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Maryland Climate Bulletin
January 2026

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DEPARTMENT OF ATMOSPHERIC & OCEANIC SCIENCE
Sumant Nigam, Chair

Maryland State Climatologist Office

Summary

Statewide averages indicate that January 2026 was colder and drier than normal (i.e., 1991-2020 averages). Regionally, monthly mean temperatures were in the 22−35°F range, maximum temperatures were between 30 and 45°F, and minimum temperatures were in the 14−27°F range. Monthly total precipitation was between 1.2 and 4.5 inches.

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

- The mean temperature was colder than normal throughout the state, especially between eastern Allegany and western Washington counties (4.2–4.8°F below), Harford, Baltimore, and parts of Cecil, Carroll, Howard, Montgomery, and Prince George's counties (3.9−4.2°F below), and parts of Allegany, Garrett, Dorchester, Wicomico, Somerset, and Worcester counties (3.0−3.6°F below).

- The maximum temperature was also colder than normal over the entire state, particularly over Washington and Harford counties, and parts of Cecil, and Baltimore counties (3.6–3.9°F below), parts of Frederick, Carroll, Montgomery, Howard, Baltimore, Prince George's, Anne Arundel, Garrett, and Allegany counties, and southern Calvert, and Saint Mary's counties (3.0–3.6°F below).

- The minimum temperature was colder than normal everywhere in the state, too, notably between eastern Allegany and western Washington counties (4.8–5.7°F below), over parts of Prince George's, Montgomery, Howard, and Anne Arundel counties (4.5–4.8°F below), and parts of Garrett, Allegany, Frederick, Carroll, Montgomery, Howard, Baltimore, Prince George's, Anne Arundel, Calvert, Talbot, Dorchester, Wicomico, Somerset and Worcester counties (3.9−4.5°F below).

- Precipitation was below normal over most of the state, particularly over Frederick, Washington, and Garrett counties (1.2–1.4 inches deficit), Allegany County (1.2 inches deficit), parts of Carroll and Frederick counties (1.0 inches deficit), northern Baltimore and Harford counties, and western Queen Anne's counties (0.8 inches deficit). While Washington County received from 50 to 55% less than normal precipitation for the month, the other regions got between 25 and 30% less than normal. Above normal precipitation occurred only over southern Montgomery County, eastern Prince George's, and Charles counties.

- Drought conditions worsened by the end of January as the extent of Severe Drought conditions increased from ~20% to ~43% of the state. The area affected by drought conditions decreased by ~3% from 100% at the end of December 2025 to ~97% at the end of 2026, with only portions of Kent, Queen Anne's, and Caroline counties under no drought conditions. The extent of Abnormally Dry and Moderate Drought conditions decreased by ~14 and 12%, respectively, by the end of January. Severe Drought conditions covered from western Baltimore, northern Anne Arundel, Prince George's, and Charles counties to eastern Garrett County. While the extent of Moderate Drought conditions decreased in favor of Severe Drought conditions, Worcester, Wicomico, Somerset, and part of Dorchester counties were affected by the former at the end of

January. Throughout the state, streams and rivers experienced Below-normal to Much-Below-normal streamflow, with more streams and rivers in the Much-Below-normal category than in December.

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

- All the climate divisions were colder than normal, with Climate Division 7, Appalachian Mountains, having the largest departure from normal (3.9°F below). All climate divisions were drier than normal, with Climate Division 7 exhibiting the largest deviation from normal (1.14 inches deficit).

- The statewide mean temperature has been colder and drier than normal in the past three months, although the November temperature was practically normal. The departure of the statewide mean temperature in January 2026 from normal was as cold as in December (3.6 vs. 3.5°F below). Statewide precipitation was drier than normal (0.56 inches deficit) in January, following drier-than-normal December (1.83 inches deficit) and November (1.73 inches deficit).

Extreme daily temperatures, precipitation, and growing degree days (Figures 9-10)

- Statewide minimum daily temperatures from January 1 to 31 indicated the number of freezing days with minimum temperatures equal to or colder than 32°F was four days more than normal (28 vs. 24) with a normal number of freezing spells (i.e., two or more consecutive freezing days; 3); the maximum duration of the spells was one more day longer than normal (16 vs. 15). Similarly, the number of days with minimum temperatures equal to or below 28°F was four days above normal (23 vs. 19), with one more spell than normal (4 vs. 3); the maximum duration of the spells was two more days longer than normal (13 vs. 11). Likewise, the number of days with minimum temperatures at or below 24°F was five days more than normal (19 vs. 14), with two more spells than normal (4 vs. 2); the maximum duration of the spells was normal (8).

- Statewide daily total precipitation from January 1 to 31 showed that the number of days with extreme precipitation (at least 0.64 inches –the 95th percentile in 1951−2000) was one more day than normal (2 vs. 1). The number of dry spells (two or more consecutive days with daily precipitation of no more than 0.04 inches) was normal (4); the longest duration of the dry spells was one more day than normal (9 vs. 8).

Historical Context (Figure 11, Tables A1 and A2)

- Statewide mean, maximum, and minimum temperatures in January 2026 (30.4, 39.6, 21.3°F) were below their (1895-2025) long-term means, but very far from their coldest records of 20.8, 28.7, and 12.4°F set in 1918, 1918, and 1977, respectively.

- Statewide mean, maximum, and minimum temperatures indicated that January 2026 was the thirty-eighth, forty-ninth, and thirty-sixth coldest January since 1895, respectively. Among the counties, Washington County had its thirty-fifth coldest mean temperature, Harford had its forty-second coldest maximum temperature, and Dorchester had its twenty-sixth coldest minimum temperature on record.

- Statewide precipitation in January 2026 (2.63 inches) was below its (1895-2025) long-term mean and very far from its driest record of 0.50 inches set in 1981. Statewide, this was the forty-sixth driest January since 1895. Among the counties, Washington County had its fifteenth driest January on record.

Century-Plus Trends, 1895-2026 (Figures 12, 13)

- Statewide mean temperature and heating degree days in January showed non-significant trends: a warming trend (1.1°F/century) and a decreasing heating trend (–39.8°FDD/century). Similarly, statewide precipitation had a non-significant drying trend (−0.20 in/century).

- Regionally, mean temperatures in January showed warming trends in most of the state but the only significant warming trends were found over the northern parts of Harford and Cecil counties (around 1.8°F/century). The largest non-significant warming trends were observed over Frederick, Carroll, Baltimore, Howard, Montgomery, northern Anne Arundel, and southern Harford and Cecil counties (1.4−1.6°F/century). Non-significant cooling trends were found only over western Garrett County.

- Regionally, January precipitation had non-significant trends in the whole state. Drying trends were found over most of the state, particularly in parts of Garrett, Allegany, and Washington counties, southern Harford, Cecil counties, Kent, and northern Queen Anne's counties (−0.5 in/century), and parts of Washington, Frederick, and Charles counties (−0.4 in/century). Non-significant wetting trends were found over the southern Somerset and Worcester counties (0.3−0.4 in/century).

Chesapeake Bay Sea Surface Temperatures (Figures 14, 15, 16, E1)

- Sea surface temperatures in the Chesapeake Bay in January 2026 were in the 37–43°F range. Regionally, they were colder than their 2007-2020 mean everywhere, notably northward of the northern half of the Middle Basin, including the Patapsco River, into the Upper Basin, the middle of the Lower Basin, including the Choptank River, and the northern part of the Potomac River (2.8–3.2°F below); weaker cold departures appeared in the Tangier Sound, including the Manokin River (2°F below). The all-basin mean

temperature of 37.9°F was below the 2007-2020 base period mean (39.7°F) and far from the coldest January in the 20-year dataset (2007-2026), which was 34.7°F in 2018.

- Following the severe freeze in mid-to-late January 2026, the Chesapeake Bay presented fast ice in sheltered inlets north of Annapolis. High ice coverage, between 90−99%, was present in the Middle and Upper basins and some inlets south of Annapolis, including the Honga River. The Choptank River, Fishing Bay, and the mouth of the Nanticoke and Wicomico rivers had 70−90% ice coverage in their waters. The main channel of the Lower Basin was ice-free.

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 January 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, 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 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; these are complemented by a map of maximum ice coverage. 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 February 10, 2026.

- NOAA Monthly U.S. Climate *Divisional* Dataset (NClimDiv – Vose et al., 2014) for 1895-present. Available in preliminary status (v1.0.0-20260205) at: https://www.ncei.noaa.gov/pub/data/cirs/climdiv/
  Data was downloaded on February 10, 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 February 8, 2026.

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

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 February 16, 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

Ice conditions in the Chesapeake Bay are from the U.S. National Ice Center website: https://usicecenter.gov/Products/MidAtlanticHome

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., January 2026) are the departures of the monthly value from the corresponding month's 30-year average (i.e., from the average of 30 Januaries) 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. January 2026 Maps

A. Mean Temperatures

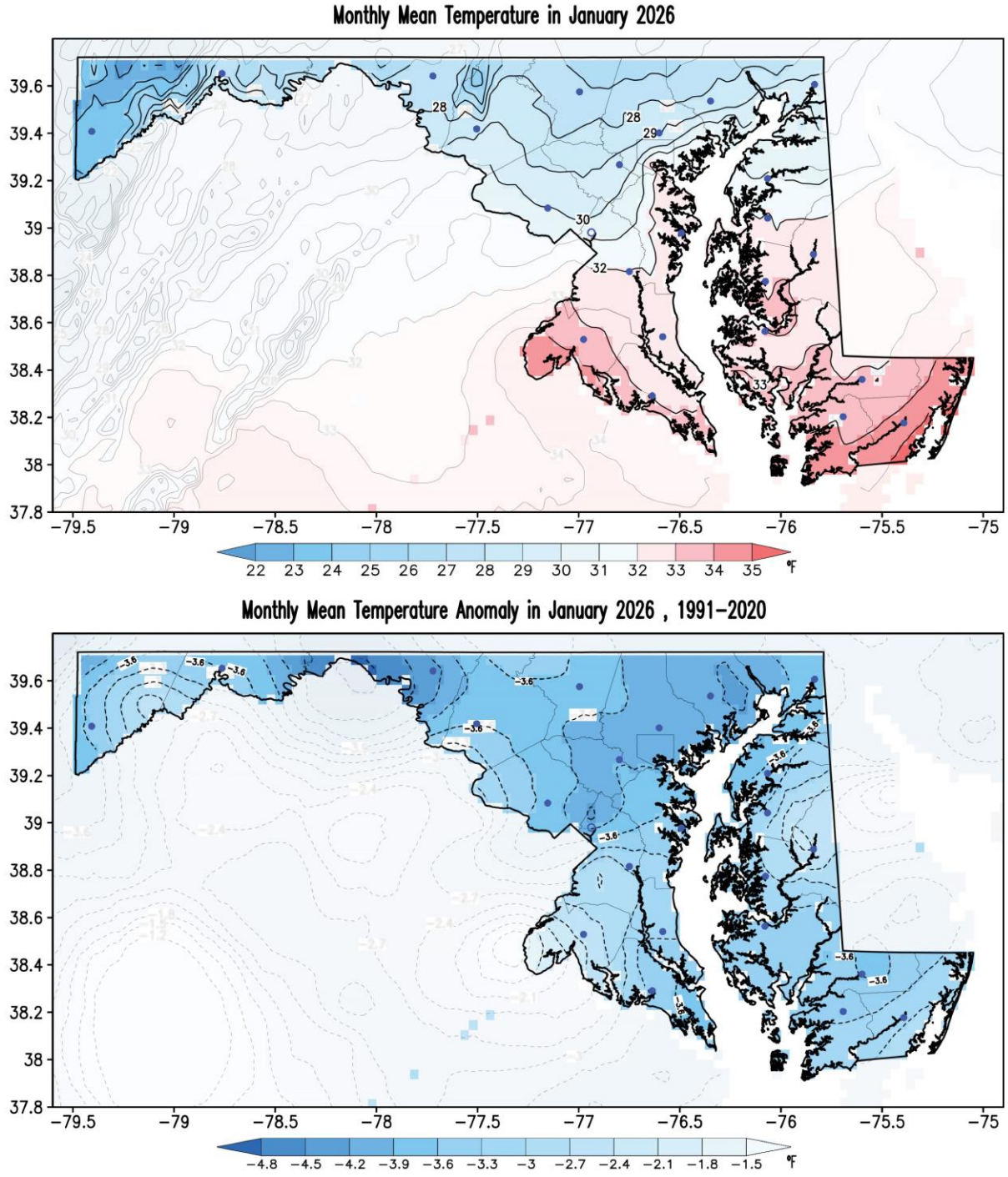

Figure 1. Monthly mean surface air temperature (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for January 2026. Temperatures are in °F following the color bar. Blue/red shading in the temperature map shows temperatures below/above 32°F. Blue shading in the anomaly map marks colder 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

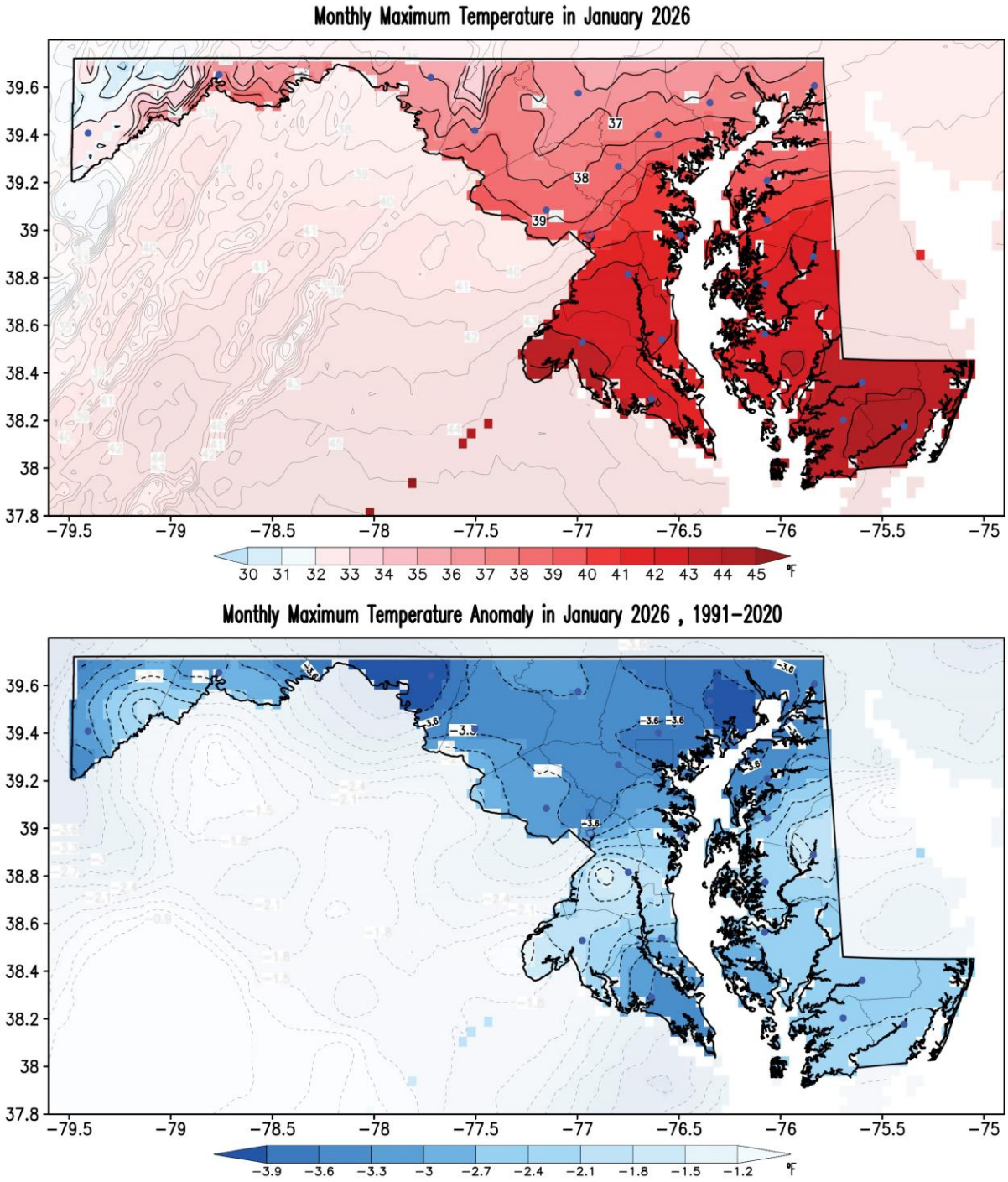

Figure 2. Monthly maximum surface air temperature (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for January 2026. Temperatures are in °F following the color bar. Blue/red shading in the temperature map shows temperatures below/above 32°F. Blue shading in the anomaly map marks colder 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

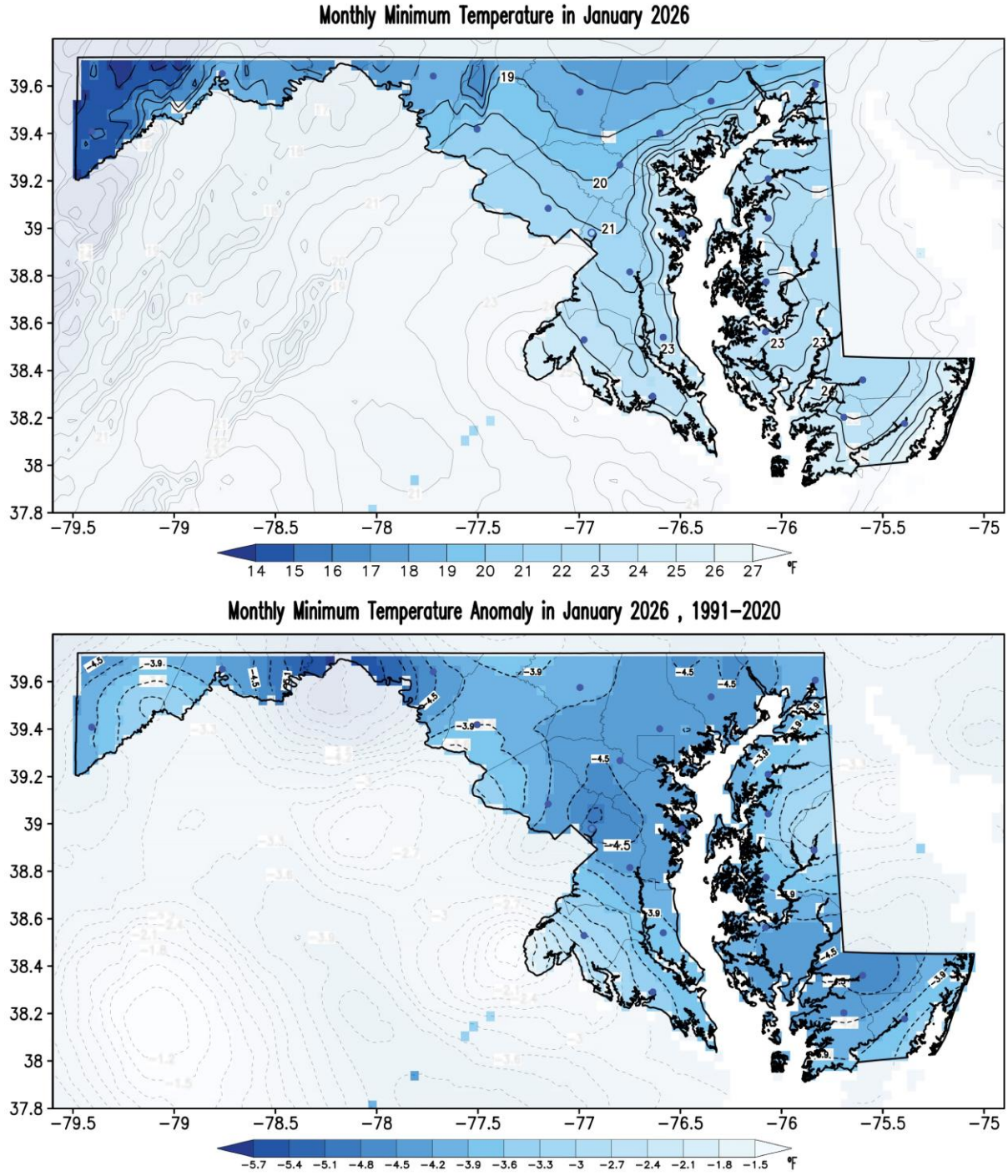

Figure 3. Monthly minimum surface air temperature (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for January 2026. Temperatures are in °F following the color bar. Blue shading in the anomaly map marks colder than normal conditions. Note shading outside the state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

D. Precipitation

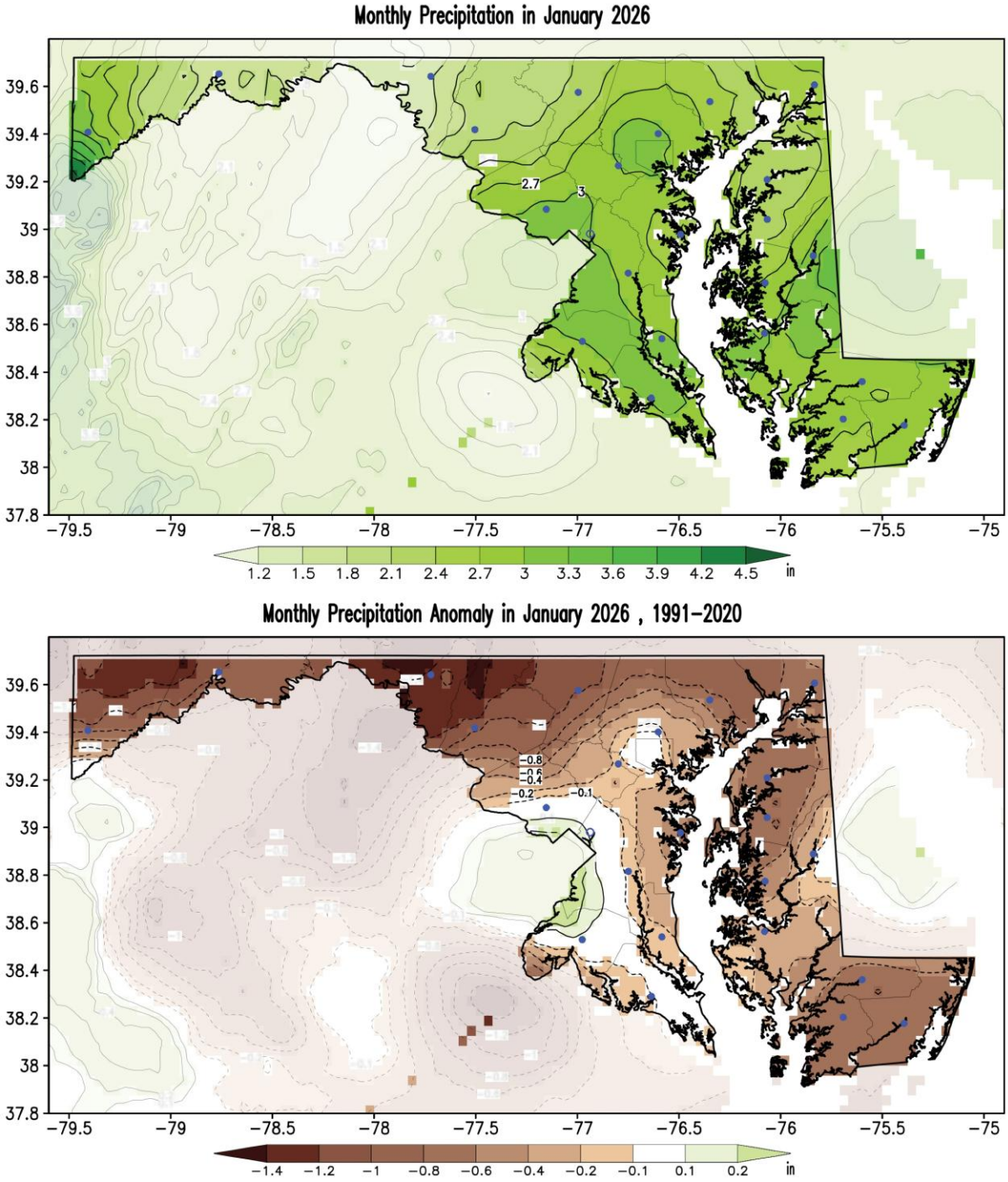

Figure 4. Monthly total precipitation (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for January 2026. Precipitation is measured in inches, as indicated by the color bar. Brown/green shading in the anomaly map indicates drier/wetter than normal conditions. Note shading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

E. Drought

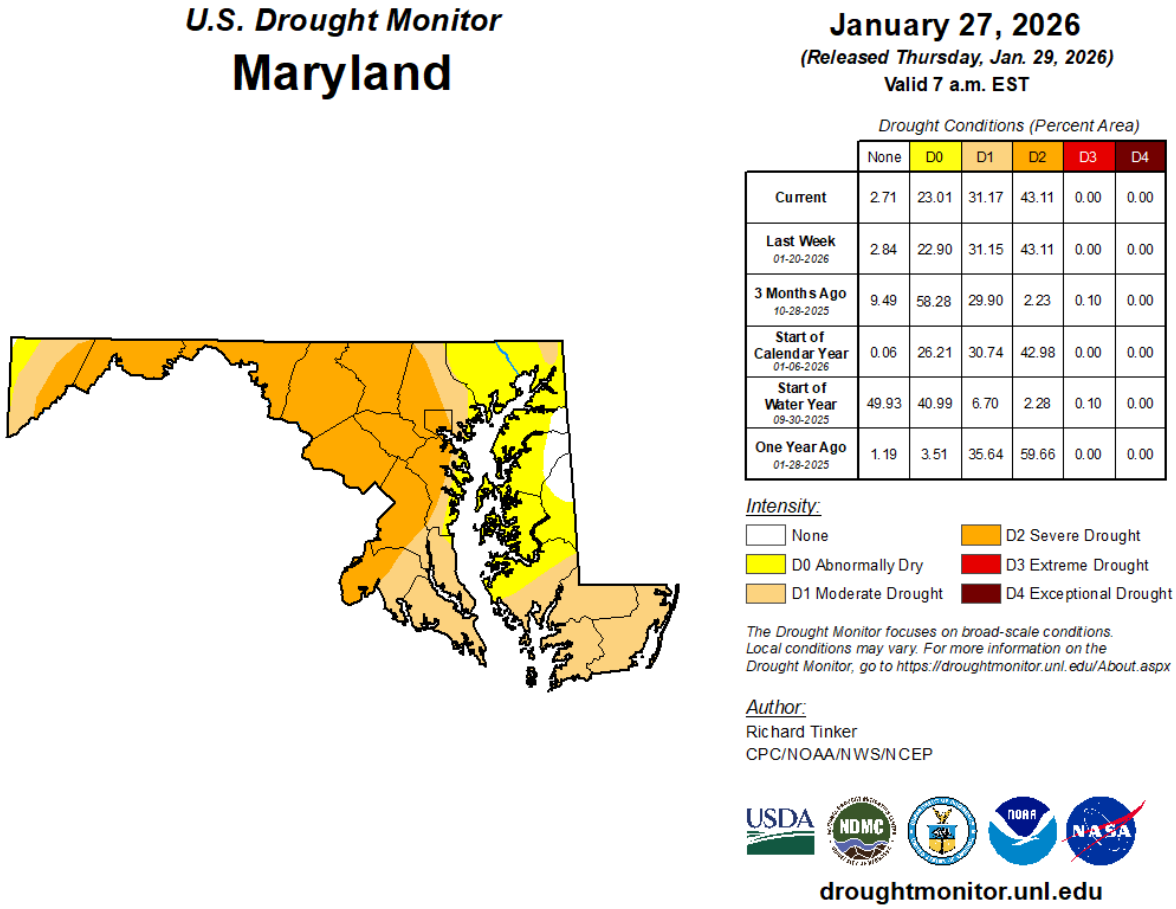

Figure 5. Drought conditions as reported by the U.S. Drought Monitor on January 27, 2026. While the extent of Abnormally Dry and Moderate Drought conditions diminished (by 14% and 12%, respectively), that of Severe Drought conditions increased (by 23%) by the end of January. Yellow shading indicates abnormally dry regions; light orange shading shows regions under a moderate drought, and dark orange shows regions under severe drought. 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 low water supply and damage to crops and pastures. 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.

F. Streamflow

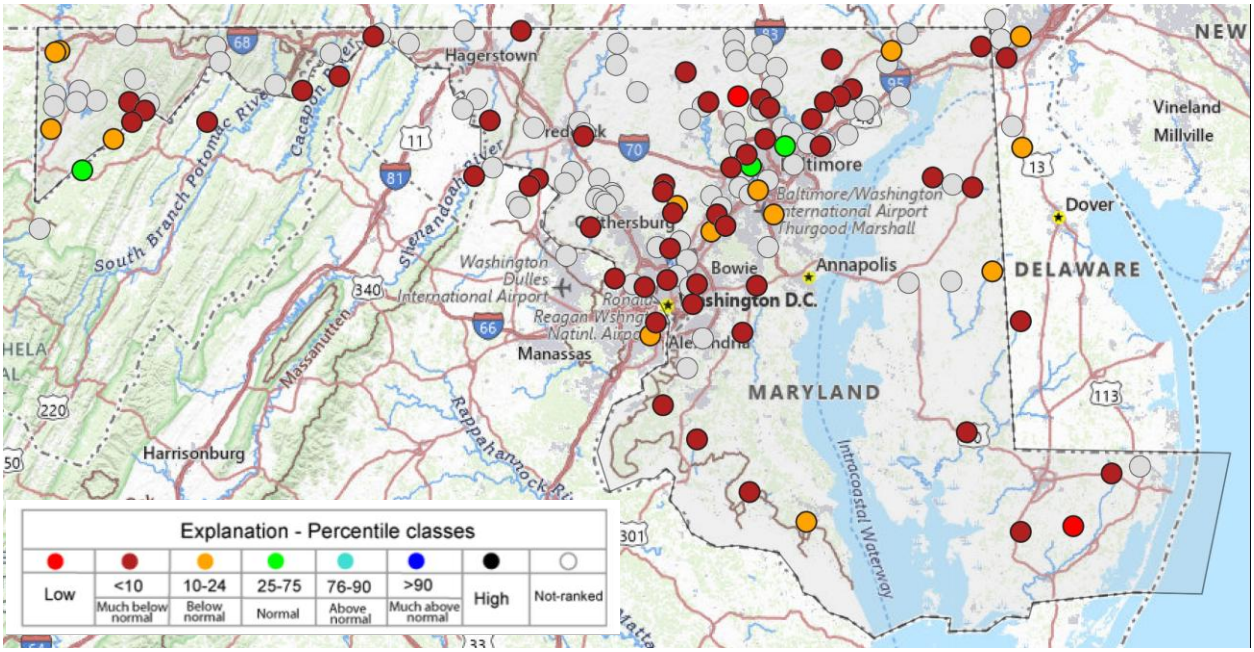

Figure 6. Monthly averaged streamflow class anomalies as reported by the U.S. Geological Survey (USGS) Water Watch for January 2026. Green-filled circles represent Normal streamflow conditions, while orange to red-filled circles denote Below-normal and Much-Below-normal streamflow conditions. Most streams and rivers had Much-Below-normal streamflow. Current conditions can be monitored on the U. S. Geological Survey website.

4. January 2026 and NDJ 2025/2026 Climate Divisions Averages

A. January 2026 Scatter Plots

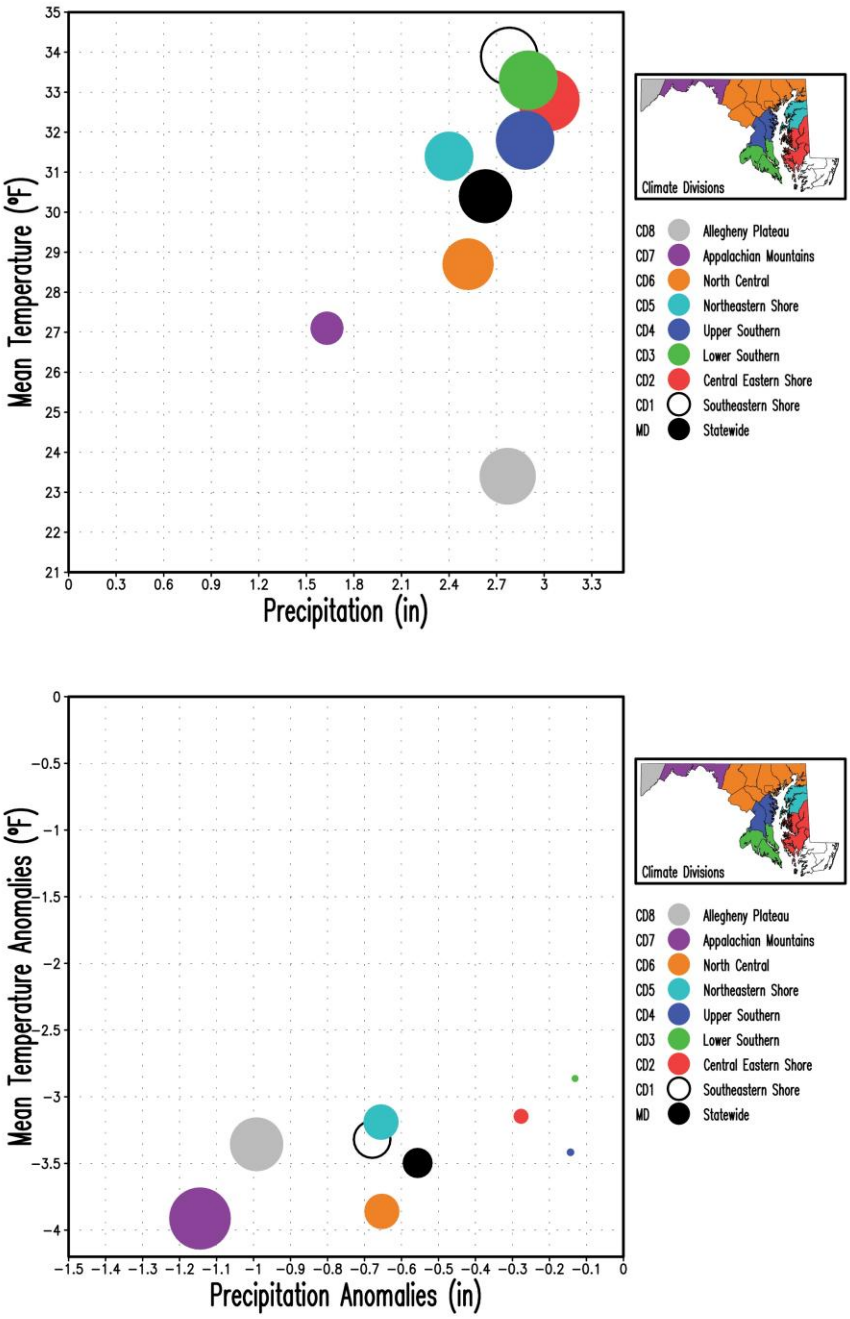

Figure 7. Scatter plots of Maryland (statewide) and Climate Divisions (CD#) monthly mean surface air temperature vs. total precipitation for January 2026. The upper panel displays the mean temperature and total precipitation, while the bottom panel displays their anomalies relative to the 1991-2020 climatology. 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 (3.03 inches in CD2, top panel) and by the maximum precipitation anomaly (|−1.14| inches in CD7, 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. November 2025 – January 2026 Scatter Plots

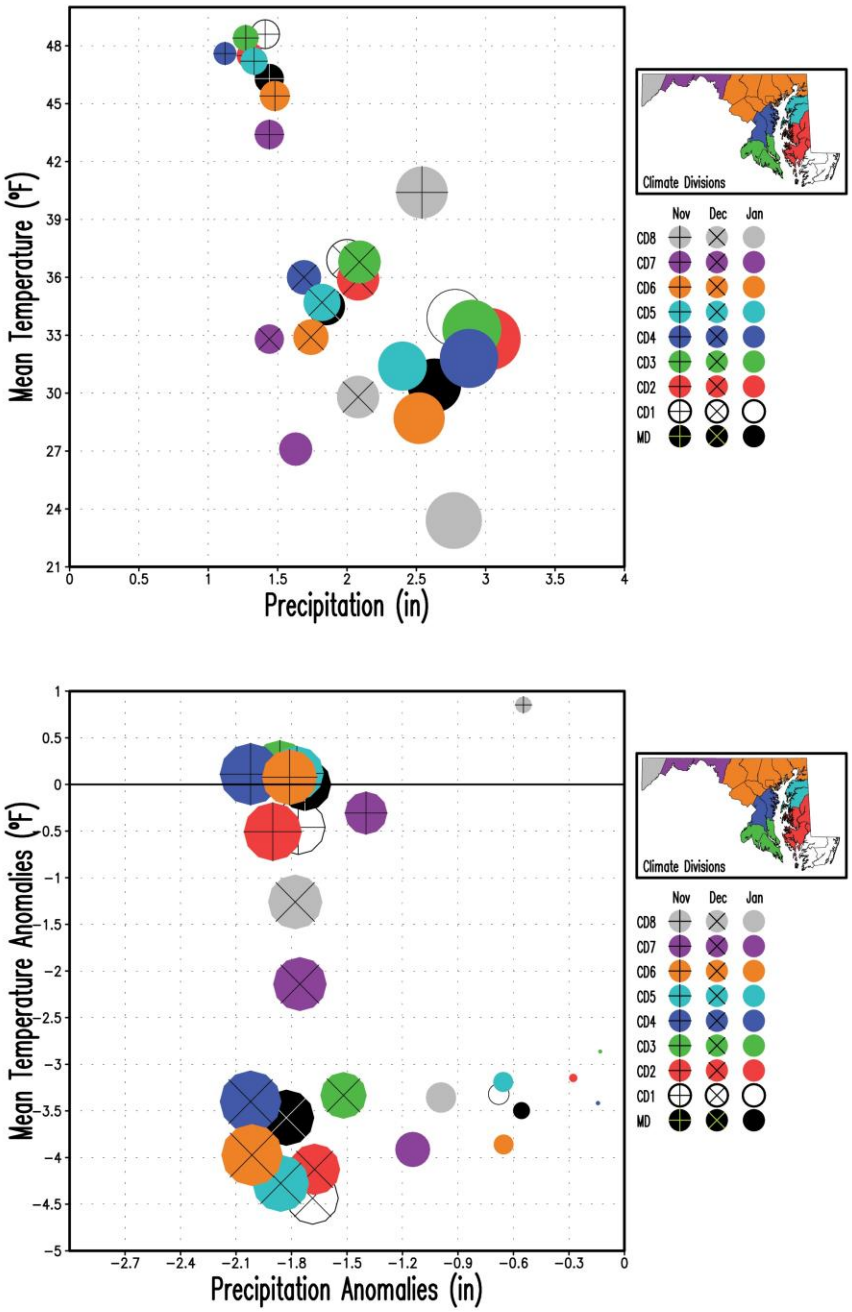

Figure 8. Scatter plots of Maryland (statewide) and Climate Divisions (CD#) monthly mean surface air temperature vs. total precipitation for November, December 2025 and January 2026. The upper panel displays the mean temperature and total precipitation, while the bottom panel shows their anomalies relative 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 (3.03 inches in CD2 in January, top panel) and by the maximum precipitation anomaly (|−2.02| inches in CD4 in December, bottom panel) among the nine regions and three months. December is displayed with filled circles only, while November and October are displayed with superposed multiplication and addition signs, respectively.

5. Extremes

A. Freezing Days

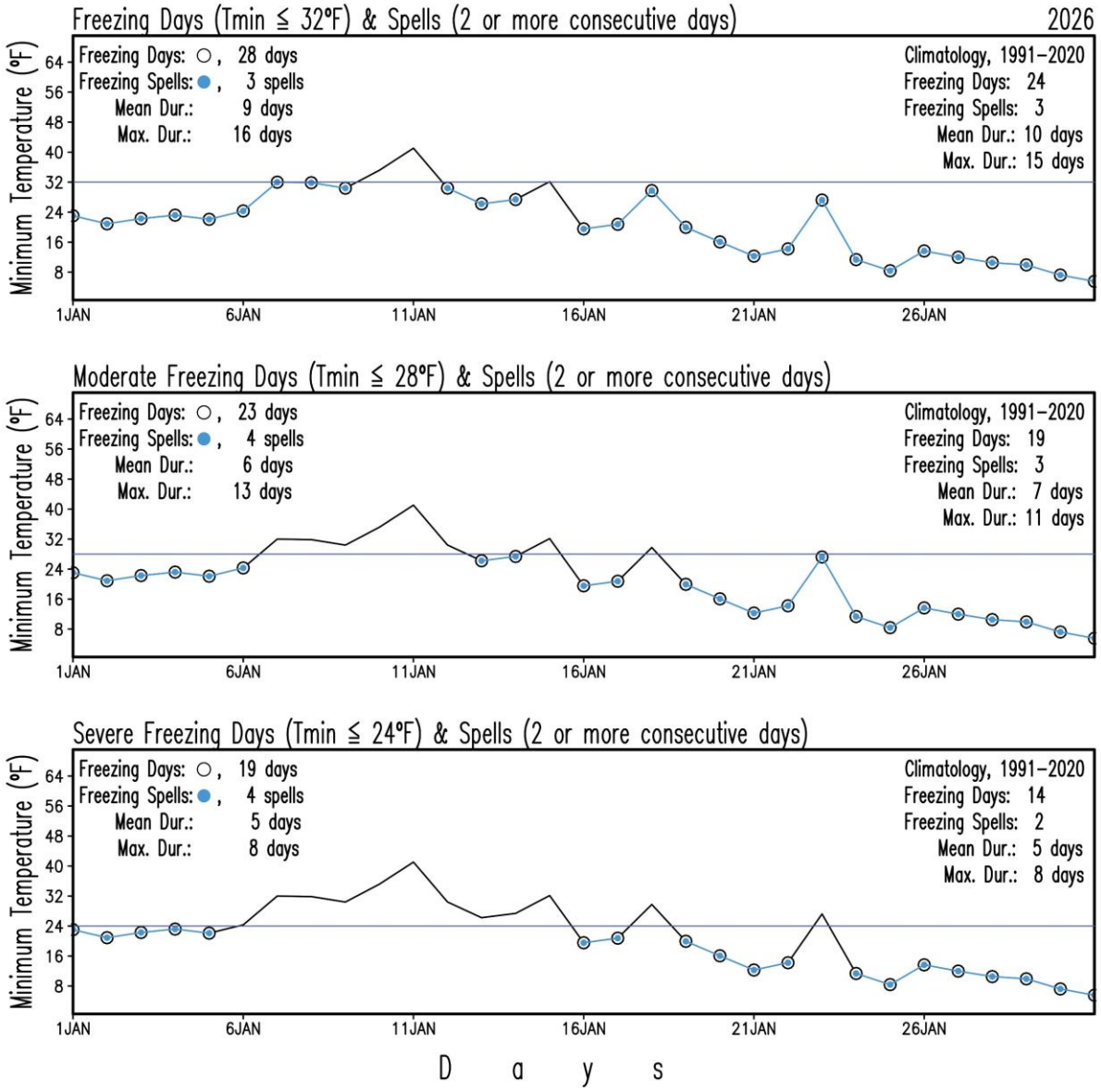

Figure 9. Maryland (statewide) number of freezing days, and their consecutive occurrence for the period January 1 – 31, 2026. The panels show freezing days in open circles and spells of freezing days in blue-filled circles from statewide daily minimum temperatures. The upper panel displays freezing days 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

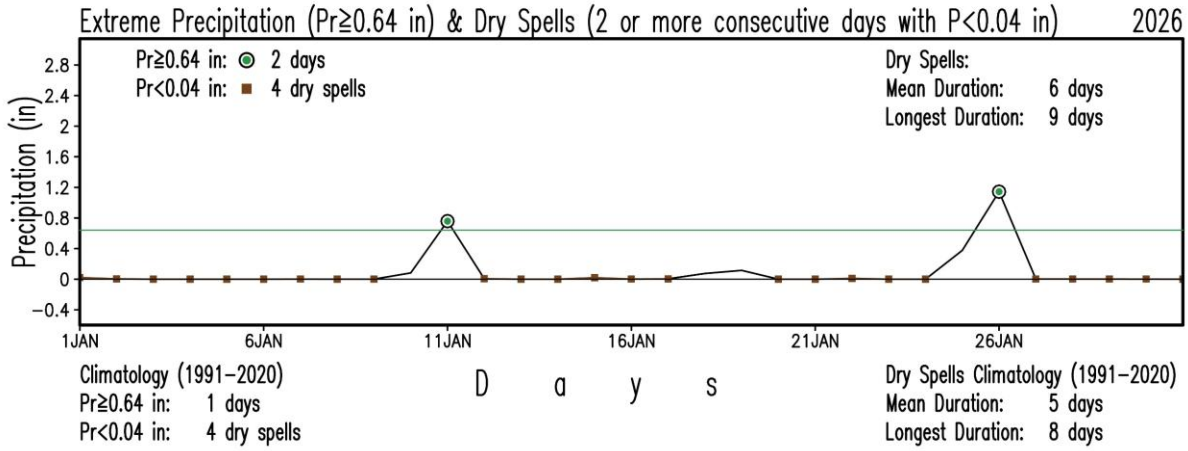

Figure 10. Maryland (statewide) number of days with extreme precipitation and dry day spells for the period January 1 – 31, 2026. Days with extreme precipitation (precipitation equal to or larger than 0.64 in) are identified by green-filled circles. Dry spells (consecutive days with daily total precipitation 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. January 2026 Statewide Averages in the Historical Record

A. Box and Whisker Plots

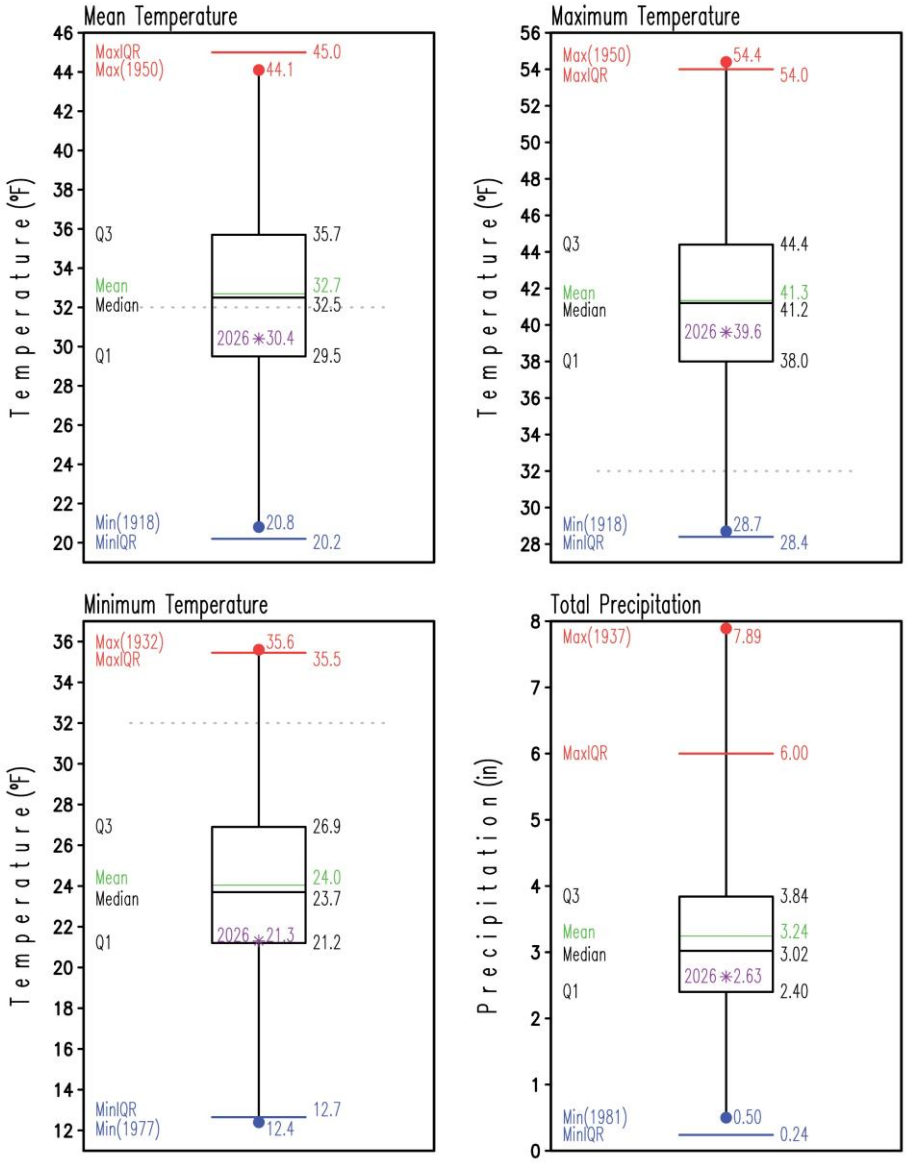

Figure 11. Box and Whisker plots of Maryland (statewide) monthly mean (upper left), maximum (upper right), minimum (lower left) surface air temperatures, and total precipitation (lower right) for January for the period 1895-2025. Conditions for January 2026 are represented by the label and asterisk in 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. 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 January Trends

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

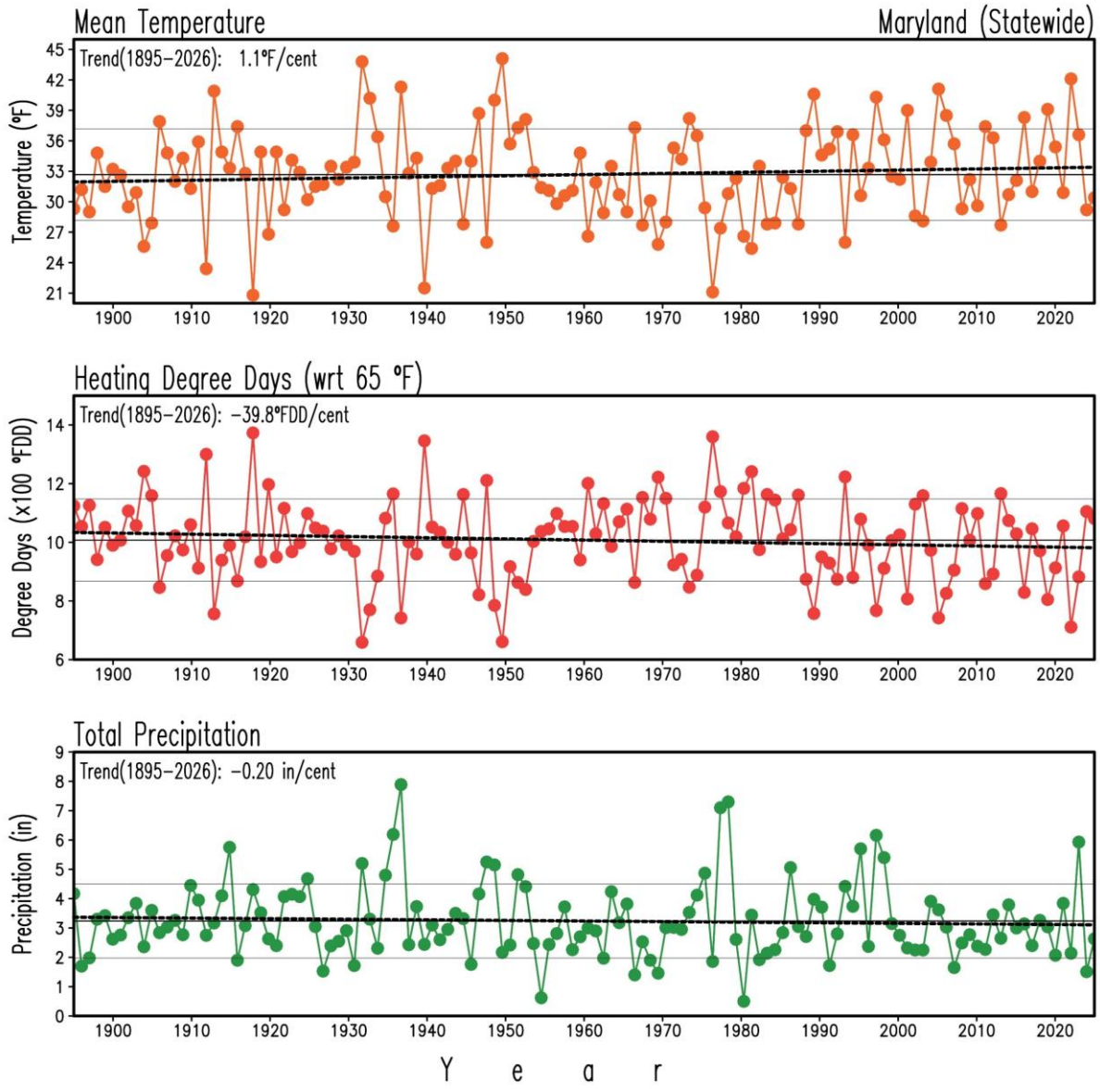

Figure 12. Maryland (statewide) mean surface air temperature, heating degree days, and precipitation in January for the period 1895-2026. Temperature is in °F, degree-days are in °F degree-days (°FDD), and precipitation is in inches. The thin, continuous black lines in each panel display the long-term means (32.7°F, 1007.6°FDD, and 3.24 in, 1895-2026), and the double thin, continuous gray lines indicate the standard deviation (4.5°F, 140.2°FDD, and 1.26 in) above/below the long-term mean. The thick dashed black lines show the long-term linear trend. The warming temperature trend (1.1°F/century), the decreasing heating degree-days trend (−39.8°FDD/century), and the drying precipitation trend (–0.20 in/century) are not statistically significant at the 95% level (*Student's t-test* −Santer et al. 2000).

B. Temperature and Precipitation Maps

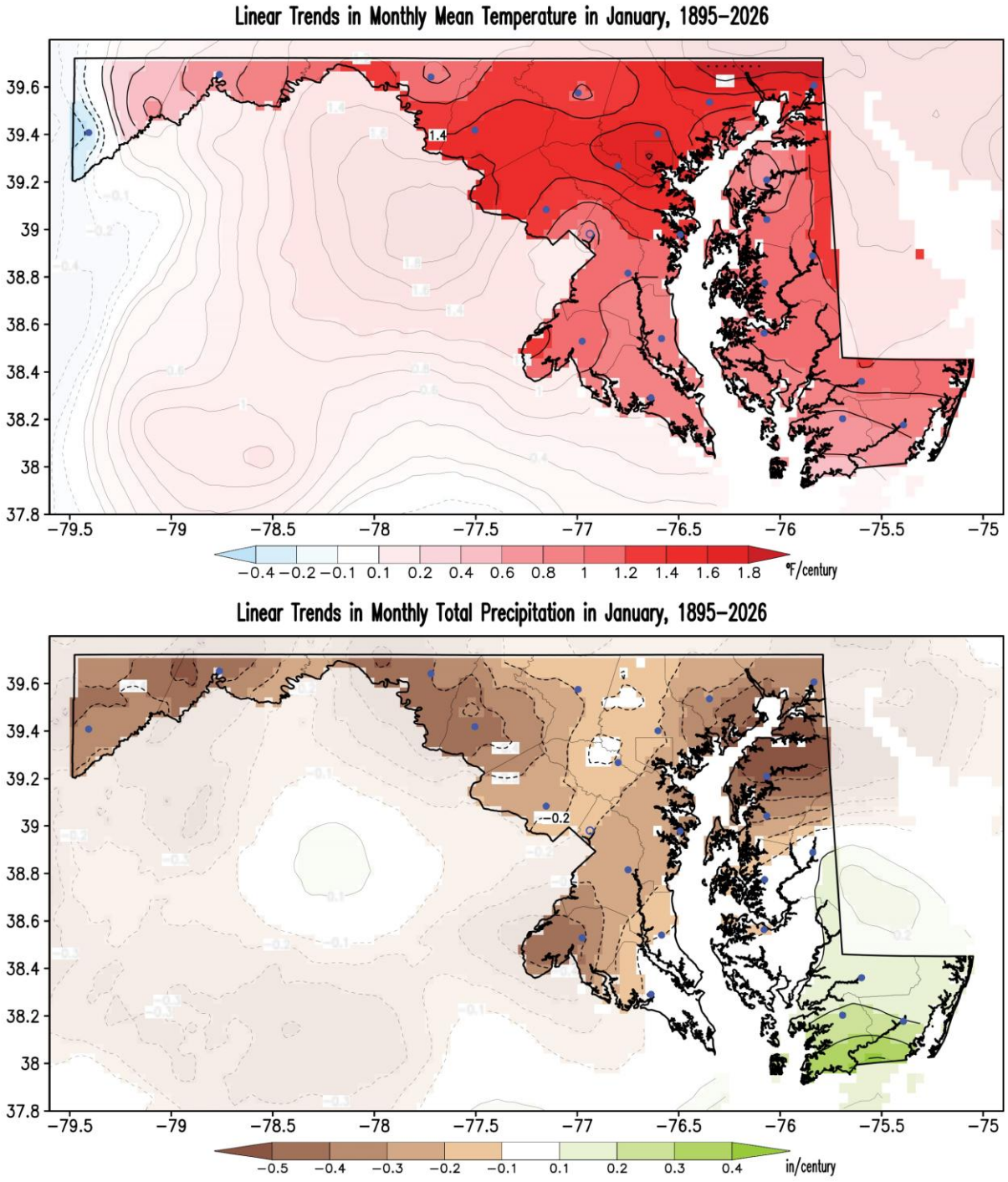

Figure 13. Linear trends in surface air mean temperature and precipitation in January for the period 1895-2026. Temperatures are in °F/century, and precipitation is in inches/century following the color bars. Blue/red shading in the temperature map marks colder/warming trends. Brown/green shading in 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 and Ice

A. Maps

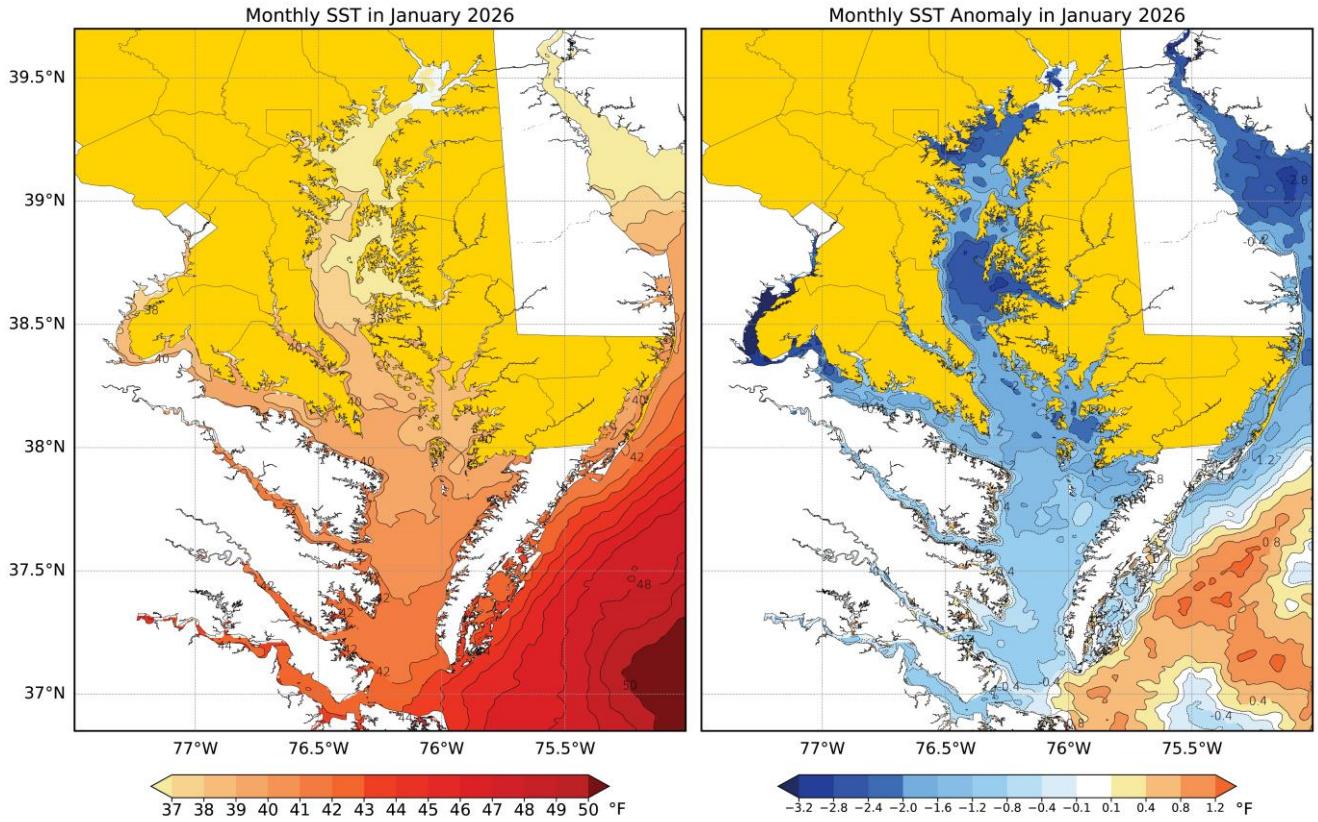

Figure 14. Monthly sea surface temperature (left panel) and its anomaly (right panel) in the Chesapeake Bay and surrounding coastal areas in January 2026. Temperatures are in °F following the color bar. Blue/orange shading in the anomaly map marks colder/warmer temperatures than the 2007-2020 mean. For 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.

B. Upper, Middle, Lower, and Entire Basins Averages

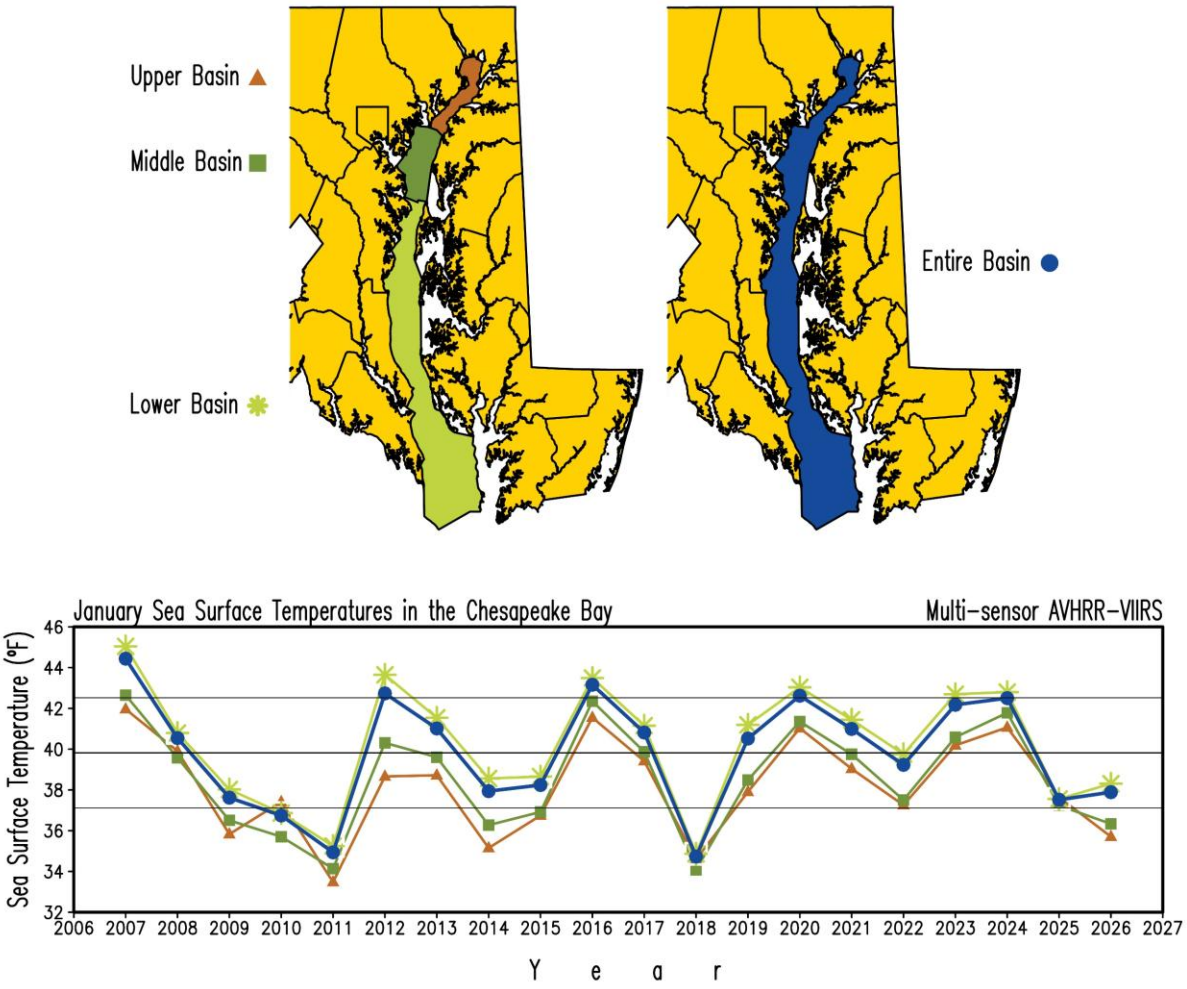

Figure 15. Watersheds in the Chesapeake Bay (top panel) and their area-averaged sea surface temperatures in January for the period 2007-2025 (bottom panel). Temperatures are in °F. The color of the lines corresponds to the color of the watersheds in the Bay, as indicated on the maps: Brown for the Upper 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 January 2026 was 37.9°F, while for the Upper, Middle, and Lower basins was 35.7, 36.3, and 38.3°F, respectively. The thin, continuous black line in the lower panel displays the 2007-2026 mean for the Entire Basin (39.8°F), and the double thin, continuous gray lines indicate the standard deviation (2.7°F) above/below the long-term mean. The 2007-2026 mean temperatures for the Upper, Middle, and Lower basins in January were 38.2, 38.6, and 40.2°F, respectively, while their standard deviations were 2.4, 2.5, and 2.8°F, respectively.

C. Ice in the Bay

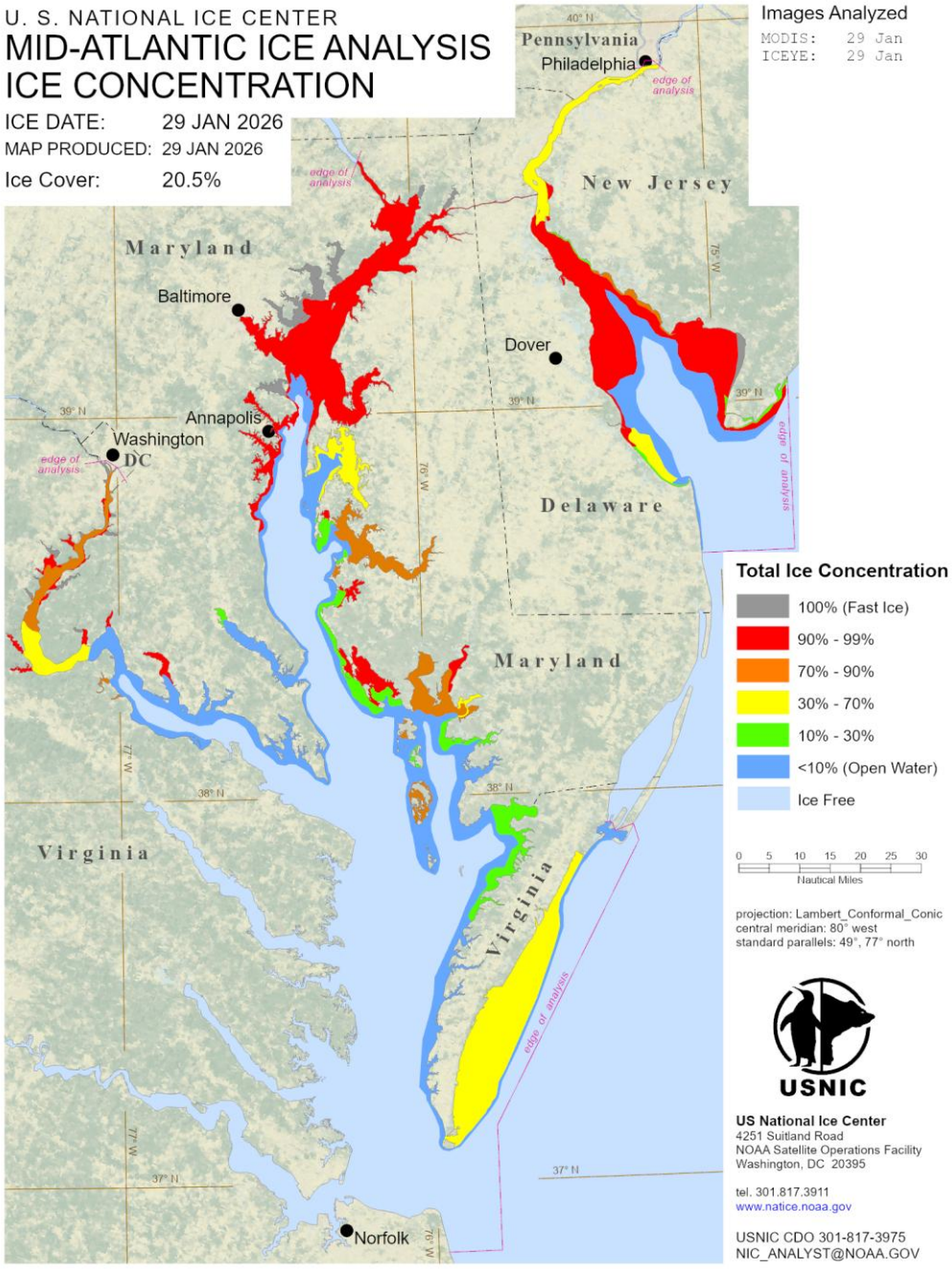

Figure 16. Maximum ice coverage (20.5%) in January 2026 in the Chesapeake and Delaware bays as tracked by the U. S. National Ice Center on January 29. As indicated by the color legend, gray-shaded areas mark waters where fast ice was present, red-shaded areas mark waters with up to 90−99% of ice coverage, orange-shaded areas mark waters with 70−90% of ice coverage, yellow-shaded areas mark waters with 30−70% of ice coverage, green-shaded areas mark waters with 10−30% of ice coverage, dark blue-shaded areas mark waters with less than 10% of ice coverage, and light blue-shaded areas mark ice-free waters. Updated ice conditions in the Bay and outlooks are available on the USNIC website.

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

A. Mean Temperature and Precipitation

Region	Mean Air Temperature (°F)	Rank (#)
Statewide	30.4	38
Climate Division 1	33.9	39
Climate Division 2	32.8	45
Climate Division 3	33.3	43
Climate Division 4	31.8	38
Climate Division 5	31.4	42
Climate Division 6	28.7	37
Climate Division 7	27.1	38
Climate Division 8	23.4	41
Allegany	26.8	39
Anne Arundel	31.9	38
Baltimore	28.6	36
Baltimore City	30.8	37
Calvert	32.6	39
Caroline	32.5	54
Carroll	27.5	38
Cecil	29.2	39
Charles	33.7	51
Dorchester	32.9	38
Fredrick	28.3	42
Garrett	23.4	40
Harford	28.6	36
Howard	29.0	38
Kent	30.9	39
Montgomery	29.9	41
Prince George's	31.8	39
Queen Anne's	31.8	44
Saint Mary's	33.1	40
Somerset	34.0	39
Talbot	32.8	43
Washington	27.3	35
Wicomico	33.2	39
Worcester	34.4	42

Region	Total Precipitation (in)	Rank (#)
Statewide	2.63	46
Climate Division 1	2.78	41
Climate Division 2	3.03	57
Climate Division 3	2.90	61
Climate Division 4	2.88	68
Climate Division 5	2.40	35
Climate Division 6	2.52	47
Climate Division 7	1.63	23
Climate Division 8	2.77	39
Allegany	1.78	32
Anne Arundel	2.73	55
Baltimore	2.83	54
Baltimore City	3.08	68
Calvert	2.98	66
Caroline	3.11	64
Carroll	2.28	36
Cecil	2.49	36
Charles	2.82	59
Dorchester	3.01	53
Fredrick	2.04	34
Garrett	2.77	39
Harford	2.47	40
Howard	2.83	59
Kent	2.34	34
Montgomery	2.85	69
Prince George's	3.01	73
Queen Anne's	2.39	33
Saint Mary's	2.99	61
Somerset	2.72	42
Talbot	2.75	52
Washington	1.49	15
Wicomico	2.85	47
Worcester	2.78	43

Table A1. Monthly mean surface air temperature (left) and total precipitation (right) at Maryland (statewide), climate division, and county levels for January 2026. Temperatures are in °F, and precipitation is in inches. The rank is the position the variable for January 2026 occupies among the 132 Januaries, 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	39.6	49
Climate Division 1	43.7	51
Climate Division 2	42.4	56
Climate Division 3	42.7	52
Climate Division 4	41.3	51
Climate Division 5	40.2	50
Climate Division 6	37.5	48
Climate Division 7	36.2	41
Climate Division 8	32.0	43
Allegany	36.1	44
Anne Arundel	41.0	48
Baltimore	37.7	44
Baltimore City	39.4	45
Calvert	42.0	49
Caroline	42.2	58
Carroll	36.6	48
Cecil	37.6	48
Charles	43.2	55
Dorchester	42.6	55
Fredrick	37.0	49
Garrett	32.0	43
Harford	37.3	42
Howard	38.2	48
Kent	39.3	46
Montgomery	38.6	51
Prince George's	41.6	54
Queen Anne's	40.8	52
Saint Mary's	42.3	47
Somerset	43.5	50
Talbot	42.0	54
Washington	36.4	43
Wicomico	43.5	53
Worcester	43.9	53

Region	Minimum Air Temperature (°F)	Rank (#)
Statewide	21.3	36
Climate Division 1	24.2	33
Climate Division 2	23.2	33
Climate Division 3	23.9	37
Climate Division 4	22.4	28
Climate Division 5	22.6	38
Climate Division 6	19.9	32
Climate Division 7	17.9	34
Climate Division 8	14.9	42
Allegany	17.6	38
Anne Arundel	22.8	28
Baltimore	19.6	31
Baltimore City	22.3	30
Calvert	23.1	31
Caroline	22.8	44
Carroll	18.4	31
Cecil	20.9	35
Charles	24.2	45
Dorchester	23.2	26
Fredrick	19.6	36
Garrett	14.9	42
Harford	19.8	31
Howard	19.9	33
Kent	22.4	37
Montgomery	21.2	35
Prince George's	22.0	29
Queen Anne's	22.8	39
Saint Mary's	23.9	34
Somerset	24.4	30
Talbot	23.7	33
Washington	18.2	29
Wicomico	22.9	28
Worcester	24.9	36

Table A2. Monthly maximum (left) and minimum (right) surface air temperatures at Maryland (statewide), climate division, and county levels for January 2026. Temperatures are in °F. The rank is the position the variable for January 2026 occupies among the 132 Januaries, 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. January 2026 Bar Graphs: Statewide, Climate Divisions, and Counties

A. Temperatures and Precipitation

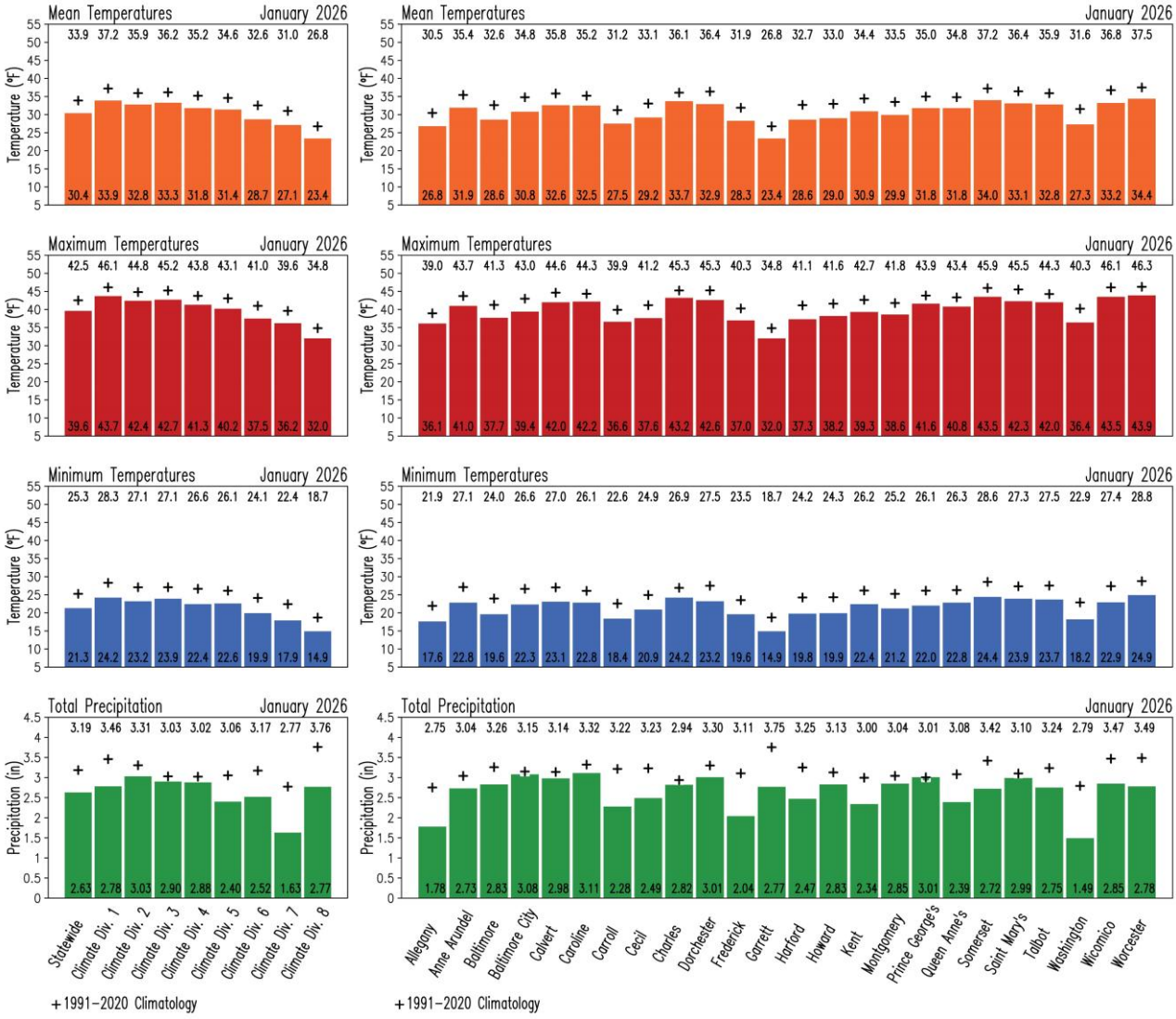

Figure B1. Monthly surface variables for Maryland in January 2026. Color bars represent the variables as follows: mean surface air temperature (orange), maximum surface air temperature (red), minimum surface air temperature (blue), and total precipitation (green) at statewide and climate division (left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

B. Temperatures and Precipitation Anomalies

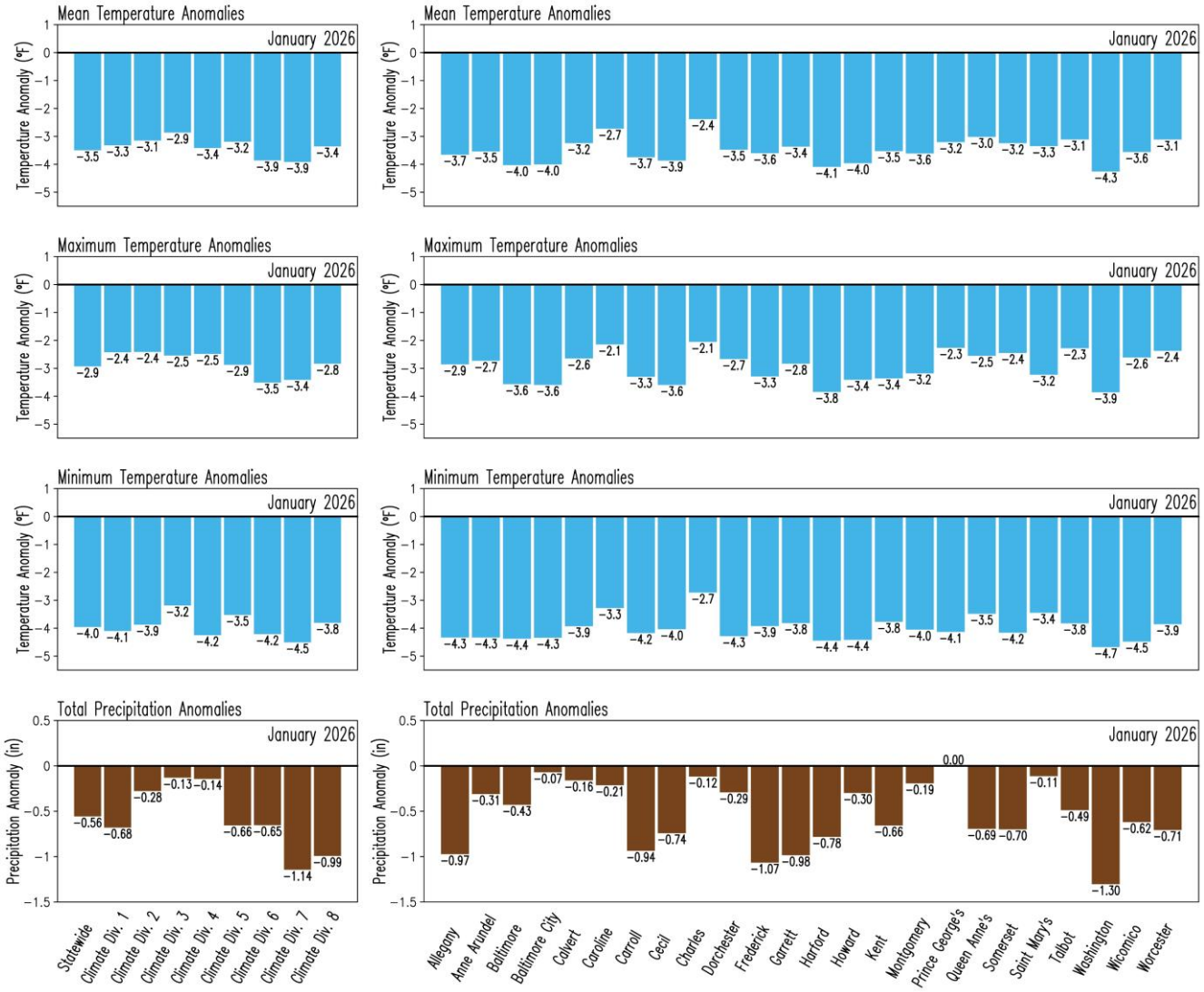

Figure B2. Anomalies in the monthly surface variables for Maryland in January 2026. Anomalies are with respect to the 1991-2020 climatology. Blue color represents negative (colder than normal) anomalies for mean surface air temperature (upper row), maximum surface air temperature (second row from top),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

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

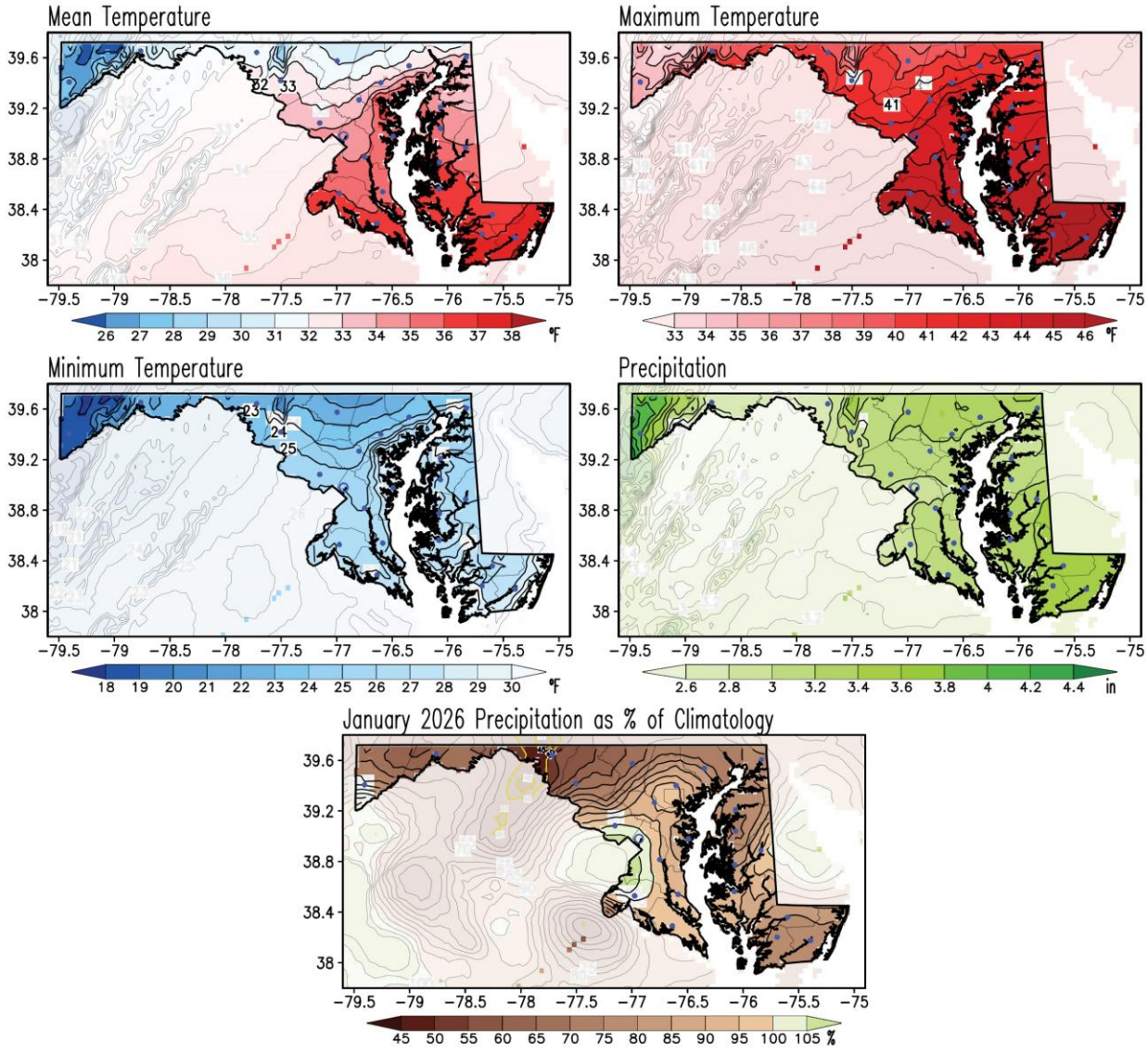

Figure C1. January climatology of the monthly mean, maximum, and minimum surface air temperatures, and total precipitation for the period 1991-2020 (upper and middle rows), and precipitation in January 2026 as a percentage of climatology (bottom row). Temperatures are in °F, and precipitation in inches according to the color bars. This is the current climate normal against which the January 2026 conditions are compared to obtain the January 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 shading in this map indicates drier 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. January Standard Deviation and January 2026 Standardized Anomalies Maps

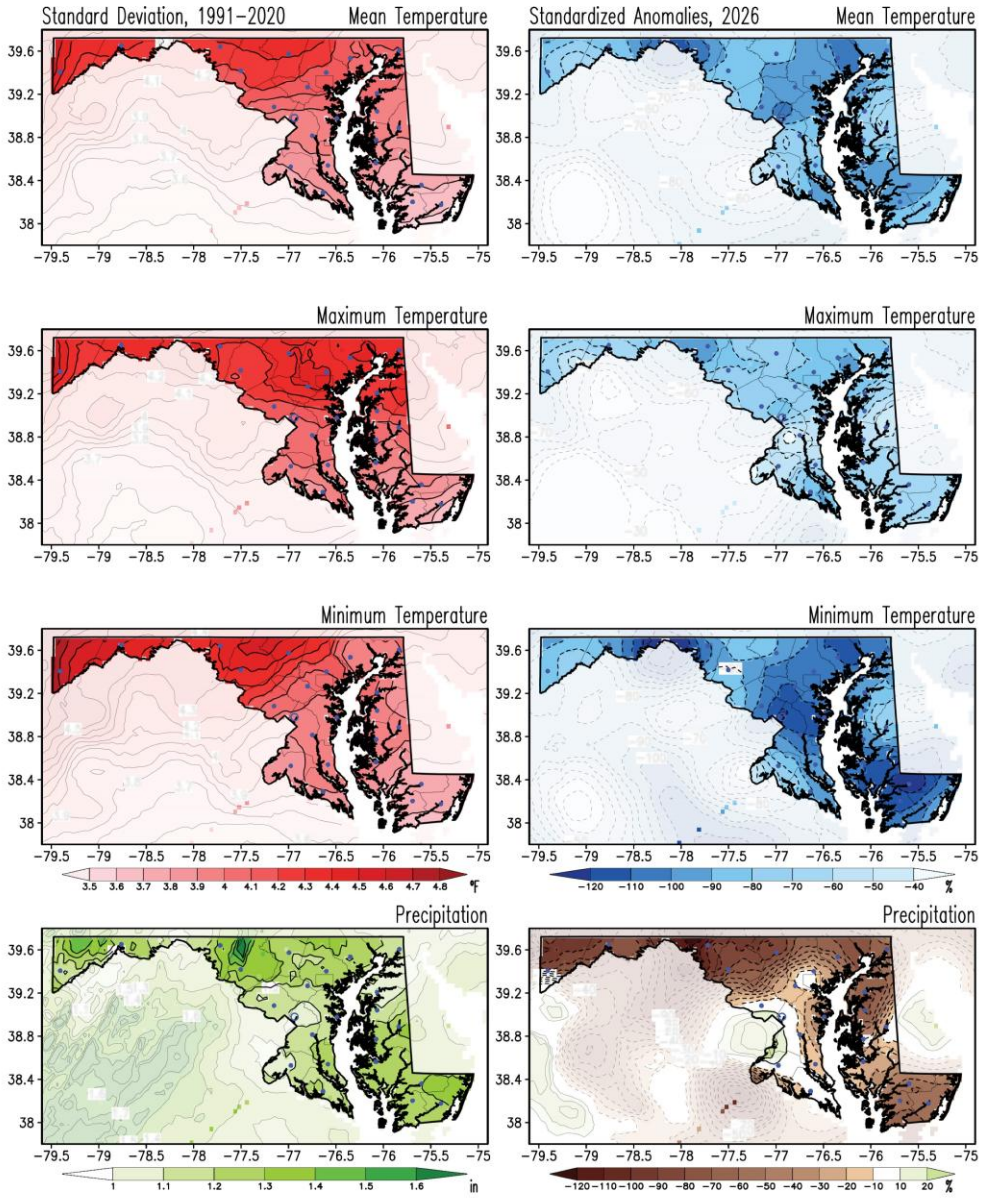

Figure D1. Standard deviation for January and standardized anomalies of temperatures and precipitation for January 2026. Standard deviations for monthly mean, maximum, and minimum surface air temperatures and total precipitation were obtained from the 1991-2020 period (left column). Anomalies for January 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. Blue shading in the anomaly temperature maps marks colder 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, units are in percent (%). Note that shading outside the state has been washed out to facilitate focus on Maryland. Filled blue circles mark the county seats.

Appendix E. 2007-2020 Mean and Standard Deviation of Sea Surface Temperatures in January

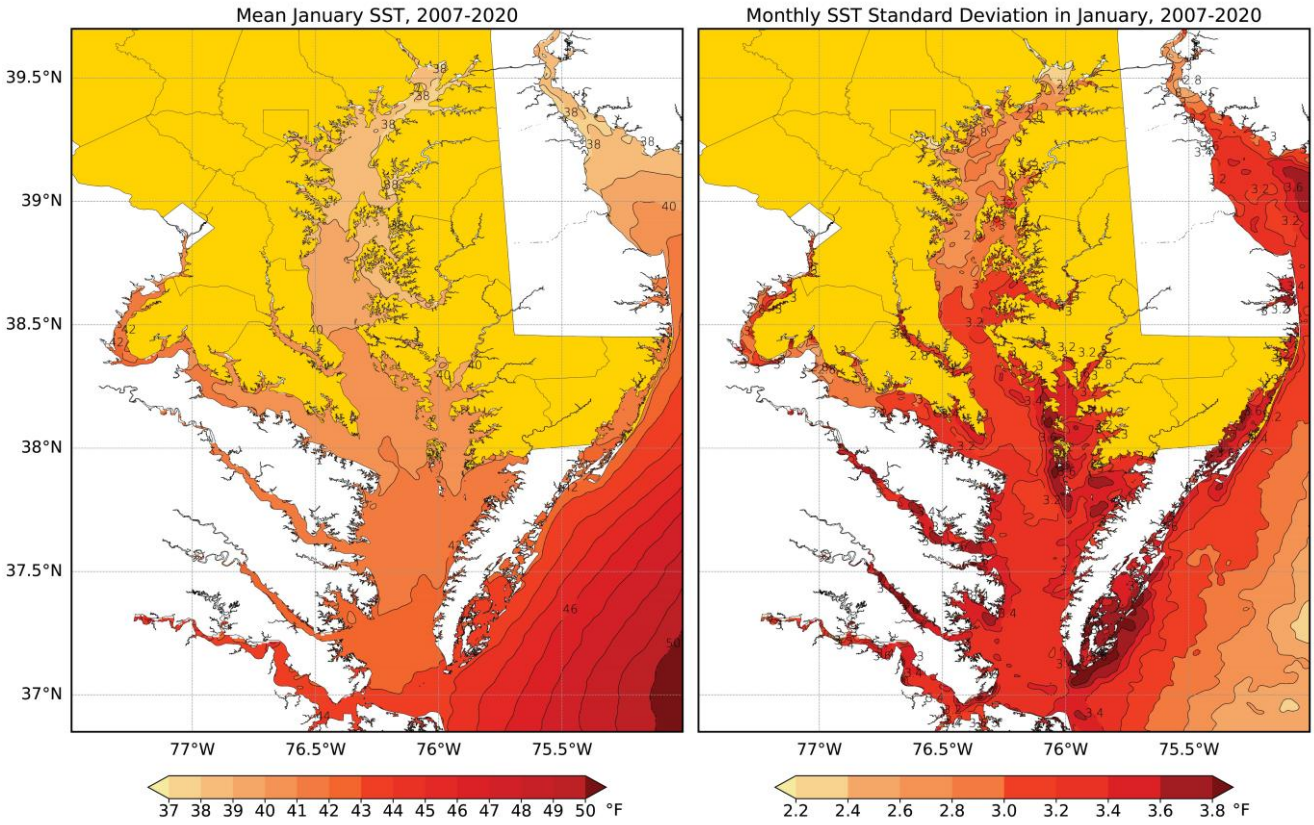

Figure E1. Mean (left panel) and standard deviation (right panel) of sea surface temperatures in the Chesapeake Bay and surrounding coastal areas in January for the period 2007-2020. The mean and standard deviation of the temperatures are in °F according to the color bars. The mean temperature map is the current mean against which the January 2026 conditions are compared to obtain the January 2026 anomalies (from Figure 14). 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 January map (left panel) and the January 2026 map (Figure 14, 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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