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# Maryland Climate Bulletin
# March 2026

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DEPARTMENT OF ATMOSPHERIC & OCEANIC SCIENCE
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Maryland State Climatologist Office

# Summary

Statewide averages indicate that March 2026 was warmer and drier than normal (i.e., 1991-2020 averages). Regionally, monthly mean temperatures were in the 44−54°F range, maximum temperatures were between 56 and 69°F, and minimum temperatures were in the 32−40°F range. Monthly total precipitation was between 1.5 and 4.5 inches.

*Maryland Regional Features* (Figures 1-5, C1, and D1)

- The mean temperature was warmer than normal throughout the state, especially in Garrett County (9.0−9.5°F), western Allegany County (8.0−9.0°F), and western Montgomery, southern Frederick, and southern Washington counties (6.5−7.0°F), and the rest of the counties in the central-to-western Piedmont (5°F and above).

- The maximum temperature, similarly, was also warmer than normal in the entire state, notably in Garrett County (12.0−12.6°F), western Allegany County (9.6−11.4°F), and western Montgomery, southern Frederick, and southern Washington counties (8.4−9.0°F), as well as the rest of the counties in the central-to-western Piedmont (6.5°F and above).

- The minimum temperature was warmer than normal across the state, too, particularly in Garrett County (6.5−7.0°F), western Allegany County (5.5−6.0°F), and counties in the central-to-western Piedmont (3.5°F and above).

- Precipitation was below normal over most of the state, particularly along the counties surrounding the Chesapeake Bay (2.0−2.6 inches deficit), with central Calvert and Saint Mary's counties and parts of Harford, Talbot, and Dorchester counties with the largest deficits (2.6 inches below). The coastal areas of these counties around the Bay received between 55 and 60% less rainfall than normal for the month. Slightly above-normal precipitation occurred only over northwestern Garrett and northern Frederick counties.

- Drought conditions improved a little by the end of March with respect to those by the end of February, as Severe Drought conditions have practically disappeared in the north of the state, and the extent of regions under no drought conditions increased slightly over Garrett County. The area affected by drought conditions decreased by ~3%, with portions of Garrett, Kent, Talbot, Queen Anne's, Caroline, and Dorchester counties under no drought conditions. The extent of Abnormally Dry conditions increased by ~1%, while the extent of Moderate Drought and Severe Drought conditions decreased by ~3 and 2%, respectively, by the end of March. While Abnormally Dry conditions appeared in central Montgomery County, they are largely in the transition areas between no drought conditions and Moderate Drought conditions in eastern Garrett County, and northern and southern Eastern Shore. Moderate Drought conditions still covered southeastern Maryland, the coastal plains on the western side of the Bay, the Piedmont, and western Maryland to eastern Garrett County. Severe Drought conditions were confined to a small area in northwestern Allegany County.

*Maryland Climate Divisions* (Figures 6-7, B1, and B2)

- All the climate divisions were warmer than normal in March, with Climate Division 8, Allegheny Plateau, having the largest departure from normal (9.2°F). All climate divisions were drier than normal in March, with Climate Division 5, Northeastern Shore, having the largest deviation from normal (2.45 inches deficit).

- The statewide mean temperature was warmer than normal (5.6°F) for the first time this year after colder-than-normal January and February (3.8 and 3.3°F below, respectively) and, in fact, since October 2025. Statewide precipitation was drier than normal this month (1.69-inch deficit), with a larger deficit than in February and January (0.41 and 0.66 inches, respectively); this is the eighth month in a row with below normal precipitation since last August.

*Extreme daily temperatures, precipitation, and growing degree days* (Figures 8-9)

- Statewide minimum daily temperatures from January 1 to March 31 indicated the number of freezing days with minimum temperatures equal to or colder than 32°F was two days below normal (57 vs. 59) with one less freezing spell (i.e., two or more consecutive freezing days) than normal (7 vs. 8); however, the maximum duration of the spells was twelve days longer than normal (36 vs. 24). The number of days with minimum temperatures equal to or below 28°F was normal (41), with one less freezing spell (7 vs. 8) than normal; the maximum duration of the spells was ten days longer than normal (24 vs. 14). Similarly, the number of days with minimum temperatures at or below 24°F was three days above normal (30 vs. 27), with two fewer freezing spells than normal (4 vs. 6); the maximum duration of the spells was nine days longer than normal (18 vs. 9). The longest freezing spells occurred between mid-January and mid-February. The number of freezing days decreased in March, with five freezing days for temperatures at or below 32°F, two for temperatures at or below 28°F, and none for temperatures at or below 24°F.

- Statewide daily total precipitation from January 1 to March 31 showed that the number of days with extreme precipitation (at least 0.64 inches –the 95th percentile in 1951−2000) was normal (4). The number of dry spells (two or more consecutive days with daily precipitation of no more than 0.04 inches) was two fewer spells than normal (11 vs. 13); the longest duration of the dry spells was nine more days longer than normal (20 vs. 11). March didn't have any day with extreme precipitation and had five dry spells.

*Historical Context* (Figure 10, Tables A1 and A2)

- Statewide mean, maximum, and minimum temperatures in March 2026 (49.2, 61.2, 37.2°F) were above their (1895-2025) long-term means (42.8, 53.0, 32.5°F), but still far from their warmest records of 53.0, 65.2, and 41.4°F set in 1921, 1945, and 2012, respectively. However, the mean and maximum temperatures were within the 5% of the warmest values on record, while the minimum temperature was within the 10% of its warmest values.

- Statewide mean, maximum, and minimum temperatures indicated that March 2026 was the eighth, fifth, and eleventh warmest March since 1895, respectively. Among the counties, Allegany, Garrett, and Montgomery got their fourth warmest mean temperatures on record, and Frederick, Howard, and Washington their fifth; Allegany, Calvert, Dorchester, Frederick, Garrett, Montgomery, Prince George's, Somerset, Washington, Wicomico and Worcester had their fourth warmest maximum temperature since 1895, while Anne Arundel, Charles, Howard, Saint Mary's and Talbot got their fifth; Garrett had its sixth warmest minimum temperature on record, and Allegany its seventh.

- Statewide precipitation in March 2026 (2.27 inches) was below its (1895-2025) long-term mean (3.70 inches) and very far from its driest record of 0.33 inches set in 2006, but still it was within the 25% of the driest values on record. Statewide, this was the eighteenth driest March since 1895. Among the counties, Somerset had its sixth driest March on record, Wicomico its seventh, Calvert its eighth, and Dorchester, Saint Mary's, Talbot, and Worcester their ninth.

*Century-Plus Trends, 1895-2026* (Figures 11, 12)

- Statewide mean temperature and heating degree days in March had significant trends: a warming trend (2.4°F/century) and a decreasing heating trend (–75.3°FDD/century). On the other hand, statewide precipitation had no trend.

- Regionally, March mean temperatures showed significant warming trends in almost the entire state, except for parts of Garrett and Allegany counties. Notably, over Baltimore City, Baltimore, and northern Harford counties (2.8−3.2°F/century), over the boundaries of Montgomery−Frederick and Carroll−Howard counties, over Harford and Cecil counties, and Worcester, Wicomico, Dorchester, and Caroline counties (2.6−2.8°F/century).

- Regionally, March precipitation had no significant trends. However, non-significant wetting trends were found over Baltimore County (0.3 to 0.4 in/century) and southern

Worcester County (0.3 in/century); non-significant drying trends were found over western Maryland, especially Garrett County (–0.4 in/century) and in western Charles County (−0.3 in/century).

*Chesapeake Bay Sea Surface Temperatures* (Figures 13, 14, E1)

- Sea surface temperatures in the Chesapeake Bay in March 2026 were in the 44–50°F range. Regionally, they were warmer than their 2007-2020 mean in the Upper Basin (northward of the Gunpowder River), the majority of the Middle Basin and Chester River, the northern portion of the Lower Basin (between Kent Island and Annapolis), and along the waters of the Eastern Shore, the Chincoteague Bay, and the Potomac River. Colder-than-normal sea surface temperatures appeared in the Patapsco River and the waters along the Western Shore of the Bay. The warmest departures from their mean occurred in the southern waters of Kent Island in the northern Eastern Bay and in the Choptank River (3.2−4.0°F), and in waters of the Fishing Bay, the Nanticoke River, and the Pocomoke Sound (2.8−3.6°F). The coldest departures from the mean appeared in the Patapsco River (0.8−1.2°F below). The all-basin mean temperature of 44.9°F in March was slightly above the 2007-2020 base period mean (44.4°F) and far from the warmest March in the 20-year dataset (2007-2026) of 50.5°F, set in 2012.

- Residual ice remained in the inlets north of Baltimore from the deep freeze of February and disappeared in the first days of March.

# 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 aims to document and characterize monthly surface climate conditions in the state, situating them within 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 March 2026 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 in Section 3. Statewide and climate division averages for the month are compared using scatter plots in Section 4. Extreme cold 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 historical context using 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. Maps of monthly sea surface temperature (SST) in the Chesapeake Bay are presented in Section 8, along with basin averages and their annual evolution for the month. Ancillary statewide, climate division, and county-level information for air temperatures and precipitation are provided in tables and plots in Appendices A and B; climatology and variability maps are included in Appendices C and D, along with the percentage of normal precipitation and normalized anomalies; mean and variability of the sea surface temperatures in the Chesapeake Bay are displayed in Appendix E.

# 2. Data and 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) for 1895-present. Available in preliminary status at: https://www.ncei.noaa.gov/data/nclimgrid-monthly/access/
  Data was downloaded on April 9, 2026.

- NOAA Monthly U.S. Climate *Divisional* Dataset (NClimDiv – Vose et al., 2014) for 1895-present. Available in preliminary status (v1.0.0-202604056 at:
  https://www.ncei.noaa.gov/pub/data/cirs/climdiv/
  Data was downloaded on April 9, 2026.

- NOAA area averages of daily temperatures and precipitation dataset (nClimGrid−Daily −Durre et al., 2022) for 1951-present. 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 April 6, 2026.

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

Data and sources for the Chesapeake Bay are the following:

- Satellite-based sea surface temperatures from NOAA's CoastWatch Program. The data was made available by the Program's East Coast Node. This satellite-based sea surface temperature data uses data from the Advanced Very High Resolution Radiometer (AVHRR) on the European MetOp satellites, and the Visible Infrared Imaging Radiometer Suite (VIIRS) on the U.S. SNPP and NOAA JPSS satellites. In creating this product, nighttime overpasses for the U.S. East Coast are used, thereby avoiding daytime solar heating of the ocean surface and the associated warm bias in the data. In particular, the acquired product consists of monthly sea surface temperature data for the Chesapeake and Delaware Bays, with a nominal horizontal resolution of 750 m from 2007 to the present. This product is available at:
  https://eastcoast.coastwatch.noaa.gov/data/avhrr-viirs/sst-ngt
  Data was downloaded on April 2, 2026.

- A shapefile of watersheds for the state from the Maryland Department of the Environment and the Department of Natural Resources: the Maryland Watersheds – 8 Digit Watersheds. It contains 138 separate watersheds, identified with an 8-digit numeric code from which three are on the main steam of the Chesapeake Bay: the Upper Chesapeake Bay (code: 02139996; from the mouth of the Susquehanna River to northern side of the mouth of the Gunpowder River), the Middle Chesapeake Bay (code: 02139997; from the Gunpowder River to the mouth of the Chester River), and the Lower Chesapeake Bay (code: 02139998; from the south side of the mouth of the Chester River to the mouth of the Potomac River), which in turn are used to create a one-watershed shapefile for the entire basin. These four watersheds are used to create area-averaged sea surface temperatures for the Bay. The shapefile and associated files are available at:
  https://data.imap.maryland.gov/datasets/maryland::maryland-watersheds-8-digit-watersheds/about

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 long-term average of weather elements. 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 average 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 because 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 simply the climatology, is defined for the period 1991–2020.

It should be noted that the satellite-based sea surface temperature data set has a short temporal coverage of 20 years, from 2007 to the present, which prevents the calculation of its current climate normal (1991-2020). Instead, the 2007-2020 mean will be used without referring to it as a climatology.

*About the anomalies*: Anomalies for a given month (e.g., March 2026) are the departures of the monthly value from the corresponding month's 30-year average (i.e., from the average of 30 Marches) 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 a negative anomaly. In the case of the sea surface temperature anomalies, they are calculated with respect to their 2007-2020 mean.

*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 anomalies are divided by the standard deviation, they are referred to as 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 below 32°F, 28°F, and 24°F (originally used to categorize agricultural impacts USDA, 2024) and by their consecutive occurrence. When these conditions persist for two or more consecutive 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 get a general idea of the amount of energy required to warm or cool buildings. The base temperature used for this purpose is 65°F, which is considered tolerable for human comfort (CPC, 2023).

*About extreme precipitation*. This is defined as the number of days per year on which statewide-averaged daily total precipitation is equal to or greater than 0.64 inches. This threshold value represents the 95th percentile of statewide averaged daily total precipitation for 1951-2000.

*About the dry day spells.* A dry day is defined as a day with precipitation below 0.04 inches. These conditions are referred to as dry spells if they persist for two or more consecutive days. The number and duration of dry spells 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. March 2026 Maps

## A. Mean Temperatures

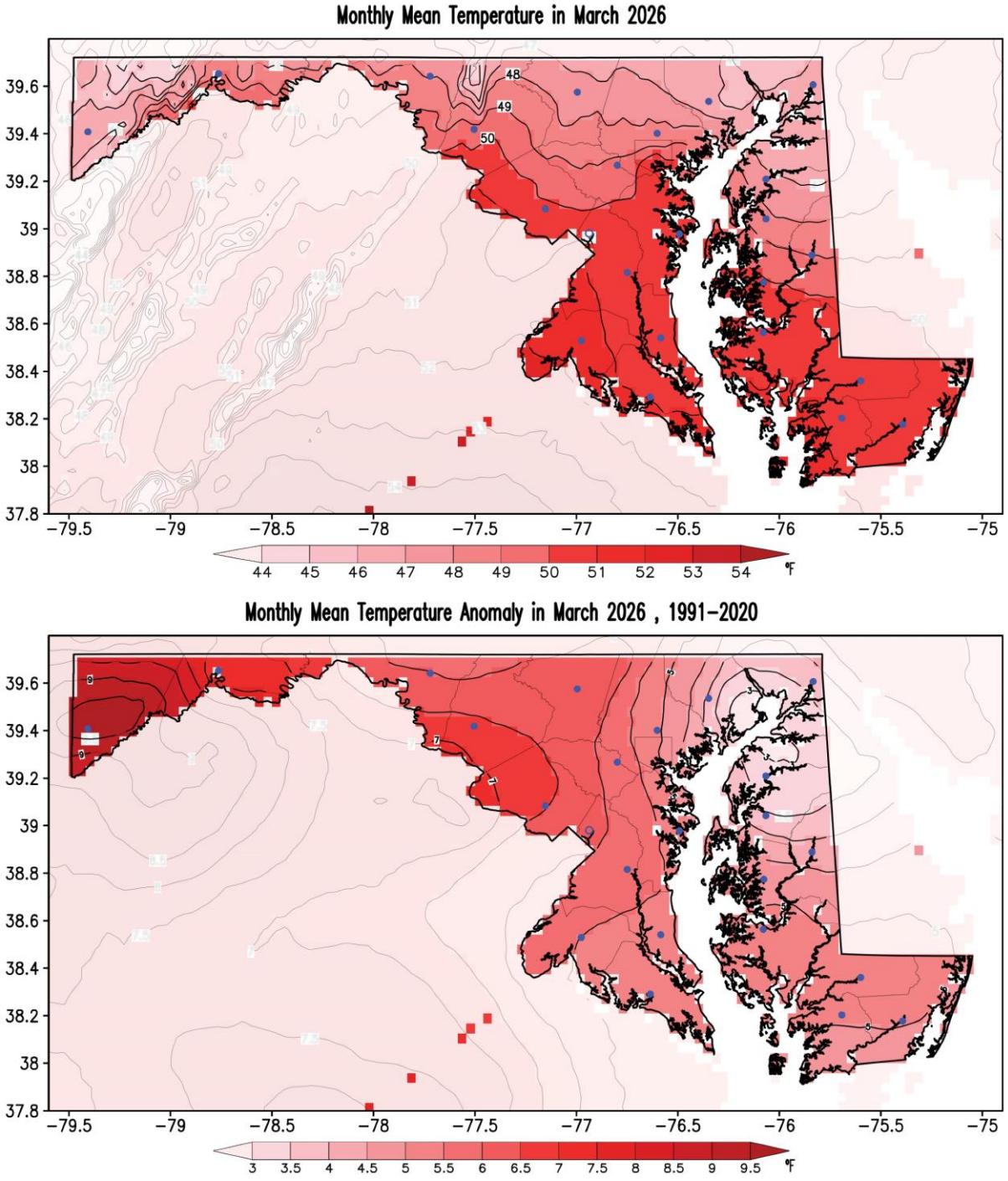


**Figure 1.** Monthly mean surface air temperature (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for March 2026. Temperatures are in °F following the color bar. Red shading in the anomaly map marks warmer than normal conditions. Note shading outside the state has been washed out to facilitate focus on Maryland. Filled blue circles mark the county seats.

B. Maximum Temperatures

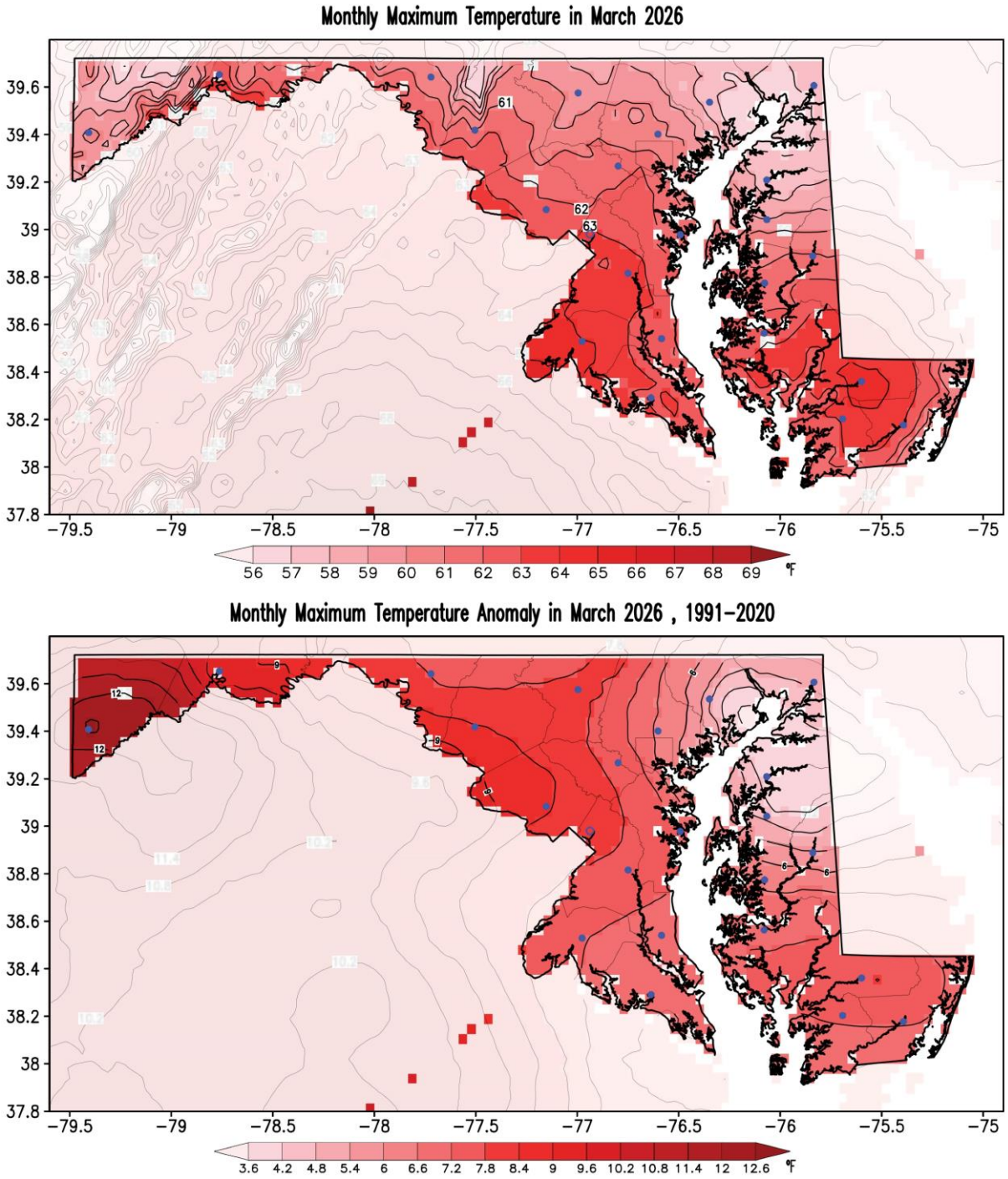


**Figure 2.** Monthly maximum surface air temperature (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for March 2026. Temperatures are in °F following the color bar. Red shading in the anomaly map marks warmer than normal conditions. Note shading outside the state has been washed out to facilitate focus on Maryland. Filled blue circles mark the county seats.

C. Minimum Temperatures

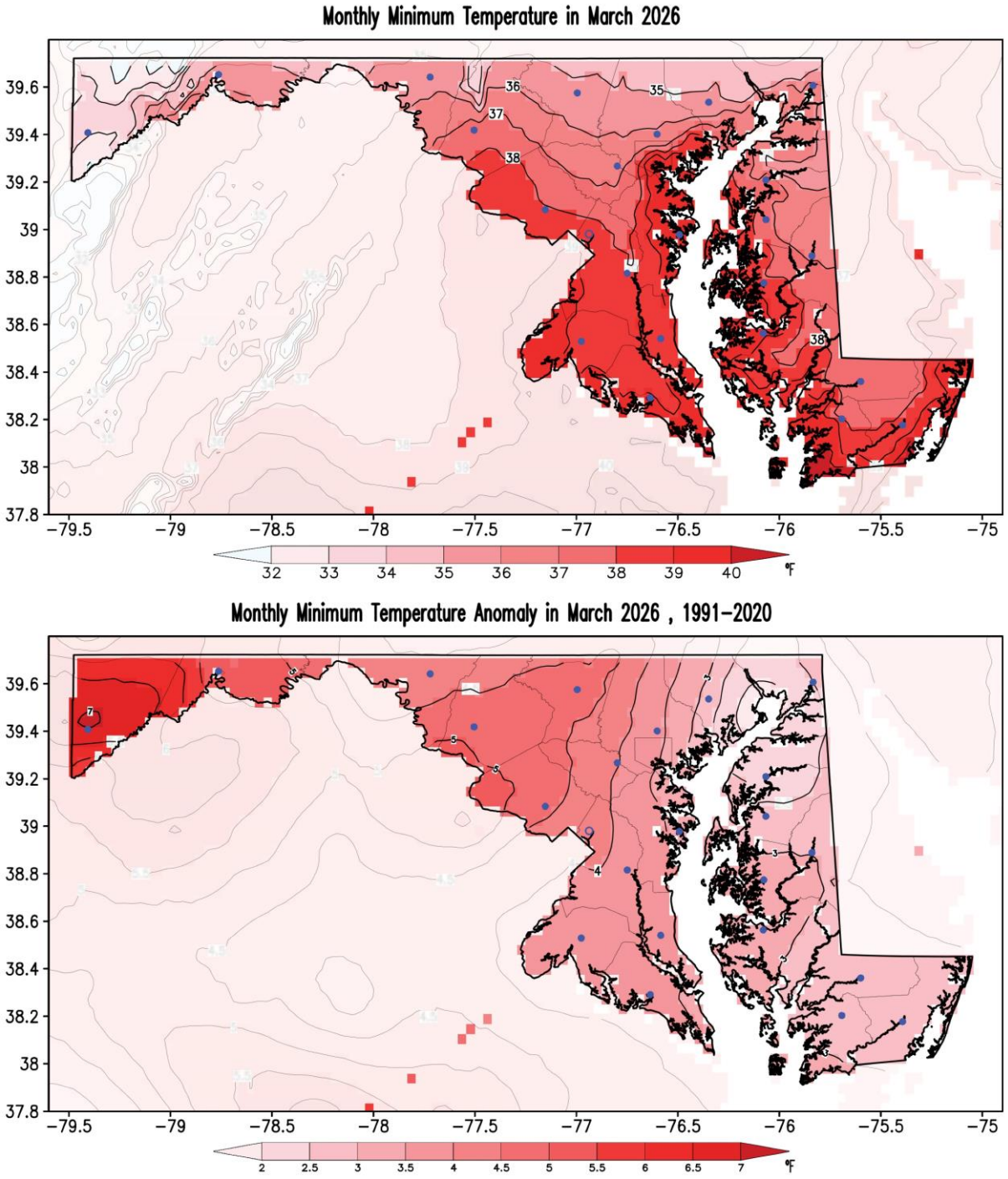


**Figure 3.** Monthly minimum surface air temperature (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for March 2026. Temperatures are in °F following the color bar. Blue/red shading in the temperature map shows temperatures below/above 32°F. Red shading in the anomaly map marks warmer than normal conditions. Note shading outside the state has been washed out to facilitate focus on Maryland. Filled blue circles mark the county seats.

D. Precipitation

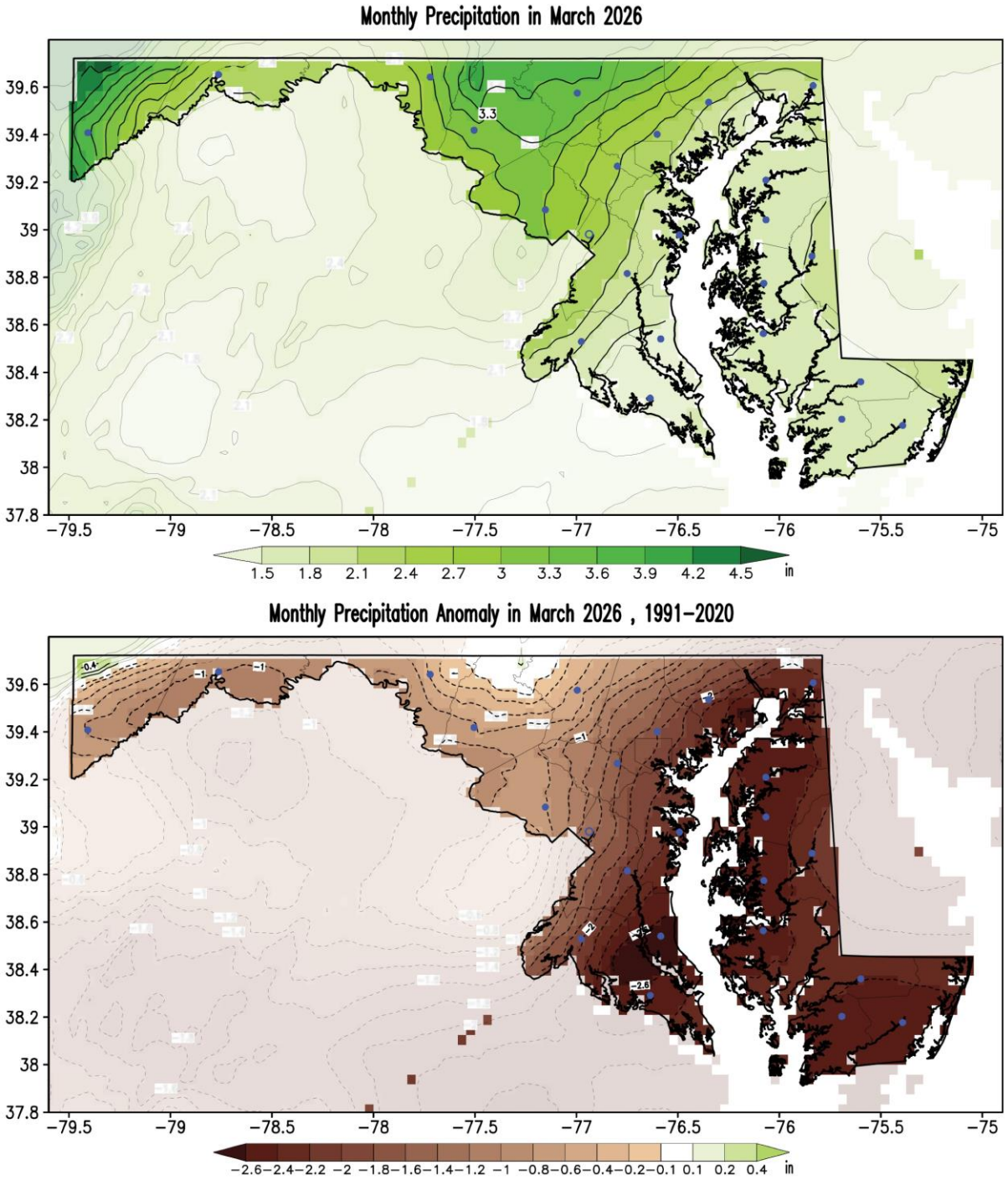


**Figure 4.** Monthly total precipitation (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for March 2026. Precipitation is measured in inches, as indicated by the color bar. Brown/green shading in the anomaly map indicates drier/wetter-than-normal conditions. Note shading outside the state has been washed out to facilitate focus on Maryland. Filled blue circles mark the county seats.

E. Drought

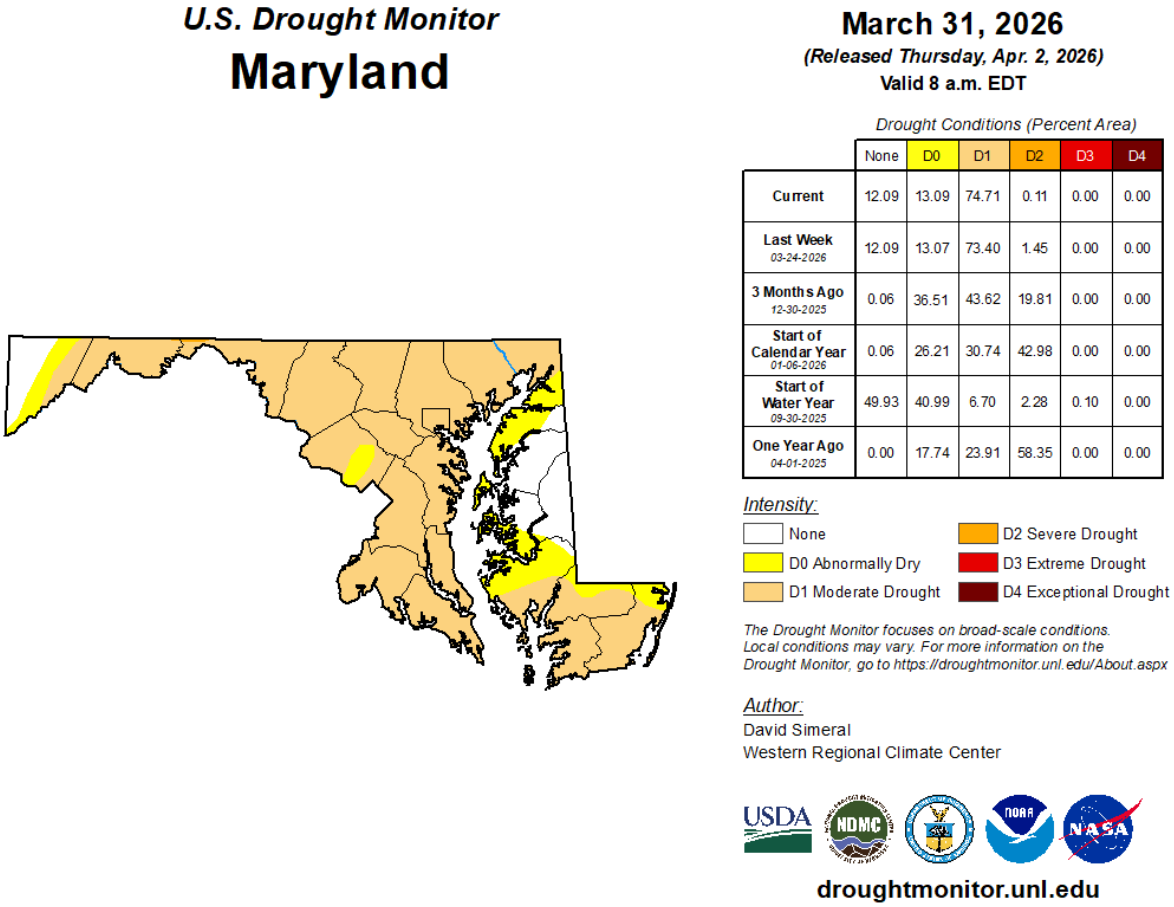


**Figure 5.** Drought conditions as reported by the U.S. Drought Monitor on March 31, 2026. Drought conditions improved slightly from the end of February, as Severe Drought conditions have almost disappeared, and the area under no drought conditions increased by 3%. Yellow shading indicates abnormally dry regions; light orange shading shows regions under a moderate drought, and dark orange shows regions under severe drought (northwestern Allegany County). Numbers in the table indicate the percentage of the state covered under the particular drought category 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 a low water supply and crop and pasture damage. Dark orange areas (Severe Drought) show land with water shortages and an increased likelihood of crop and pasture losses. Current conditions can be monitored on the U. S. Drought Monitor website. If interested, you can help monitor drought conditions by submitting a report of your local soil conditions through the National Drought Mitigation Center's Drought Impact Toolkit by using the Condition Monitoring Observer Reports system.

# 4. March and JFM 2026 Statewide and Climate Divisions Averages

## A. March 2026 Scatter Plots

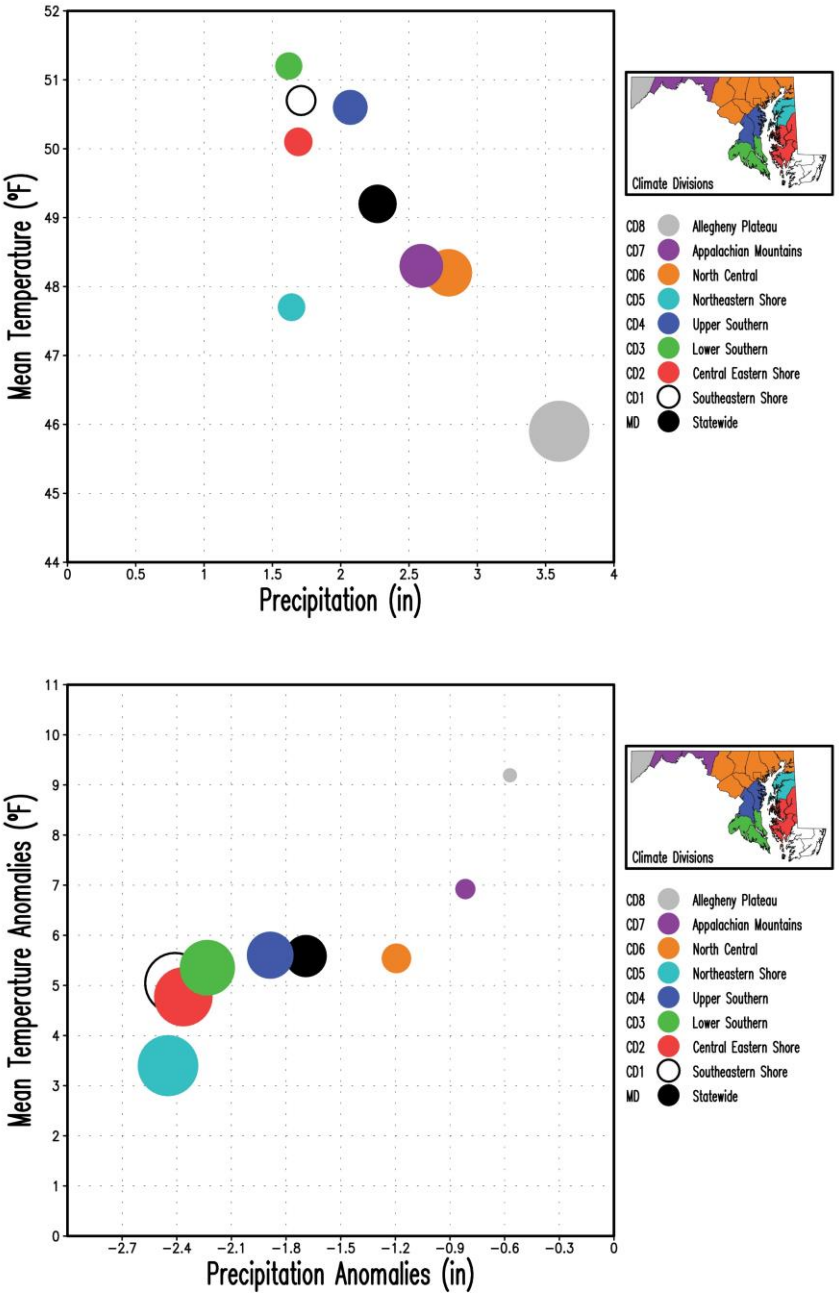


**Figure 6.** Scatter plots of Maryland (statewide) and Climate Divisions (CD#) monthly mean surface air temperature vs. total precipitation for March 2026. The upper panel displays the mean temperature and total precipitation, while the bottom panel displays their anomalies relative to the 1991-2020 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 (3.60 inches in CD8, top panel) and by the maximum precipitation anomaly (|−2.45| inches in CD5, 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. January – March 2026 Scatter Plots

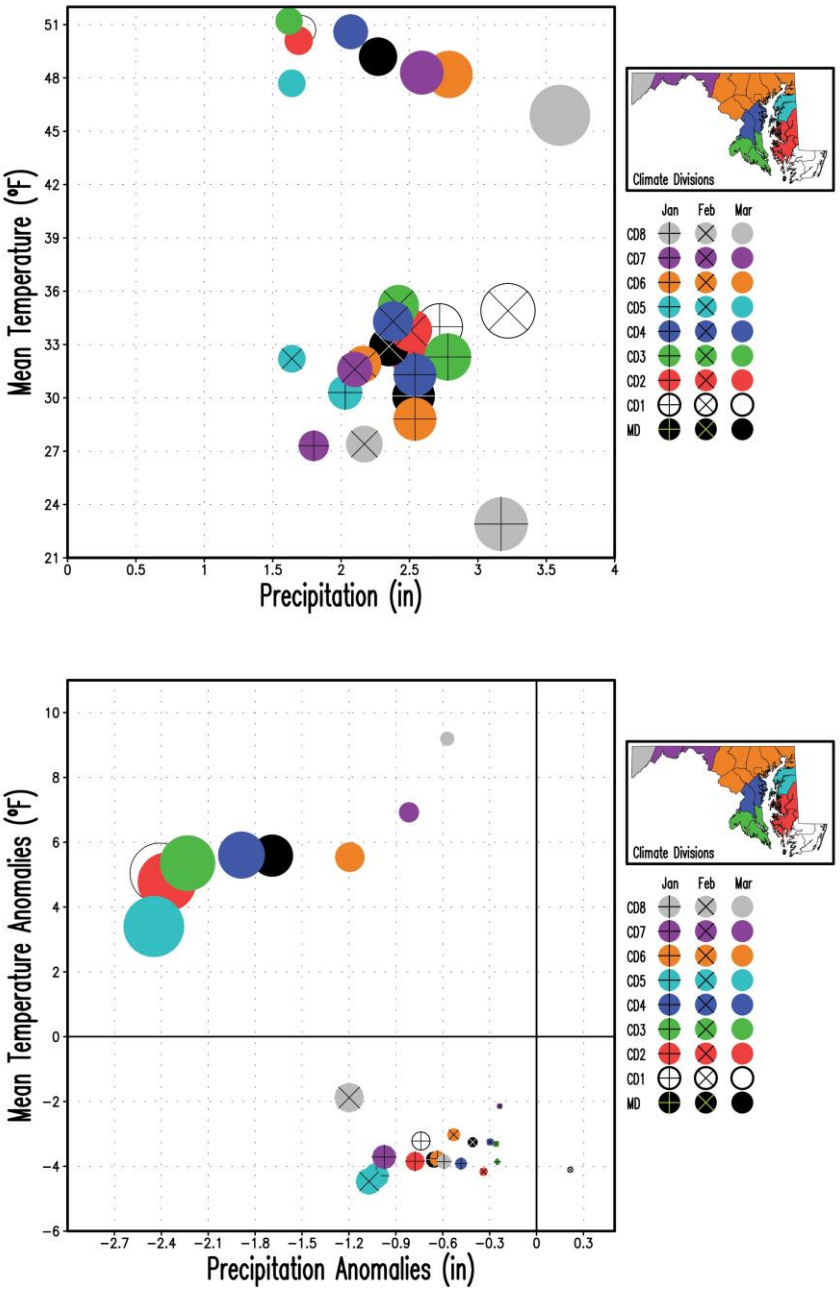


**Figure 7.** Scatter plots of Maryland (statewide) and Climate Divisions (CD#) monthly mean surface air temperature vs. total precipitation for January, February and March 2026. The upper panel displays the mean temperature and total precipitation, while the bottom panel shows their anomalies relative 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 (3.60 inches in CD8 in March, top panel) and by the maximum precipitation anomaly (|−2.45| inches in CD5 in March, bottom panel) among the nine regions and three months. March is displayed with filled circles only, while February and January are displayed with superposed multiplication and addition signs, respectively.

# 5. Extremes in Statewide Averages

## A. Freezing Days

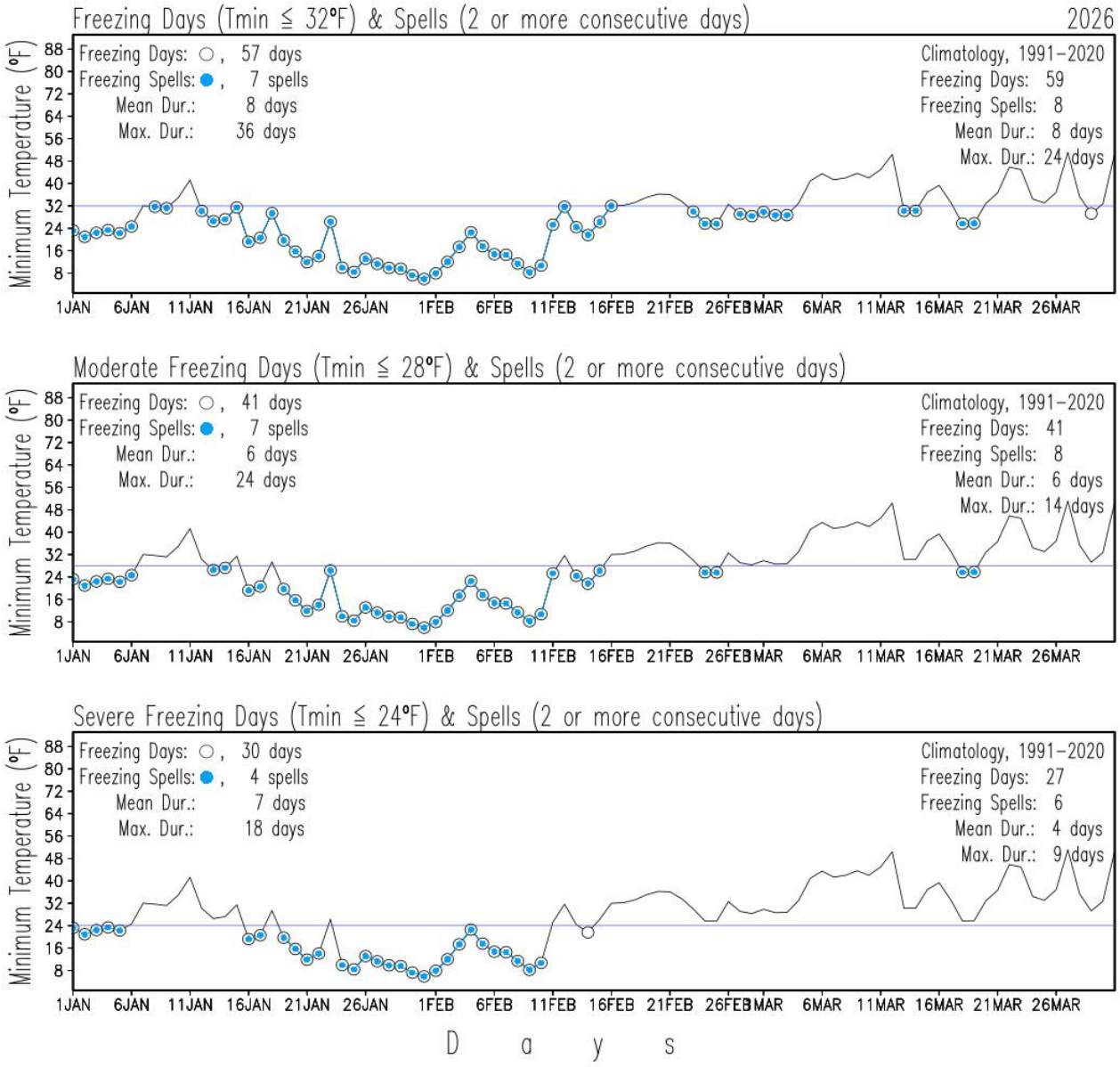


**Figure 8.** Maryland (statewide) number of freezing days, and their consecutive occurrence for the period January 1 – March 31, 2026. The panels show freezing days in open circles and spells of freezing days in blue-filled circles from statewide daily minimum temperatures. The upper panel displays 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, are available on the MDSCO website.

B. Extreme Precipitation and Dry Spells

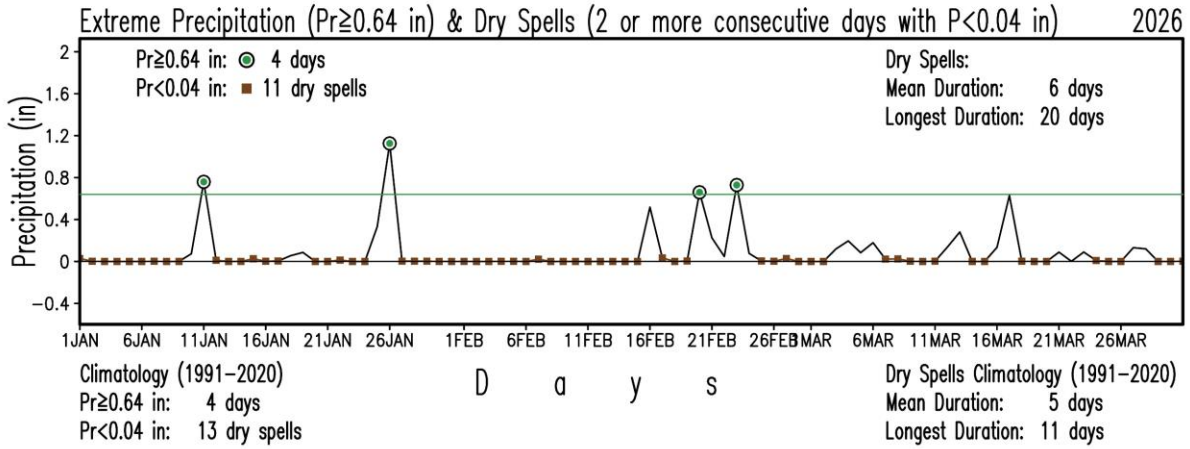


**Figure 9.** Maryland (statewide) number of days with extreme precipitation and dry spells for the period January 1 – March 31, 2026. Days with extreme precipitation (precipitation equal to or larger than 0.64 in) are identified by green-filled circles. Dry spells (consecutive days with daily total precipitation less than 0.04 in) are shown by brown-filled squares. Both extremes are identified from the statewide total daily precipitation. Figures at the county and climate division levels, as well as summary tables, are available on the MDSCO website. The displayed precipitation peaks highlight the winter storms that affected the state. Snow totals by event can be seen on the Recent Event Snow Maps page of the Baltimore/Washington Weather Forecast Office.

# 6. March 2026 Statewide Averages in the Historical Record

## A. Box and Whisker Plots

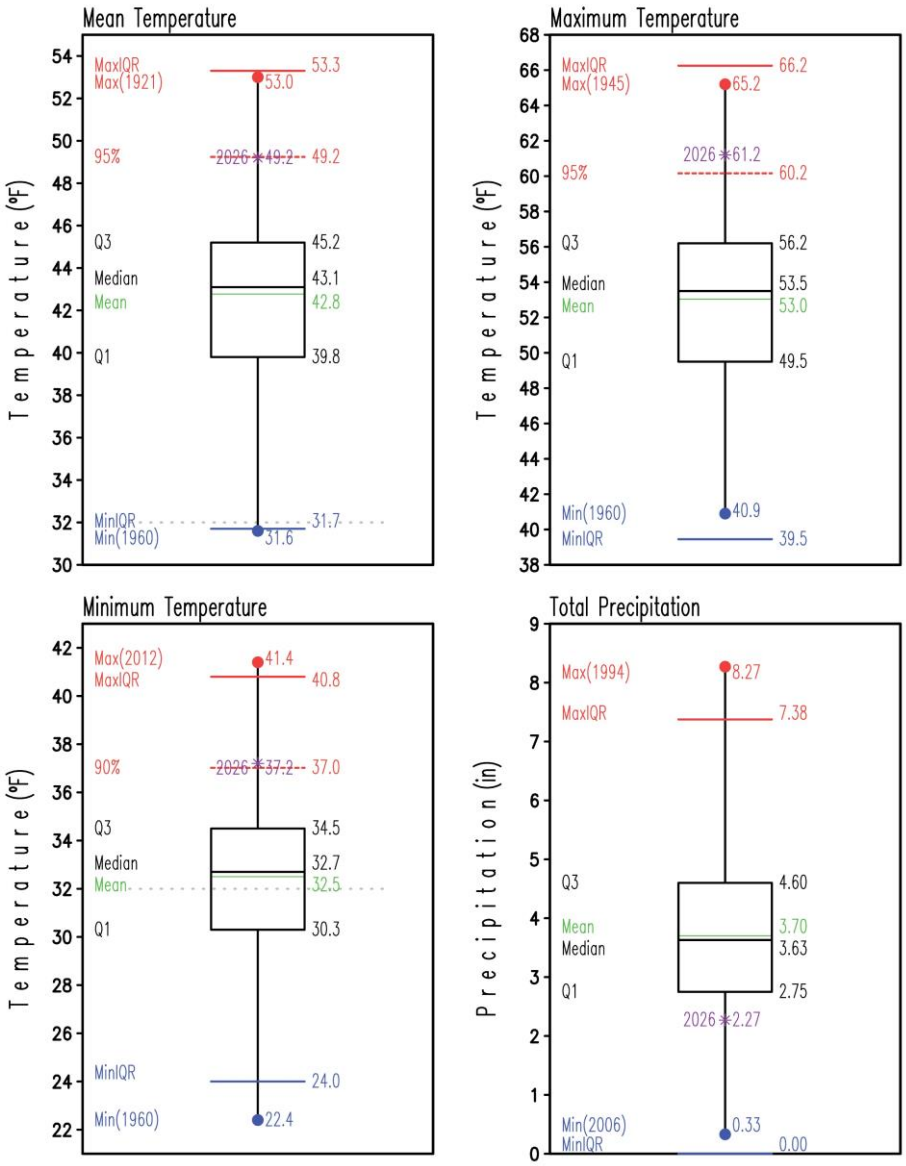


**Figure 10.** Box and Whisker plots of Maryland (statewide) monthly mean (upper left), maximum (upper right), minimum (lower left) surface air temperatures, and total precipitation (lower right) for March for the period 1895-2025. Conditions for March 2026 are represented by the label and asterisk in purple. Statistics for the period 1895-2025 are labeled at the left side of each box and whisker plot, and their values are 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, and the 95th percentile in mean and maximum temperatures and the 90th percentile in the minimum temperature are displayed with a red dashed 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 parentheses. The blue and red horizontal lines represent extreme values defined by Q1-1.5×(Q3-Q1) and Q3+1.5×(Q3-Q1), respectively.

# 7. 1895-2026 March Trends

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

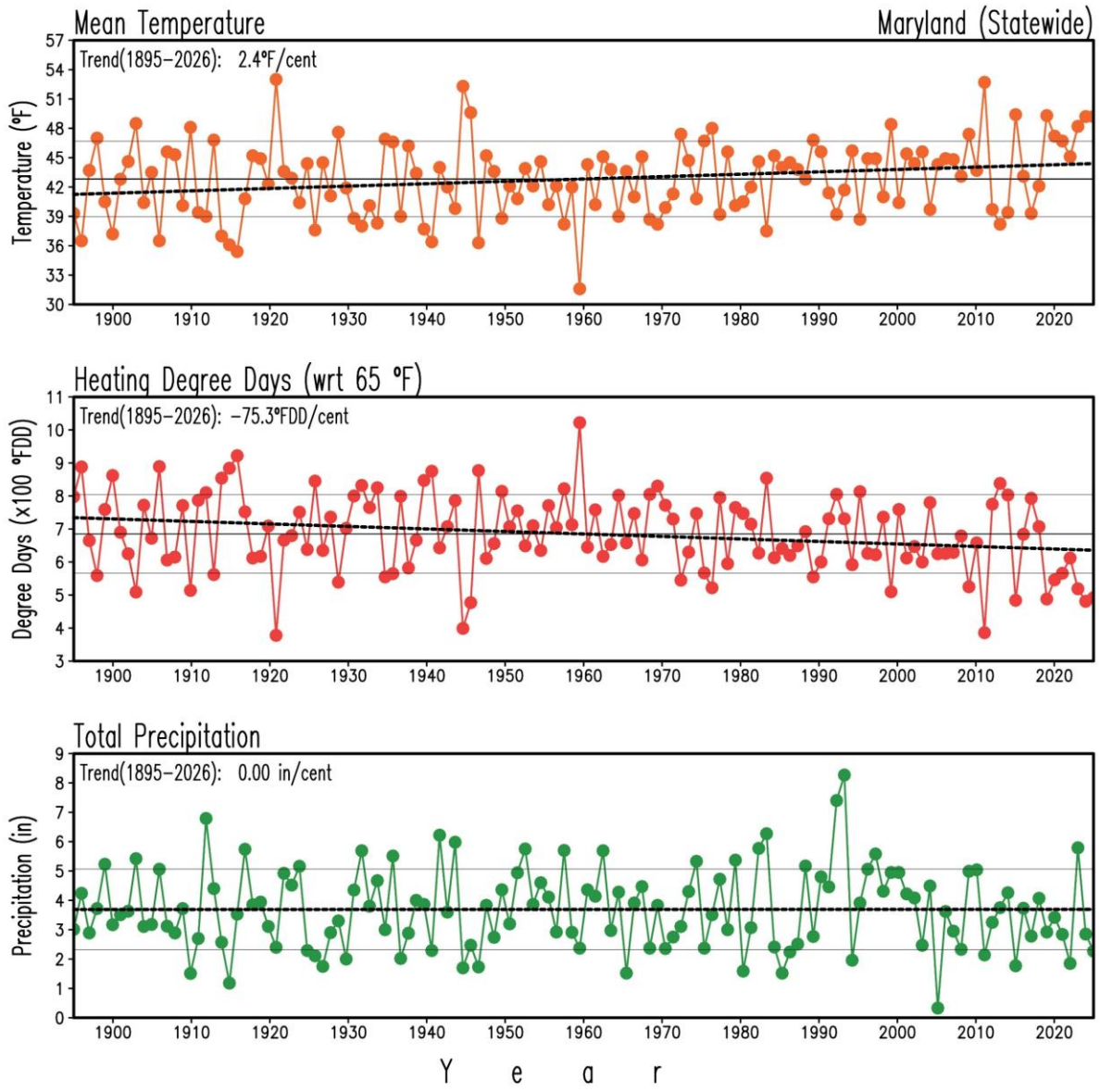


**Figure 11.** Maryland (statewide) mean surface air temperature, heating degree days, and precipitation in March for the period 1895-2026. Temperature is in °F, degree-days are in °F degree-days (°FDD), and precipitation is in inches. The thin, continuous black lines in each panel display the long-term means (42.8°F, 685.0°FDD, and 3.69 in, 1895-2026), and the double thin, continuous gray lines indicate the standard deviation (3.9°F, 119.0°FDD, and 1.37 in) above/below the long-term mean. The thick dashed black lines show the long-term linear trend. The warming temperature trend (2.4°F/century) and the decreasing heating degree-days trend (−75.3°FDD/century) are statistically significant at the 95% level (*Student's t-test* −Santer et al. 2000); precipitation shows no trend.

B. Temperature and Precipitation Maps

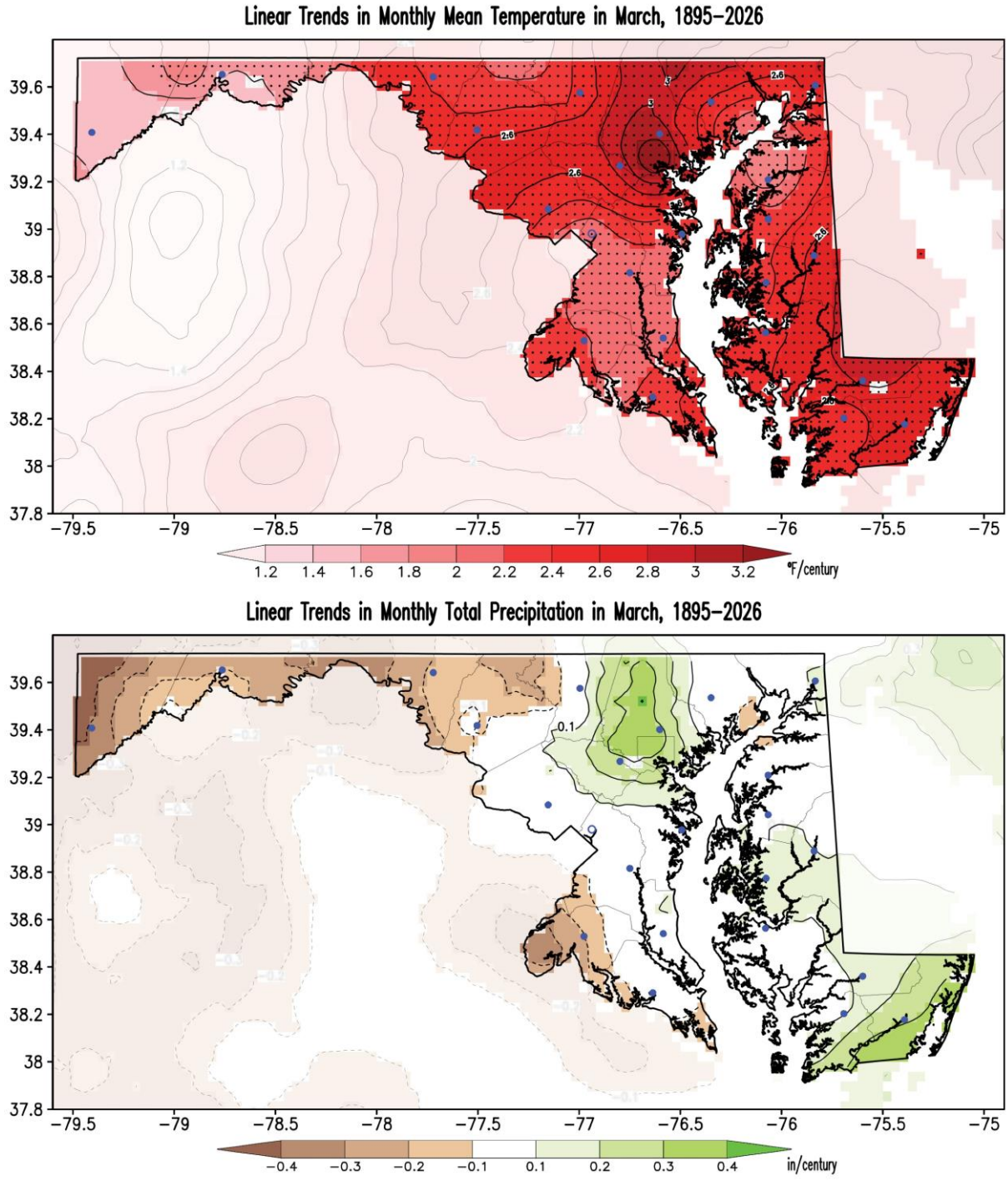


**Figure 12**. Linear trends in surface air mean temperature and precipitation in March for the period 1895-2026. Temperatures are in °F/century, and precipitation is in inches/century following the color bars. Red shading in the temperature map marks warming trends. Brown/green shading in the precipitation map shows drying/wetting trends. Stippling in the maps indicates 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 focus on Maryland. Filled blue circles mark the county seats.

# 8. Chesapeake Bay's Sea Surface Temperatures

## A. Sea Surface Temperature Maps

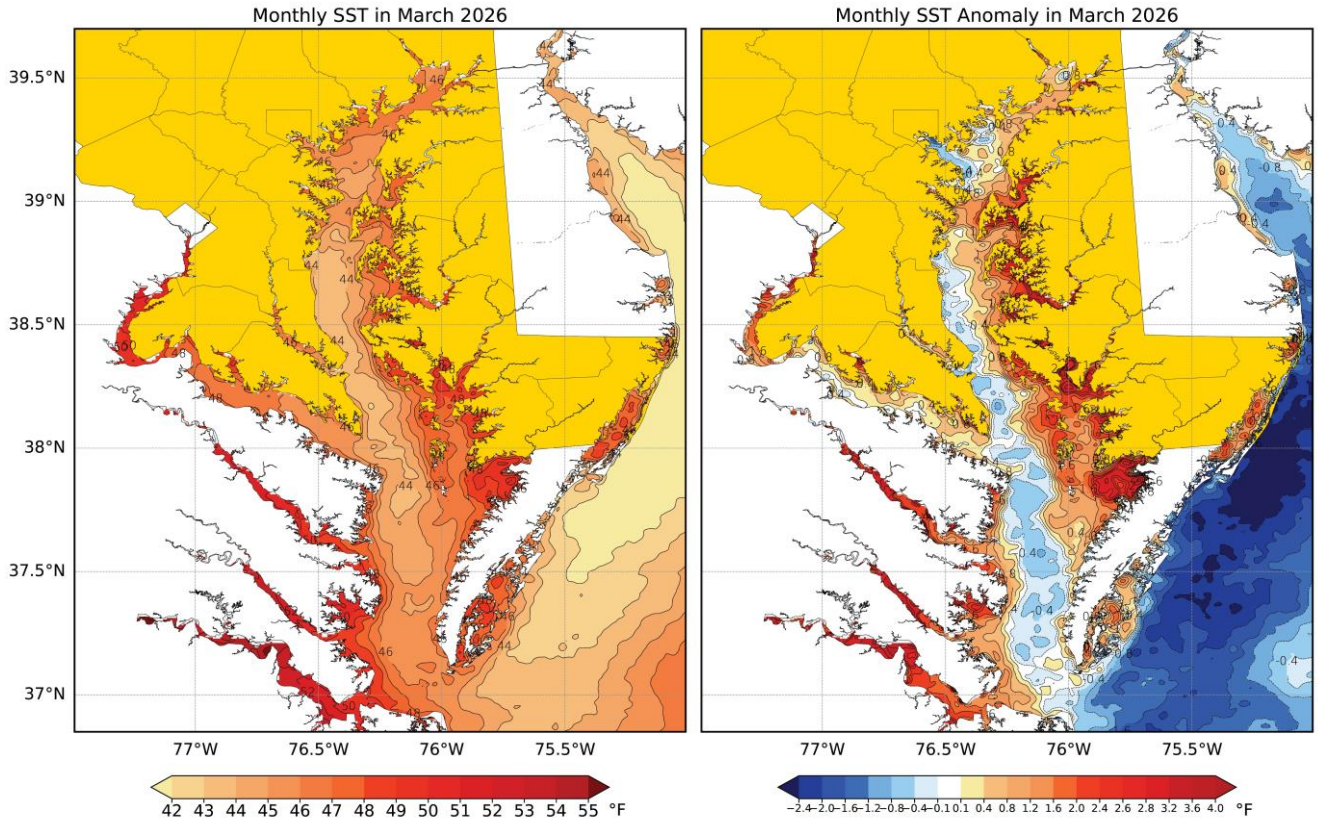


**Figure 13.** Monthly sea surface temperature (left panel) and its anomaly (right panel) in the Chesapeake Bay and surrounding coastal areas in March 2026. Temperatures are in °F, following the color bar. Blue/orange shading in the anomaly map marks colder/warmer temperatures than the 2007-2020 mean. For clarity, the temperatures and their anomalies have been smoothed using a 9-point spatial smoother applied four times. Note that Maryland has been shaded yellow to facilitate focus on the state waters. Residual ice remained in the inlets north of Baltimore from February's deep freeze and disappeared in March (map not shown); pass ice conditions and outlooks are available on the USNIC website.

B. Upper, Middle, Lower, and Entire Basins Sea Surface Temperature Averages

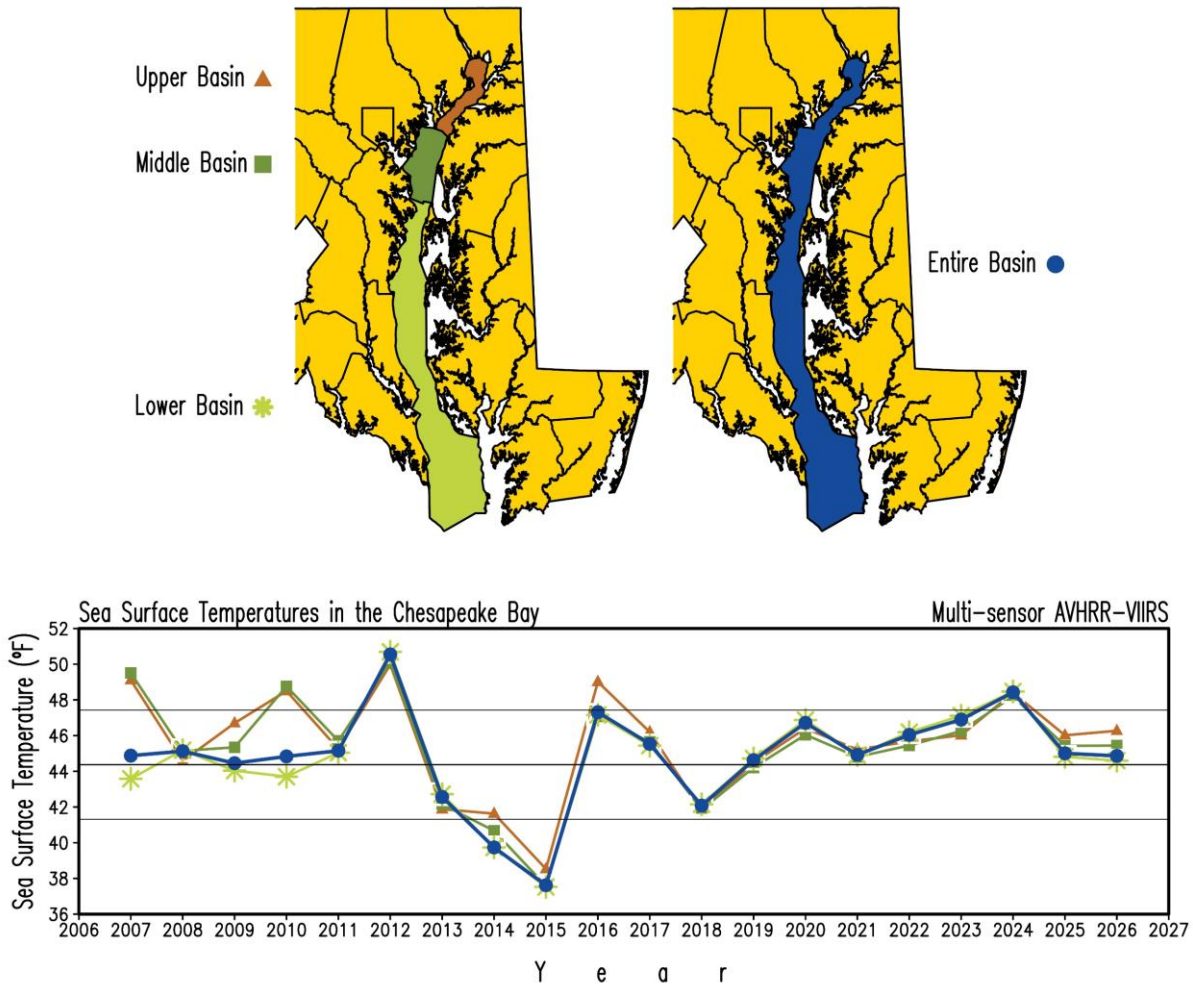


**Figure 14.** Watersheds in the Chesapeake Bay (top panel) and their area-averaged sea surface temperatures in March for the period 2007-2026 (bottom panel). Temperatures are in °F. The color of the lines corresponds to the color of the watersheds in the Bay, as indicated on the maps: Brown for the Upper Bay, dark green for the Middle Bay, light green for the Lower Bay, and Navy Blue for the Entire Bay. The mean temperature for the Entire basin in March 2026 was 44.9°F, while for the Upper, Middle, and Lower basins was 46.3, 45.4, and 44.6°F, respectively. The thin, continuous black line in the lower panel displays the 2007-2026 mean for the Entire Basin (44.9°F), and the double thin, continuous gray lines indicate the standard deviation (2.8°F) above/below the long-term mean. The 2007-2026 mean temperatures for the Upper, Middle, and Lower basins in March were 45.6, 45.3, and 44.7°F, respectively, while their standard deviations were 2.8, 2.9, and 2.8°F, respectively.

# Appendix A. March 2026 Data Tables: Statewide, Climate Divisions, and Counties

A. Mean Temperature and Precipitation

| Region | Mean Air Temperature (°F) | Rank (#) |
|---|---|---|
| **Statewide** | 49.2 | 125 |
| **Climate Division 1** | 50.7 | 127 |
| **Climate Division 2** | 50.1 | 125 |
| **Climate Division 3** | 51.2 | 126 |
| **Climate Division 4** | 50.6 | 125 |
| **Climate Division 5** | 47.7 | 116 |
| **Climate Division 6** | 48.2 | 125 |
| **Climate Division 7** | 48.3 | 129 |
| **Climate Division 8** | 45.9 | 129 |
| **Allegany** | 48.4 | 129 |
| **Anne Arundel** | 50.5 | 125 |
| **Baltimore** | 48.0 | 125 |
| **Baltimore City** | 49.7 | 125 |
| **Calvert** | 50.6 | 125 |
| **Caroline** | 49.1 | 123 |
| **Carroll** | 47.7 | 126 |
| **Cecil** | 46.3 | 114 |
| **Charles** | 51.6 | 126 |
| **Dorchester** | 50.8 | 126 |
| **Fredrick** | 48.7 | 128 |
| **Garrett** | 45.9 | 129 |
| **Harford** | 46.4 | 117 |
| **Howard** | 49.1 | 128 |
| **Kent** | 47.4 | 115 |
| **Montgomery** | 50.2 | 129 |
| **Prince George's** | 50.8 | 127 |
| **Queen Anne's** | 48.1 | 118 |
| **Saint Mary's** | 51.0 | 126 |
| **Somerset** | 51.0 | 126 |
| **Talbot** | 50.1 | 124 |
| **Washington** | 48.2 | 128 |
| **Wicomico** | 50.7 | 127 |
| **Worcester** | 50.4 | 126 |

| Region | Total Precipitation (in) | Rank (#) |
|---|---|---|
| **Statewide** | 2.27 | 18 |
| **Climate Division 1** | 1.71 | 7 |
| **Climate Division 2** | 1.69 | 9 |
| **Climate Division 3** | 1.62 | 11 |
| **Climate Division 4** | 2.07 | 21 |
| **Climate Division 5** | 1.64 | 13 |
| **Climate Division 6** | 2.79 | 47 |
| **Climate Division 7** | 2.59 | 50 |
| **Climate Division 8** | 3.60 | 57 |
| **Allegany** | 2.34 | 42 |
| **Anne Arundel** | 1.95 | 16 |
| **Baltimore** | 2.62 | 39 |
| **Baltimore City** | 2.25 | 24 |
| **Calvert** | 1.47 | 8 |
| **Caroline** | 1.83 | 13 |
| **Carroll** | 3.42 | 61 |
| **Cecil** | 1.92 | 16 |
| **Charles** | 1.85 | 16 |
| **Dorchester** | 1.61 | 9 |
| **Fredrick** | 3.35 | 63 |
| **Garrett** | 3.59 | 57 |
| **Harford** | 2.21 | 26 |
| **Howard** | 2.68 | 45 |
| **Kent** | 1.63 | 11 |
| **Montgomery** | 2.97 | 55 |
| **Prince George's** | 2.15 | 21 |
| **Queen Anne's** | 1.64 | 13 |
| **Saint Mary's** | 1.40 | 9 |
| **Somerset** | 1.65 | 6 |
| **Talbot** | 1.62 | 9 |
| **Washington** | 2.83 | 53 |
| **Wicomico** | 1.70 | 7 |
| **Worcester** | 1.76 | 9 |

**Table A1.** Monthly mean surface air temperature (left) and total precipitation (right) at Maryland (statewide), climate division, and county levels for March 2026. Temperatures are in °F, and precipitation is in inches. The rank is the position the variable for March 2026 occupies among the 132 Marches, after the 132 values have been arranged from lowest to highest using the *standard competition ranking method*. The closer to 132 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** | 61.2 | 128 |
| **Climate Division 1** | 62.7 | 129 |
| **Climate Division 2** | 62.1 | 128 |
| **Climate Division 3** | 63.5 | 128 |
| **Climate Division 4** | 62.6 | 129 |
| **Climate Division 5** | 58.6 | 117 |
| **Climate Division 6** | 59.9 | 127 |
| **Climate Division 7** | 61.2 | 129 |
| **Climate Division 8** | 58.8 | 129 |
| **Allegany** | 61.6 | 129 |
| **Anne Arundel** | 62.2 | 128 |
| **Baltimore** | 59.9 | 126 |
| **Baltimore City** | 61.1 | 127 |
| **Calvert** | 62.5 | 129 |
| **Caroline** | 61.1 | 125 |
| **Carroll** | 59.8 | 127 |
| **Cecil** | 57.0 | 120 |
| **Charles** | 64.2 | 128 |
| **Dorchester** | 62.9 | 129 |
| **Fredrick** | 60.7 | 129 |
| **Garrett** | 58.8 | 129 |
| **Harford** | 57.5 | 121 |
| **Howard** | 61.4 | 128 |
| **Kent** | 57.9 | 114 |
| **Montgomery** | 62.3 | 129 |
| **Prince George's** | 63.1 | 129 |
| **Queen Anne's** | 59.1 | 118 |
| **Saint Mary's** | 63.0 | 128 |
| **Somerset** | 62.7 | 129 |
| **Talbot** | 61.5 | 128 |
| **Washington** | 60.8 | 129 |
| **Wicomico** | 63.6 | 129 |
| **Worcester** | 62.1 | 129 |

| Region | Minimum Air Temperature (°F) | Rank (#) |
|---|---|---|
| **Statewide** | 37.2 | 122 |
| **Climate Division 1** | 38.7 | 117 |
| **Climate Division 2** | 38.1 | 116 |
| **Climate Division 3** | 39.0 | 121 |
| **Climate Division 4** | 38.6 | 119 |
| **Climate Division 5** | 36.9 | 113 |
| **Climate Division 6** | 36.4 | 120 |
| **Climate Division 7** | 35.4 | 125 |
| **Climate Division 8** | 33.0 | 127 |
| **Allegany** | 35.2 | 126 |
| **Anne Arundel** | 38.8 | 119 |
| **Baltimore** | 36.2 | 121 |
| **Baltimore City** | 38.3 | 121 |
| **Calvert** | 38.7 | 119 |
| **Caroline** | 37.1 | 117 |
| **Carroll** | 35.5 | 121 |
| **Cecil** | 35.6 | 110 |
| **Charles** | 39.0 | 119 |
| **Dorchester** | 38.6 | 117 |
| **Fredrick** | 36.7 | 121 |
| **Garrett** | 33.0 | 127 |
| **Harford** | 35.4 | 113 |
| **Howard** | 36.8 | 121 |
| **Kent** | 36.9 | 113 |
| **Montgomery** | 38.1 | 122 |
| **Prince George's** | 38.3 | 119 |
| **Queen Anne's** | 37.2 | 114 |
| **Saint Mary's** | 39.1 | 122 |
| **Somerset** | 39.3 | 117 |
| **Talbot** | 38.7 | 118 |
| **Washington** | 35.6 | 121 |
| **Wicomico** | 37.9 | 117 |
| **Worcester** | 38.8 | 117 |

**Table A2**. Monthly maximum (left) and minimum (right) surface air temperatures at Maryland (statewide), climate division, and county levels for March 2026. Temperatures are in °F. The rank is the position the variable for March 2026 occupies among the 132 Marches, after the 132 values have been arranged from lowest to highest using the *standard competition ranking method*. The closer to 132 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. March 2026 Bar Graphs: Statewide, Climate Divisions, and Counties

## A. Temperatures and Precipitation

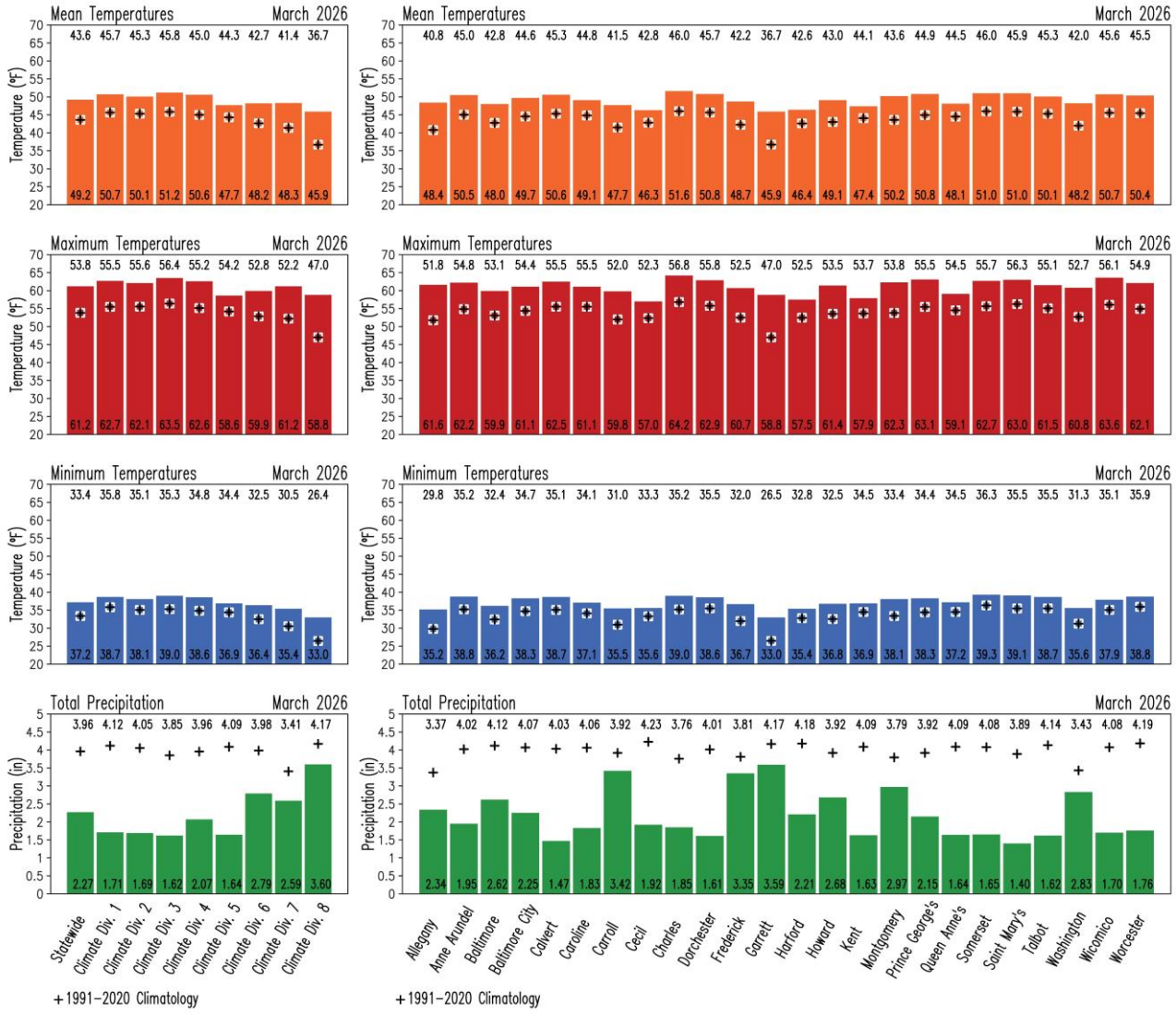


**Figure B1.** Monthly surface variables for Maryland in March 2026. Color bars represent the variables as follows: mean surface air temperature (orange), maximum surface air temperature (red), minimum surface air temperature (blue), and total precipitation (green) at statewide and climate division (left 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 March 2026. For comparison, the corresponding 1991-2020 climatological values for March are displayed as black addition signs, and their magnitudes are shown at the top of the panels.

## B. Temperatures and Precipitation Anomalies

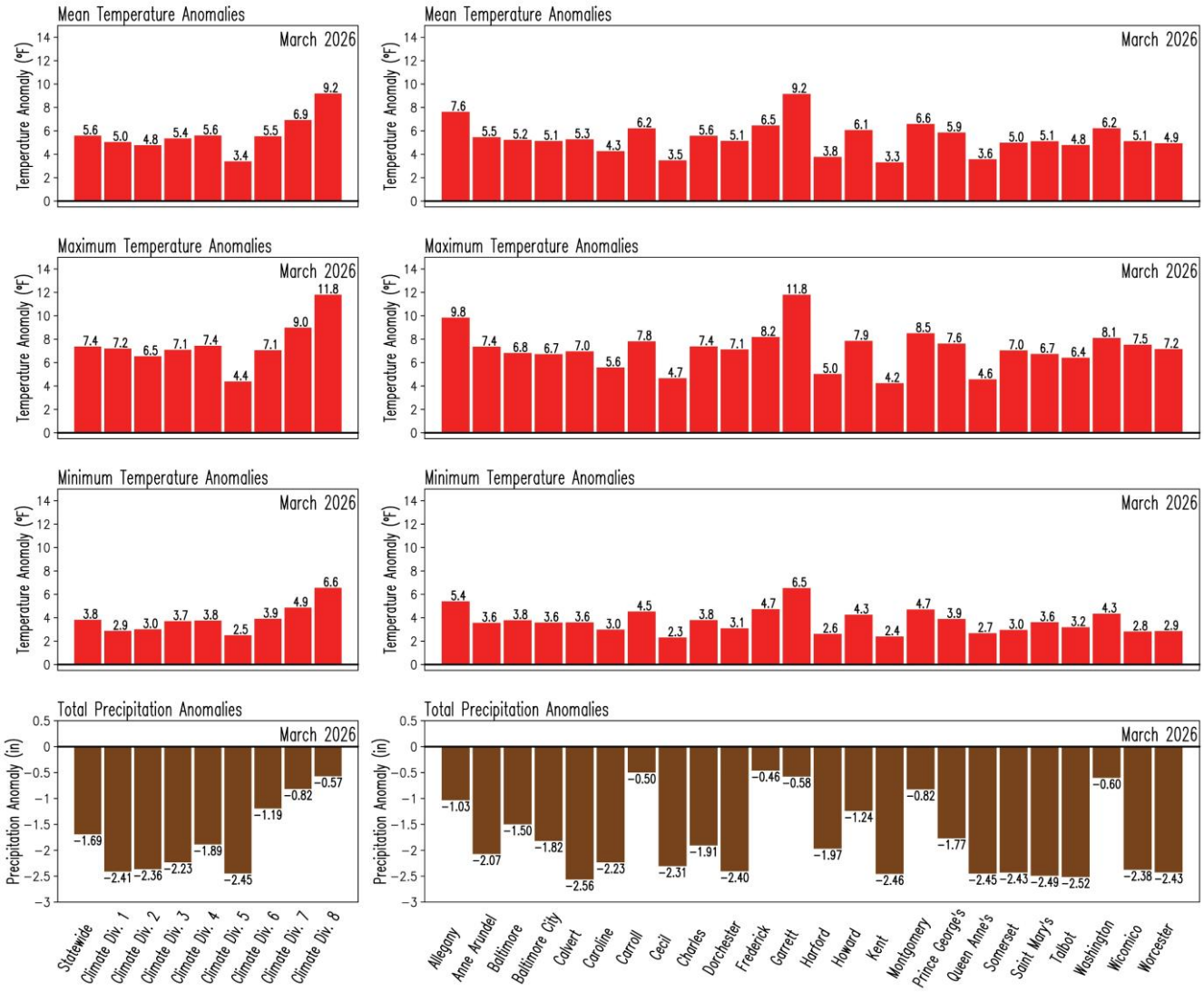


**Figure B2.** Anomalies in the monthly surface variables for Maryland in March 2026. Anomalies are with respect to the 1991-2020 climatology. Red color represents positive (warmer than normal) anomalies for mean surface air temperature (upper row), maximum surface air temperature (second row from top), and minimum surface air temperature (third row from top), while brown color indicates negative (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 March 2026.

# Appendix C. March 1991-2020 Climatology and March 2026 Precipitation as Percentage of Climatology Maps

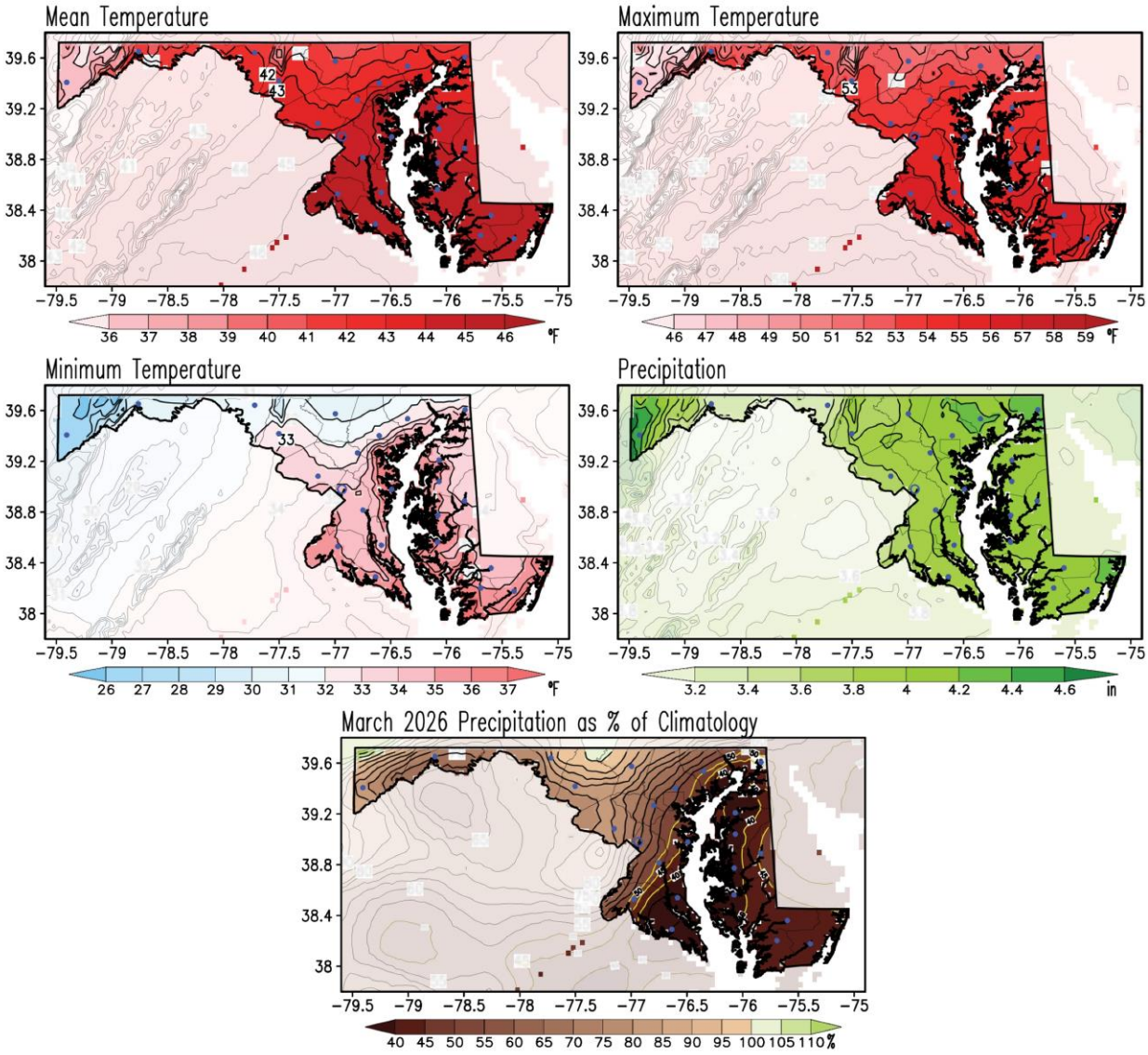


**Figure C1.** March climatology of the monthly mean, maximum, and minimum surface air temperatures, and total precipitation for the period 1991-2020 (upper and middle rows), and precipitation in March 2026 as a percentage of climatology (bottom row). Temperatures are in °F, and precipitation in inches according to the color bars. This is the current climate normal against which the March 2026 conditions are compared to obtain the March 2026 anomalies (from Figures 1 to 4). Precipitation as a percentage is calculated by dividing the total precipitation (from Figure 4) by the climatology (from the middle right panel) and multiplying that ratio by 100, so the units are expressed as a percentage of the climatology (%); the brown/green shading in this map indicates drier/wetter than normal conditions, and yellow isolines are for percentages equal to or less than 50%. Note that shading outside the state has been washed out to facilitate focus on Maryland. Filled blue circles mark the county seats.

# Appendix D. March Standard Deviation and March 2026 Standardized Anomalies Maps

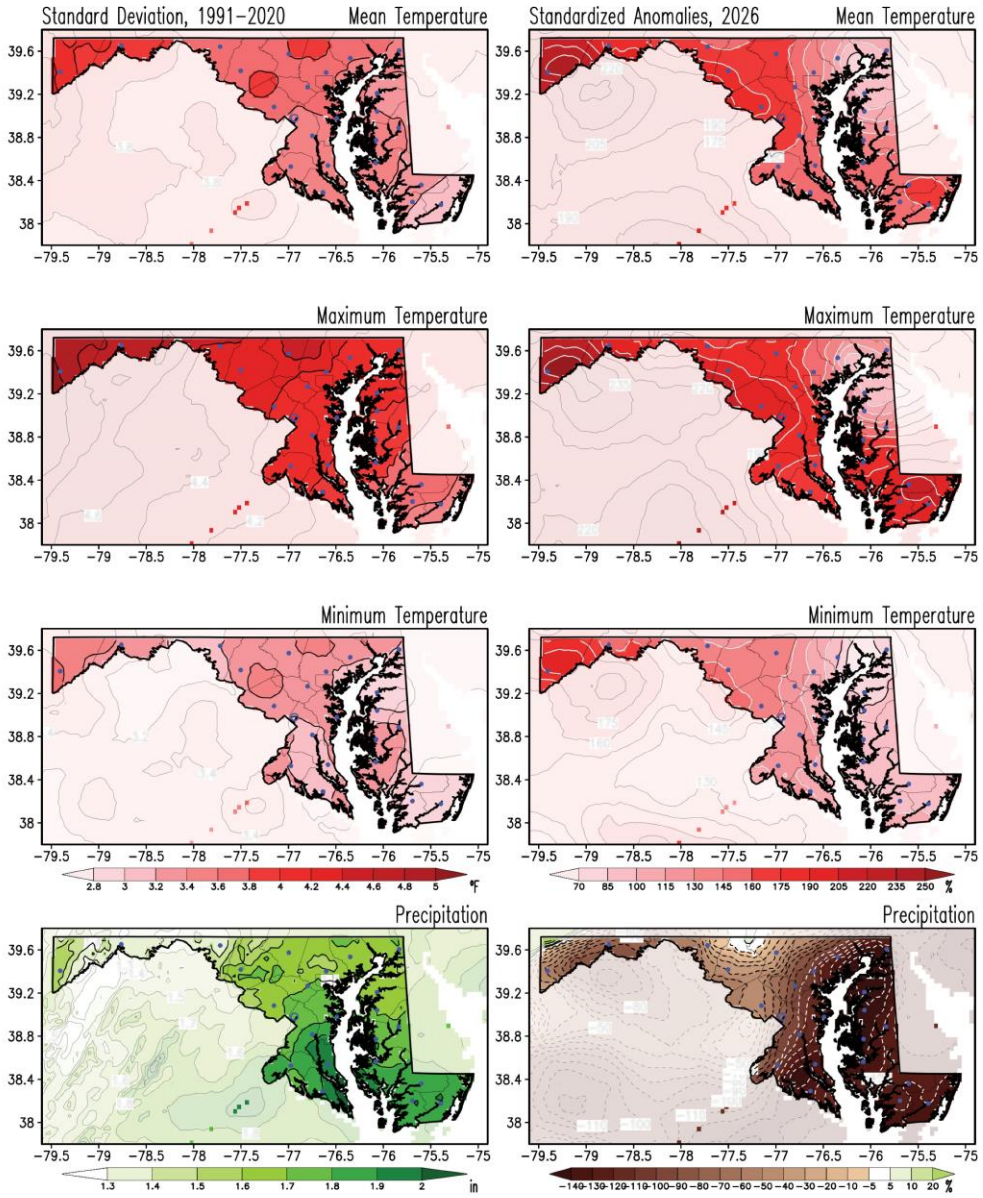


**Figure D1.** Standard deviation for March and standardized anomalies of temperatures and precipitation for March 2026. Standard deviations for monthly mean, maximum, and minimum surface air temperatures and total precipitation were obtained from the 1991-2020 period (left column). Anomalies for March 2026 (right column) are obtained as a percentage of the standard deviations. The standard deviations for temperature are in °F, and those for precipitation are in inches according to the color bars. Red shading in the anomaly temperature maps marks 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 the ratio by 100; hence, the units are in percent (%); white isolines highlight anomalies equal to or larger than 1 standard deviation. Note that shading outside the state has been washed out to facilitate focus on Maryland. Filled blue circles mark the county seats.

# Appendix E. March 2007-2020 Mean and Standard Deviation of Sea Surface Temperature Maps

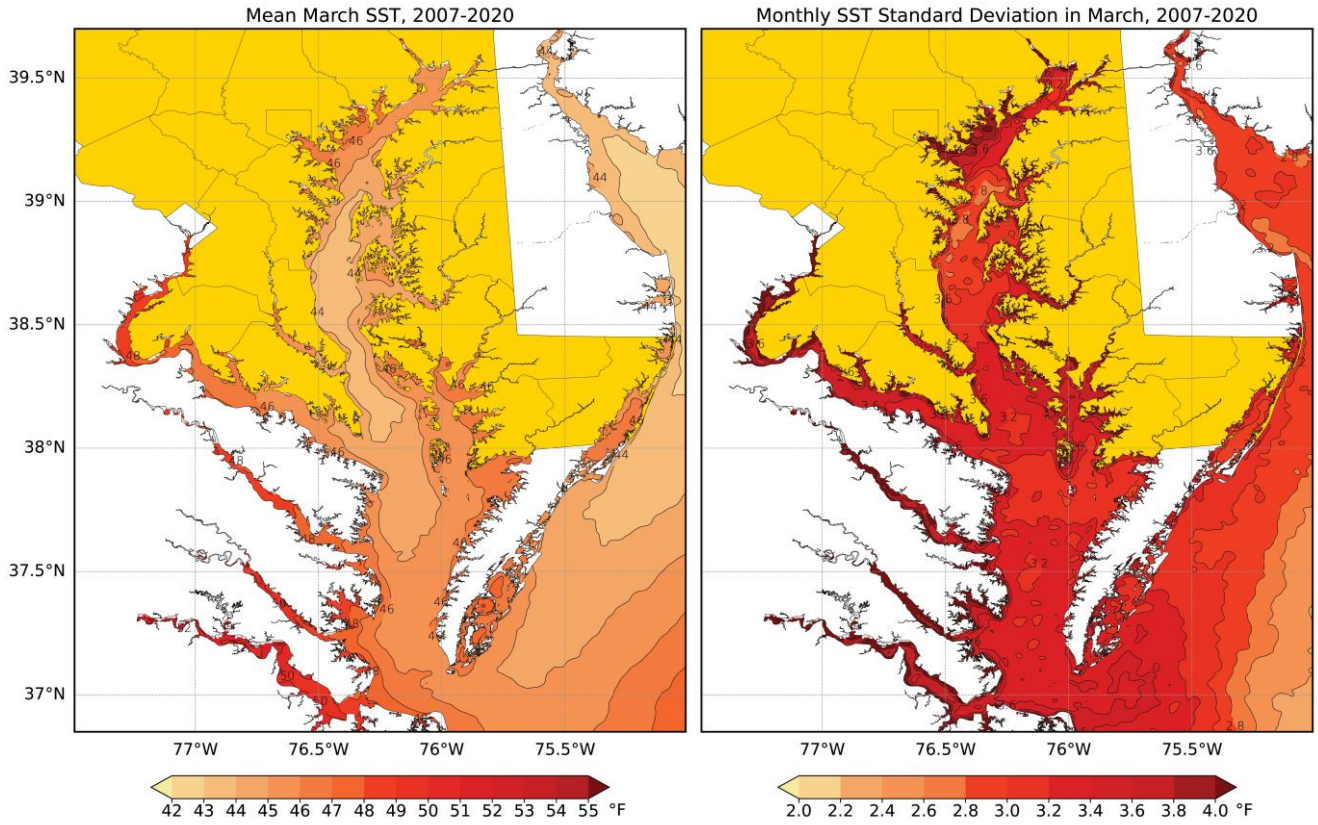


**Figure E1.** Mean (left panel) and standard deviation (right panel) of sea surface temperatures in the Chesapeake Bay and surrounding coastal areas in March for the period 2007-2020. The mean and standard deviation of the temperatures are in °F according to the color bars. The mean temperature map is the current mean against which the March 2026 conditions are compared to obtain the March 2026 anomalies (from Figure 13). For clarity, the mean and standard deviation of the temperature have been smoothed using a 9-point spatial smoother, applied four times. To facilitate comparison between the mean March map (left panel) and the March 2026 map (Figure 13, left panel), the shading schemes are the same. Note that Maryland has been shaded yellow to facilitate focus on the state waters.

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