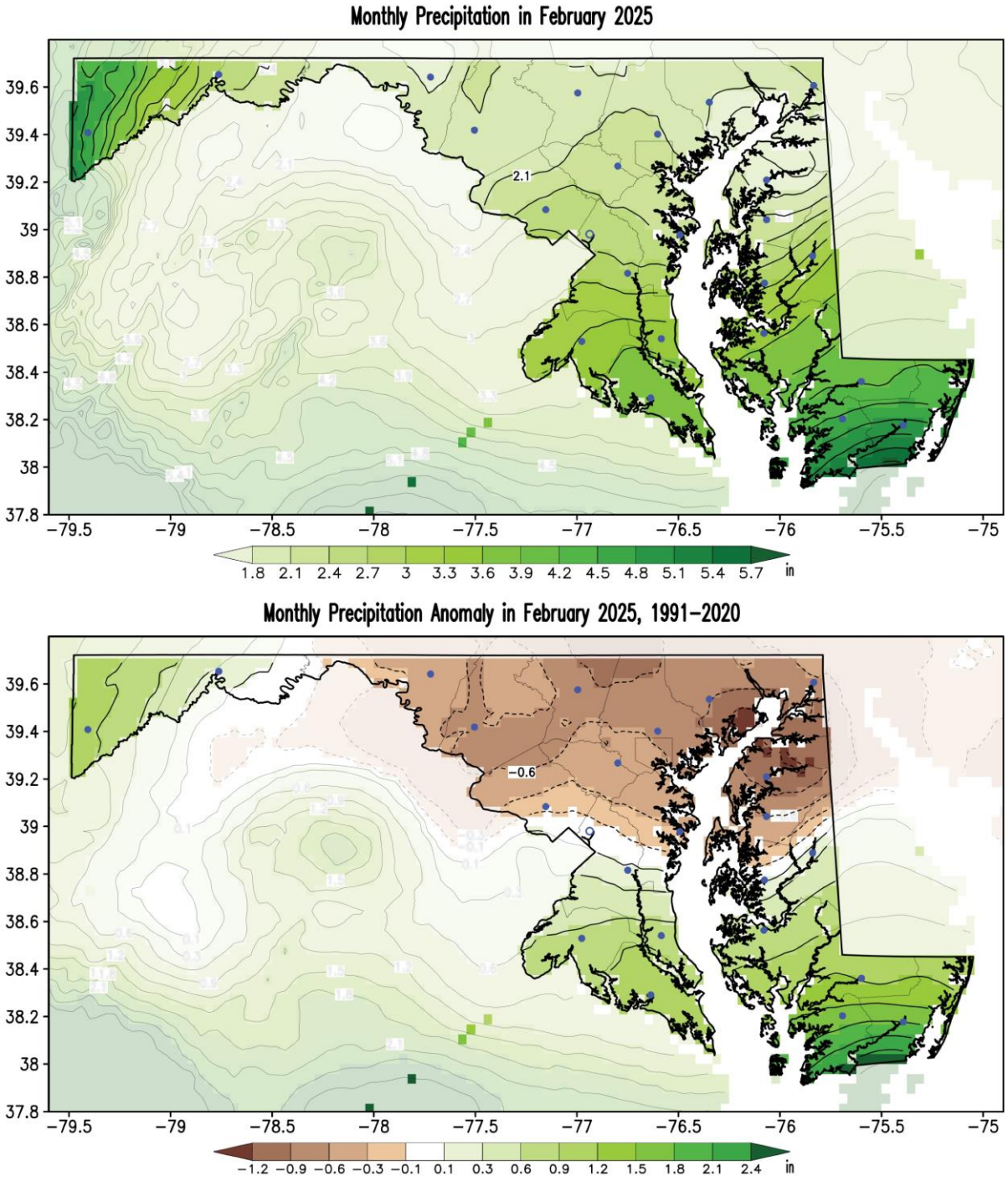

Figure 4. Monthly total precipitation (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for February 2025. Precipitation is in inches following the color bar. Brown/green shading in the anomaly map marks drier/wetter than normal conditions. Note shading outside the state has been washed out to facilitate focusing on Maryland. Filled blue circles mark the county seats.

E. Drought

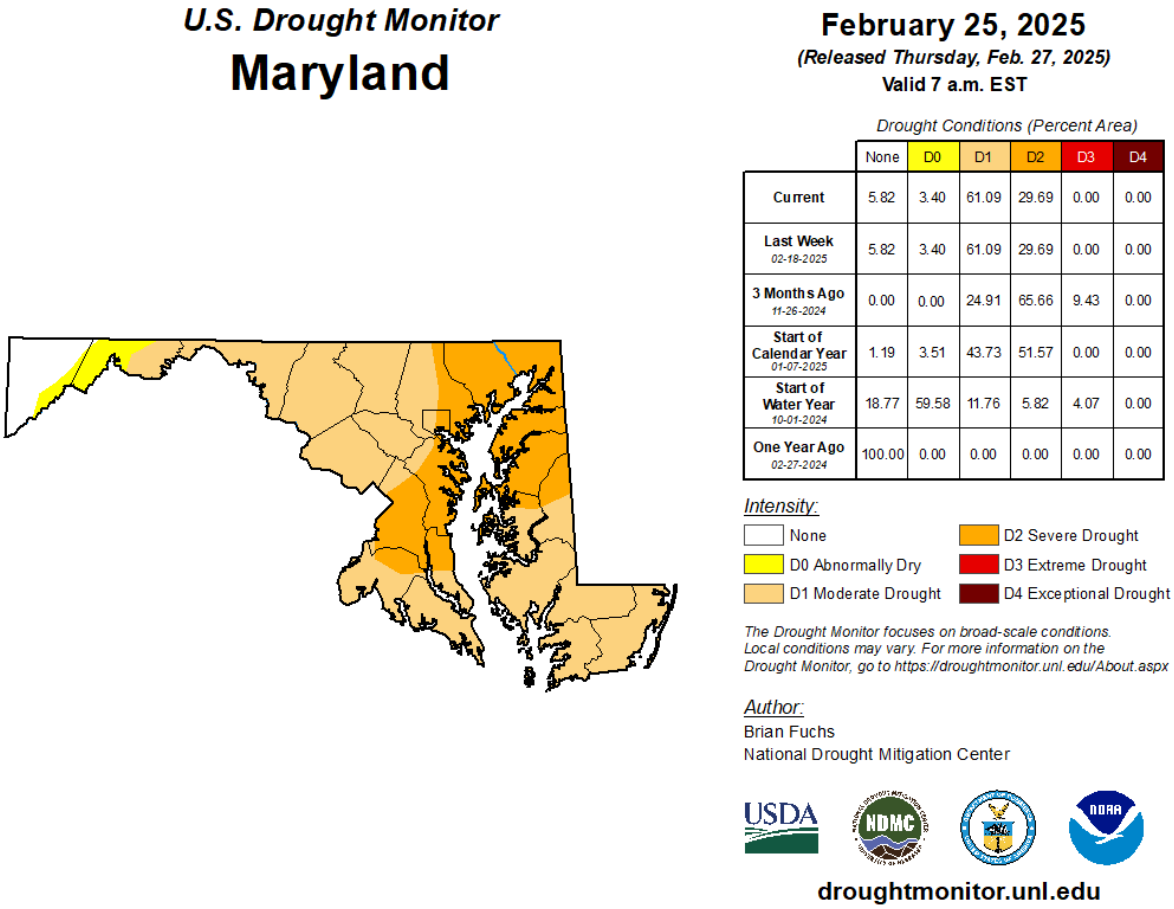

Figure 5. Drought conditions as reported by the U.S. Drought Monitor on February 25, 2025. Around 94% of the state was still under some drought category, 5% less than at the end of January. Conditions improved over Garrett County, which was practically under normal conditions by the end of February, and southern Maryland on both sides of the Bay, which transitioned from Severe to Moderate Drought. Yellow shading indicates abnormally dry regions, light orange shading shows regions under a moderate drought, and darker orange shading marks regions under severe drought according to the drought intensity key. Numbers in the table indicate the percentage of the state covered under the particular drought conditions at the time (in the left column). Areas shown in yellow (Abnormally Dry) indicate land that is going into or coming out of drought. Light orange areas (Moderate Drought) highlight land that may experience low water supply and damage to crops and pastures. Orange areas (Severe Drought) show land with water shortages and an increased likelihood of crop and pasture losses. Current conditions can be monitored from the U. S. Drought Monitor website.

F. Streamflow

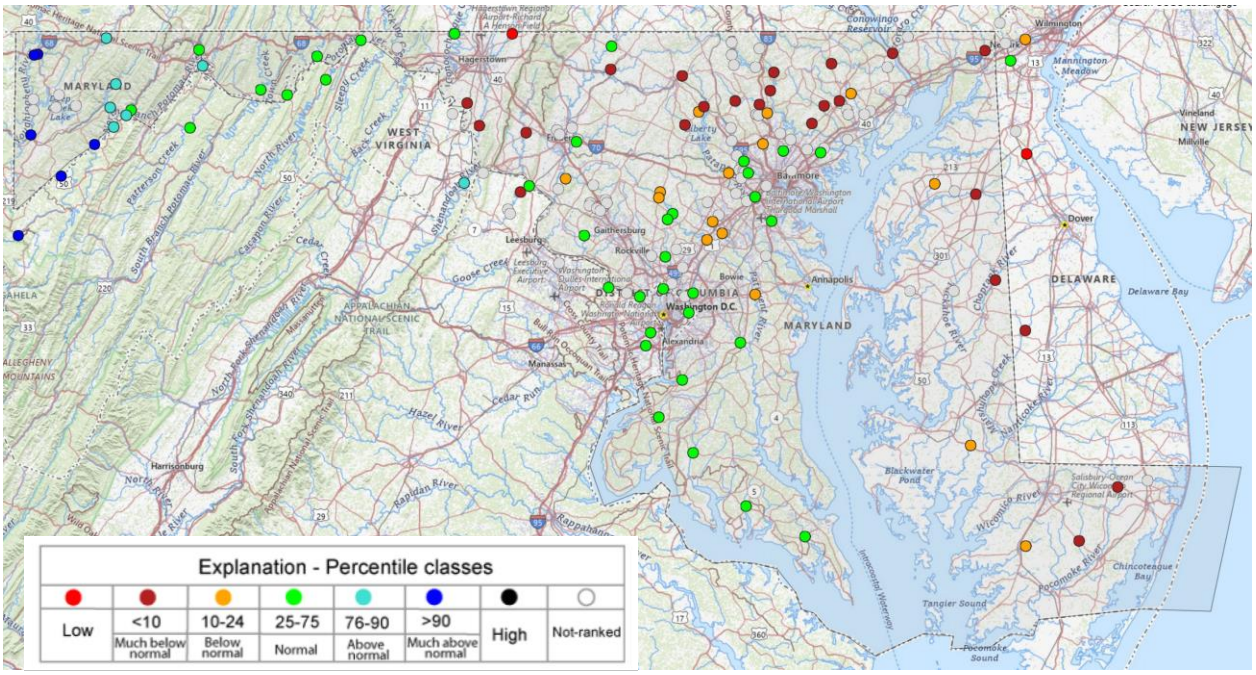

Figure 6. Monthly averaged streamflow class anomalies as reported by the U.S. Geological Survey (USGS) Water Watch for February 2025. Orange to red-filled circles denote below-normal streamflow conditions, cyan to black-filled circles denote above-normal streamflow conditions, and green-filled circles represent normal streamflow conditions. Streams and rivers had below-normal streamflow in the severe drought areas along the northern half of the Piedmont and Eastern Shore. Streams and rivers in Garrett County had much above-normal streamflow. Current conditions can be monitored from the U. S. Geological Survey website.

4. February 2025 and DJF 2024/2025 Climate Divisions Averages

A. February 2025 Scatter Plots

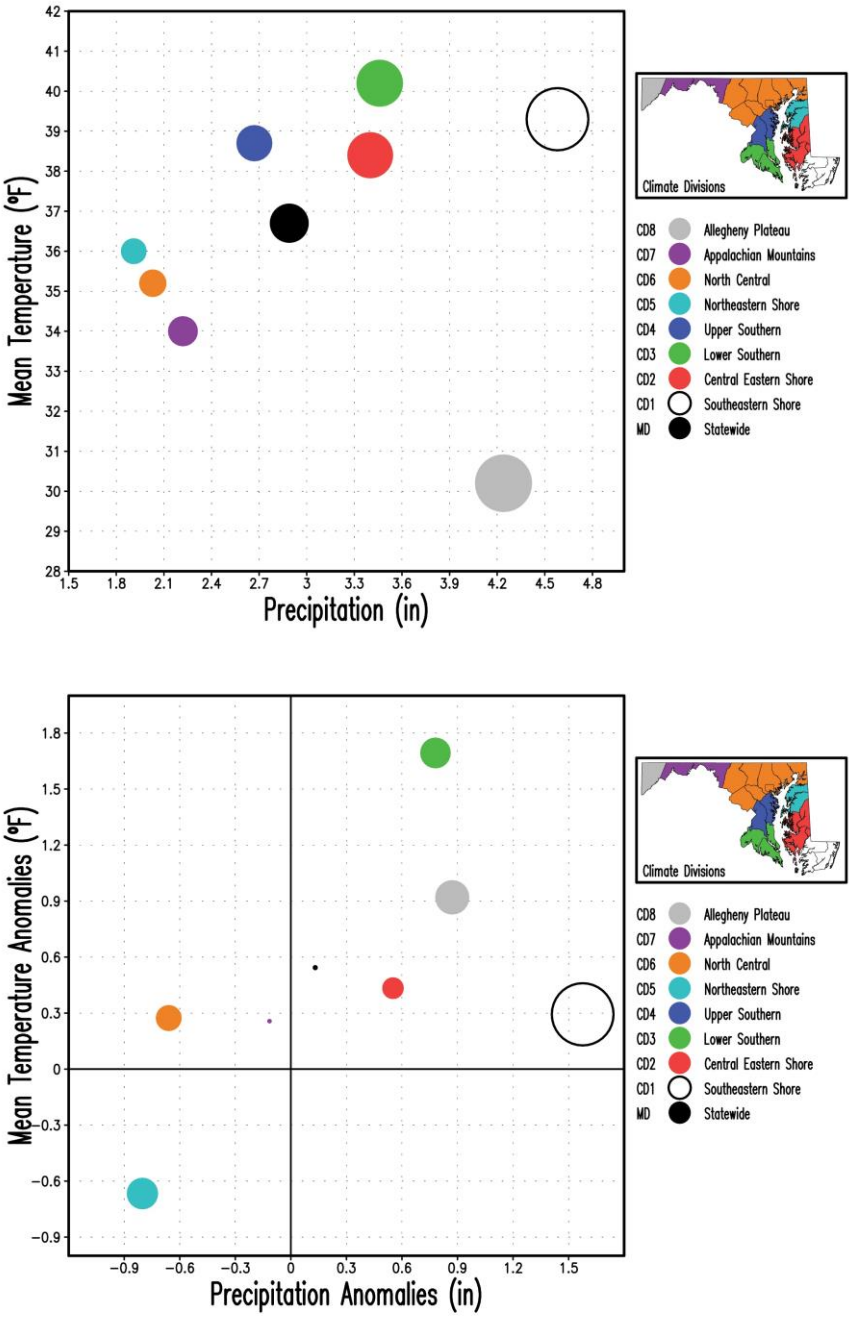

Figure 7. Scatter plots of Maryland (statewide) and Climate Divisions (CD#) monthly mean surface air temperature vs. total precipitation for February 2025. The upper panel shows the mean temperature and total precipitation, and the bottom panel displays their anomalies with respect to the 1991-2020 climatology. Temperatures are in °F and precipitation is in inches. The size of the circles is proportional to the total precipitation scaled down by the maximum precipitation (4.58 inches in CD1, top panel) and by the maximum precipitation anomaly (1.58 inches in CD1, bottom panel) among the nine regions. Note that the color of the filled circles corresponds to the color in the Climate Divisions according to the inset map.

B. December 2024 – February 2025 Scatter Plots

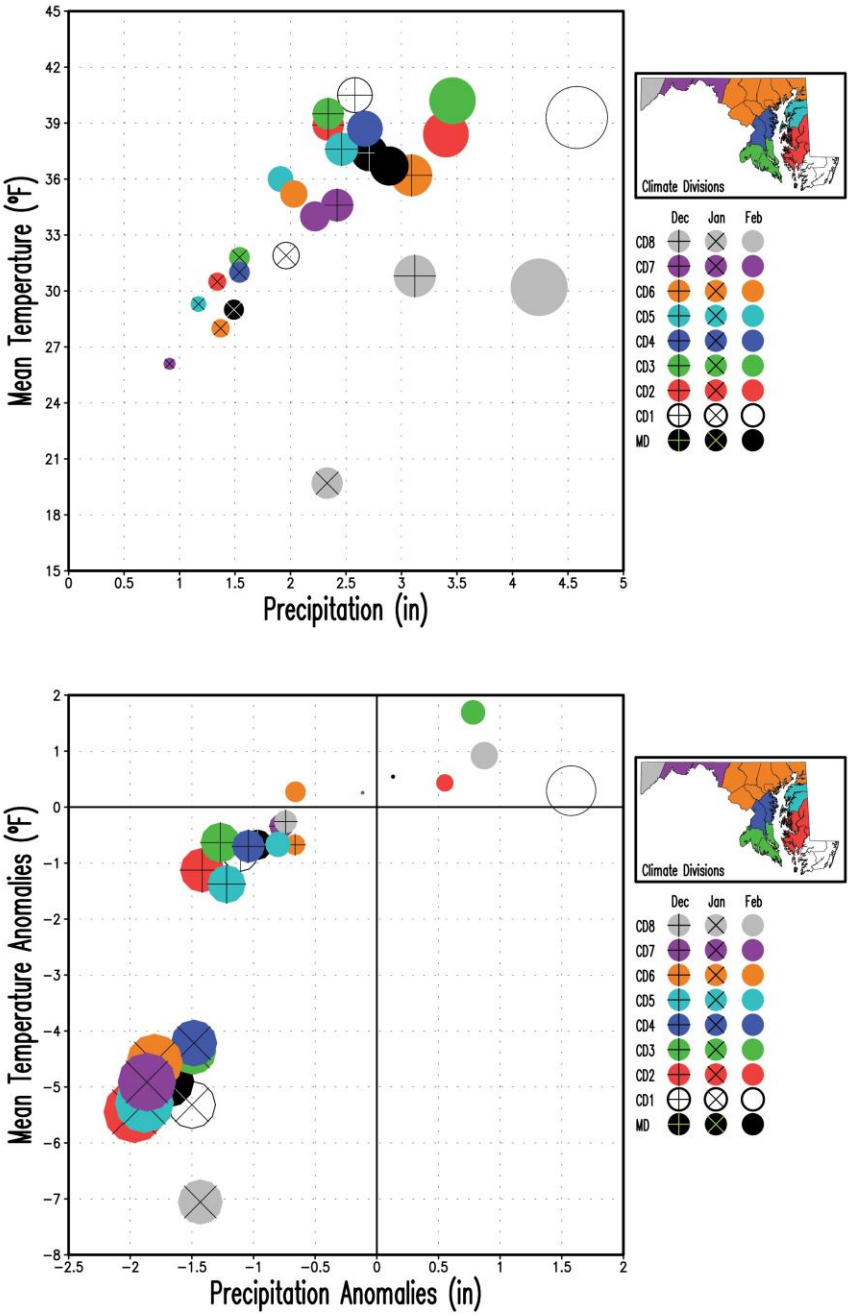

Figure 8. Scatter plots of Maryland (statewide) and Climate Divisions (CD#) monthly mean surface air temperature vs. total precipitation for December 2024 and January and February 2025. The upper panel shows the mean temperature and total precipitation, and the bottom panel displays their anomalies with respect to the 1991-2020 climatology. Temperatures are in °F, and precipitation is in inches. The size of the circles is proportional to the total precipitation scaled down by the maximum precipitation (5.58 inches in CD1 in February, top panel) and by the maximum precipitation anomaly (|−1.97| inches in CD2 in January, bottom panel) among the nine regions and three months. February is displayed with filled circles only, while January and December are displayed with superposed multiplication and addition signs, respectively.

5. Extremes

A. Freezing Days

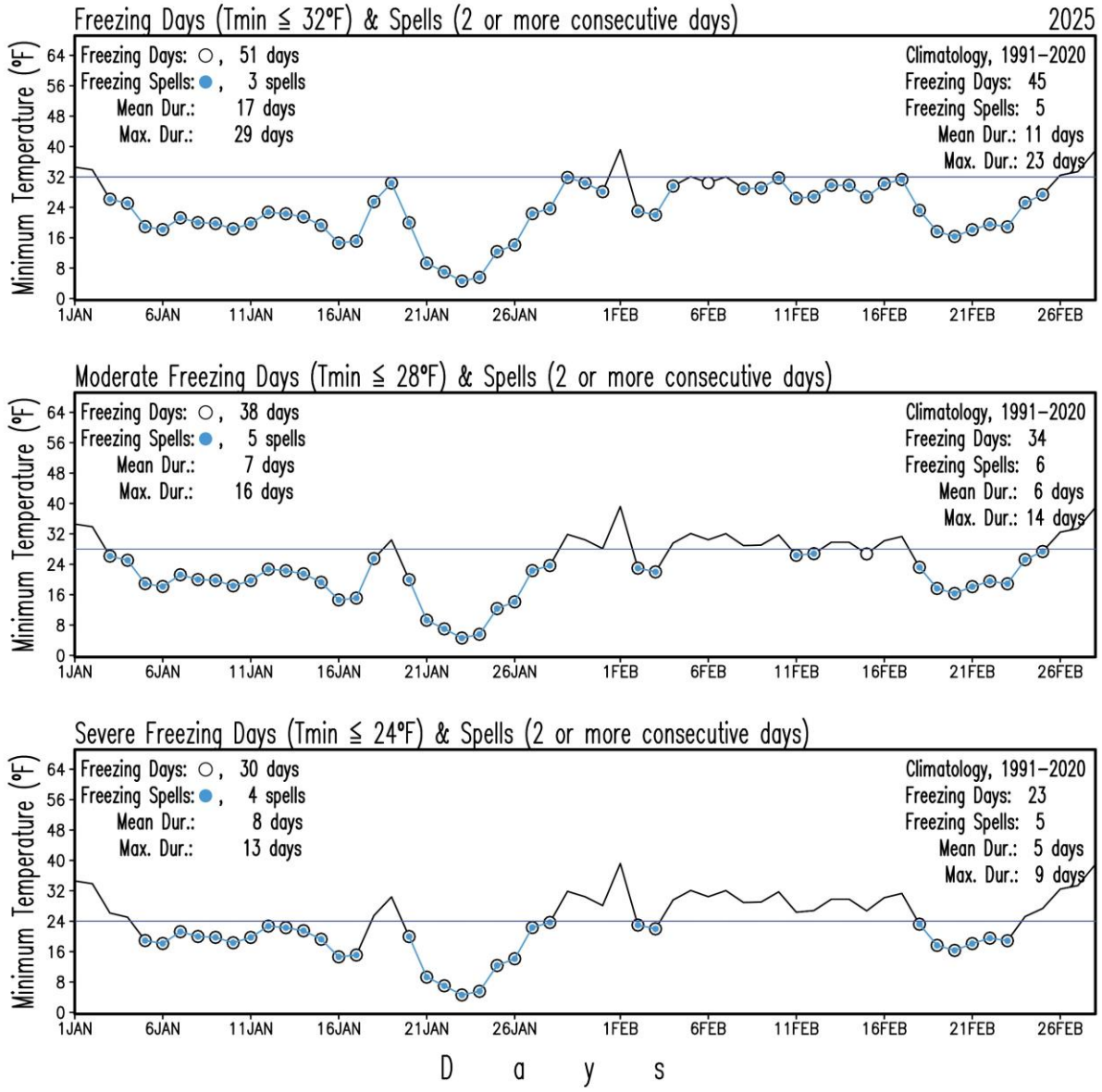

Figure 9. Maryland (statewide) number of freezing days, and their consecutive occurrence for the period January 1 – February 28, 2025. The panels show freezing days in open circles and spells of freezing days in blue-filled circles from statewide daily minimum temperatures. The upper panel displays freezing days and spells when statewide daily minimum temperatures are equal to or below 32°F. The middle panel shows freezing days and spells when statewide daily minimum temperatures are equal to or lower than 28°F. The lower panel shows freezing days and spells when statewide daily minimum temperatures are equal to or below 24°F. The blue line in each panel marks the threshold temperatures of 32°F, 28°F, and 24°F for each case. Figures at the county and climate division levels as well as summary tables can be found on the MDSCO website.

B. Extreme Precipitation and Dry Spells

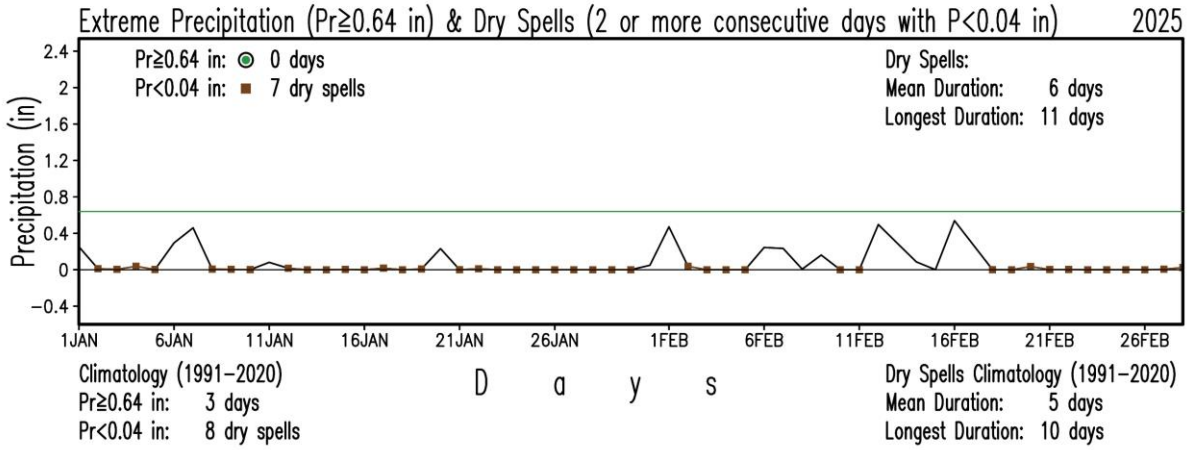

Figure 10. Maryland (statewide) number of days with extreme precipitation and dry day spells for the period January 1 – February 28, 2025. Extreme precipitation days (precipitation equal to or larger than 0.64 in) are identified by green-filled circles, but none in this month. Dry spells (consecutive days with daily total precipitation less than or equal to 0.04 in) are shown by brown-filled squares. Both extremes are identified from the statewide area-averaged total daily precipitation. Figures at the county and climate division levels, as well as summary tables, can be found on the MDSCO website. The displayed peaks in precipitation highlight the winter storms that impacted the state, although not all of them produced snow or widespread snow through the state. Snow totals by event can be seen on the Recent Event Snow Maps page of the Baltimore/Washington Weather Forecast Office.

6. February 2025 Statewide Averages in the Historical Record

A. Box and Whisker Plots

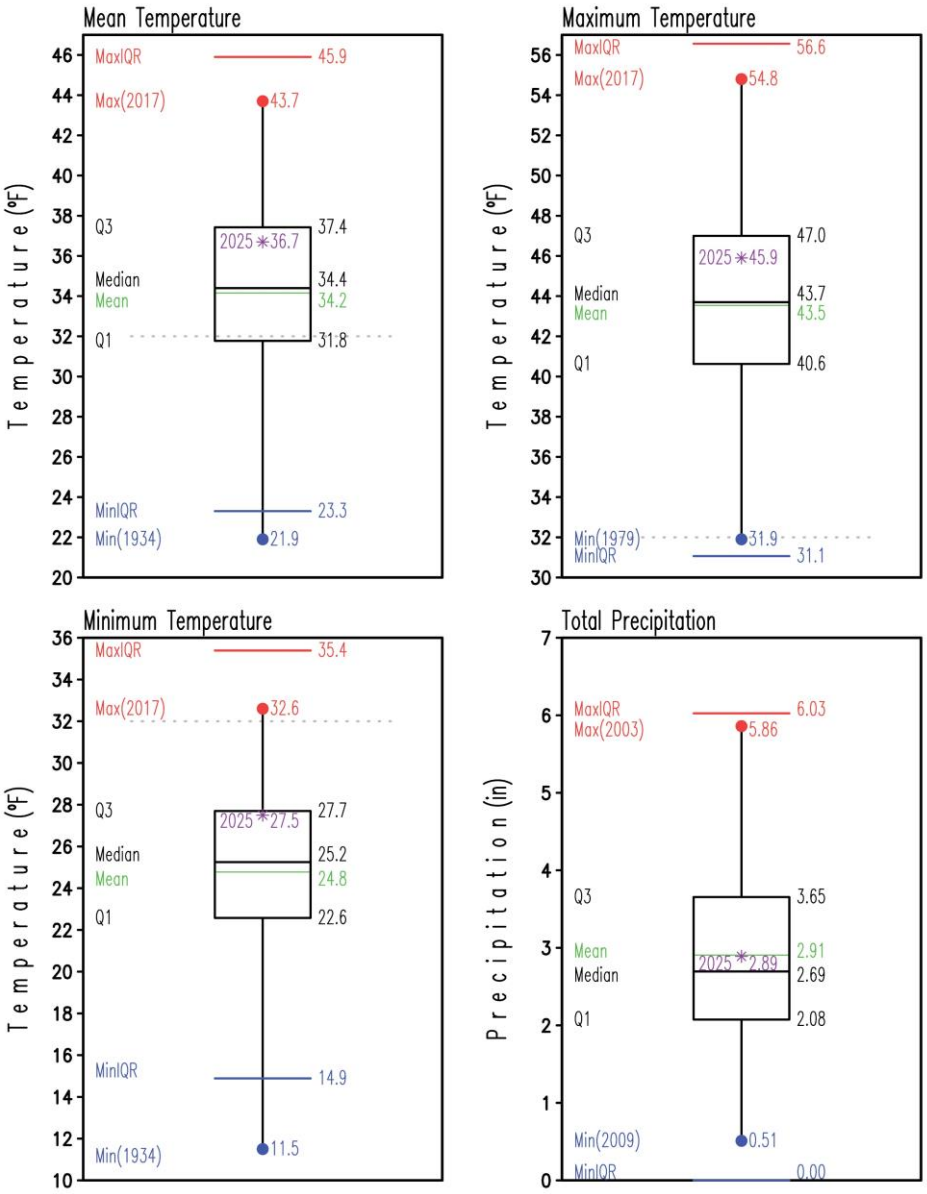

Figure 11. Box and Whisker plots of Maryland (statewide) monthly mean (upper left), maximum (upper right), minimum (lower left) surface air temperatures, and total precipitation (lower right) for February for the period 1895-2024. The label and asterisk in purple represent conditions for February 2025. Statistics for the period 1895-2024 are labeled at the left side of each box and whisker plot and their values at their right. Temperatures are in °F, and precipitation is in inches. The mean is the green line within the box, while the median is the black line within the box. The lower (Q1) and upper (Q3) quartiles, indicating the values of the variable that separate 25% of the smallest and largest values, are the lower and upper horizontal black lines of the box, respectively. For reference, the 32°F temperature is displayed with a horizontal dotted, gray line. The blue and red dots mark the minimum and maximum values in the period at the end of the whiskers; the year of occurrence is shown in parenthesis. The blue and red horizontal lines represent extreme values defined by Q1-1.5×(Q3-Q1) and Q3+1.5×(Q3-Q1), respectively.

7. 1895-2025 February Trends

A. Statewide Mean Temperature, Heating Degree-Days, and Precipitation

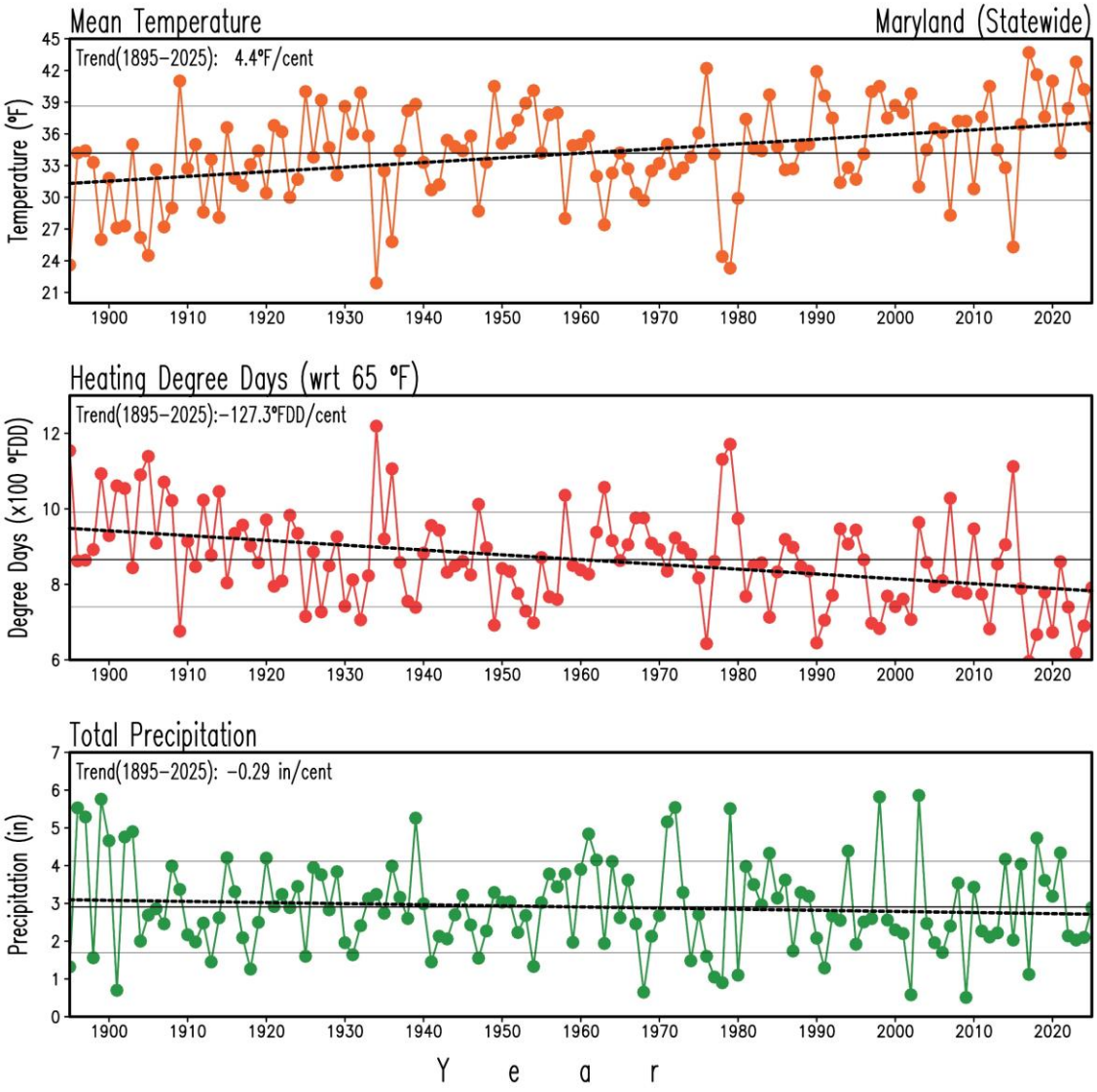

Figure 12. Maryland (statewide) mean surface air temperature, heating degree days, and precipitation in February for the period 1895-2025. Temperature is in °F, heating degree-days is in °F degree-days (°FDD), and precipitation is in inches. The thin, continuous black lines in each panel display the long-term means (34.2°F, 865.6°FDD and 2.91 in, 1895-2025), and the double thin, continuous gray lines indicate the standard deviation (4.5°F, 125.3°FDD and 1.21 in) above/below the long-term mean. The thick dashed black lines show the long-term linear trend. The warming temperature trend (4.4°F/century), the decreasing heating degree-days trend (−127.3°FDD/century) are statistically significant at the 95% level (*Student's t-test* −Santer et al. 2000) but not the precipitation drying precipitation trend (−0.29 in/century).

B. Temperature and Precipitation Maps

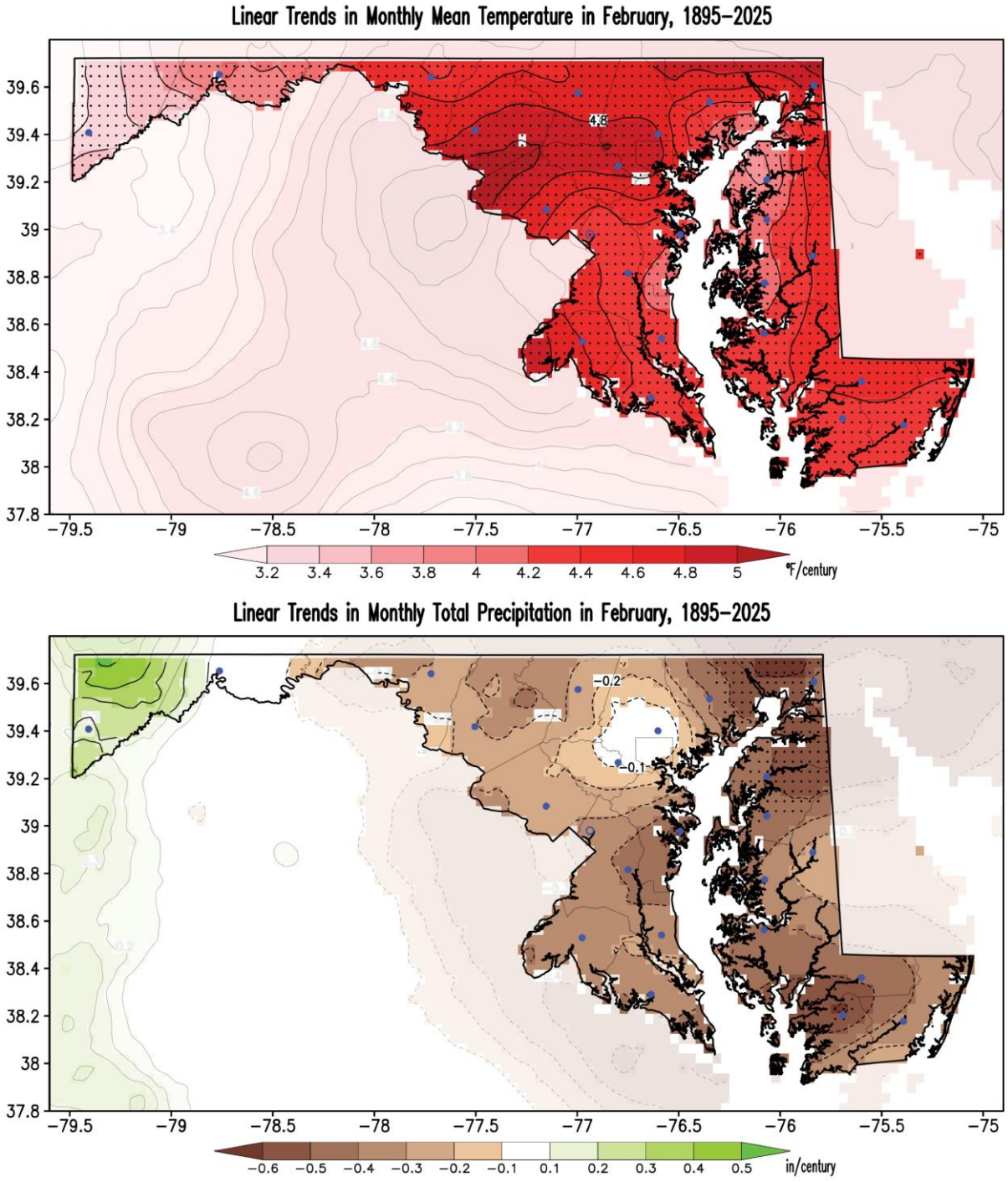

Figure 13. Linear trends in surface air mean temperature and precipitation in February for the period 1895-2025. Temperatures are in °F/century, and precipitation is in inches/century following the color bars. Brown/green shading in the precipitation map shows drying/wetting trends. Stippling in the maps shows regions where trends are statistically significant at the 95% level (*Student's t-test* −Santer et al. 2000). Note that shading outside the state has been washed out to facilitate focusing on Maryland. Filled blue circles mark the county seats.

Appendix A. February 2025 Data Tables: Statewide, Climate Divisions, and Counties

A. Mean Temperature and Precipitation

Region	Mean Air Temperature (°F)	Rank (#)
Statewide	36.7	93
Climate Division 1	39.3	90
Climate Division 2	38.4	91
Climate Division 3	40.2	104
Climate Division 4	38.7	97
Climate Division 5	36.0	80
Climate Division 6	35.2	92
Climate Division 7	34.0	89
Climate Division 8	30.2	91
Allegany	33.6	90
Anne Arundel	38.4	94
Baltimore	34.9	91
Baltimore City	36.7	89
Calvert	39.6	102
Caroline	37.2	87
Carroll	34.4	94
Cecil	34.3	83
Charles	40.4	104
Dorchester	39.1	95
Fredrick	35.2	95
Garrett	30.2	91
Harford	34.0	82
Howard	36.1	95
Kent	35.6	78
Montgomery	37.2	98
Prince George's	39.0	101
Queen Anne's	36.4	85
Saint Mary's	40.2	102
Somerset	39.7	94
Talbot	38.4	92
Washington	34.5	91
Wicomico	38.7	89
Worcester	39.4	90

Region	Total Precipitation (in)	Rank (#)
Statewide	2.89	71
Climate Division 1	4.58	108
Climate Division 2	3.40	88
Climate Division 3	3.46	93
Climate Division 4	2.67	66
Climate Division 5	1.91	30
Climate Division 6	2.03	42
Climate Division 7	2.22	63
Climate Division 8	4.24	107
Allegany	2.58	81
Anne Arundel	2.47	57
Baltimore	2.05	41
Baltimore City	2.26	48
Calvert	3.42	95
Caroline	3.07	75
Carroll	1.95	41
Cecil	1.88	24
Charles	3.33	93
Dorchester	3.70	97
Fredrick	2.00	44
Garrett	4.23	107
Harford	1.78	25
Howard	2.23	51
Kent	1.67	22
Montgomery	2.32	56
Prince George's	2.85	72
Queen Anne's	2.06	35
Saint Mary's	3.67	98
Somerset	4.78	111
Talbot	2.95	72
Washington	1.87	49
Wicomico	4.16	104
Worcester	4.74	110

Table A1. Monthly mean surface air temperature (left) and total precipitation (right) at Maryland (statewide), climate division, and county levels for February 2025. Temperatures are in °F, and precipitation is in inches. The rank is the order that the variable for February 2025 occupies among the 131 Februaries after the 131 values have been arranged from the lowest to the highest in the *standard competition ranking method*. The closer to 131 the rank is, the larger (i.e., the warmer/wetter) the value of the surface variable is in the record; similarly, the closer to 1 the rank is, the smaller (i.e., the colder/drier) the value of the surface variable is in the record.

B. Maximum and Minimum Temperatures

Region	Maximum Air Temperature (°F)	Rank (#)
Statewide	45.9	90
Climate Division 1	49.6	98
Climate Division 2	48.5	96
Climate Division 3	50.2	102
Climate Division 4	47.6	96
Climate Division 5	44.7	74
Climate Division 6	43.7	83
Climate Division 7	42.9	80
Climate Division 8	39.3	82
Allegany	42.4	77
Anne Arundel	47.0	89
Baltimore	43.5	78
Baltimore City	44.9	79
Calvert	49.4	102
Caroline	47.2	87
Carroll	43.0	84
Cecil	43.0	79
Charles	50.4	100
Dorchester	49.5	101
Fredrick	43.6	89
Garrett	39.3	82
Harford	42.7	71
Howard	44.9	91
Kent	44.1	72
Montgomery	45.4	93
Prince George's	48.3	97
Queen Anne's	45.2	75
Saint Mary's	50.2	103
Somerset	49.6	99
Talbot	47.9	96
Washington	43.4	87
Wicomico	49.7	98
Worcester	49.4	98

Region	Minimum Air Temperature (°F)	Rank (#)
Statewide	27.5	96
Climate Division 1	29.0	79
Climate Division 2	28.3	86
Climate Division 3	30.2	105
Climate Division 4	29.7	105
Climate Division 5	27.3	85
Climate Division 6	26.6	98
Climate Division 7	25.1	97
Climate Division 8	21.1	93
Allegany	24.8	97
Anne Arundel	29.7	105
Baltimore	26.2	97
Baltimore City	28.6	97
Calvert	29.8	102
Caroline	27.3	86
Carroll	25.8	104
Cecil	25.5	78
Charles	30.5	111
Dorchester	28.6	84
Fredrick	26.8	104
Garrett	21.1	92
Harford	25.3	86
Howard	27.3	105
Kent	27.2	84
Montgomery	28.9	109
Prince George's	29.7	108
Queen Anne's	27.6	89
Saint Mary's	30.0	98
Somerset	29.8	87
Talbot	28.9	88
Washington	25.5	93
Wicomico	27.8	76
Worcester	29.4	79

Table A2. Monthly maximum (left) and minimum (right) surface air temperatures at Maryland (statewide), climate division, and county levels for February 2025. Temperatures are in °F. The rank is the order that the variable for February 2025 occupies among the 131 Februaries after the 131 values have been arranged from the lowest to the highest using the *standard competition ranking method*. The closer to 131 the rank is, the larger (i.e., the warmer) the value of the surface variable is in the record; similarly, the closer to 1 the rank is, the smaller (i.e., the colder) the value of the surface variable is in the record.

Appendix B. February 2025 Bar Graphs: Statewide, Climate Divisions, and Counties

A. Temperatures and Precipitation

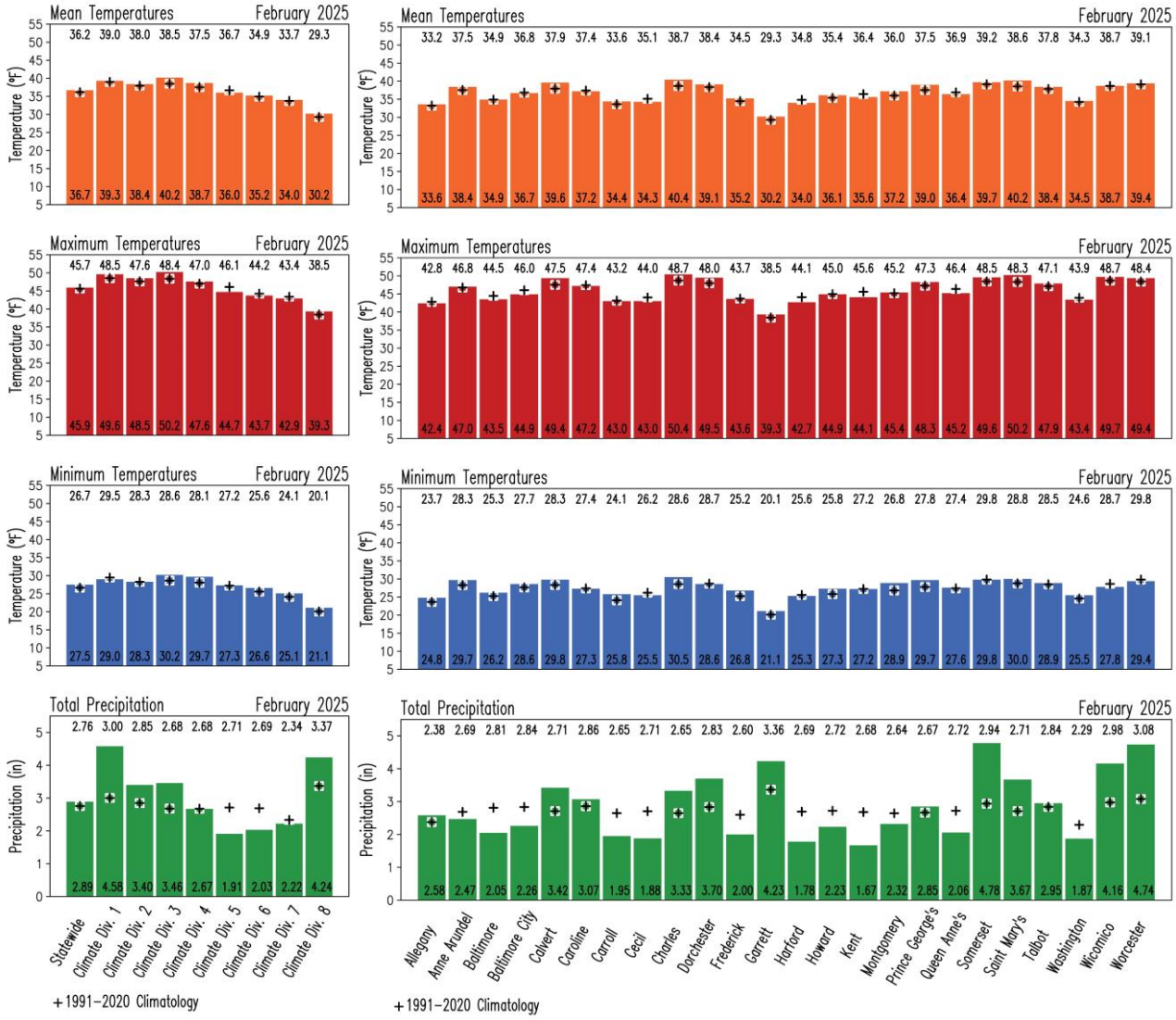

Figure B1. Monthly surface variables in Maryland for February 2025. Color bars represent the variables as follows: mean surface air temperature (orange), maximum surface air temperature (red), minimum surface air temperature (blue), and total precipitation (green) at statewide and climate division (left column), and county (right column) levels. Temperatures are in °F, and precipitation is in inches. The numbers at the base of the bars indicate the magnitude of the variable for February 2025. For comparison, the corresponding 1991-2020 climatological values for February are displayed as black addition signs, and their magnitudes are shown at the top of the panels.

B. Temperatures and Precipitation Anomalies

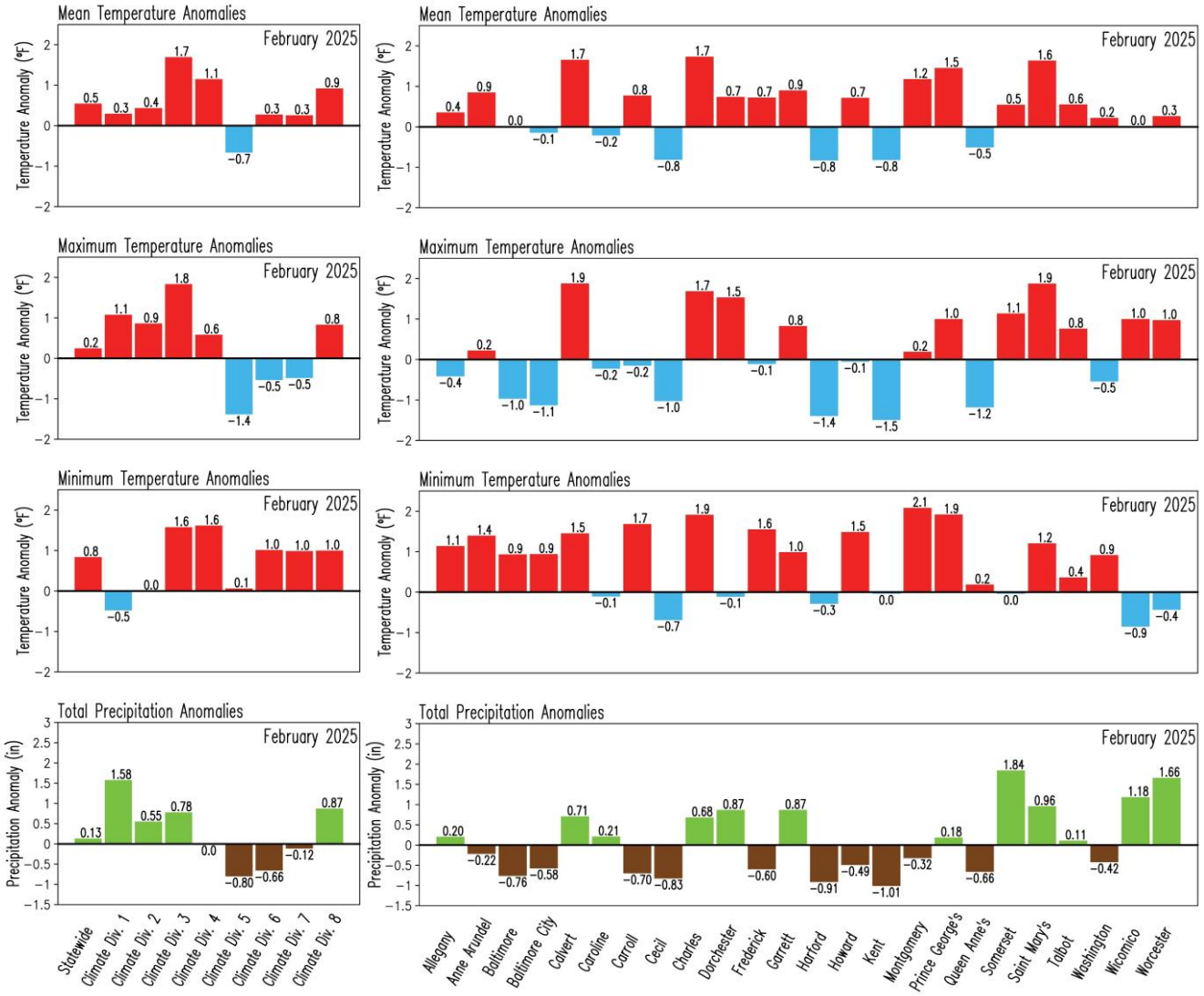

Figure B2. Anomalies of the monthly surface variables in Maryland for February 2025. Anomalies are with respect to the 1991-2020 climatology. Red/blue color represents positive/negative (warmer/colder than normal) anomalies for mean surface air temperature (upper row), maximum surface air temperature (second row from top), and minimum surface air temperature (third row from top), while green/brown color indicates positive/negative (wteer/drier than normal) anomalies in total precipitation (bottom row) at statewide and climate division (left column) and county (right column) levels. Temperatures are in °F, and precipitation is in inches. The numbers outside the bars indicate the magnitude of the anomaly for February 2025.

Appendix C. February 1991-2020 Climatology Maps and February 2025 Precipitation as Percentage of Climatology

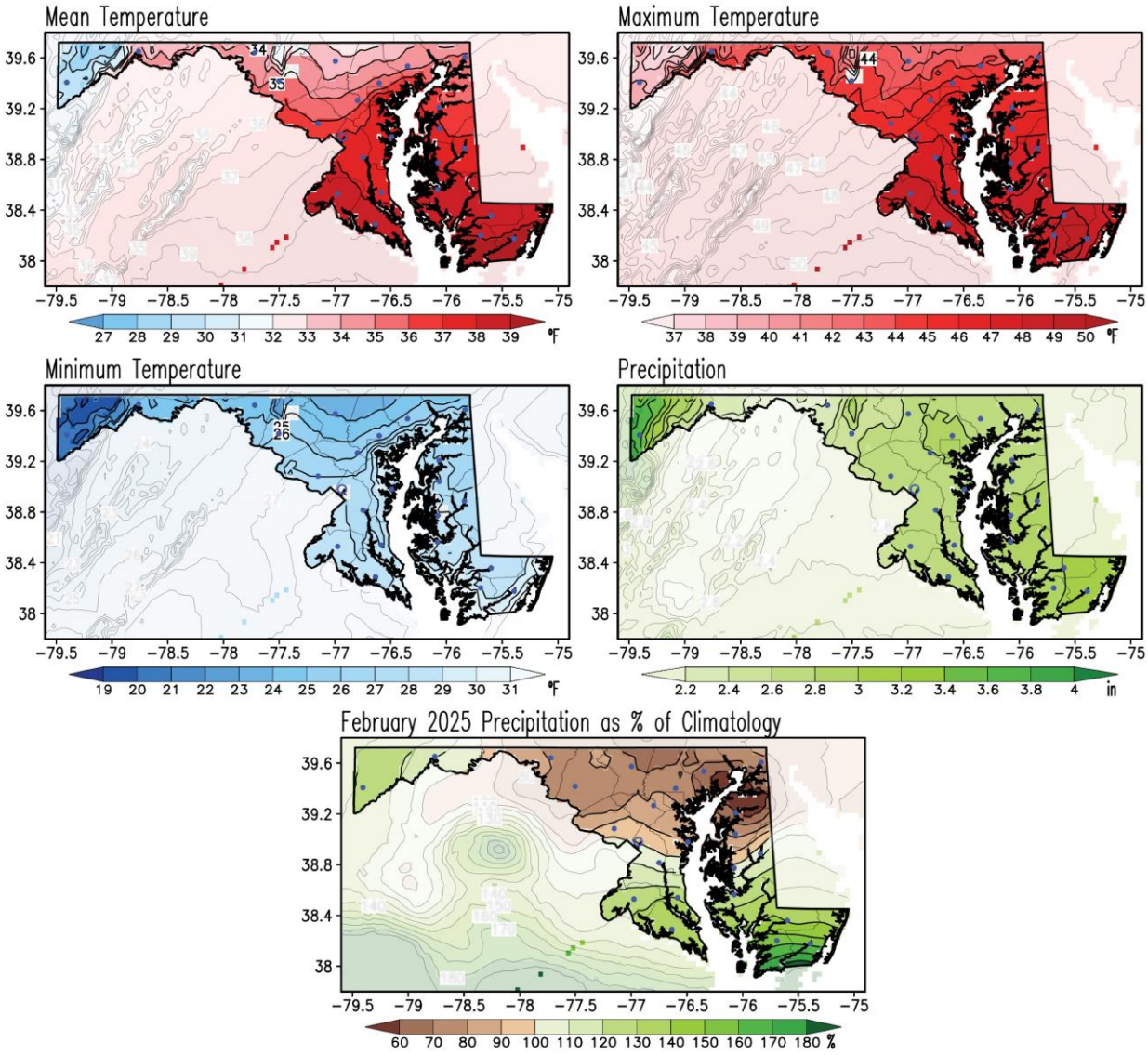

Figure C1. February climatology of the monthly mean, maximum and minimum surface air temperatures, and total precipitation for the period 1991-2020 (upper and middle rows), and precipitation in February 2025 as a percentage of climatology (bottom row). Temperatures are in °F, and precipitation is in inches according to the color bars. This is the current climate normal against which the February 2025 conditions are compared to obtain the February 2025 anomalies (from Figures 1 to 4). The precipitation as a percentage is obtained by dividing the total precipitation (from Figure 4) by the climatology (from the middle right panel) and multiplying that ratio by 100 so units are in percent of climatology (%); brown/green shading in this map shows drier/wetter than normal conditions. Note that shading outside the state has been washed out to facilitate focusing on Maryland. Filled blue circles mark the county seats.

Appendix D. February Standard Deviation and February 2025 Standardized Anomalies Maps

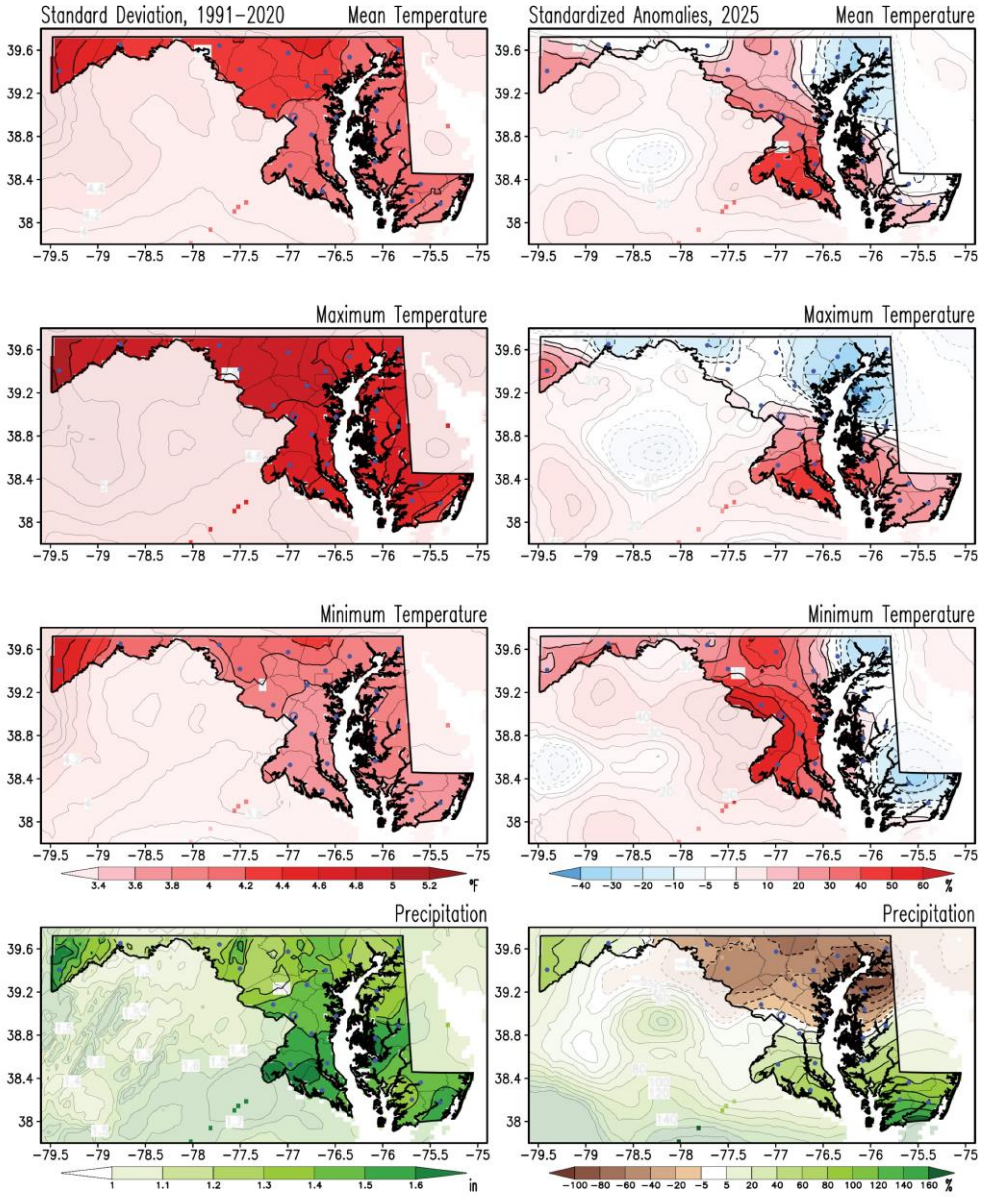

Figure D1. Standard deviation for February and standardized anomalies of temperatures and precipitation for February 2025. Standard deviations for monthly mean, maximum, and minimum surface air temperatures and total precipitation were obtained from the 1991-2020 period (left column). Anomalies for February 2025 (right column) are obtained as a percentage of the standard deviations. The standard deviations in temperatures are in °F, and those in precipitation are in inches according to the color bars. Blue/red shading in the anomaly temperature maps marks colder/warmer than normal conditions; brown/green shading in the anomaly precipitation map marks drier/wetter than normal conditions. The standardized anomalies are obtained by dividing the raw anomalies (from Figures 1 to 4) by the standard deviation (from left column panels) and multiplying that ratio by 100; hence, units are in percent (%). Note that shading outside the state has been washed out to facilitate focusing on Maryland. Filled blue circles mark the county seats.

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