2024-2025 MID-ATLANTIC DROUGHT ASSESSMENT

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM

NOAA TECHNICAL REPORT: OAR-NIDIS-006

2024-2025 MID-ATLANTIC DROUGHT ASSESSMENT

BUILDING DROUGHT EARLY WARNING CAPACITY AND RESILIENCE

The National Oceanic and Atmospheric Administration's
National Integrated Drought Information System

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Cover image: Very low water level in Cheat Lake near Morgantown, West Virginia. Image from Adobe Stock.

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TABLE OF CONTENTS

Introduction **4**
Historical Drought in the Mid-Atlantic **5**
Drought Evolution and Impacts **6**
Drought Responses **12**
Drought Information Gaps and Needs: Challenges and Opportunities **18**
Next Steps in Building Drought Early Warning Capacity **22**
Partners **23**
Appendix A: Meeting Participants **24**
Appendix B: Meeting Agendas **28**

INTRODUCTION

Drought has occurred frequently in the Mid-Atlantic states over the past century. Major droughts occurred in the 1930s, 1940s, 1960s, and 1980s, with several lasting for more than a year. The 1960s drought was a multi-year event that resulted in the establishment of new and expansive water management agencies and policies. More recent droughts occurred between 1998 and 2002, as well as 2016, reconfirming the eastern United States is prone to drought. Economic losses due to drought were counted in millions of dollars for the agricultural sector alone. Strain on energy and water supplies led to costly infrastructure improvements key to maintaining the economic engines of the Eastern Seaboard.

In 2024, heat and a lack of rainfall led to widespread drought across Delaware, Maryland, New Jersey, Pennsylvania, Virginia, West Virginia, and the District of Columbia. For some locations, the 2024 drought was the worst the region had experienced in more than two decades. The region felt significant impacts across both natural and managed landscapes, and in multiple sectors including agriculture, mining, public health, and water utilities.

In response to these conditions and impacts, NOAA's National Integrated Drought Information System (NIDIS), Northeast Regional Climate Center (NRCC), and NOAA's Regional Climate Services Eastern Region held a special drought webinar in September 2024 to deliver timely, relevant drought information and resources to decision-makers across West Virginia and Ohio, and surrounding states in the Midwest and Mid-Atlantic. Speakers from the U.S. Department of Agriculture, NRCC, NOAA's National Weather Service (NWS), Federal Emergency Management Agency (FEMA) Region 3, Environmental Protection Agency (EPA) Region 3, Ohio Department of Agriculture, West Virginia Emergency Management Division, and others shared federal, state, and local resources available to help communities cope with the impacts of ongoing drought.

What Is NIDIS?

Congress authorized the National Oceanic and Atmospheric Administration's (NOAA) National Integrated Drought Information System (NIDIS) in 2006 (Public Law 109-430) with an interagency mandate to develop and provide a national drought early warning system, by coordinating and integrating drought research, and building upon existing federal, tribal, state, and local partnerships.

As drought persisted into winter 2024-2025, NOAA, NIDIS, and NRCC hosted a series of virtual meetings in March-April 2025 with approximately 140 participants from state agencies, local government, water utilities, academia, and non-profits in the Mid-Atlantic region. The purpose of these follow-up meetings was to: (1) assess the 2024-2025 drought; (2) understand how the drought impacted communities and the additional information and resources that would have strengthened drought resilience through the drought period; and (3) identify lessons learned and how to integrate drought early warning capacity into a Mid-Atlantic Drought Early Warning System.

This report discusses the origins of the drought, its evolution and impacts between June 2024 and May 2025, and a review of response activities. It also presents stakeholder-identified opportunities for further collaboration, research, and capacity building for greater drought resilience in the Mid-Atlantic region.

HISTORICAL DROUGHT IN THE MID-ATLANTIC

Drought has occurred frequently in the Mid-Atlantic states over the past century. The major droughts occurred in the 1930s, 1940s, 1960s, and 1980s, with some lasting for as long as a year. Below, a regional timeline of the 9-month Standardized Precipitation Index (SPI) from the late 1890s through May 2025 illustrates these drought periods. This timeline includes Delaware, the District of Columbia, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia.

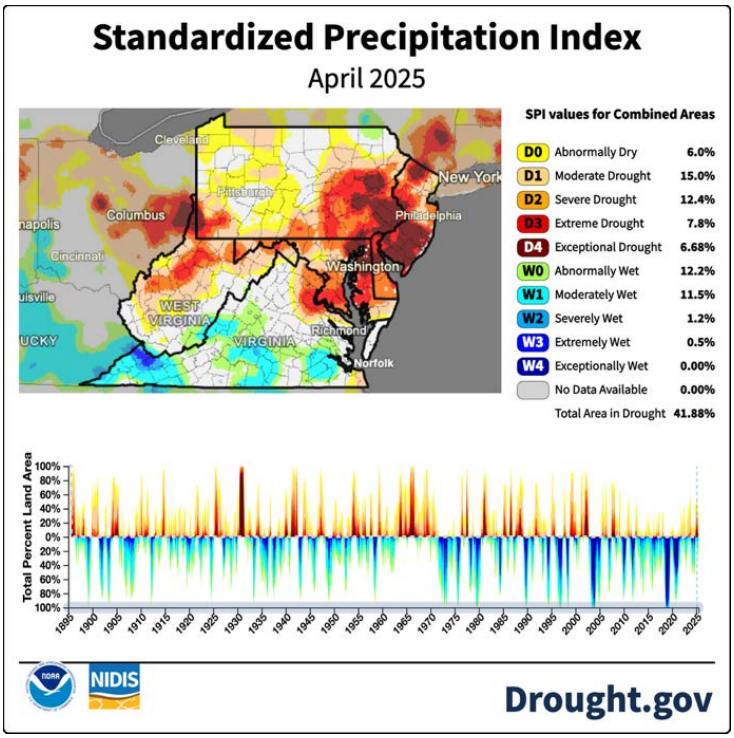
The 1960s drought, which occurred from 1962-1969, is considered the region's drought of record. This drought produced one of the most prolonged dry periods in recent history. In fact, in 1965, President Johnson issued Major Disaster Declarations for New York, New Jersey, Pennsylvania, and Delaware due to water shortages, representing one of the only times a president used a Major Disaster Declaration for drought.

The Mid-Atlantic region includes Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia, as well as the District of Columbia. Map from the National Integrated Drought Information System.

Beginning in the 1940s, water resource management made great strides, particularly across major Mid-Atlantic river systems like the Susquehanna and the Potomac. Federal and/or state agencies, alongside quasi-governmental agencies, formed commissions on major Mid-Atlantic river systems. The Interstate Commission on the Potomac River Basin (ICPRB), the oldest of the commissions, was authorized by an Act of the United States Congress in the 1940s. In 1961, the Delaware River Basin Commission was established under a federal-interstate compact authorized by Congress. The Susquehanna River Basin Commission was similarly formed in 1970 by Congress in partnership with basin states through an interstate compact. Today, these commissions are multi-state entities that support the region with regulatory roles in water withdrawal and drought planning, response, and mitigation activities.

White House ceremonial signing of the Delaware River Basin Compact on Nov. 2, 1961. Image from the Delaware River Basin Commission.

According to the U.S. Drought Monitor, two significant droughts with Extreme Drought (D3) or worse were observed in the region since 2000—one in 2002 and another in 2024-2025. The most recent drought included Exceptional Drought (D4) conditions beginning in August 2024 in Ohio and West Virginia, the first time these areas had D4 conditions since the U.S. Drought Monitor began in 2000. Conditions improved in West Virginia toward the end of the year, and the epicenter of the most impactful drought shifted east. During the fall and winter of 2024-2025, the drought expanded into Delaware, Maryland, Pennsylvania, New Jersey, and the District of Columbia.



Regional map (top) showing the standardized precipitation index (SPI) for April 2025, and timeline (bottom) showing SPI from 1895 to July 2025. The Standardized Precipitation Index (SPI) measures water supply, specifically precipitation. SPI captures how observed precipitation (rain, hail, snow) deviates from the climatological average over a given period—in this case, over the 9 months leading up to the selected date. Red hues indicate drier conditions, while blue hues indicate wetter conditions. Map from drought.gov. Data from NOAA's National Centers for Environmental Information.

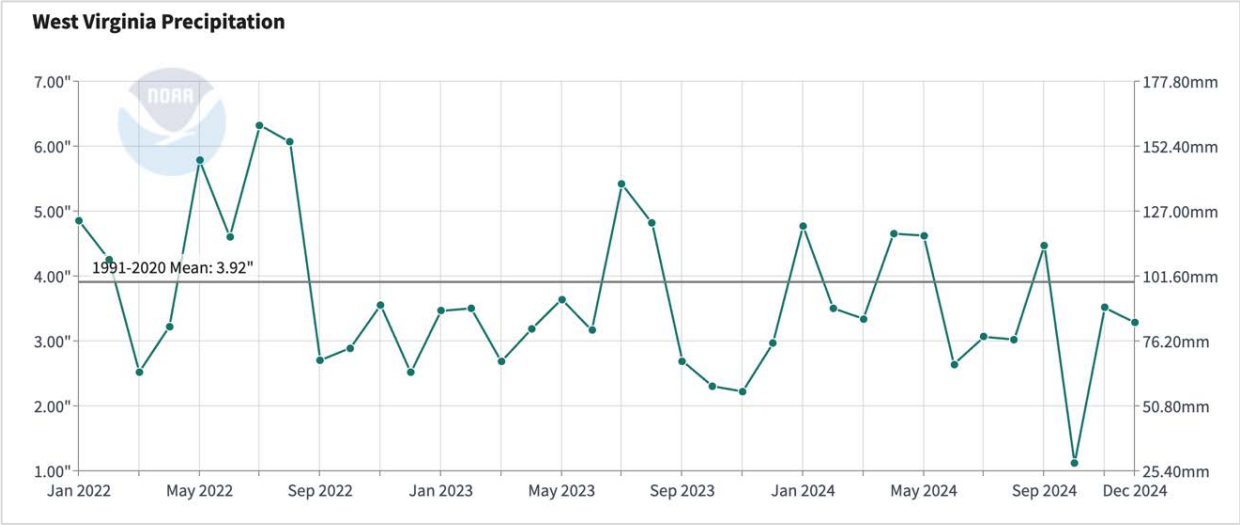
Many residents, farmers, and water utility managers compared the 2024-2025 drought to the last major drought in the region in 2002. Comparisons between the two events helped gauge responses and allowed for contrast between antecedent weather patterns that initiated the droughts. However, there were new lessons to learn as the region felt new impacts, and new information sources pointed to the possibility of greater drought early warning capacity to inform planning and response in the future.

DROUGHT EVOLUTION AND IMPACTS

This section describes the 2024-2025 Mid-Atlantic drought's onset, development, persistence, and amelioration, as well as the impacts across sectors of the economy as well as ecological impacts.

Summer-Fall 2024

The 2024 Mid-Atlantic drought unfolded in early summer, taking on the characteristics of a flash drought that intensified persistently over the course of just a few short weeks. However, there was also a long-term component to this drought. Starting in fall 2022, parts of the region saw a dry spell with significant rainfall deficits in West Virginia, which had lingering effects on soil moisture and streamflow condition recovery in fall 2023 and spring 2024.

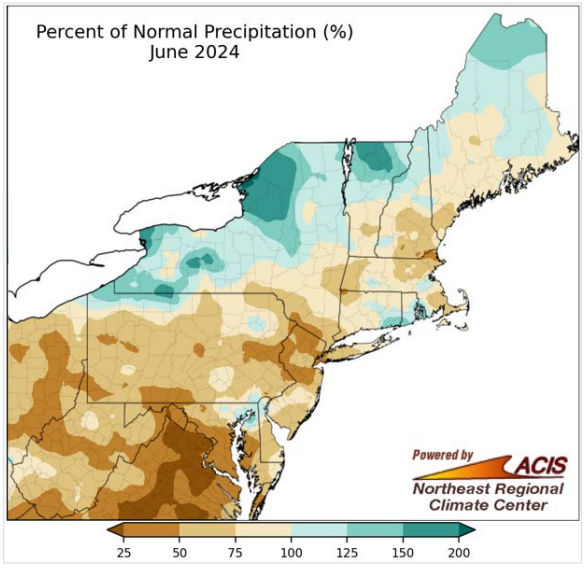


Time series showing precipitation from January 2022 to December 2024. Starting in fall 2022, parts of the region saw a dry spell with significant rainfall deficits in West Virginia, which had lingering effects on soil moisture and streamflow condition recovery in fall 2023 and spring 2024. Chart from NOAA's National Centers for Environmental Information.

Following a relatively mild spring, a sudden onset of hot, dry conditions in early summer—coupled with high evaporative demand—led to a swift decline in soil moisture, streamflows, and vegetation health across the region. Driven by persistent ridging (high pressure systems that bring fair weather), drier-than-normal conditions in June in the Mid-Atlantic led to the rapid introduction/expansion of Moderate Drought (D1) and Abnormal Dryness (D0), particularly in West Virginia and Maryland. For instance, in one week, Maryland's percent area in drought went from 5% to 61%, while West Virginia's drought coverage expanded from 5% to 59%. Parts of the Mid-Atlantic noted impacts such as record-low streamflow and groundwater levels, requests for water conservation, burn bans, and heavy reliance on irrigation. Virginia experienced its driest June on record, while the month was among the 20 driest Junes for Maryland, Pennsylvania, and West Virginia. By mid-July, the U.S. Drought Monitor introduced Extreme Drought (D3) conditions in eastern West Virginia and western Maryland for the first time since September 2010. And by late July, streamflows and groundwater levels had dropped significantly across parts of Maryland, Delaware, and Virginia.

In one week, Maryland's percent area in drought went from 5% to 61%, while West Virginia's drought coverage expanded from 5% to 59%.

In particular, the June–August 2024 period became West Virginia's 5th driest summer on record (since 1895). The U.S. Drought Monitor depicted Exceptional Drought conditions (D4) in western West Virginia in late August, which was the first time in the 24-year history of the U.S. Drought Monitor that Exceptional Drought (D4) occurred in this state. Exceptional Drought (D4) persisted in West Virginia for 12 consecutive

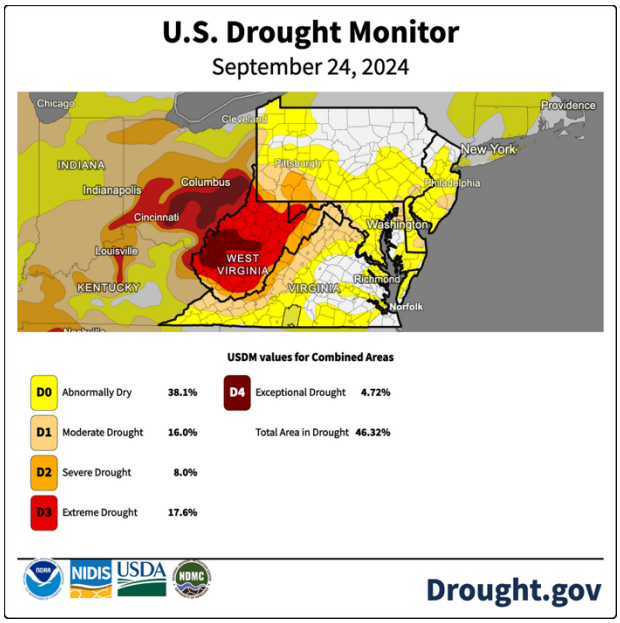


Percent of Normal Precipitation in the Northeast and Mid-Atlantic in June 2024. Virginia experienced its driest June on record, while the month was among the 20 driest Junes for Maryland, Pennsylvania, and West Virginia.

weeks, and at its maximum extent, covered 17% of the state, according to the September 24, 2024 U.S. Drought Monitor.

Through August, drought impacts included depleted soil moisture that delayed planting, reduced yields, and decreased livestock feed crop production. According to the U.S. Department of Agriculture (USDA), pasture conditions were "poor" with creeks and ponds "mostly dry," which forced producers to source feed and water from hundreds of miles away. By late August, USDA determined West Virginia top soil and subsoil percentages were "short to very short" in croplands statewide, indicating, "fields are brown and pasture growth has stopped."

Throughout fall 2024, drought persisted in the Mid-Atlantic states, and in some areas, worsened, despite isolated rainfall events that brought a temporary reprieve. At the end of September, a stalled frontal system and the remnants of Hurricane Helene dropped heavy rainfall on some southern and eastern parts of West Virginia, bringing localized relief but also challenges in understanding and communicating the role of precipitation effectiveness (a measure of water that represents the water that remains in the landscape after accounting for runoff and evaporation) in improving drought conditions. Across the region, October 2024 went into the record books as the all-time driest month on record for the states of New Jersey and Delaware, and several cities had their all-time driest month, including Philadelphia and Allentown in Pennsylvania and Newark and Atlantic City in New Jersey. Lack of precipitation allowed drought and Abnormal Dryness (D0) to rapidly expand during October, particularly in coastal areas of the Mid-Atlantic. Warmer-than-normal October temperatures worsened the dryness, with the greatest departures between 2°F to 4°F above normal. The temperatures and persistent lack of precipitation in the Mid-Atlantic contributed to record-low streamflow, reduced soil moisture, and an increase in wildfire activity. Water suppliers across the region reported low lakes, reservoirs, and aquifers. Reservoir levels declined, including those that service the New York City area. In New Jersey, the Manasquan Reservoir fell to record-low levels by mid-October, while the



The September 24, 2024 U.S. Drought Monitor shows Moderate to Exceptional Drought (D1-D4) in the Mid-Atlantic. Exceptional Drought (D4) persisted in West Virginia for 12 consecutive weeks, and at its maximum extent, covered 17% of the state, according to the September 24, 2024 U.S. Drought Monitor. Map from drought.gov.
Data from the U.S. Drought Monitor.

The Importance of Irrigation

Irrigation made a difference for some producers during this drought period. These photos show the impact of drought on both irrigated and rainfed crops on adjacent fields in Sussex County, Delaware. In the photo of corn, the difference between the ear on the left (from rainfed acreage) versus the right (from irrigated fields) is likely due to drought later in the summer. Similarly, in the photo of soybeans, the rainfed pods (on the left) are much smaller as well." Source: University of Delaware.

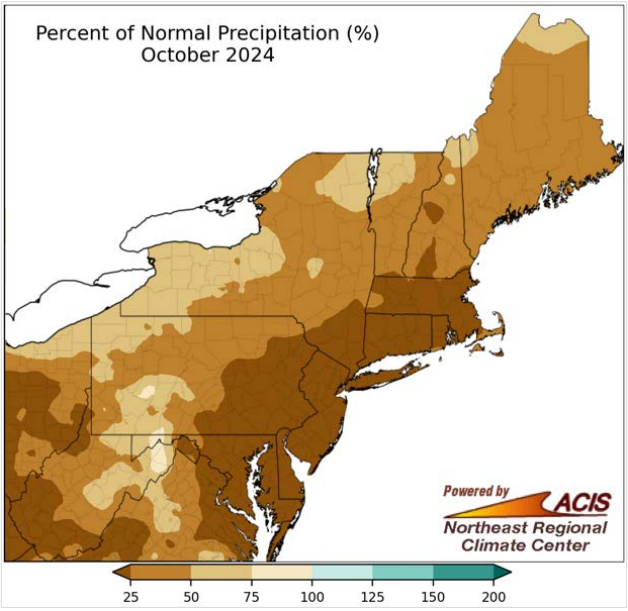
Spruce Run Reservoir was at 36.6% of capacity. Reservoir levels at Tygart Lake and Stonewall Jackson Lake in northern West Virginia hit record low levels during this period. Across the region, dry wells and streams with reduced flow also increased water supply uncertainty and backup or alternate water supplies options were limited. Communities enacted mandatory water restrictions in some locations, including several systems in western Maryland and southeastern Pennsylvania. Meanwhile, many residents in dry areas were asked to voluntarily conserve water.

Reduced water levels related to the drought in New Jersey made the cranberry harvest slower and more difficult. USDA crop progress reports showed 98% of Delaware, 91% of New Jersey and Maryland, and 89% of West Virginia crop lands had topsoil moisture in the driest two categories (very short or short) for the week ending October 27. The condition of corn, hay, pastures, and soybeans in West Virginia remained in very poor, poor, and fair categories, with none of these crops in the good or excellent categories. Pasture and rangeland conditions deteriorated in a few states, with poor or very poor conditions for 96% of West Virginia, 57% of Maryland, and 42% of New Jersey crop land. A press release from Delaware officials noted, "Presently, some soils are so dry that cover crops and small grains that are being seeded do not have enough moisture to germinate. These crops are important to help retain nutrients thereby protecting groundwater and surface waters. If they can't be established, we lose that ability."

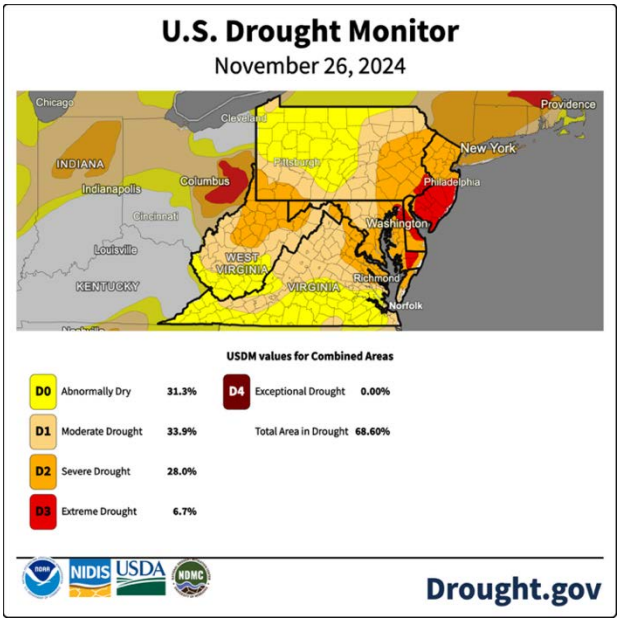
Maintenance on controlled waterways and water supply lines is usually scheduled during periods of low water demand, as lower water levels allow easier access to the areas requiring repair. Even with the typical reduced demand for water during the fall, extremely reduced water availability due to drought interfered with some infrastructure projects, including New York City's Delaware Aqueduct Repair Project, which the city paused in November 2024.

Alongside voluntary and mandatory municipal and county water restrictions, farms and residents experienced dry and collapsing wells. Waterways also dried up across West Virginia, harming firefighting operations.

Across the region, an increase in brush fires and general fire risk threatened urban and rural landscapes, as well as human health and safety. While New Jersey can see elevated fire risk in October and November due to drier conditions and an increase in leaf litter, fall 2024 was unusually problematic. Drought and the early leaf fall impacted fire behavior. NOAA's National



Percent of Normal Precipitation in the Northeast and Mid-Atlantic in October 2024. Across the region, October 2024 went into the record books as the all-time driest month on record for the states of New Jersey and Delaware, and several cities had their all-time driest month. Map from the Northeast Regional Climate Center.

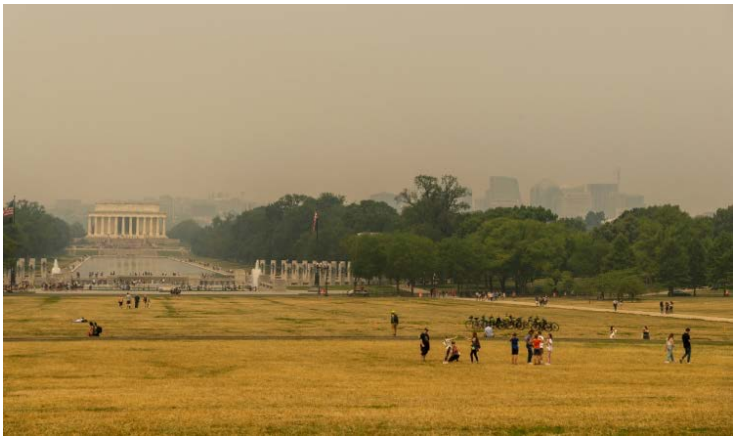


The November 26, 2024 U.S. Drought Monitor shows Moderate to Exceptional Drought (D1-D4) in the Mid-Atlantic. Extreme Drought (D3) took hold in southern New Jersey, with a range of Abnormally Dry (D0) to Extreme Drought (D3) conditions throughout the region by late November. Map from drought.gov. Data from the U.S. Drought Monitor.

Weather Service issued numerous Red Flag Warnings for fire danger throughout New Jersey, New York, and surrounding states. In November, the Jennings Creek Fire burned 5,304 acres of forests and wetlands across New York and New Jersey. Fire risk in New Jersey continued into 2025, with an additional 382 fires consuming 1,242 acres between January 1 and March 13, 2025. The fires threatened business and transportation, and poor air quality due to wildfire smoke reduced respiratory health.

Smoke from wildfires on Neversink Mountain in Reading, Pennsylvania in November 2024. Image from Adobe Stock.

Smoke from brush and wildfires was not the only threat to human health during this time. A unique impact of this drought was the relationship between drought and aggressive wasp behavior, which increased the risk of anaphylaxis. The West Virginia Department of Health attributed this behavior to drought and a reduction in typical food and water sources for these insects. In September, West Virginia's Department of Health was forced to warn residents statewide of a rise in emergency room visits related to stings, which increased significantly compared to 2023. West Virginia residents were asked to remain vigilant throughout the fall as wasps were more aggressive.

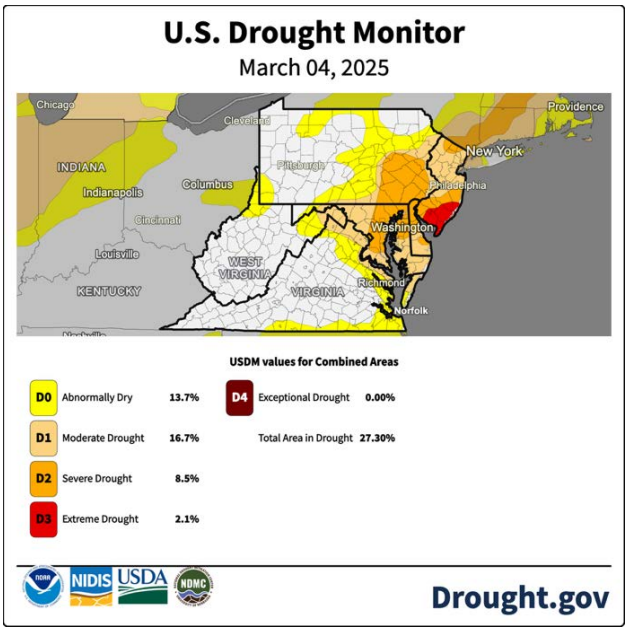


Wildfire smoke reduced air quality in Washington D.C. Image from Adobe Stock.

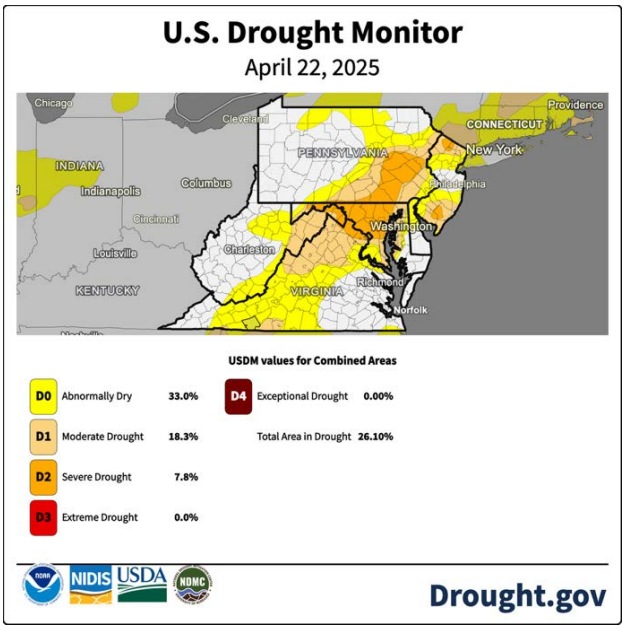
A wasp drinks water from a leaf. Image from Adobe Stock.

Winter 2024-Spring 2025

Water demand in the winter months decreased as agricultural and ecosystem needs for water fell. Unfortunately, precipitation was scattered and highly variable across the region. Drought conditions changed very little, except in West Virginia, where there was sufficient precipitation to bring significant improvement. Throughout the winter, improvement continued in West Virginia, and the epicenter of drought shifted to eastern portions of the Mid-Atlantic. Extreme Drought (D3) persisted in southern New Jersey, and reservoirs fell to concerning levels in northern and central portions of the state. Fall and winter were also particularly difficult for New Jersey cranberry growers to flood bogs, and for reseeding, much of which was delayed or did not occur. Severe Drought (D2) in Maryland and northern Virginia persisted in the winter, then expanded westward during spring.



The March 4, 2025 U.S. Drought Monitor shows Moderate to Extreme Drought (D1-D3) in the Mid-Atlantic. Extreme Drought (D3) persisted in southern New Jersey. Severe Drought (D2) in Maryland and northern Virginia persisted in the winter, then expanded westward during spring. Map from drought.gov. Data from the U.S. Drought Monitor.



The April 22, 2025 U.S. Drought Monitor shows Moderate to Severe Drought (D1-D2) in the Mid-Atlantic. By April, all four Maryland drought monitoring regions entered a drought warning status. Data from the U.S. Drought Monitor.

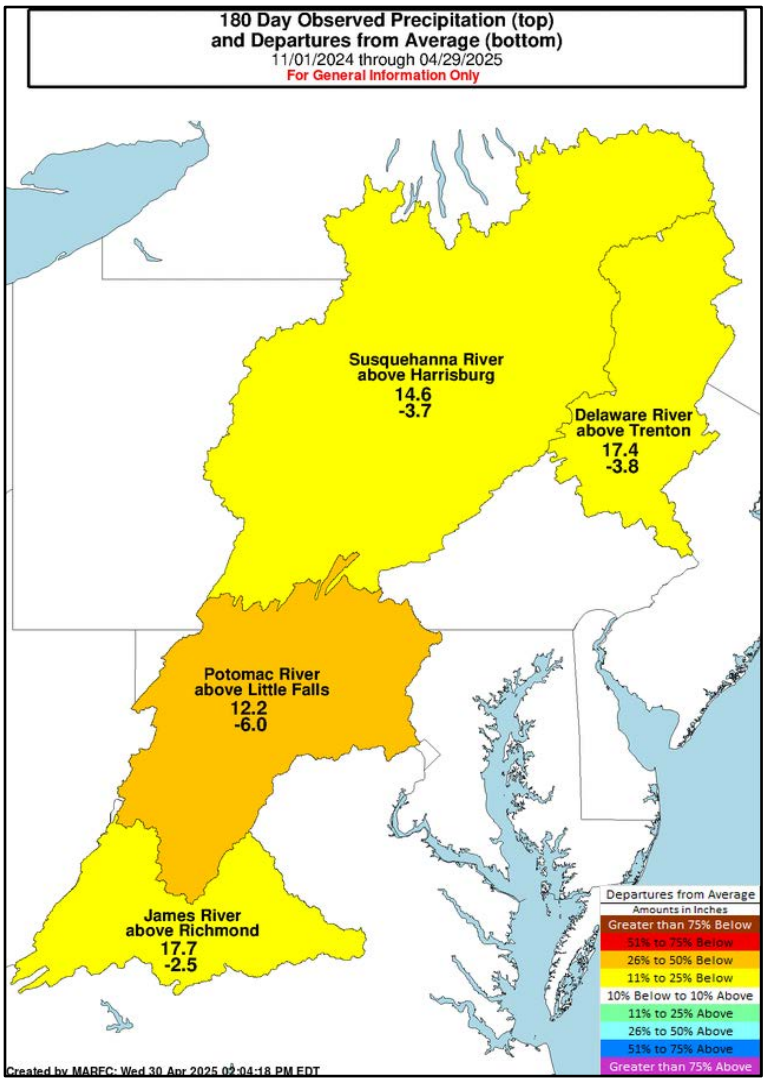
At its mid-March meeting, the Delaware River Basin Commission assessed the drought and voted to extend its water supply emergency due to persistent drought conditions. By April, all four Maryland drought monitoring regions entered a drought warning status. Several systems in central Maryland implemented mandatory water use restrictions, and by May, the Baltimore City Department of Public Works issued voluntary water use restrictions. Lower winter precipitation simply did not replenish aquifers or maintain streamflow levels into the spring. Resource managers expected this longer-term streamflow impact and lagging groundwater recovery to become challenging as warmer spring temperatures and increasing seasonal water demands pulled moisture from all sources. In Clarke County, Virginia, groundwater reached emergency levels in April, and the county urged residents to conserve water. West Virginia farmers expressed concerns about agricultural impacts for the upcoming season, and New Jersey officials feared a return to large, impactful wildfire events during the spring fire season. This fear was rooted in the growing concern about below-normal winter snowfall.

On April 22, 2025, the Jones Road wildfire erupted in Ocean County, validating New Jersey fire officials' earlier concerns. The fire prompted mandatory evacuations, power shutdowns, and major road closures. Based on the U.S. Drought Monitor released on April 17, 2025, this county was experiencing Abnormally Dry (D0) conditions at the time. The state's fire danger was high, and weather conditions at the time included gusty winds that enhanced evaporation rates, further drying out available fuels.

As conditions incrementally improved in New Jersey through April, Maryland, southeastern Pennsylvania, and northern Virginia became the epicenter of drought in the Mid-Atlantic states by late April.

Submit your drought impacts!

To document your local drought impacts, please visit the U.S. Drought Portal at **www.drought.gov/impacts** to submit your impacts to the Condition Monitoring Observer Reports on Drought (CMOR-Drought) for the U.S.



The agriculture sector felt impacts, with challenges to spring planting in a few locations in Virginia from precipitation deficits. The map (at left) of 180-day observed precipitation and precipitation departures from average depicts the reason for concern among the Mid-Atlantic river basin commissions and water utilities: this area had precipitation deficits between 2 and 6 inches. Beginning in May 2025, wet conditions improved drought significantly, and kicked off drought recovery in much of the region.

The April 30, 2025 map at left shows 180-day observed precipitation and precipitation departures from average. This area had precipitation deficits between 2 and 6 inches. Map from National Weather Service Middle Atlantic River Forecast Center April 30, 2025.

DROUGHT RESPONSES

River Basin Commissions

Due to earlier significant droughts, including the multi-year drought in the 1960s, the Mid-Atlantic region developed agencies, commissions, and capabilities to monitor and respond to drought that continue to serve the region today. Multi-state river basin agencies, including the Delaware River Basin Commission (DRBC), the Susquehanna River Basin Commission (SRBC), and the Interstate Commission on the Potomac River Basin (ICPRB), are examples of entities that serve the region with drought response and mitigation responsibilities. These entities provide water supply planning, waterway project permitting, drought response exercises, public education and information services, and water quality testing and reporting. These commissions also maintain publicly accessible dashboards and reports, with data and information local communities can use for real-time decision support.

During the 2024-2025 drought, all three commissions routinely monitored the drought and tested water quality to maintain safe drinking water and minimize drought impacts. They frequently adjusted water allocations, authorized diversions and impoundments, and guided water releases to mitigate negative impacts to water quality and quantity. One of the key duties of the DRBC was upstream reservoir and river flow management to prevent the salt front from advancing on the Delaware River. Their management efforts protected the drinking water treatment plants and industrial water intake systems just south of Philadelphia, Pennsylvania and

Trenton, New Jersey. More than 14 million people in the region rely on water from the Delaware River, where there is a delicate balance between New York City water reserves and the needs of downstream cities and communities. The SRBC and ICPRB also worked closely with state drought task forces to issue basin advisories (watches, warnings, and emergency status alerts) that informed local water management drought preparation and response actions.

State Responses

State drought task forces are typically part of state-level environmental, emergency management, or water resources departments. Within each state, task forces bring together multiple departments responsible for monitoring conditions and impacts, coordinating response activities, and supporting gubernatorial requests for drought declarations. During the 2024-2025 drought, state drought task forces across the region actively collected data on local weather and hydrologic conditions, as well as impact reports. This information informed local decisions and provided input to the U.S. Drought Monitor. Governors in the Mid-Atlantic states responded to the drought with structured measures of escalation—beginning with voluntary watches, advancing to warnings and emergency declarations, and culminating in regional coordination towards long-term drought preparedness and resilience efforts. Proactive communications, water-use restrictions, wildfire risk management, and planning also played central roles in state responses as dry conditions intensified.

Wappasening Creek, a tributary of the Susquehanna River in Pennsylvania. Image from the Susquehanna River Basin Commission.

The Delaware River flows through the Delaware Water Gap between New Jersey and Pennsylvania. Image from Adobe Stock.

State Drought Task Force Case Study: West Virginia

On July 26, 2024, West Virginia Governor Jim Justice declared a state of emergency for all 55 counties in the state due to dangerous drought conditions and later extended it on August 23. The state's Emergency Drought Relief Reimbursement Grant Program provided financial assistance for drought expenses to state, regional, county, and municipal agencies, including fire departments. The program assisted these agencies to maintain necessary irrigation and livestock water supplies to respond to drought conditions across the state.

The West Virginia Department of Agriculture, along with other state partners, hosted a Multi-Agency Drought Management Meeting in August 2024 and launched a social media campaign soliciting impact reports via the National Drought Mitigation Center's Condition Monitoring Observer Reports on Drought (CMOR-Drought) tool, calling attention to signs of drought. These partners coordinated public awareness and drought assistance meetings with the USDA's Farm Service Agency and worked with public health officials and the media to warn residents about drought impacts. IFLOWS, an online resource to provide statewide access to meteorological and stream stage information during storm events, also informed West Virginia's drought response. IFLOWS also supported coordination with relevant agencies to ensure the effective information use in flood forecasting, early warning systems, and emergency response planning. A collaborative effort between the USGS, NOAA's National Weather Service, the state of West Virginia, and private entities resulted in a mesonet of 256 monitored meteorological gauges reporting rainfall, temperature, wind, and humidity. Data from this network proved to be an important asset for the West Virginia Emergency Management Division and the West Virginia drought task force.

The task force met regularly through December 2024, when monitored streams and rivers indicated recovery and drought conditions largely improved. In January 2025, the task force met to discuss their response activities and formulate improvement plans. This continuous improvement process supported an early warning posture when Severe Drought (D2) conditions briefly returned to the state in early May.

Babcock State Park in West Virginia. Image from Adobe Stock.

State Drought Task Force Case Study: Delaware

The Delaware Water Supply Coordination Council (WSCC) met in October 2024, and the state's Drought Monitoring Subcommittee (a drought task force) held its first meeting on October 9, 2024. This first meeting coincided with the U.S. Drought Monitor registering just over 90% of the state in Moderate Drought (D1). The following week, the subcommittee supported the state Fire Marshal's issuance of an outdoor burn ban. Delaware Governor John Carney responded to the WSCC's updates and recommendations by issuing a state drought watch in late October 2024. Near the end of the month, just over 98% of the state was experiencing Severe Drought (D2) and continued coordination resulted in the state's Geological Survey installing two additional real-time monitoring wells in partnership with USGS. The Delaware Department of Natural Resources and Environmental Control also began to collect monthly water level data from agricultural monitoring wells in Kent and Sussex counties. By spring 2025, the Delaware Climate Office at the University of Delaware launched a new drought resources page that routinely posted updates on drought status. The new webpage tracked precipitation, temperatures, streamflow, and groundwater, as well as key drought indices and links to drought information from the contiguous states of Maryland, New Jersey, and Pennsylvania.

Water Utilities and Other Responding Agencies

Rural water associations, small cooperatives, and private water utility companies (large and small) are integrated into drought response in the Mid-Atlantic states. Most utilities focused on source water protection and water quality testing, issuing advisories as needed. These companies incurred additional expenses due to more frequent testing, increased staff time, and the costs of additional filters and chemical agents used in testing and purification.

A Master Well Owner Network volunteer discusses private water system management with a well owner. Image from Penn State Extension.

Pennsylvania State University's Extension Service administers a grassroots organization, the Master Well Owner Network, a network of trained volunteers dedicated to promoting the proper construction and maintenance of private water systems in Pennsylvania. This organization performed an education and response role during the 2024-2025 drought, serving private well owners on a person-to-person level of interaction. They responded to Pennsylvania residents' requests related to low water pressure, dry wells, and well collapses.

Federal Responses

During the 2024-2025 Mid-Atlantic drought, numerous federal agencies monitored and responded to resource queries, data needs, and financial assistance after drought losses. The USDA delivered vital farm relief efforts across the region, including through the Livestock Forage Disaster Program (LFP), which provides compensation to eligible livestock producers who suffered grazing losses for covered livestock and produce grazed forage. Grazing losses must occur on land physically located in a county experiencing a qualifying drought during the normal grazing period for the county. Below are total LFP-eligible counties in Mid-Atlantic states based on USDA Secretarial Disaster Declarations in the 2024 crop year.

STATE (TOTAL # OF COUNTIES IN THE STATE)	PRIMARY DECLARATIONS	CONTIGUOUS DECLARATIONS
DELAWARE (3 COUNTIES)	3	0
MARYLAND (23 COUNTIES, 1 INDEPENDENT CITY)	14	10
NEW JERSEY (21 COUNTIES)	13	6
PENNSYLVANIA (67 COUNTIES)	17	34
VIRGINIA (95 COUNTIES)	80	50
WEST VIRGINIA (55 COUNTIES)	53	2

Source: USDA Farm Service Agency All Crops Calendar Year 2024 with drought declarations. Contiguous counties are counties that share a common border with counties with primary declarations.

Nine NOAA National Weather Service local forecast offices provided short- and long-term weather forecasts, outlooks, and drought information statements. Weather forecast offices in Charleston, West Virginia; Pittsburgh, Philadelphia, and State College, Pennsylvania; Binghamton and Upton, New York; Wakefield and Roanoke, Virginia; and the Baltimore/Washington office in Sterling, Virginia, were key partners during state drought task force briefings and when supporting wildfire events. These offices also issued Fire Weather Watches and Red Flag Warnings. In addition, the National Interagency Fire Center's Eastern Area Coordination Center delivered logistical and resource support, predictive services, and expertise for anticipated and ongoing wildland fire activity across the region.

Federal, regional, state, and academic partners coordinated to provide pertinent drought-related data, impact, and outlook briefings, along with early warning information to the Mid-Atlantic region. These included NOAA's NIDIS, Regional Climate Services, and National Weather Service, NRCC, USDA Northeast Climate Hub, and state climate offices across the region.

In addition, federal staff from many other agencies in the region engaged in drought response. The U.S. Small Business Administration (SBA) provided disaster loans to agricultural producers, farmers, and ranchers. This included small cooperatives, private nonprofits, nurseries, and others suffering drought-related losses.

The Federal Emergency Management Agency (FEMA) supported USDA's regional drought response with operational planning, public information, and operational coordination. FEMA offered two limited recovery programs after the drought event. The Disaster Unemployment

Assistance (DUA) program provides temporary benefits to people who, because of a major disaster, lost or had their employment or self-employment interrupted. This is funded by FEMA's Disaster Relief Fund, and the Department of Labor administers the program. The Disaster Supplemental Nutrition Assistance Program (D-SNAP) gives food assistance to eligible households with food loss or damage caused by a natural disaster, including drought. The Disaster Relief Fund also funds D-Snap, and USDA administers it.

The U.S. Environmental Protection Agency (EPA)'s Creating Resilient Water Utilities (CRWU) served as a valuable resource for impacted water utilities in planning for post-drought and wildfire environmental impacts.

Drought monitoring and response practitioners also continually used the data and expertise found at the USGS Water Science Centers in Maryland, Delaware, Pennsylvania, New Jersey, New York, Virginia, and West Virginia. The USGS National Water Dashboard offered interactive mapping layers of rivers, watersheds, and aquifers for a regional overview of hydrological conditions.

An agricultural producer in Washington County, Pennsylvania removes 30-year-old hardy kiwi vines in June 2025. The vines died during the 2024 drought. Image from the National Drought Mitigation Center's Condition Monitoring Reports.

New Response Capabilities

Right before and during the response to this drought, several entities developed new capabilities and repurposed existing tools to address specific drought response needs in the region. Examples include:

- West Virginia University Extension developed websites and resource lists to share information on sources for hay and tanked water for farmers and livestock owners. Resource lists also included contact information for mental healthcare and crisis support.

- Several newly installed stations in the West Virginia mesonet were put to the test and more fully utilized as a drought monitoring and response resource. Though the region lacked watershed information on soil moisture and groundwater when the drought started, information sharing rapidly improved over the course of the drought.

- In 2023, USGS created a publicly available, near real-time drought-awareness web tool to compare the estimated withdrawal rate for 109 public water systems across West Virginia with forecast streamflows from the National Water Model. The tool supported drought decision-making for emergency and water managers in the state.

- The emergency management community routinely used cloud-based solutions for unified emergency response and automated task workflows, as well as for situational awareness and status communications between responders. Cloud-based solutions were also adapted and utilized to share information on public water supplies.

DROUGHT INFORMATION GAPS AND NEEDS: CHALLENGES AND OPPORTUNITIES

This input was synthesized around the five components of drought early warning, which are outlined below.

Observation and Monitoring

Robust observational data are critical for drought monitoring, particularly for flash drought progression. In the Mid-Atlantic, gaps and opportunities identified include:

- **Challenges Reflecting Conditions in Drought Data:** In June 2024 in the Eastern Panhandle of West Virginia, and later in southeastern parts of the state, drought information gathering lacked ground truth reports from growers that reflected the severity of the dry conditions. Established reporting/communication methods with growers were not in place, given the rarity of significant drought in the state. The U.S. Drought Monitor (USDM) and other indicators seemed to lag behind actual conditions farmers experienced on the ground, particularly during the drought's rapid onset. USDA's Farm Service Agency (FSA) rectified this with close coordination to quickly develop a reporting mechanism for county offices to solicit weekly reports from growers in early July. In addition, a coordinated effort between NWS, FSA, NRCC, and West Virginia Emergency Management Division and others developed to disseminate other reporting methods for growers and the public using the National Drought Mitigation Center's Condition Monitoring Observer Reports (CMOR). Moving forward, this challenge may also be addressed through advances in research to identify key variables needed to monitor flash drought by sector, such as soil moisture indicators, which are vital for agriculture.

- **Maintain and Expand Drought Monitoring:** More in-situ observations are needed to maintain and increase support for drought monitoring infrastructure, including soil moisture, evapotranspiration, groundwater, fine fuel conditions, dry wells, reservoir levels, and headwater streamflow observations. Increased density of sites reporting precipitation, temperature, and wind conditions are also needed. For instance, the West Virginia Water Resources Institute (WVWRI) collects water quality data from small streams, most of which are not monitored by a gauge system. Efforts to connect valuable local data to more centralized regional monitoring efforts would support earlier warnings of drought and its impacts.

Soil Moisture Monitoring in the Mid-Atlantic Region

Soil moisture drives many hydrological and ecological processes, such as runoff, streamflow, forest productivity, drought stress, and wildland fire probability and severity. Land managers need high quality and timely information about soil moisture for decision-making. Currently, the desired high resolution spatial and temporal soil moisture datasets are not widely available in the Mid-Atlantic region, and greater in-situ soil moisture monitoring is needed. Users need access to approachable, user-friendly soil-moisture data, particularly a product that tracks changes in soil moisture over specified time periods. The Delmarva Peninsula is a challenging area to model soil moisture and lacks good soil moisture sensor data to validate models. The area needs better coverage and at greater depths.

- **Consistent Citizen Science Observation Mechanisms**: Additional reporting through systems like the Condition Monitoring Observer Reports (CMOR) is needed to improve drought research, assessment, and prediction across the region. A regional clearinghouse could gather and share multi-county or multi-state impact data and observations through systems developed to control quality and verify inputs. This would support farmers, especially those in rural areas, who could not contribute to CMOR due to a lack of internet connection, hindering their ability to provide real-time, ground-truthed information. More on-the-ground reports of conditions and impacts across the country would support:
    - Coordination with existing data sources to "ground-truth" indicators. In the case of rapid onset drought, impacts may happen before indices capture the emerging dry pattern and current datasets might not capture the quickly changing conditions.
    - Communication of the current and/or potential impacts and risk of flash drought for a particular region or sector.
    - Potential response and management strategies to mitigate primary impacts.

- **Drought Amelioration**: While some drought recovery and improvement information tools exist, the region is interested in learning more about available tools and how to improve them to better incorporate drought amelioration information into routine drought monitoring and decision-making.

Prediction and Forecasting

- **Drought Outlooks Across Time Scales**: Improved seasonal forecasts will continue to enhance drought preparedness. In addition, water utilities need greater access to datasets and drought indicators for input into predictive water models.

- **Sector-specific, Short-Term Drought Outlooks:** Timely, user-oriented, and sector-specific drought outlooks can deliver earlier warnings of drought that help mitigate economic impacts to sectors particularly susceptible to the hazards of too much and too little water.

- **Predictions for Headwater Ecosystems**: Decision-support products that deliver targeted forecasts can help managers focus restoration efforts to more efficiently preserve or conserve headwater ecosystems. Resource managers need more monitoring of intact headwater streams, along with research on the impacts of drought in headwater ecosystems.

Low water levels at Spruce Run Reservoir in Clinton, New Jersey. Image from Adobe Stock.

Communication and Outreach

- **Shareable Regional Communication:** Stakeholders requested shareable communication templates and standardized regional/state-level communication as drought conditions emerge and persist to support Mid-Atlantic drought response and coordination.

- **Rural Communities**: Drought information disseminated through social media, webinars, and briefings provided timely information for many partners, stakeholders, and the public throughout the 2024-2025 drought. However, some individuals were not aware of some resources (e.g., hay and tankered water) until it was too late, particularly in rural areas. There is a need to better understand and use drought communication pathways in the region that are effective for rural communities.

- **Communicating Drought Recovery**: Drought communication is just as important at the end of a drought as it is before or during a drought. When a drought impacted area gets an inch or two of rain, and surface moisture rebounds in a shallow layer, local conservation guidelines to continue to conserve water may contradict public perceptions of recovery. Clear public communication on the status of water supply and how long it may take to recover to seasonal normals is needed.

- **Targeted Sectoral Outreach**: Many sectors are uniquely vulnerable to drought events and would benefit from engagement to become aware of and proficient in using drought early warning products to support local operational decisions. In particular, stakeholders identified drought impacts on the public health sector as a topic that state and local health agencies would like to better understand and integrate into response plans.

Image from Susquehanna River Basin Commission.

Planning and Preparedness

- **Training**: Across the region, stakeholders need training for practitioners about interpreting data products, forecasting products, and available drought indices. These include the U.S. Drought Monitor, the Palmer Drought Severity Index (PDSI), the Evaporative Demand Drought Index (EDDI), the Standardized Precipitation Index (SPI), and the Keetch-Byram Drought Index (KBDI), as well as trainings to determine which indices are best for the region and season. Access to the data and metadata in various formats (e.g., maps of data, access to raw data) is also vital to drought decision-makers.

- **Regional Coordination**: Better communication between federal, tribal, state, local, and private entities engaged in drought planning and preparedness can improve information transfer and decision making. Regular convening of those responding to drought could improve national coordination to bridge awareness gaps related to storage capabilities, drinking water supplies, and regulations and guidelines (state and federal) in the region.

- **Flash Drought Planning Resources**: Rapid onset drought (or flash drought) requires a similarly quick paced set of responses. Mid-Atlantic communities need flash drought early warning and flash drought preparedness guidance, including how to incorporate flash drought-based indicators and actions into existing/future drought plans and address accelerated decision timelines that support deployment of mitigation strategies. Decision makers could also benefit from developing Mid-Atlantic-specific documents on flash drought. These documents could highlight what flash drought typically "looks like" in the region, including impacts and seasonal nuances of when flash drought is most impactful, critical indicators to monitor, case studies from past events, and effective flash drought management actions.

- **Drought and Wildfire Preparedness**: Wildfire managers and emergency responders need access to drought status updates, frequently updated outlooks, and information on expected drought persistence or improvement. Soil moisture information, as well as forest and fine fuels conditions as they relate to drought is also helpful. Participants identified networks of state and local partners sharing drought status information in real-time as an important component of regional wildfire management.

Interdisciplinary Research and Applications

- **Post-Flash Drought Assessments**: Understanding the regional experience of flash drought is vital to better monitor and forecast the phenomenon. Conducting post-flash drought assessments provides the opportunity to reflect on a past flash drought event from a variety of lenses (e.g., monitoring, impacts, and response) to improve response and planning for future events.

- **Precipitation Effectiveness Monitoring Capacity**: Multi-year droughts have occurred in the Mid-Atlantic, and little is understood about how groundwater recharge lags after multi-year events. Future research should evaluate current infrastructure for precipitation effectiveness measurement and monitoring capacity to better understand how precipitation replenishes soil moisture across various soil types and groundwater recharge in the Mid-Atlantic.

- **Weather Whiplash:** Abrupt changes in precipitation patterns can lead to "weather whiplash" with periods of extreme wetness and extreme dryness occurring in succession. During the drought of 2024, Hurricane Helene brought heavy precipitation, but only a temporary reprieve to drought conditions in the Mid-Atlantic. Research into the identification of meteorological drivers that lead to swings in extreme precipitation could provide better insight into drought development and amelioration in the Mid-Atlantic. Research into best practices for messaging when these events occur is also needed.

The Delaware River in flood stage after a series of rainy days. Image from Adobe Stock.

- **Wildfire and Flash Drought:** Wildfire often occurs alongside flash drought in many areas of the country, including the Mid-Atlantic. More research about this relationship is needed to improve monitoring and preparedness. It is vital to work with fire managers and the National Weather Service in the region to ensure flash drought is integrated into their monitoring and outlook products, including Red Flag Warnings. An index that identifies the combination of hot, dry, and windy conditions underlying rapid onset drought could be particularly helpful in identifying the risk of wildfire during flash droughts.

- **Tree Mortality and Drought:** There is little information on how the drought impacted Mid-Atlantic forests, and how existing beetle or insect infestations may or may not have played a role. Additionally, the timing of when trees and plants grow new leaves and shed old leaves was a major influence on wildfire risk, and more research is required to identify how changes in these timings might affect drought and wildfire risk.

- **Drought Amelioration**: Due to the variation in terrain, soils, and land cover in the Mid-Atlantic, precipitation requirements for drought amelioration are not clearly understood. The region needs more research to understand the complexities of hydrologic drought recovery in the region.

Together, the recommendations stakeholders across the MId-Atlantic shared will inform next steps among engaged partners to build regional drought early warning capacity and resilience across Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia, as well as the District of Columbia.

NEXT STEPS IN BUILDING DROUGHT EARLY WARNING CAPACITY

Brown tips of corn stalks in a corn maze in Virginia. Image from Adobe Stock.

Congress authorized the National Integrated Drought Information System (NIDIS) in 2006 (P.L.109-430) and reauthorized in 2014 and 2019 with an interagency mandate to develop and provide a drought early warning system (DEWS) for the nation, by coordinating and integrating drought research, and building upon existing federal, tribal, state, and local partnerships. NIDIS's approach to building the foundation of a national DEWS has been to develop regional DEWS, where networks of researchers, academics, resource managers, policymakers, and other stakeholders share information and actions that help communities cope with drought.

Each one of the eight existing regional drought early warning systems focuses on improving early warning capacity for and resilience to drought, including examining the role of extreme weather events and climate variability in drought. While authority lies with the states to manage water resources, NIDIS facilitates local, stakeholder-driven work including: cultivating an understanding of existing observation and monitoring networks as well as decision-support tools; identifying research, data collection, and monitoring gaps and needs and working collaboratively to address them; supporting regions in planning for and mitigating the effects of drought; and communicating drought forecasts, conditions, and impacts on an ongoing basis to decision makers at all levels of government, the private sector, and the public. To complete the build-out of a national drought early warning system, NIDIS will continue to develop regional DEWS in watersheds and regions across the country, including the Mid-Atlantic.

PARTNERS

We greatly appreciate the many partners in the Mid-Atlantic region who contributed their time and efforts to ensure that drought-impacted stakeholders had timely drought response information. These partners contributed valuable insights to form the basis of a post-drought assessment and next steps.

Special thanks to the Northeast Regional Climate Center for significant contributions to this report and partnership in supporting 2024-2025 Mid-Atlantic Drought Meetings. We are also grateful to the University Corporation for Atmospheric Research, which provided vital meeting and facilitation support.

Planning Team

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APPENDIX A: MEETING PARTICIPANTS

First name	Last name	Organization	State/District
Md Tanvir	Ahad	Maryland Department of the Environment	Maryland
Sarah	Ahmed	Interstate Commission on the Potomac River Basin	Maryland
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Soni	Yatheendradas	University of Maryland / ESSIC, & NASA / GSFC	Maryland

APPENDIX B: MEETING AGENDAS

Mid-Atlantic Drought Assessment and Building Early Warning Capacity Virtual Meetings

March 25, 2025: 9 a.m.–12 p.m. ET
March 27, 2025: 12:30 p.m.–3:30 p.m. ET
April 2, 2025: 10 a.m.–11:30 a.m. ET

Meeting Goals

- Look back at the 2024–2025 drought's evolution, and what's ahead for drought in the region.
- Assess the impacts, hurdles, successes, and needs experienced across sectors during the Mid-Atlantic drought of 2024–2025.
- Identify potential next steps toward improved drought early warning capacity in the region.

AGENDA

Tuesday, March 25, 2025: 9 a.m.–12 p.m. ET

Time (ET)	Topic	Speaker/Facilitator
9:00 a.m.	**Welcome and Run of Show** Veva Deheza | NOAA National Integrated Drought Information System (NIDIS) Art DeGaetano | Northeast Regional Climate Center Ellen Mecray | NOAA Eastern Region Climate Services Director Sylvia Reeves | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS	
9:05 a.m.	**Overview of 2024–2025 Drought Evolution, Current Conditions, and Outlook**	Samantha Borisoff | Northeast Regional Climate Center
Interactive Drought Assessment Exercise (link forthcoming) QR code		
9:15 a.m.	**Drought Assessment: How were you impacted by the 2024–2025 drought? What was the biggest information gap you experienced during the drought?** Miro board exercise with all participants	Sylvia Reeves and Eleanor Hasenbeck | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS
NIDIS and Drought Early Warning Systems (DEWS)		
9:35 a.m.	**Overview of NIDIS and Drought Early Warning Systems (DEWS)**	Sylvia Reeves | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS

2025 Mid-Atlantic Drought Assessment and Building Drought Early Warning Meetings

9:45 a.m.	**Current Drought Early Warning System (DEWS) Partners Dialogue**	Rebecca Dahl | Connecticut Interagency Drought Working Group/Northeast Drought Early Warning System Additional Speakers TBA
9:55 a.m.	**Q&A about NIDIS and DEWS**	All Participants
Interactive Drought Early Warning Capacity Exercise (link forthcoming) *QR code*		
10:05 a.m.	**Building Drought Early Warning Capacity: What do you need to proactively manage for the next drought?** Miro board exercise with all meeting participants	Sylvia Reeves and Eleanor Hasenbeck | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS
10:50 a.m.	**BREAK** (5 Minutes)	
10:55 a.m.	**Instructions for Breakout Session Discussions**	Sylvia Reeves | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS
11:00 a.m.	**Breakout Sessions**	
	Discuss the Assessment and Capacity Building Exercise Results	Session Facilitators and All Participants
	What were the first and most difficult decisions you had to make? Were plans and supportive networks in place to help with infrastructure and agricultural issues? What were your primary sources of drought information from? What other information sources were important to you? What's the best way to get drought information to you? How often do you need updates on current drought conditions? How much time do you need to make your decisions? What did you need to have been better prepared and warned of drought earlier?	
11:40 a.m.	**Reconvene for Highlights and Reminders**	Sylvia Reeves | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS
12:00 p.m.	**Webinar Concludes**	
Thursday's meeting will cover the same topics and offer the same opportunities for inputs. Join us on Wednesday, April 2, 2025 for the Synthesis and Prioritization Meeting from 10–11:30 a.m. ET.		

2025 Mid-Atlantic Drought Assessment and Building Drought Early Warning Meetings

AGENDA

Thursday, March 27, 2025: 12:30 p.m.–3:30 p.m. ET

Time (ET)	Topic	Speaker/Facilitator
12:30 p.m.	**Welcome and Run of Show** Veva Deheza | NOAA National Integrated Drought Information System (NIDIS) Art DeGaetano | Northeast Regional Climate Center Ellen Mecray | NOAA Eastern Region Climate Services Director Sylvia Reeves | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS	
12:35 p.m.	**Overview of 2024–2025 Drought Evolution, Current Conditions and Outlook**	Samantha Borisoff | Northeast Regional Climate Center
Interactive Drought Assessment Exercise (link forthcoming) *QR code*		
12:45 p.m.	**Drought Assessment: How were you impacted by the 2024–2025 drought? What was the biggest information gap you experienced during the drought?** Miro board exercise with meeting participants	Sylvia Reeves and Eleanor Hasenbeck | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS
NIDIS and Drought Early Warning Systems (DEWS)		
1:05 p.m.	**Overview of NIDIS and Drought Early Warning Systems (DEWS)**	Sylvia Reeves | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS
1:15 p.m.	**Current DEWS Partners Dialogue**	Eric Lindquist | Connecticut Interagency Drought Working Group/Northeast Drought Early Warning System Additional Speakers TBD
1:25 p.m.	**Q&A on NIDIS and DEWS**	All Participants

2025 Mid-Atlantic Drought Assessment and Building Drought Early Warning Meetings

Interactive Drought Early Warning Capacity Exercise (link forthcoming) *QR code*		
1:35 p.m.	**Building Drought Early Warning Capacity: What do you need to proactively manage for the next drought?** 2nd Miro board exercise with meeting participants	Sylvia Reeves and Eleanor Hasenbeck | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS
2:20 p.m.	**BREAK** (5 Minutes)	
Time (ET)	**Topic**	**Speaker | Facilitator**
2:25 p.m.	**Instructions for Breakout Session Discussions**	Sylvia Reeves | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS
2:30 p.m.	**Breakout Sessions**	
	Discuss the Assessment and Capacity Building Exercise Results	**Session Facilitators and All Participants**
	What were the first and most difficult decisions you had to make? Were plans and supportive networks in place to help with infrastructure and agricultural issues? What were your primary sources of drought information from? What other information sources were important to you? What's the best way to get drought information to you? How often do you need updates on current drought conditions? How much time do you need to make your decisions? What did you need to have been better prepared and warned of drought earlier?	
3:10 p.m.	**Reconvene for Highlights and Reminders**	Sylvia Reeves | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS
3:30 p.m.	Webinar Concludes	
Don't forget to join us on Wednesday, April 2, 2025 for the Synthesis and Prioritization Meeting from 10–11:30 a.m. ET.		

2025 Mid-Atlantic Drought Assessment and Building Drought Early Warning Meetings

Synthesis and Prioritization Meeting Agenda

Wednesday, April 2, 2025: 10 a.m.–11:30 a.m. ET

Time (ET)	Topic	Speaker
10:00 a.m.	**Welcome**	Veva Deheza | NOAA National Integrated Drought Information System (NIDIS)
10:05 a.m.	**Review of the Collaboration Boards and Breakout Sessions**	TBA
Interactive Exercise to Identify Possible Actions (link forthcoming) *QR code*		
10:15 a.m.	**Interactive Exercise to Identify Potential Next Steps**	Sylvia Reeves | Cooperative Institute for Research in Environmental Sciences (CIRES)/NOAA NIDIS
10:35 a.m.	**Summary of the Exercise Results**	TBA
10:45 a.m.	**Breakout Group Discussions: Discuss the Capacity Building Exercise Results**	Session Facilitators and All Participants
	What do the top results look like for you and your agency? Who isn't here at these meetings that could be part of the solution to building drought early warning capacity?	
11:15 a.m.	**Report Out on Breakouts, Synthesis, Discussion**	
11:30 a.m.	**Conclusion**	
A Short Form Report Summarizing the Results of These Meetings Will Be Available Soon		

2025 Mid-Atlantic Drought Assessment and Building Drought Early Warning Meetings

Contacts

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