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Maryland Climate Bulletin

May 2026

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Summary

Statewide averages indicate that May 2026 was colder and drier than normal (i.e., 1991-2020 averages). Regionally, monthly mean temperatures were in the 55–65°F range, maximum temperatures were between 65 and 78°F, and minimum temperatures were in the 42–50°F range; these temperatures were in the same range as April's temperatures. Monthly total precipitation was between 2 and 6 inches.

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

- The mean temperature was colder than normal in most of the state, especially in northwestern Garrett County (1.8–2.1°F below), and southern Harford County (1.5–1.8°F below). Slightly above-normal mean temperatures were observed in parts of Caroline, Dorchester, Wicomico, and Worcester counties (0.1°F).
- The maximum temperature, similarly, was colder than normal in the majority of the state, too, notably in northwestern Garrett County (2.4–2.7°F below), southern Harford and northern Kent counties (1.5–1.8°F below), and southern Calvert and Saint Mary's counties (1.2°F below). Slightly above-normal maximum temperatures were observed in parts of Dorchester, Wicomico, and Somerset counties (by 0.1°F).
- The minimum temperature was also colder than normal in most of the state, particularly in western Allegany County and southern Harford County (1.5–1.8°F below). Slightly above-normal minimum temperatures appeared in Caroline, Talbot, Dorchester, and Worcester counties (0.3°F).
- Precipitation was below normal in the Coastal Plains at both sides of the Bay, notably in parts of Caroline, Dorchester, Saint Mary's, and Calvert counties (1.5–1.8 inches deficit). Above normal precipitation occurred in the counties of the west and central Piedmont, especially over Garrett County (0.6–0.9 inches). The counties of Caroline, Dorchester, Saint Mary's, and Calvert received 50–55% less precipitation than their climatological monthly precipitation, while the western counties received 15–20% more.
- Drought conditions responded to this distribution of rainfall for the month as drought conditions eased in the western and Piedmont counties and worsened in the southern counties of the Coastal Plains. Garrett County and eastern Allegany County, which were from Abnormally Dry to Severe Drought conditions by the end of April, were from None to Moderate Drought conditions at the start of June. The conditions in the Piedmont counties improved from Severe Drought to Moderate Drought during the same period. The counties in the Coastal Plains to the west of the Bay remained under Severe Drought conditions, except for the southernmost tip of Saint Mary's County, which transitioned to Extreme Drought. The conditions in the counties on the Eastern Shore worsened from Moderate Drought to Severe Drought.

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

- Except for Climate Division 2, Central Eastern Shore, which had a normal temperature (64.7°F), the rest of the climate divisions were colder than normal in May, with Climate Division 8, Allegheny Plateau, having the largest departure from normal (1.1°F below). Except for Climate Divisions 7 and 8, Allegheny Plateau and Appalachian Mountains, which were wetter than normal (0.37 and 0.79 inches respectively), the rest of the climate divisions were drier than normal, with Climate Division 2 having the largest deviation from normal (1.70 inches deficit).
- The statewide mean temperature was colder than normal (0.6°F below) after warmer-than-normal April (4.3°F) and March (5.6°F). Statewide precipitation was drier than normal this month (0.61 inches deficit), after drier-than-normal April (1.69 inches deficit) and March (1.57 inches deficit); this is the tenth consecutive month with below-normal statewide precipitation since last August.

Extreme daily temperatures, precipitation, and growing degree days (Figures 8-10)

- Statewide maximum daily temperatures from January 1 to May 31 indicated that there were four more hot days (maximum temperatures larger than 86°F) than normal (7 vs. 3) and one more heat wave (two or more consecutive hot days) than normal (2 vs. 1); from these, a heat wave of four consecutive hot days occurred from May 18 to 21. Similarly, there were five more warm days (maximum temperatures larger than 80°F) than normal (17 vs. 12), and two more warm day spells (two or more consecutive warm days) than normal (4 vs. 2); from these, a spell of five consecutive warm days occurred from May 17 to 21. On the other hand, statewide minimum daily temperatures indicated a normal number of warm nights (0; maximum temperatures larger than 68°F) and warm night spells (0; two or more consecutive warm nights).
- Statewide daily total precipitation from January 1 to May 31 showed that the number of days with extreme precipitation (at least 0.64 inches –the 95th percentile in 1951–2000) was two days below normal (5 vs. 7). The number of dry spells (two or more consecutive days with daily precipitation of no more than 0.04 inches) was one fewer spell than normal (20 vs. 21); the mean duration of the dry spells was one more day longer than normal (5 vs. 4). May had one day with extreme precipitation on the 24 and had four dry spells, with a maximum duration of 6 days.
- The cumulative calendar year (January 1 to May 31) modified growing degree days (base 86/50°F) reached around 971°FDD by the end of May and have been greater than normal since the second week of March, with a departure above normal of 127°FDD by the end of May. Under these conditions, the modified growing days were 6-7 days ahead



of normal for this time of year; or in other words, this amount of accumulated growing degree days is normally reached around the 6th or 7th of June. Similarly, the simple growing degree days (base 50°F) reached around 782°FDD by the end of May and have been above normal since the last week of March, with a departure from normal of 141°FDD by the end of May. The simple growing days were 7-8 days ahead of normal for this time of year.

Historical Context (Figure 11, Tables A1 and A2)

- Statewide mean and minimum temperatures in May 2026 (62.8, 52.1°F) were just above their (1895-2025) long-term means (62.6, 51.3°F), but the maximum temperature (73.6°F) was just below its mean (73.9°F). These temperatures were far from any warm or cold record for May. Statewide precipitation (3.42 inches) in May was below the long-term mean (3.85 inches), and far from the driest record of 0.82 inches in 1964.
- Statewide mean, maximum, and minimum temperatures indicated that May 2026 was the seventy-third, sixty-sixth, and eighty-seventh coldest (or sixtieth, sixty-seventh, and forty-sixth warmest) May since 1895, respectively. The closest county to any record temperature was Caroline County, which recorded its twenty-ninth-warmest minimum temperature for May.
- Statewide precipitation in May 2026 (3.42 inches) indicated that this was the fifty-ninth driest May on record. While Garrett County had its thirty-second wettest May, Dorchester County had its eighteenth driest. Caroline, Saint Mary's, Wicomico, and Calvert counties had their twenty-third, twenty-fourth, twenty-seventh, and twenty-ninth driest May, respectively.

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

- Statewide mean temperature, heating degree days, cooling degree days, and precipitation in May showed significant trends: a warming trend (1.2°F/century), a decreasing heating trend (−20.6°FDD/century), an increasing cooling trend (16.9°FDD/century), and a wetting trend (0.84 in/century), respectively.
- Regionally, mean temperatures in May showed significant warming trends in most of the state. In particular, warming trends were the largest over Baltimore City (2.0°F/century), and the counties of Baltimore, Carroll, Howard, Anne Arundel, Harford, Caroline, Talbot, Dorchester, Somerset, Wicomico, and Worcester (1.4–1.8°F/century).
- Regionally, precipitation in May had significant wetting trends over the northern counties west of Bay and counties in the central and southern Eastern Shore. In particular, wetting trends were the largest over areas of Garrett, Montgomery, Howard,

Carol, and Baltimore counties (1.3–1.4 inches/century), and Somerset and Worcester counties (0.8–0.9 in/century)

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

- Sea surface temperatures in the Chesapeake Bay in May 2026 were in the 63–66°F range. Regionally, they were colder than the 2007-2020 mean everywhere in the Bay, especially in the Chincoteague Bay (3.2–4.0°F), the northern third of the Lower Basin, northward of Tilghman Island, in the Eastern Bay and southward coastal waters along the Eastern Shore including the Tangier Sound, Fishing Bay, Nanticoke, Wicomico, Manokin, and Annemessex rivers (2.4–3.2°F). The all-basin mean temperature of 63.6°F in May was below the 2007-2020 base-period mean (65.8°F) but well below the record for the month (60.8°F in 2020) in the 20-year dataset (2007-2026).

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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 May 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 warm daily maximum temperatures and precipitation, as well as growing degree days, 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 and cooling 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/ncimgrid-monthly/access/>
Data was downloaded on June 10, 2026.



- NOAA Monthly U.S. Climate *Divisional* Dataset (NClimDiv – Vose et al., 2014) for 1895-present. Available in preliminary status (v1.0.0-20260604) at:
<https://www.ncei.noaa.gov/pub/data/cirs/climdiv/>
Data was downloaded on June 8, 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/ncimgrid-daily>
Data labeled as “scaled” was downloaded on June 8, 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 June 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 stem 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., May 2026) are the departures of the monthly value from the corresponding month's 30-year average (i.e., from the average of 30 Mays) 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 hot days, warm days, and warm nights. Extreme heat, detrimental to crops without irrigation and to populations lacking air conditioning, is tracked by the count of hot days, warm days and nights, and their consecutive occurrence (e.g., Tschurr et al. 2020, Barriopedro et al. 2023). A hot day is defined as one when the maximum temperature is greater than 86°F, a warm day is when the maximum temperature is greater than 80°F, while a warm night is when the minimum temperature is greater than 68°F. When these conditions persist for two or more days, they are referred to as heat waves for the hot days and warm spells for the warm days and nights. These threshold values correspond to the 89th and 75th percentiles of statewide daily maximum



temperatures and the 95th percentile of statewide daily minimum temperatures for the period 1951- 2000.

About degree days. Degree days represent the difference between the daily mean temperature (calculated as the average of 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).
- *Growing Degree Days.* These are used to estimate the growth and development of plants and insects during the growing season, under the assumption that development occurs only if the temperature exceeds a minimum development threshold temperature, or, in other words, if enough warmth is accumulated. Because actual development varies across plants and insects, and the presence of weeds and precipitation can influence it, a base temperature of 50°F is generally considered acceptable for all plants and insects (OSU 2024). However, this base temperature is best suited for the development of specific crops like corn, sweet corn, soybeans, tomatoes, and a few others.
 - *Modified Growing degree days.* The modified growing degree days are calculated by establishing base temperatures for the daily maximum and minimum temperatures before determining the daily mean temperature. When the base temperature for the daily maximum temperature is set to 86°F, and the base temperature for the daily minimum temperature is set to 50°F, the growing degree days are specific to corn development, as no appreciable growth is detected at temperatures below 50°F or above 86°F.

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. May 2026 Maps

A. Mean Temperatures

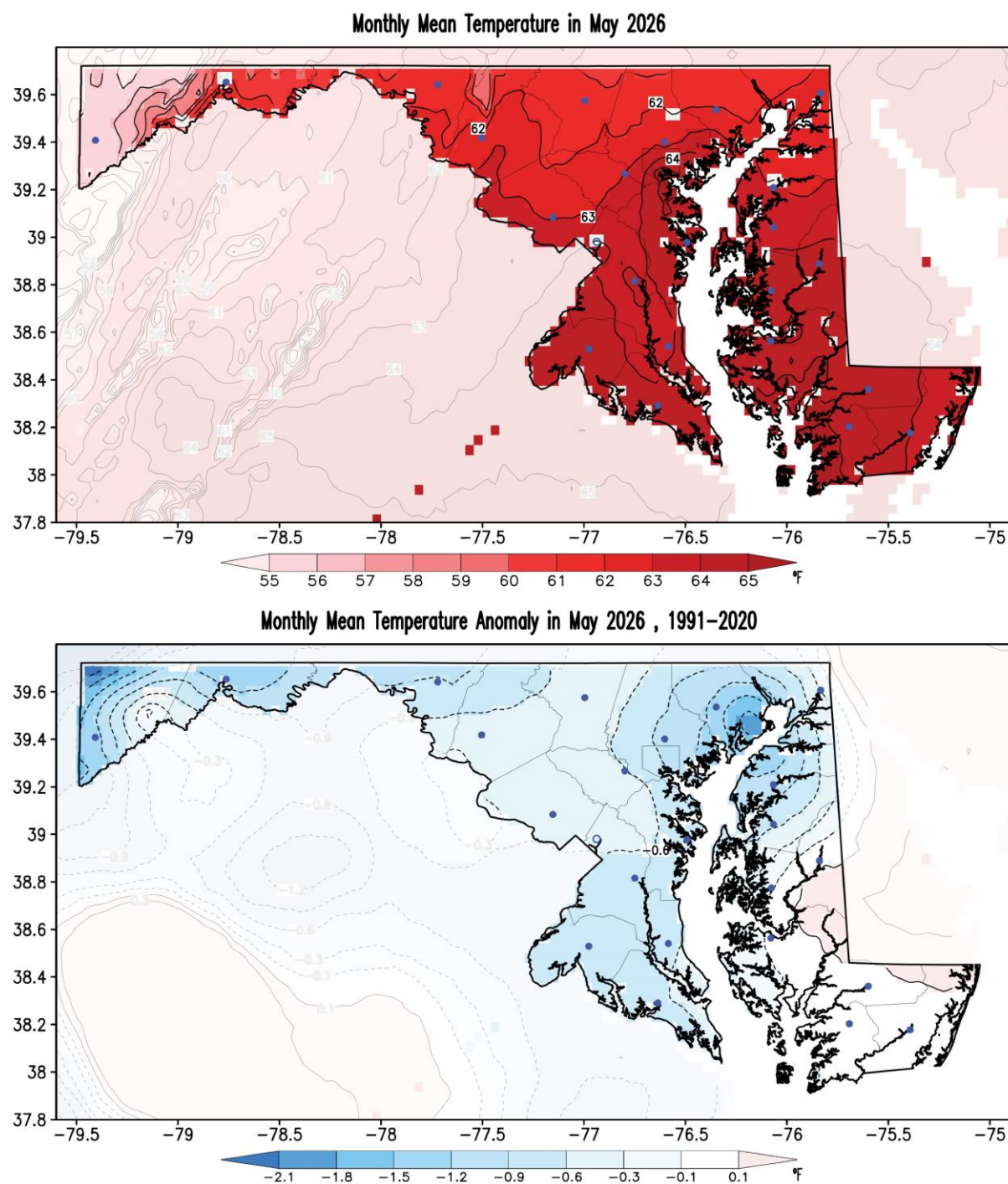


Figure 1. Monthly mean surface air temperature (top panel) and its anomaly with respect to the 1991–2020 climatology (bottom panel) for May 2026. Temperatures are in °F following the color bar. Blue/red shading in the anomaly map marks colder/warmer-than-normal conditions. Note shading outside the state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

B. Maximum Temperatures

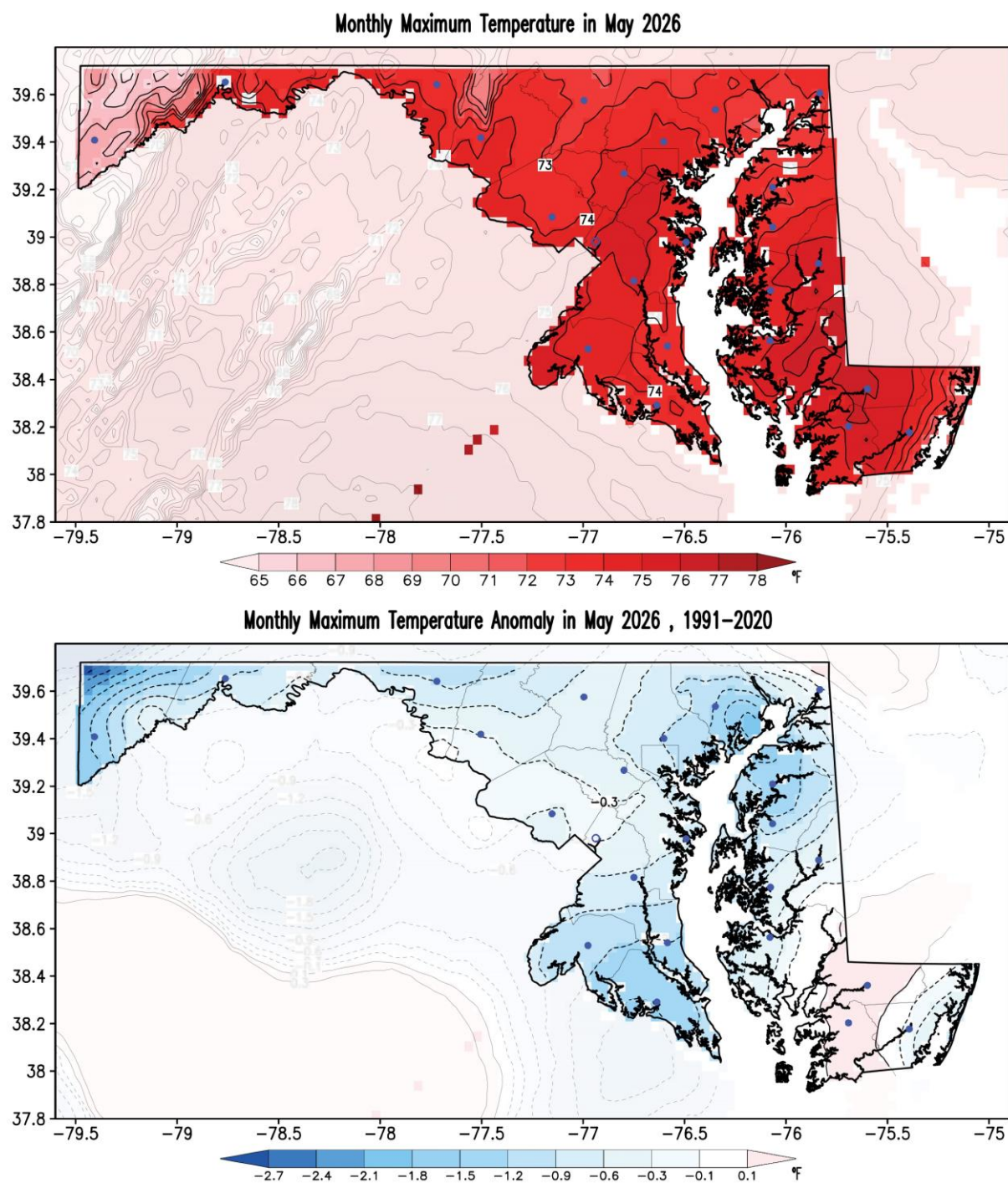


Figure 2. Monthly maximum surface air temperature (top panel) and its anomaly with respect to the 1991–2020 climatology (bottom panel) for May 2026. Temperatures are in °F following the color bar. Blue/red shading in the anomaly map marks colder/warmer-than-normal conditions. Note shading outside the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

C. Minimum Temperatures

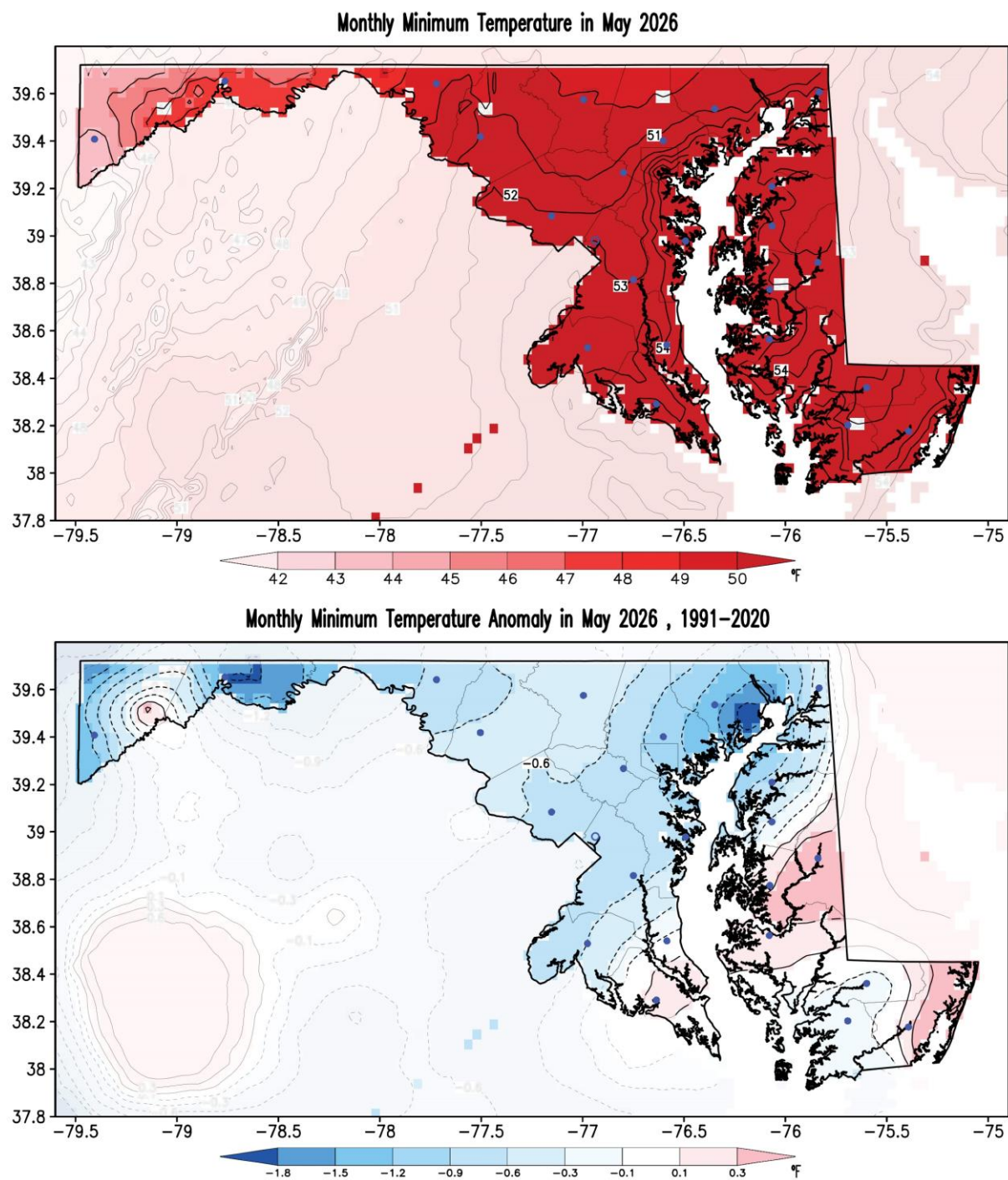


Figure 3. Monthly minimum surface air temperature (top panel) and its anomaly with respect to the 1991–2020 climatology (bottom panel) for May 2026. Temperatures are in °F following the color bar. Blue/red shading in the anomaly map marks colder/warmer-than-normal conditions. Note shading outside the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

D. Precipitation

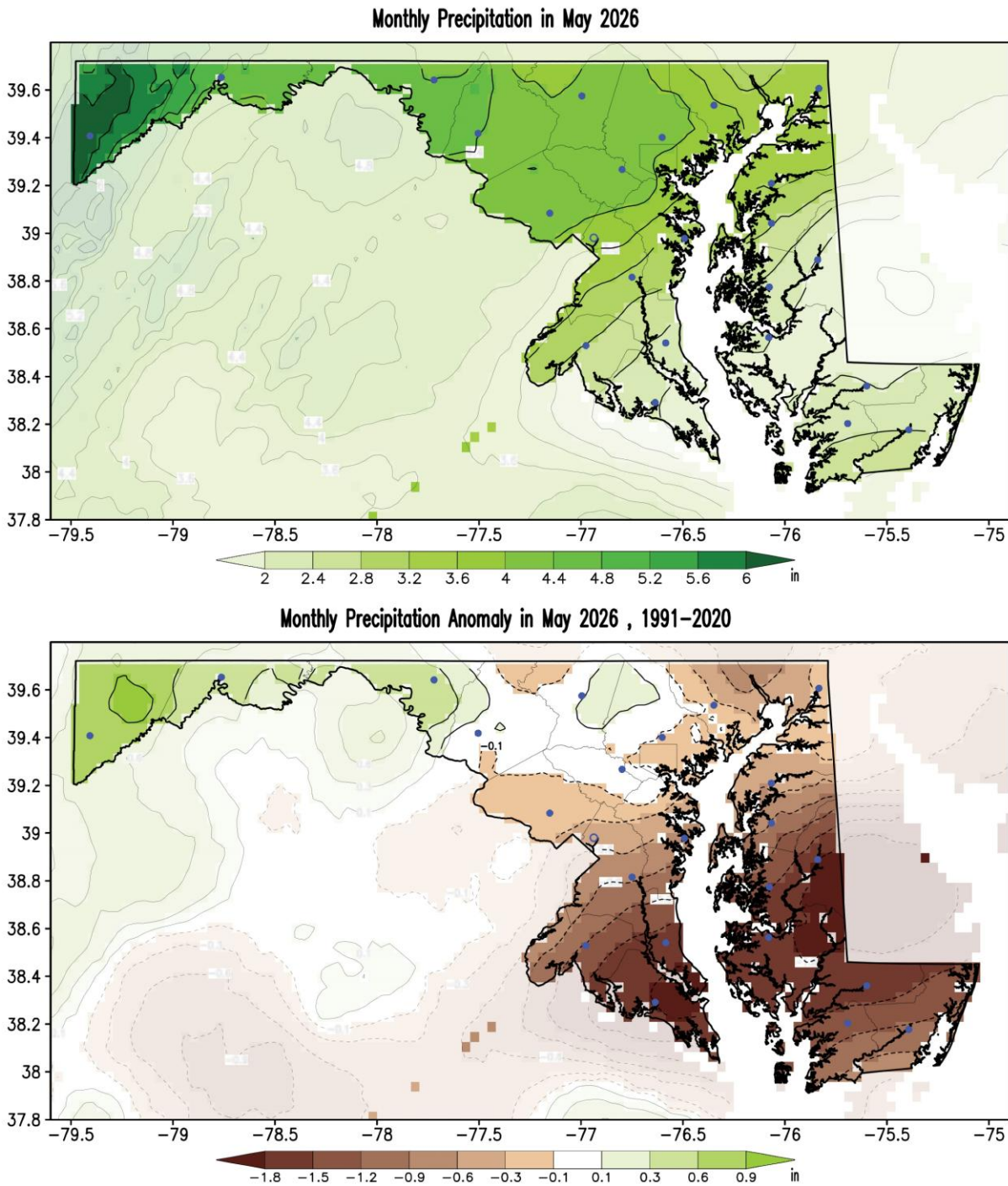


Figure 4. Monthly total precipitation (top panel) and its anomaly with respect to the 1991-2020 climatology (bottom panel) for May 2026. Precipitation is measured in inches, as indicated by the color bar. Brown/green shading in the anomaly map indicates drier/wetter-than-normal conditions. Note shading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

E. Drought

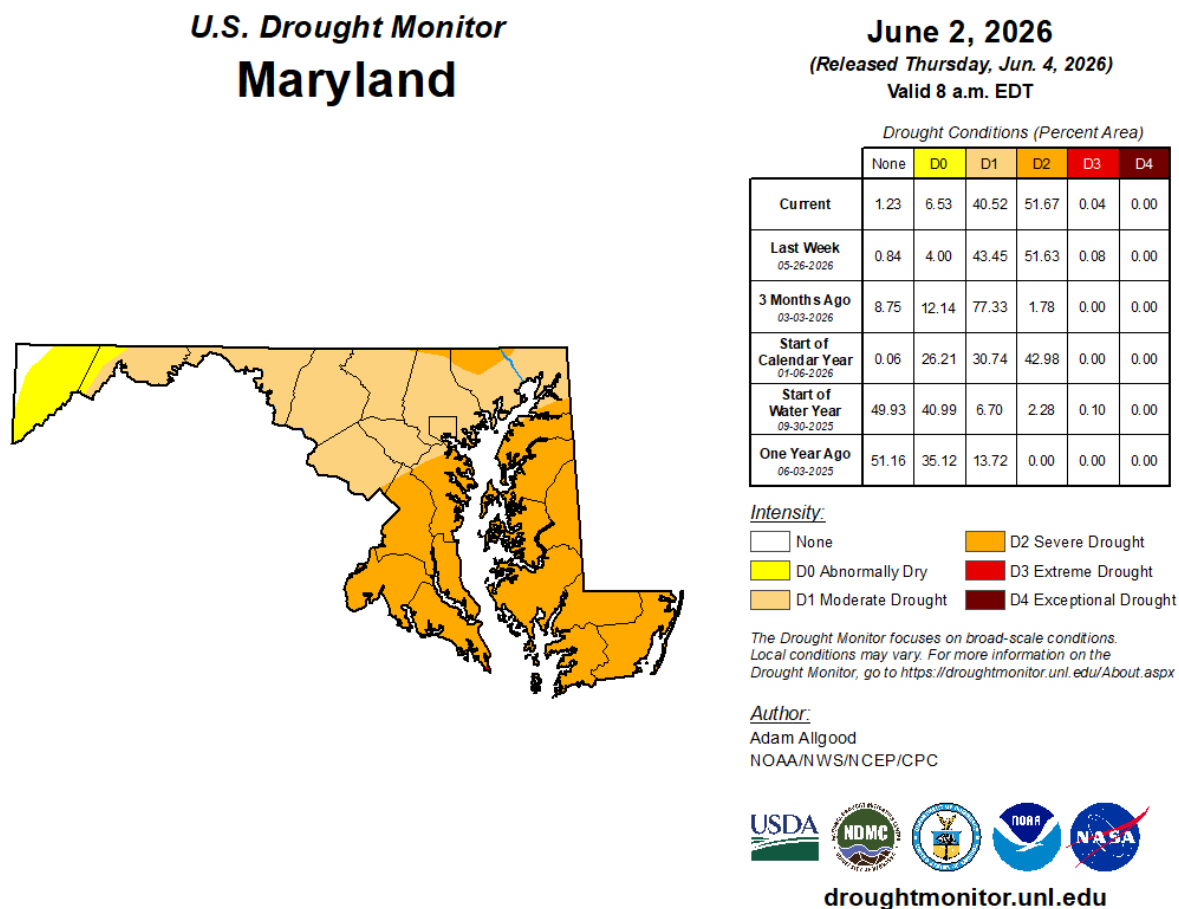


Figure 5. Drought conditions as reported by the U.S. Drought Monitor on June 2, 2026. Drought conditions improved over the western and Piedmont counties but worsened in the Eastern Shore counties. Yellow shading indicates Abnormally Dry regions; light orange shading shows regions under a Moderate Drought, dark orange shading shows regions under Severe Drought, and red shading (in the southern-most tip of Saint Mary's County) shows regions under Extreme Drought. Numbers in the table indicate the percentage of the state covered under the particular drought category at the time (in the left column). Typically, areas shown in yellow (Abnormally Dry) indicate land that is entering or exiting 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. Red areas (Extreme Drought) indicate land where crop losses are widespread, streamflow is severely reduced, river water temperatures are warm, and wells are running dry. Current conditions can be monitored on the [U. S. Drought Monitor website](https://droughtmonitor.unl.edu). 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](https://droughtmonitor.unl.edu/About.aspx) system.

4. May and MAM 2026 Statewide and Climate Divisions Averages

A. May Scatter Plots

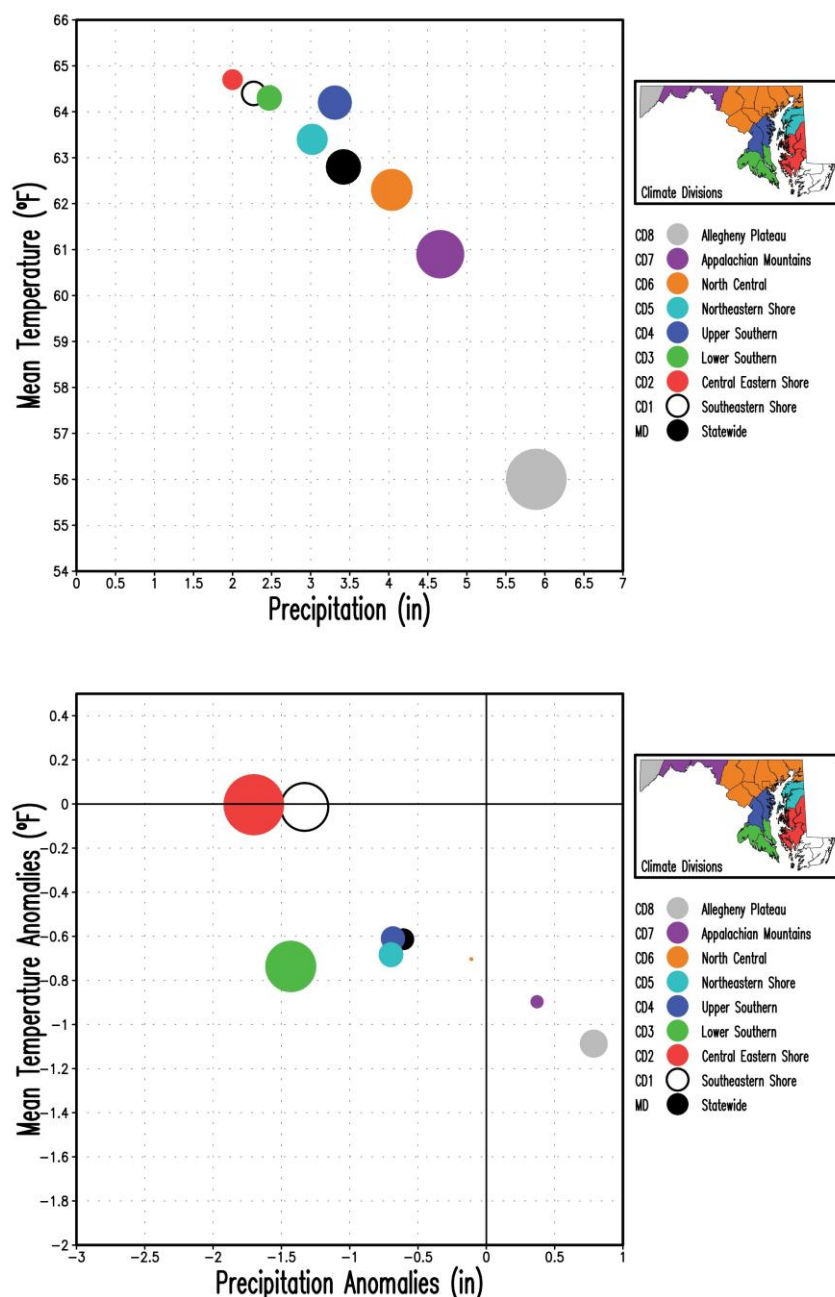


Figure 6. Scatter plots of Maryland (statewide) and Climate Divisions (CD#) monthly mean surface air temperature vs. total precipitation for May 2026. The upper panel displays the mean temperature and total precipitation, while the bottom panel displays their anomalies relative to the 1991-2020 climatology. 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 (5.89 inches in CD8, top panel) and by the maximum precipitation anomaly ($|-1.70|$ inches in CD2, 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. March – May Scatter Plots

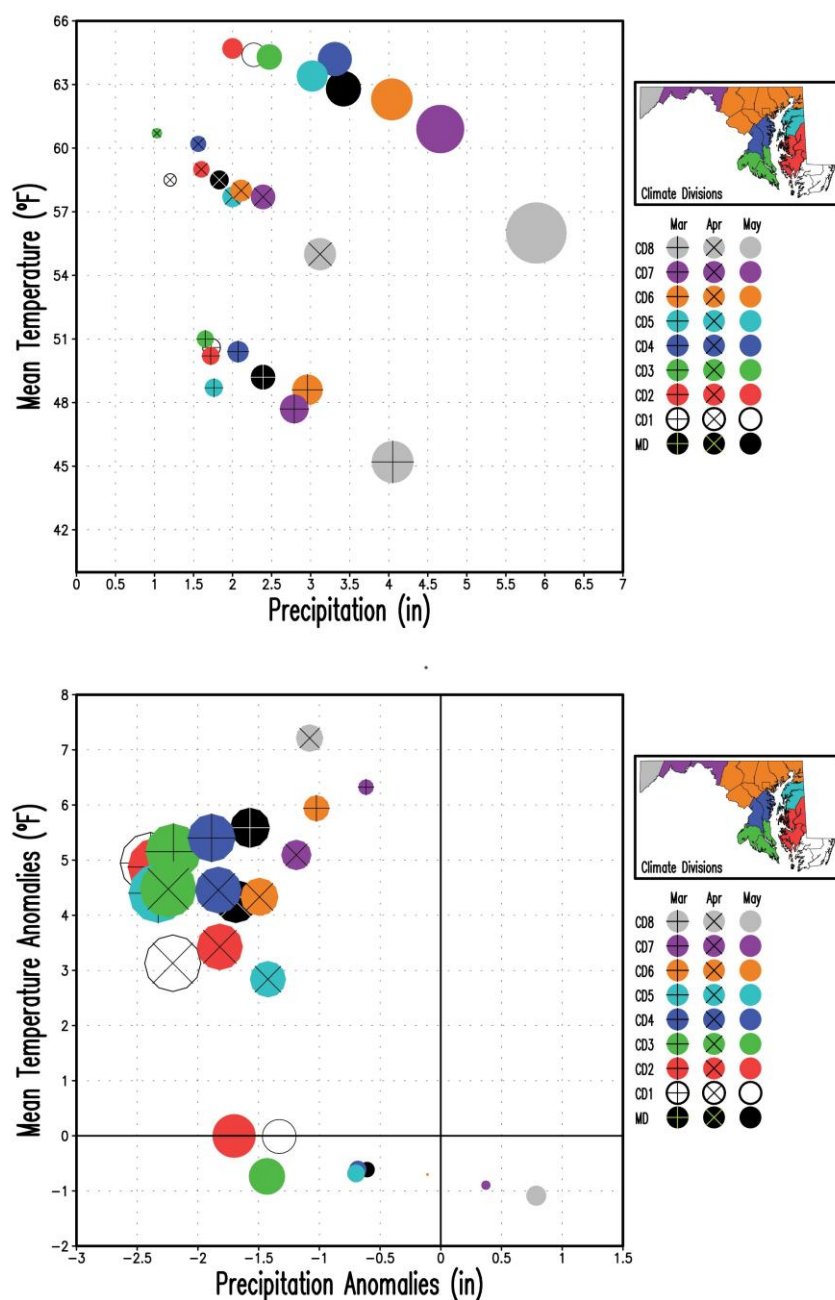


Figure 7. Scatter plots of Maryland (statewide) and Climate Divisions (CD#) monthly mean surface air temperature vs. total precipitation for March, April and May 2026. The upper panel displays the mean temperature and total precipitation, while the bottom panel shows their anomalies relative to the 1991-2020 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 (5.89 inches in CD8 in May, top panel) and by the maximum precipitation anomaly ($|-2.39|$ inches in CD1 in March, bottom panel) among the nine regions and three months. May is displayed with filled circles only, while April and March are displayed with superposed multiplication and addition signs, respectively.

5. Extremes in Statewide Averages

A. Hot Days, Warm Days, and Warm Nights

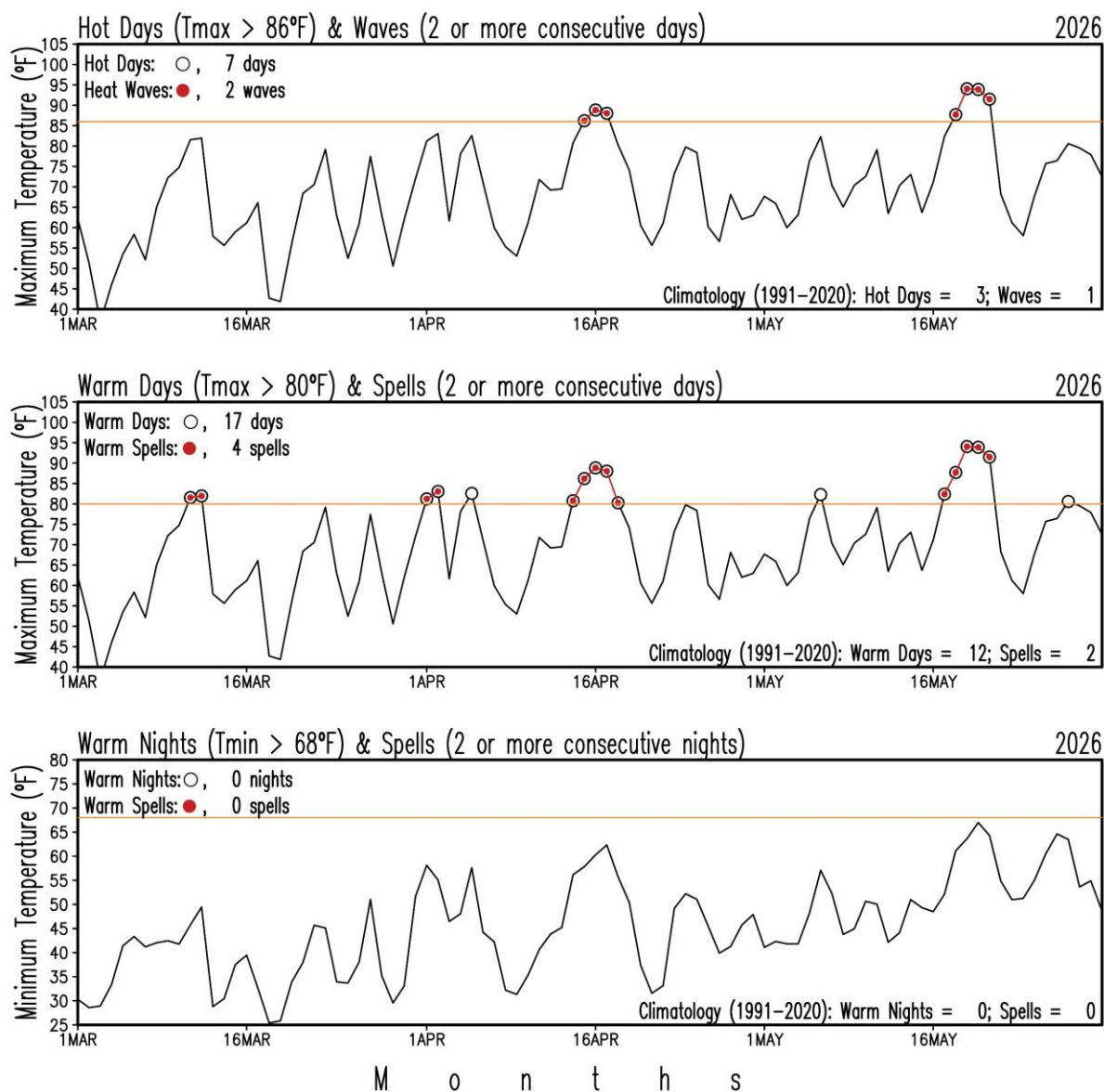


Figure 8. Maryland (statewide) number of hot days, warm days, warm nights, and their consecutive occurrence for the period January 1 – May 31, 2026. The upper panel shows hot days in open circles and heat waves in red-filled circles from statewide daily maximum temperatures. The middle panel shows warm days in open circles and warm day spells in red-filled circles from statewide daily maximum temperatures. The bottom panel shows warm nights in open circles and warm night spells in red-filled circles from statewide daily minimum temperatures. The orange line in each panel marks the threshold temperatures of 86°F , 80°F and 68°F for each case. Figures at the county and climate division levels, as well as summary tables, are available on the [MDSCO website](#), along with near-real-time figures.

B. Extreme Precipitation and Dry Spells

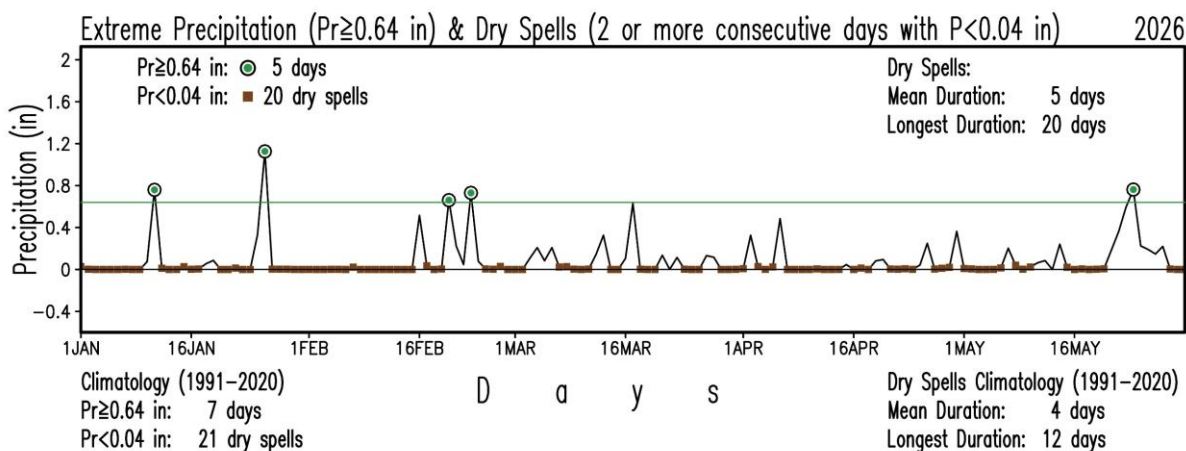


Figure 9. Maryland (statewide) number of days with extreme precipitation and dry spells for the period January 1 – May 31, 2026. Days with extreme precipitation (precipitation of 0.64 in or more) are identified by green-filled circles. Dry spells (consecutive days with daily total precipitation less 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](#), along with near-real-time figures.

C. Modified and Simple Growing Degree Days

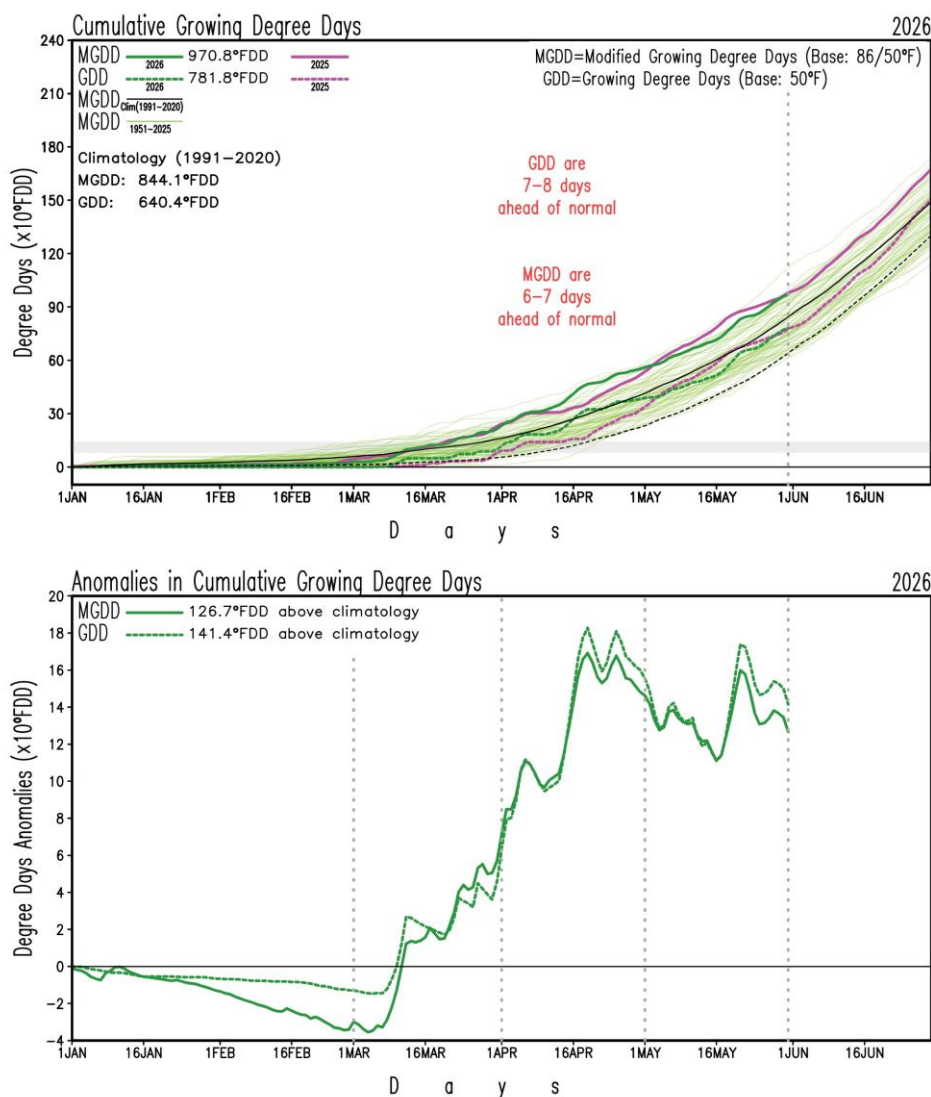


Figure 10. Maryland (statewide) cumulative modified and simple growing degree days (upper panel) and their anomaly with respect to the 1991-2020 climatology (lower panel) for the period January 1 – May 31, 2026. The modified growing degree days are shown with the continuous thick green line in the upper panel and for reference their 1991-2020 climatology and the year 2025 are displayed with continuous black and purple lines, respectively; the continuous thin light-green lines display the cumulative modified growing degree days every year from 1951 to 2024. Similarly, the simple growing degree days are shown as dashed lines. The gray shaded areas mark a range of values for emergence (82-140 in corn development (IPAD, 2023)). The red annotations in the upper panel display how many days ahead of climatology the May 31 accumulated values were. Anomalies relative to the 1991-2020 climatology in the cumulative modified growing degree days (bottom panel) are displayed as the continuous green line, while those for the growing degree days are shown as the dashed green line. The vertical dotted gray lines mark the start of the months since March. The accumulated growing degree days and their anomalies as of May 31 are displayed at the top left of each panel. Analysis is from statewide daily maximum and minimum temperatures. Figures at the county and climate division levels, as well as summary tables, are available on the [MDSCO website](#), along with near-real-time figures.

6. May 2026 Statewide Averages in the Historical Record

A. Box and Whisker Plots

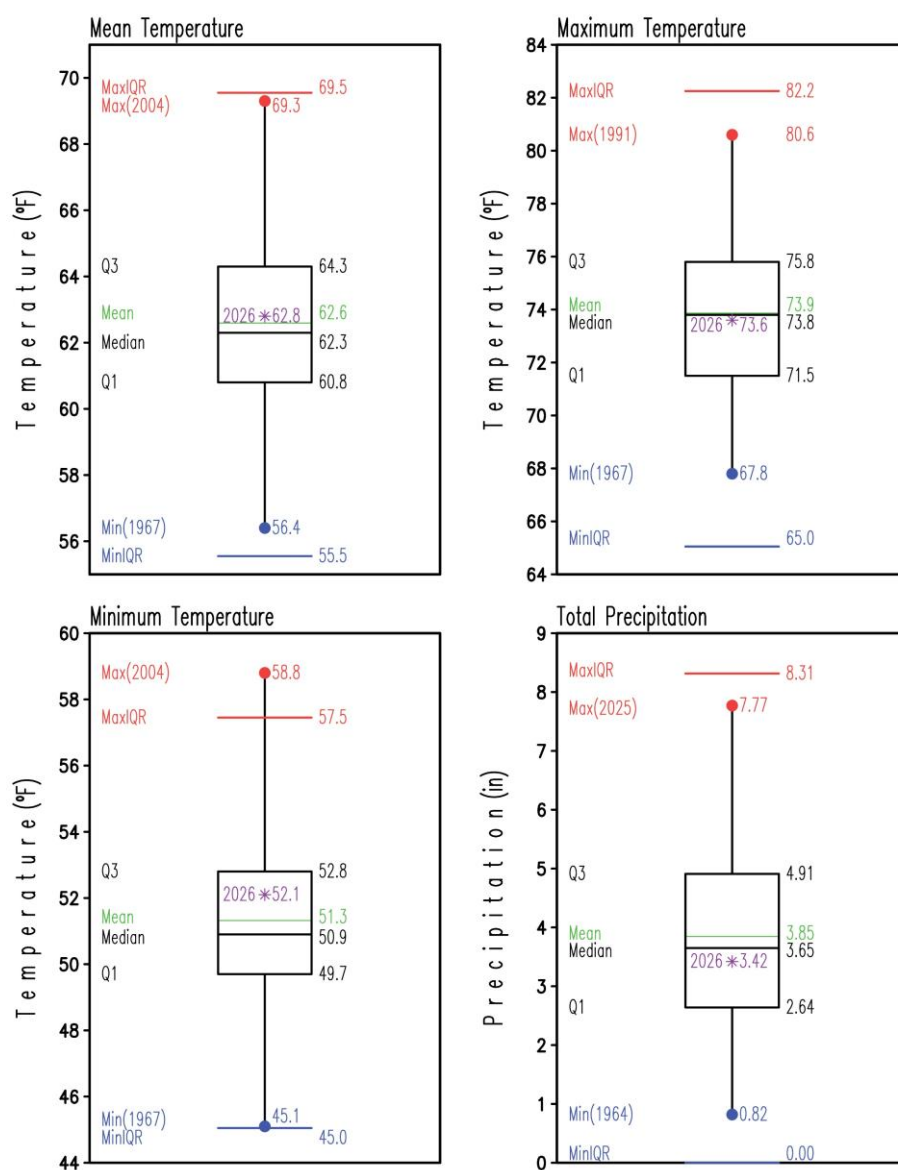


Figure 11. Box and Whisker plots of Maryland (statewide) monthly mean (upper left), maximum (upper right), minimum (lower left) surface air temperatures, and total precipitation (lower right) for May for the period 1895-2025. Conditions for May 2026 are represented by the label and asterisk in purple. 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. 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 $Q1 - 1.5 \times (Q3 - Q1)$ and $Q3 + 1.5 \times (Q3 - Q1)$, respectively.

7. 1895-2026 May Trends

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

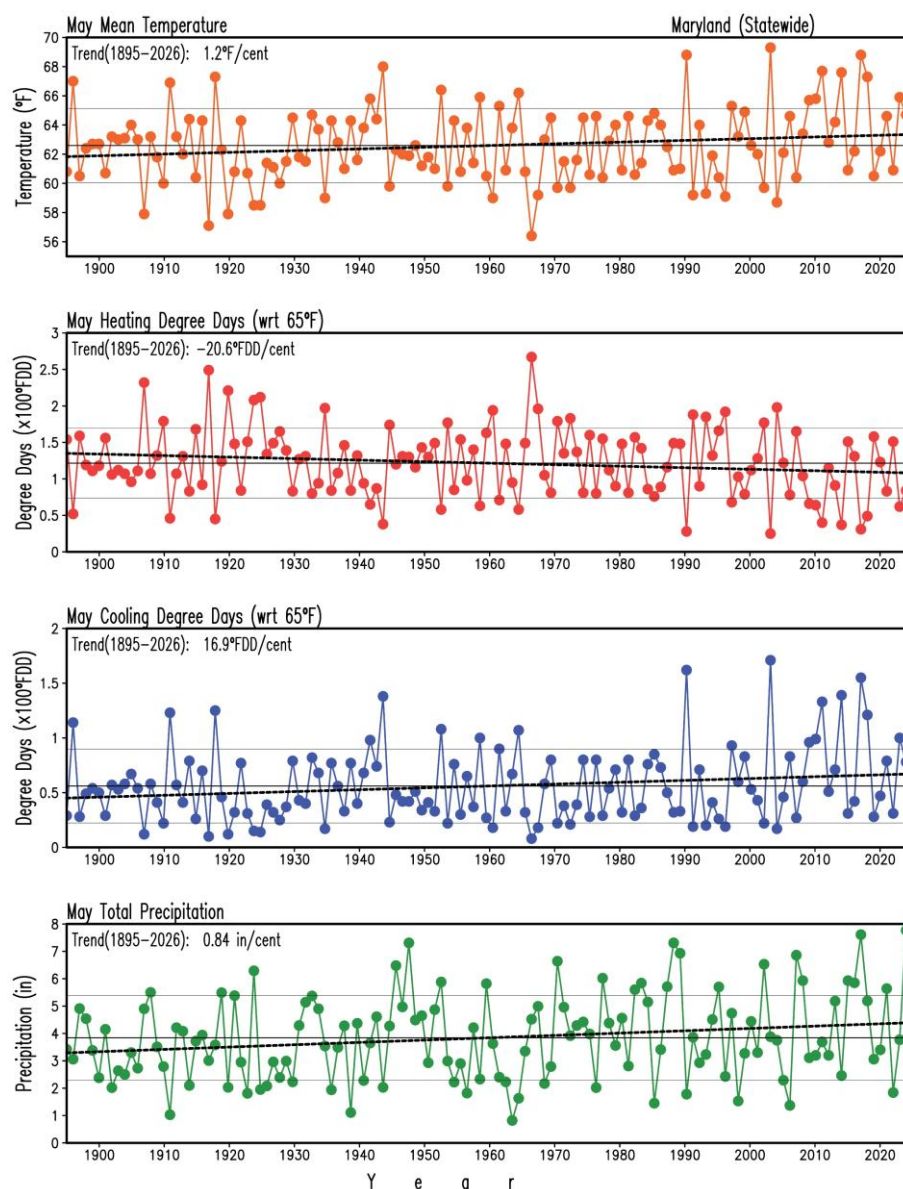


Figure 12. Maryland (statewide) mean surface air temperature, heating degree days, cooling degree days, and precipitation in May for the period 1895-2026. Temperature is in °F, degree-days are in °F degree-days (°FDD), and precipitation is in inches. The thin, continuous black lines in each panel display the long-term means (62.6°F, 121.6°FDD, 56.1°FDD, and 3.84 in, 1895-2026), and the double thin, continuous gray lines indicate the standard deviation (2.5°F, 47.6°FDD, 33.8°FDD, and 1.54 in) above/below the long-term mean. The thick dashed black lines show the long-term linear trend. The warming temperature trend (1.2°F/century), the decreasing heating degree-days trend (-20.6°FDD/century), the increasing cooling degree-days trend (16.9°FDD/century), and the precipitation wetting trend (0.84 in/century) are statistically significant at the 95% level (*Student's t-test* –Santer et al. 2000).

B. Temperature and Precipitation Maps

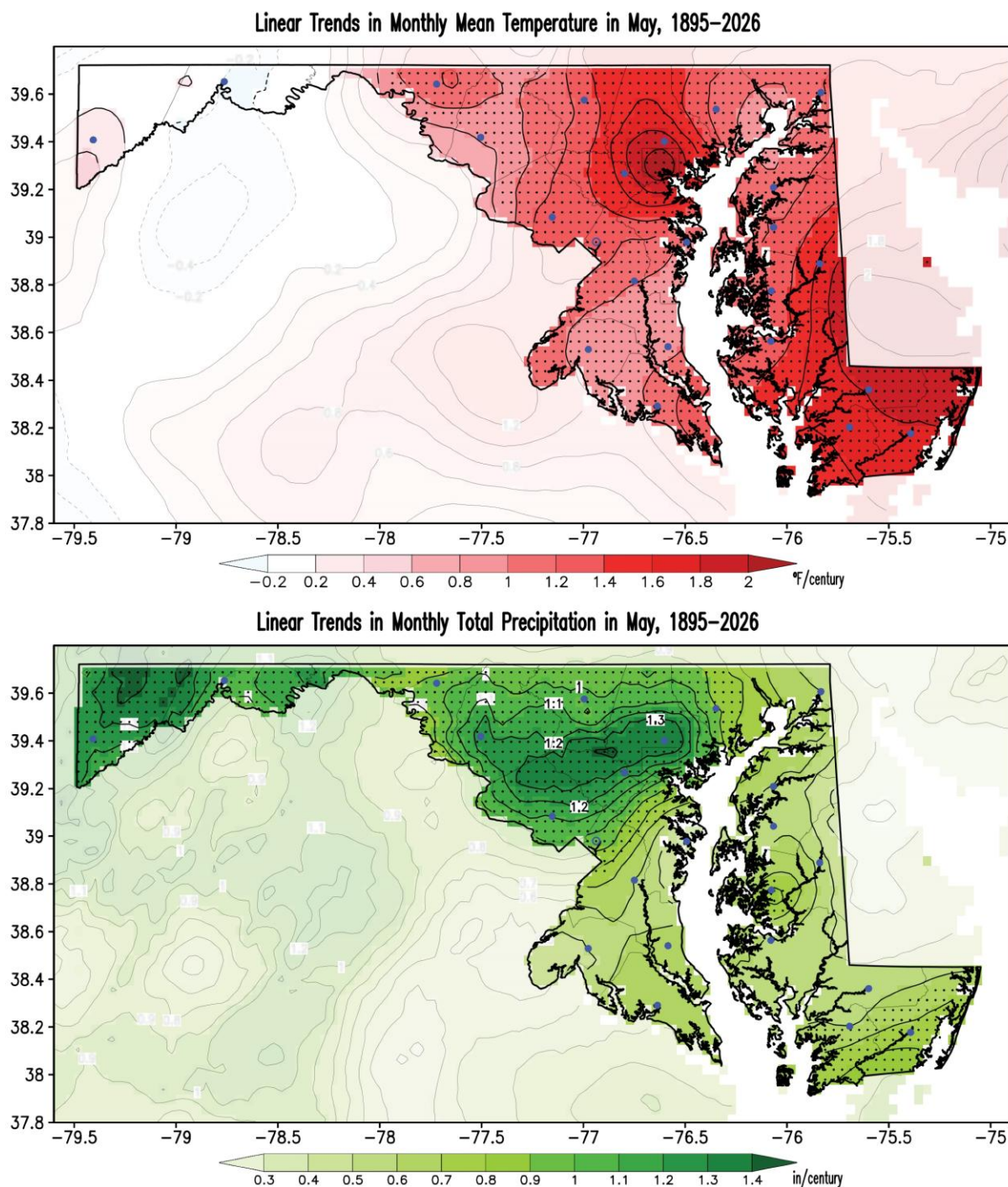


Figure 13. Linear trends in surface air mean temperature and precipitation in May for the period 1895–2026. Temperatures are in $^{\circ}\text{F}/\text{century}$, and precipitation is in inches/century following the color bars. Blue/red shading in the temperature map marks cooling/warming trends. Green shading in the precipitation map shows 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. May 2026 Sea Surface Temperature Maps

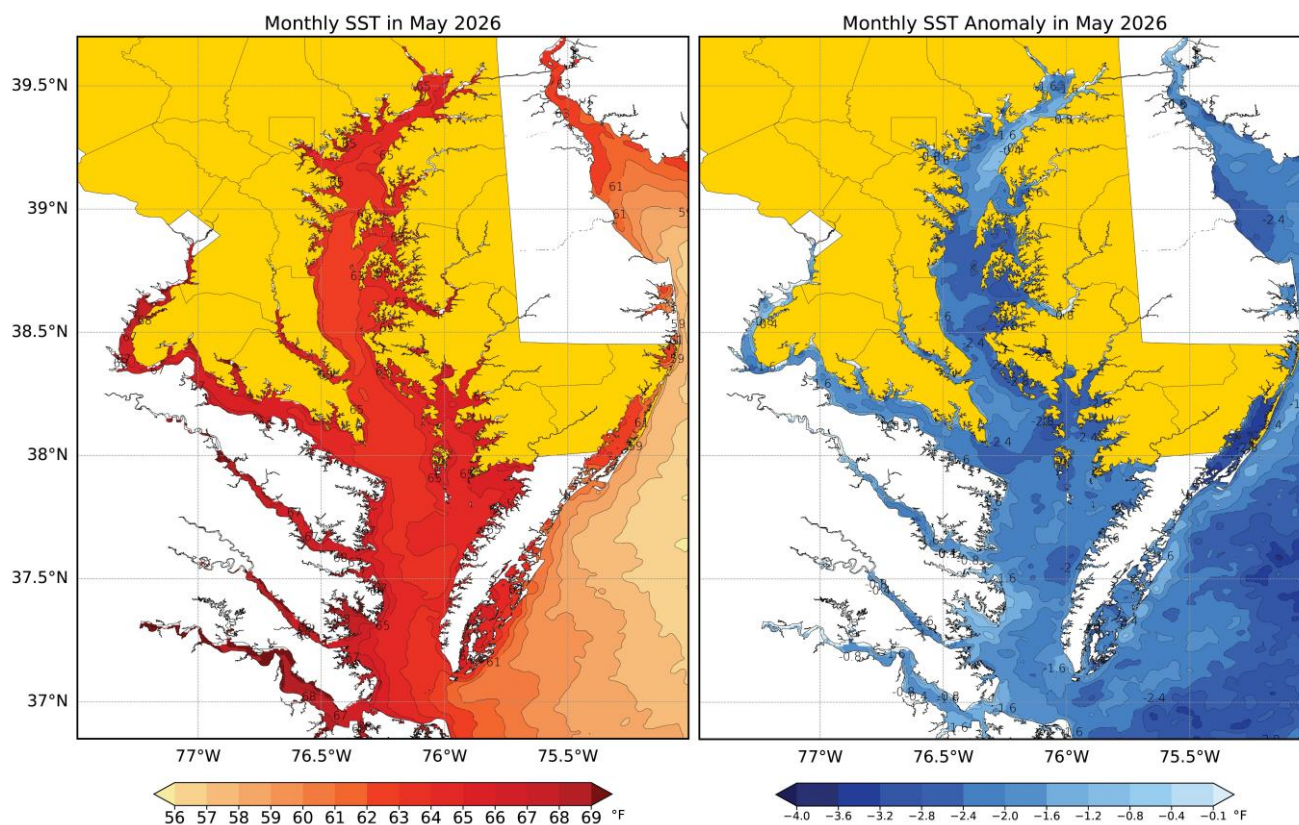


Figure 14. Monthly sea surface temperature (left panel) and its anomaly (right panel) in the Chesapeake Bay and surrounding coastal areas in May 2026. Temperatures are in °F, following the color bar. Blue shading in the anomaly map marks colder temperatures than the 2007-2020 mean. For clarity, the temperatures 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. May Upper, Middle, Lower, and Entire Basins Sea Surface Temperature Averages

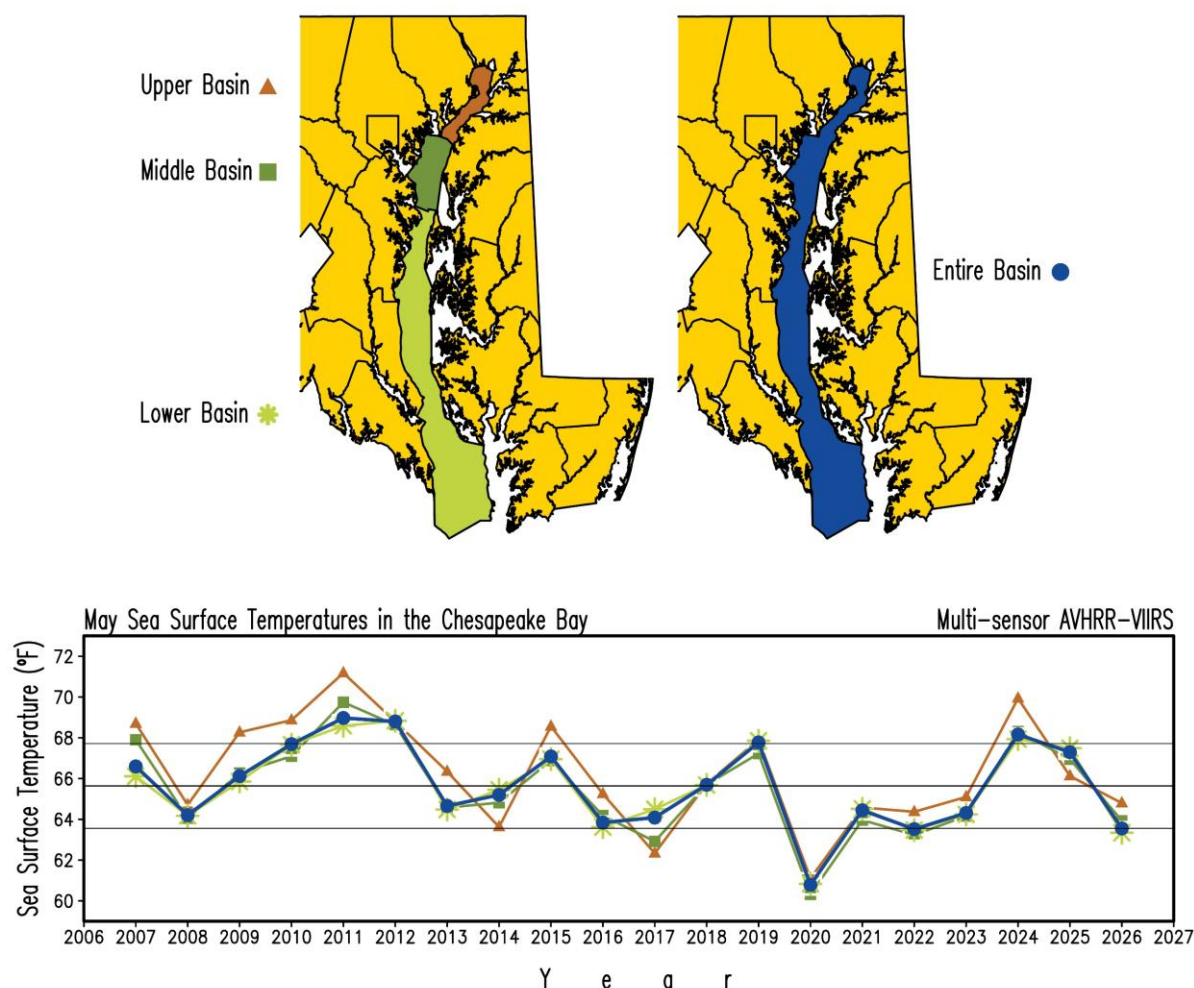


Figure 15. Watersheds in the Chesapeake Bay (top panel) and their area-averaged sea surface temperatures in May for the period 2007-2026 (bottom panel). Temperatures are in °F. The color of the lines corresponds to the color of the watersheds in the Bay, as indicated on the maps: Brown for the Upper 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 May 2026 was 63.6°F, while for the Upper, Middle, and Lower basins was 64.8, 63.9, and 63.3°F, respectively. The thin, continuous black line in the lower panel displays the 2007-2026 mean for the Entire Basin (65.6°F), and the double thin, continuous gray lines indicate the standard deviation (2.1°F) above/below the long-term mean. The 2007-2026 mean temperatures for the Upper, Middle, and Lower basins in May were 66.3, 65.5, and 65.6°F, respectively, while their standard deviations were 2.6, 2.3, and 2.0°F, respectively.

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

A. Mean Temperature and Precipitation

Region	Mean Air Temperature (°F)	Rank (#)	Region	Total Precipitation (in)	Rank (#)
Statewide	62.8	73	Statewide	3.42	59
Climate Division 1	64.4	87	Climate Division 1	2.27	33
Climate Division 2	64.7	84	Climate Division 2	2.00	22
Climate Division 3	64.3	71	Climate Division 3	2.47	36
Climate Division 4	64.2	72	Climate Division 4	3.31	55
Climate Division 5	63.4	70	Climate Division 5	3.02	47
Climate Division 6	62.3	72	Climate Division 6	4.04	75
Climate Division 7	60.9	67	Climate Division 7	4.66	90
Climate Division 8	56.0	61	Climate Division 8	5.89	101
Allegany	60.2	60	Allegany	4.79	95
Anne Arundel	64.4	70	Anne Arundel	3.38	60
Baltimore	62.5	73	Baltimore	4.12	80
Baltimore City	64.3	76	Baltimore City	4.01	78
Calvert	64.1	70	Calvert	2.27	29
Caroline	64.3	85	Caroline	2.02	23
Carroll	61.5	78	Carroll	4.14	80
Cecil	62.3	70	Cecil	3.37	60
Charles	64.4	70	Charles	2.82	43
Dorchester	64.9	84	Dorchester	1.94	18
Fredrick	62.0	75	Fredrick	4.33	78
Garrett	56.0	61	Garrett	5.89	101
Harford	62.0	63	Harford	3.59	67
Howard	62.6	79	Howard	4.28	81
Kent	63.1	64	Kent	3.33	58
Montgomery	62.9	78	Montgomery	4.20	75
Prince George's	64.0	69	Prince George's	3.28	51
Queen Anne's	63.6	70	Queen Anne's	2.85	46
Saint Mary's	64.4	72	Saint Mary's	2.09	24
Somerset	64.9	87	Somerset	2.39	36
Talbot	64.6	80	Talbot	2.30	31
Washington	61.5	72	Washington	4.54	86
Wicomico	64.6	90	Wicomico	2.02	27
Worcester	63.9	90	Worcester	2.35	39

Table A1. Monthly mean surface air temperature (left) and total precipitation (right) at Maryland (statewide), climate division, and county levels for May 2026. Temperatures are in °F, and precipitation is in inches. The rank is the position the variable for May 2026 occupies among the 132 Mays, 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 (#)	Region	Minimum Air Temperature (°F)	Rank (#)
Statewide	73.6	66	Statewide	52.1	87
Climate Division 1	74.7	85	Climate Division 1	54.2	97
Climate Division 2	75.2	71	Climate Division 2	54.1	100
Climate Division 3	74.2	56	Climate Division 3	54.4	90
Climate Division 4	74.7	64	Climate Division 4	53.6	85
Climate Division 5	73.6	54	Climate Division 5	53.1	92
Climate Division 6	73.4	64	Climate Division 6	51.2	82
Climate Division 7	73.3	64	Climate Division 7	48.4	69
Climate Division 8	67.1	45	Climate Division 8	44.9	81
Allegany	73.1	61	Allegany	47.3	60
Anne Arundel	74.7	66	Anne Arundel	54.1	84
Baltimore	73.8	64	Baltimore	51.2	82
Baltimore City	74.9	69	Baltimore City	53.6	83
Calvert	73.6	55	Calvert	54.5	92
Caroline	75.4	70	Caroline	53.2	104
Carroll	72.9	66	Carroll	50.1	86
Cecil	72.9	63	Cecil	51.8	80
Charles	74.8	53	Charles	54.0	87
Dorchester	75.3	72	Dorchester	54.5	98
Fredrick	73.2	66	Fredrick	50.8	81
Garrett	67.2	46	Garrett	44.9	81
Harford	72.9	53	Harford	51.1	68
Howard	74.1	70	Howard	51.2	88
Kent	73.1	53	Kent	53.0	84
Montgomery	73.9	74	Montgomery	52.0	87
Prince George's	74.8	62	Prince George's	53.1	84
Queen Anne's	73.9	57	Queen Anne's	53.3	93
Saint Mary's	73.7	52	Saint Mary's	55.0	94
Somerset	75.1	86	Somerset	54.8	95
Talbot	74.6	67	Talbot	54.6	98
Washington	73.6	66	Washington	49.5	78
Wicomico	75.6	82	Wicomico	53.5	98
Worcester	73.7	84	Worcester	54.2	97

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

A. Temperatures and Precipitation

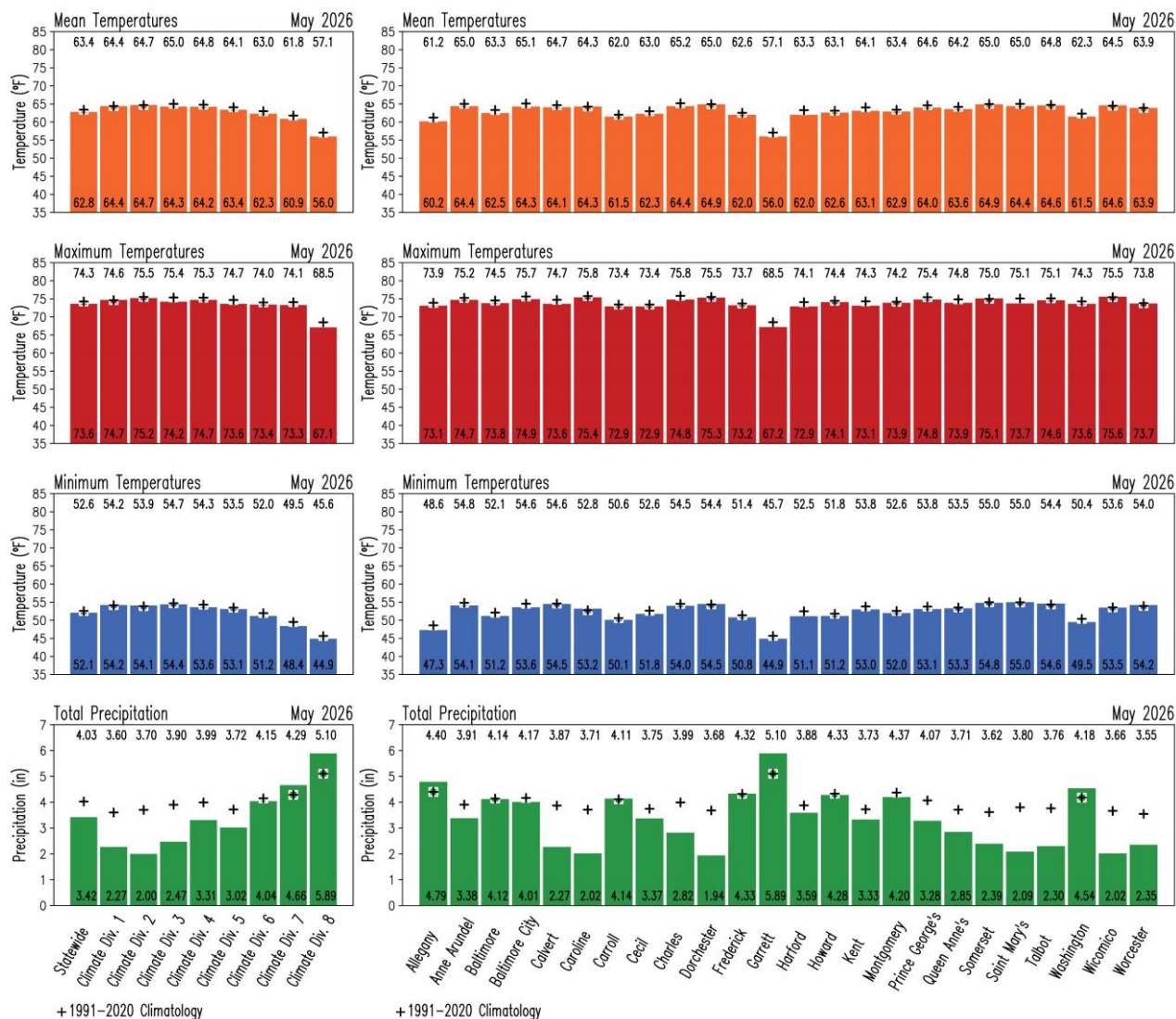


Figure B1. Monthly surface variables for Maryland in May 2026. Color bars represent the variables as follows: mean surface air temperature (orange), maximum surface air temperature (red), minimum surface air temperature (blue), and total precipitation (green) at statewide and climate division (left column),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

B. Temperatures and Precipitation Anomalies

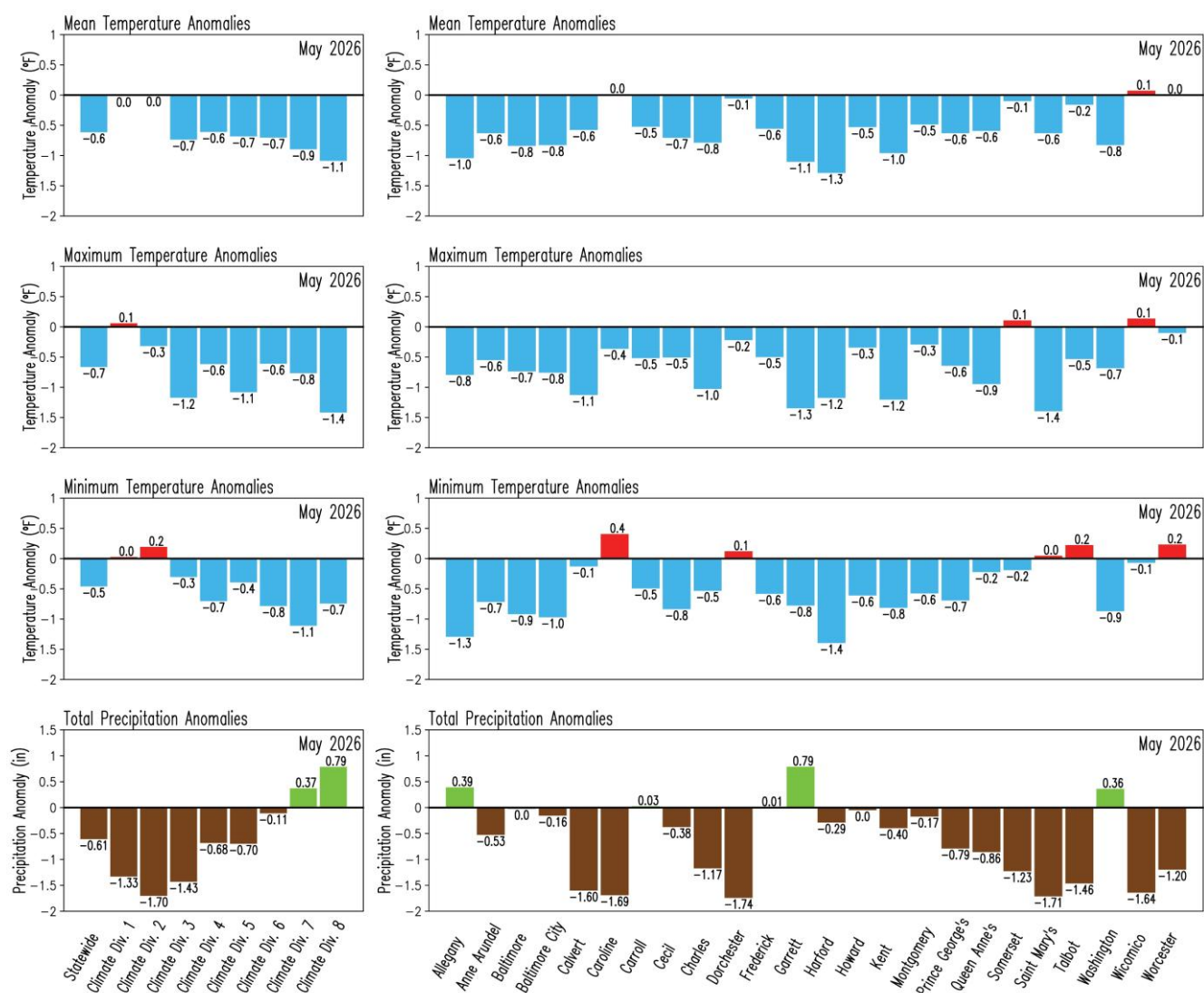


Figure B2. Anomalies in the monthly surface variables for Maryland in May 2026. Anomalies are with respect to the 1991-2020 climatology. Red/blue color represents positive/negative (warmer/colder than normal) anomalies for mean surface air temperature (upper row), maximum surface air temperature (second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

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

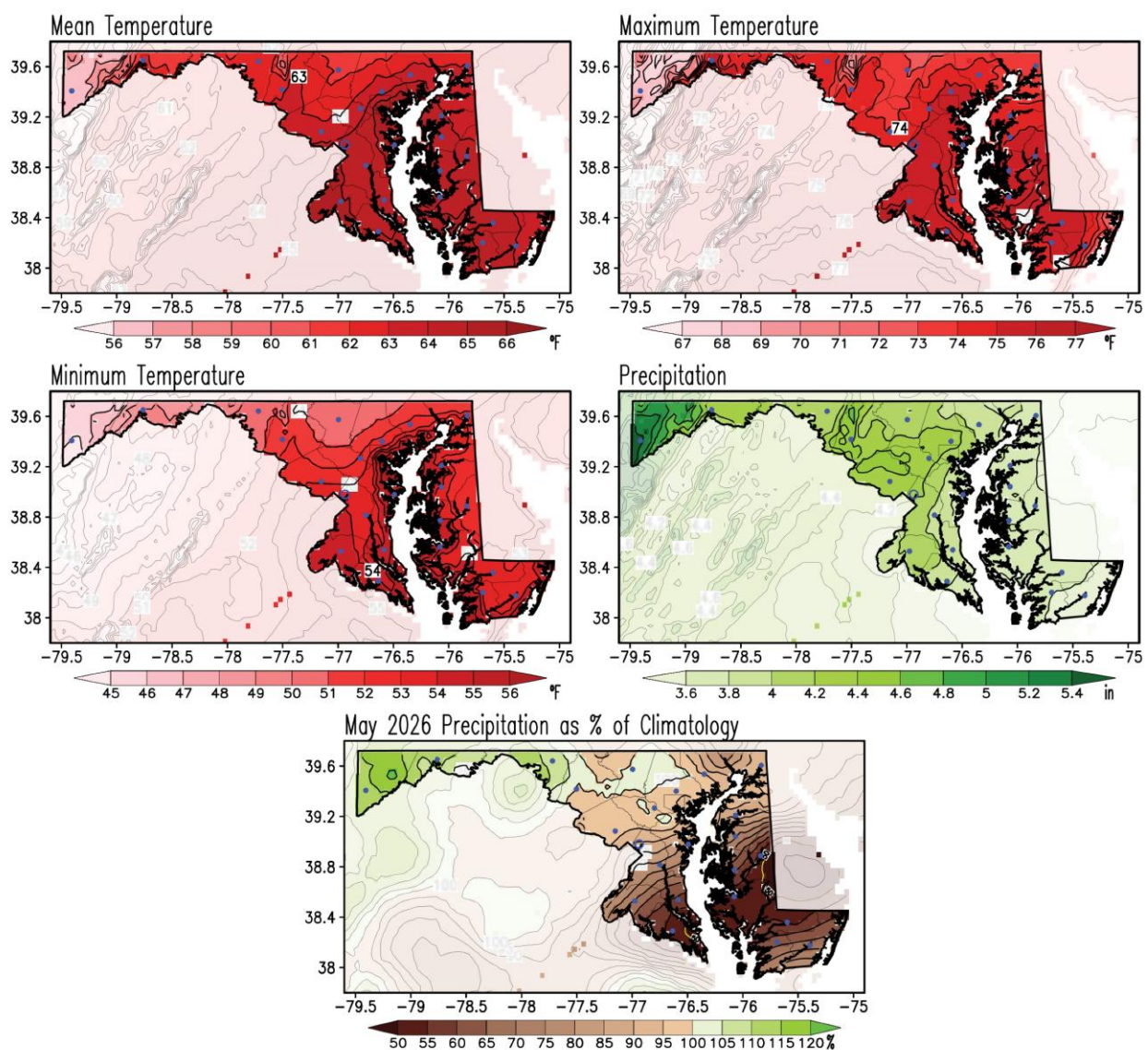


Figure C1. May climatology of the monthly mean, maximum, and minimum surface air temperatures, and total precipitation for the period 1991-2020 (upper and middle rows), and precipitation in May 2026 as a percentage of climatology (bottom row). Temperatures are in °F, and precipitation in inches according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

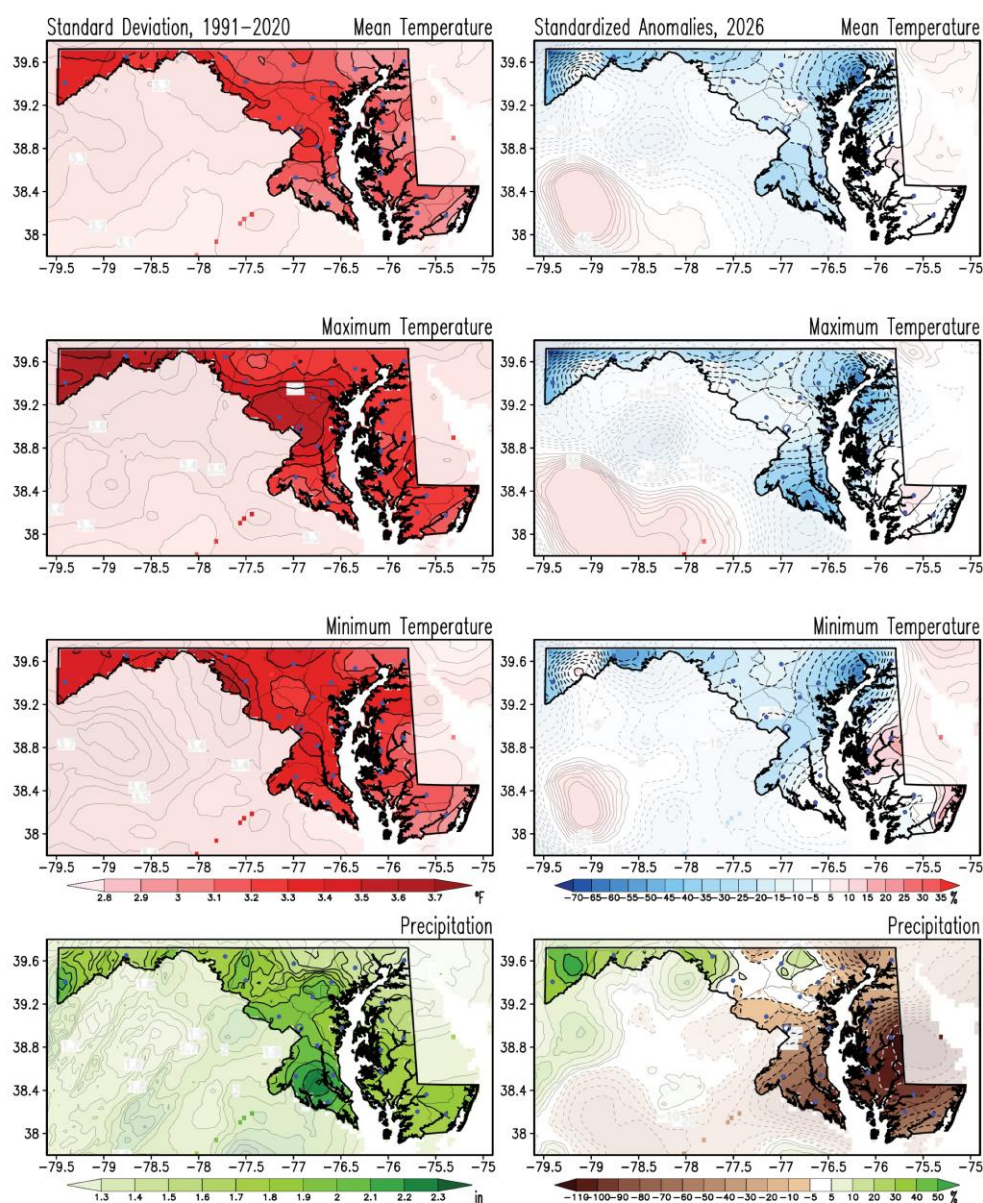


Figure D1. Standard deviation for May and standardized anomalies of temperatures and precipitation for May 2026. Standard deviations for monthly mean, maximum, and minimum surface air temperatures and total precipitation were obtained from the 1991-2020 period (left column). Anomalies for May 2026 (right 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/red shading in the anomaly temperature maps marks colder/warmer than normal conditions; brown/green shading in the anomaly precipitation map marks drier/wetter than normal conditions. The standardized anomalies are obtained by dividing the raw anomalies (from Figures 1 to 4) by the standard deviation (from left column panels) and multiplying 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. May 2007-2020 Mean and Standard Deviation of Sea Surface Temperature Maps

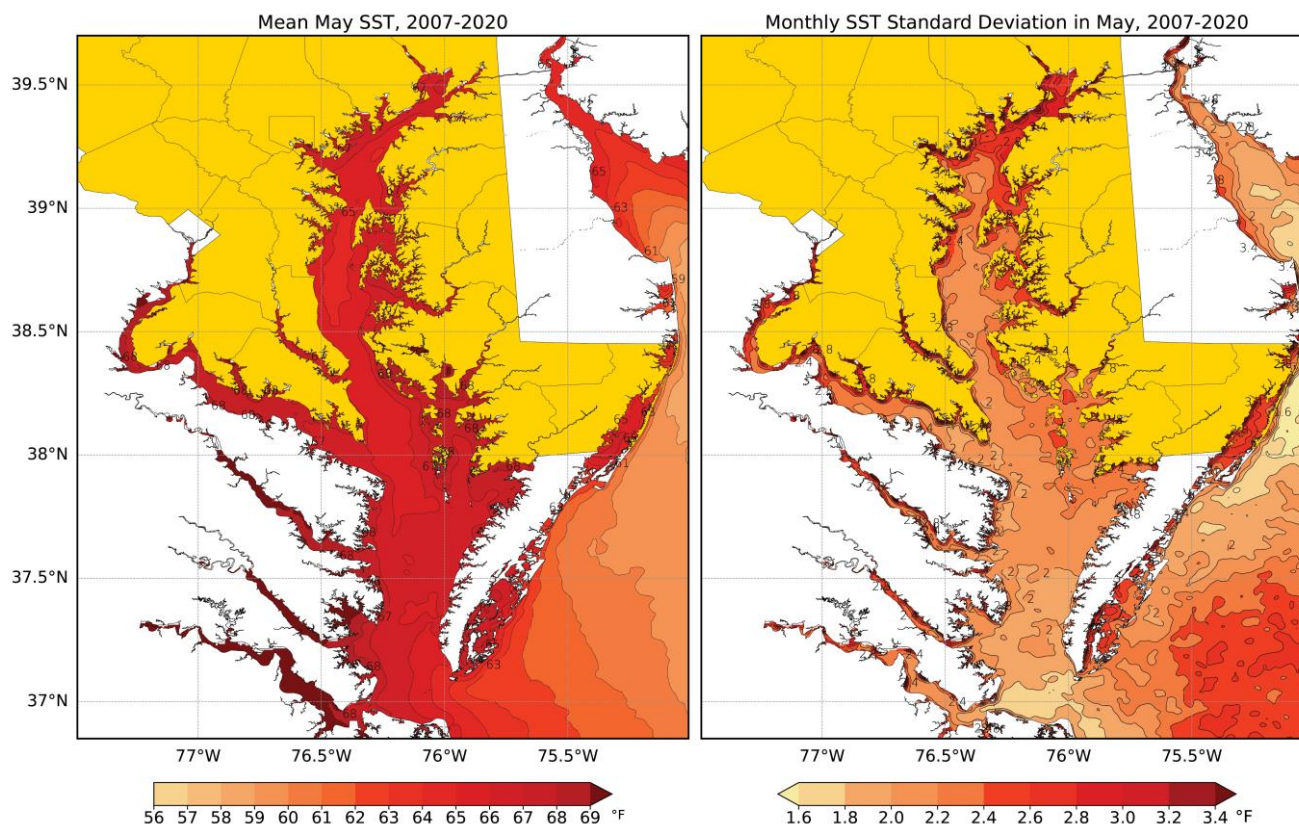


Figure E1. Mean (left panel) and standard deviation (right panel) of sea surface temperatures in the Chesapeake Bay and surrounding coastal areas in May for the period 2007-2020. The mean and standard deviation of the temperatures are in °F according to the color bars. The mean temperature map is the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

References

- Arguez A., I. Durre, S. Applequist, R. S. Vose, M. F. Squires, X. Yin, R. R. Heim Jr, and T. W. Owen, 2012: NOAA's 1981-2010 U. S. Climate Normals. An Overview. *Bulletin of the American Meteorological Society*, 93, 1687-1697, doi:10.1175/BAMS-D-11-00197.1 <https://www1.ncdc.noaa.gov/pub/data/normals/1981-2010/documentation/1981-2010-normals-overview.pdf>.
- Barriopedro, D., R. García-Herrera, C. Ordóñez, D. G. Miralles, and S. Salcedo-Sanz, 2023: Heat waves: Physical understanding and scientific challenges. *Reviews of Geophysics*, 61, e2022RG000780. <https://doi.org/10.1029/2022RG000780>.
- CPC, Climate Prediction Center, 2023: Degree Days Explanation. https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/cdus/degree_days/ddayexp.shtml
- Durre, I., A. Arguez, C. J. Schreck III, M. F. Squires, and R. S. Vose, 2022: Daily high-resolution temperature and precipitation fields for the Contiguous United States from 1951 to Present. *Journal of Atmospheric and Oceanic Technology*, doi:10.1175/JTECH-D-22-0024.1
- IPAD, 2023. Metadata for Corn <https://ipad.fas.usda.gov/cropexplorer/Definitions/csc.htm>
- Kunkel, K. E., and A. Court, 1990: Climatic Means and Normals—A Statement of the American Association of State Climatologists (AASC), *Bulletin of the American Meteorological Society*, 71(2), 201-204. Retrieved Aug 20, 2022, from https://journals.ametsoc.org/view/journals/bams/71/2/1520-0477-71_2_201.xml
- OSU, 2024: The Ohio State Phenology Calendar. <https://weather.cfaes.osu.edu/gdd/glossary.asp>
- Santer, B. D., and co-authors, 2000: Statistical significance of trends and trend differences in layer-averaged atmospheric temperature time series. *J. Geophys. Res.*, 105, 7337–7356, doi:10.1029/1999JD901105.
- Tschurr, F., I. Feigenwinter, A. M. Fischer, and S. Kotlarski, 2020: Climate Scenarios and Agricultural Indices: A Case Study for Switzerland. *Atmosphere*, 11, 535. <https://doi.org/10.3390/atmos11050535>
- Vose and co-authors, 2014: NOAA Monthly U.S. Climate Gridded Dataset (NClimGrid), Version 3. *NOAA National Centers for Environmental Information*. DOI:10.7289/V5SX6B56.
- WMO, 2017: WMO Guidelines on the Calculation of Climate Normals. WMO-No. 1203, Series. 29pp. https://library.wmo.int/doc_num.php?explnum_id=4166.

