



National Significant Events – September–November 2024

Selected U.S. Significant Climate Anomalies and Events for November and Autumn

The first significant lake-effect snows of the season brought accumulations of 1–3 feet across portions of Pennsylvania and New York.

September

It was the driest September on record for sites like Wilmington, DE, and Islip, NY.

October

At least a half-dozen long-term stations across the Mid-Atlantic set records for the number of consecutive days without measurable rainfall from late Sep through early Nov.

The contiguous U.S. had a record warm autumn at 4.1°F above the 20th-century average. Average temperatures for September, October, and November were 3.8°F above average (second warmest), 4.9°F above average (second warmest), and 3.6°F above average (sixth warmest), respectively. Globally, it was the second-warmest September, October, November, and autumn. The contiguous U.S. autumn precipitation total was 0.65 inches below average, in the driest third of all autumns. September, October, and November precipitation were 0.26 inches below average, 1.21 inches below average (second driest), and 0.75 inches above average (17th wettest), respectively.

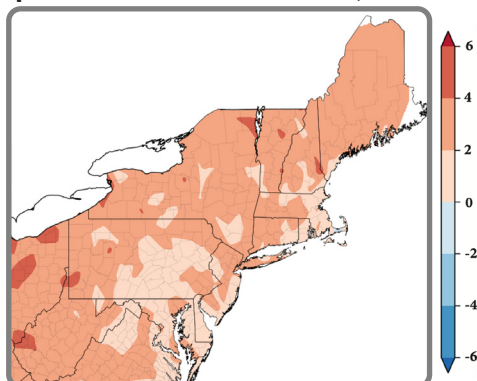
Highlights for the Northeast

- Autumn was record dry for [some sites](#) like Allentown, PA, and Hartford, CT. [October 2024](#) was the **all-time driest month** for multiple sites including Newark, NJ; Philadelphia, PA; and Wilmington, DE, which also saw their **first month on record without measurable precipitation** (0.01 in.). This September–October was the **all-time driest two-month period** for sites like Islip, NY, and Wilmington, which were [record dry in September](#) and October, their **first time with back-to-back record dry months**.
- Several sites including Atlantic City, NJ; Philadelphia, PA; Baltimore, MD; and Washington, D.C., had their **longest streak of consecutive days without measurable precipitation, lasting between 38 and 42 days**.
- Autumn was record warm for a few sites like Caribou, ME, and Worcester, MA. [Several sites](#) had their **warmest high and/or low temperatures for November**, with a few places like Washington, D.C., and Caribou, ME, having a **record warm November**.
- Limited precipitation, along with increased evaporation driven by above-normal temperatures, contributed to **intensifying drought conditions**. West Virginia had a **record-long stretch of weeks** with exceptional drought. Extreme drought covered over half of New Jersey and over a third of Delaware for the **first time since 2002**. Drought-related impacts included an **unusually high number of wildfires, record-low water levels, and crop failures**.
- Two notable snow events occurred in late November, one that produced Erie, PA's **all-time snowiest day** and another that gave Scranton, PA, and Binghamton, NY, one of their 10 snowiest November days.

Regional Climate Overview – September–November 2024

Temperature

Departure from Normal (°F)
September 1–November 30, 2024

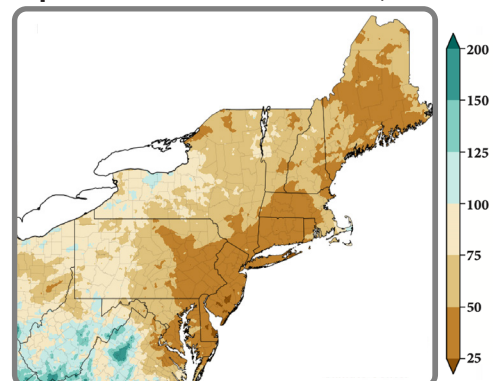


Climate normals based on 1991–2020 data; rankings based on 1895–2024.

The Northeast had its **second-warmest autumn** at 2.5°F above normal. It was **record warm** in Maine and among the 10 warmest for the other 11 states. **September** was the region's **16th warmest** at 1.5°F above normal, ranking among the 20 warmest for four states. **October** was 1.8°F above normal, in the **warmest third** of all years. It was among the 20 warmest for five states. **November** was the **fifth warmest** at 4.1°F above normal and the region's 12th consecutive above-normal month. It was among the 11 warmest for all states, with Maine being **record warm**.

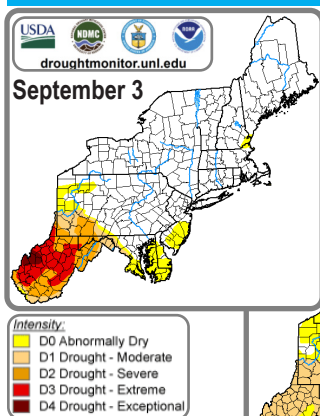
Precipitation

Percent of Normal (%)
September 1–November 30, 2024



The Northeast had its **sixth-driest autumn** with 57% of normal. It was **record dry** for four states and among the nine driest for seven other states. The region had its **18th-driest September** with 58% of normal. It was among the 20 driest for seven states. The region had its **sixth-driest October** with 33% of normal. It was **record dry** for two states and among the 20 driest for the other states. **November** precipitation was 84% of normal, in the middle third of all years.

Regional Climate Overview – September–November 2024



Drought in the Northeast

As of [September 3](#), the [U.S. Drought Monitor](#) showed 16% of the Northeast in drought and 7% as abnormally dry. Below-normal precipitation, including a **record dry October**, along with above-normal temperatures allowed **drought to intensify** and abnormal dryness to expand in many areas during autumn. West Virginia reached its **highest coverage of exceptional and extreme drought** since the U.S. Drought Monitor began in 2000. Extreme drought covered over half of New Jersey and over a third of Delaware for the **first time since 2002**, while all of Maryland was in drought for the first time since 2005. The [December 3](#) U.S. Drought Monitor showed 65% of the Northeast in drought and 33% as abnormally dry. Only 2.31% of the Northeast was not in drought or abnormal dryness as of December 3, the **second-lowest percentage** in the U.S. Drought Monitor era. Drought impacts are discussed below. For current conditions, see the [Northeast DEWS Dashboard](#) and the [Northeast Drought Update](#).

Regional Impacts and Updates – September–November 2024



Brush fire in Northampton, PA, in November. Credit: David Astorina

Autumn Conditions

Autumn featured record-setting dryness and record-setting warm temperatures, leading to **drought intensification and numerous drought-related impacts**.

Fires: Dry conditions allowed wildfires to grow quickly and burn deeper, making them harder to fight. The **number of wildfires** in many states was **unusually high**. New Jersey saw [537 fires](#) from October to mid-November, including [over 300 fires](#) in a three-week period. As of mid-November, New Jersey had seen **30% more fires than average** this year, burning nearly three times more acreage than average. Multiple [large wildfires](#) erupted in New York, with one along the New York-New Jersey border consuming around 2,500 acres in each state, making it [one of New York's largest fires since 2008](#). New York City's fire department responded to a [record-high 271 fires](#) from November 1–14 and created its **first-ever brush fire task force**. Pennsylvania saw at least 100 wildfires in just the first week of November, with the state seeing [more wildfires this fall](#) than during all of the spring fire season. Massachusetts saw around 200 wildfires in October, a [1,200% increase over the average](#) and **more typical of the early spring fire season**, and had over 400 wildfires in November, [well above the six-year average](#) of 20 fires. Maine saw [ten times its average number of fires](#) during October and the first week of November. Connecticut officials called this wildfire season “one of the most challenging” the state has faced in recent history, with [227 fires](#) between October 21 and late November. Multiple firefighters [were injured](#) and [one died](#) battling fires, some of which [damaged houses](#) and forced [residents to evacuate](#). Wildfire smoke led to hazy skies, [limited visibility](#) on roadways, and [reduced air quality](#), prompting a Massachusetts school district to [dismiss or relocate students](#). Low water levels [affected rural firefighting operations](#) in Maine and [Pennsylvania](#). **Burn bans** were enacted or remained in place in [multiple states](#), counties, or other municipalities. However, beneficial precipitation during the second half of November allowed many of these bans to be lifted.

Water Resources: Streamflow and groundwater levels reached **record low levels** in multiple areas. [Some smaller waterways dried up](#), affecting fish populations and other species. Some West Virginia communities experienced **water shortages**, forcing a [school to close](#) for several days. In November, the salt front on the Delaware River was **unusually far north**, reaching the Philadelphia Airport for [only the fifth time on record](#). Reservoir levels declined, including the Manasquan Reservoir in New Jersey which hit [record-low levels](#) and in Attleboro, MA, where [water had to be imported](#) from other communities. **Private wells ran dry** in some areas like parts of [Pennsylvania](#), West Virginia, and [Connecticut](#). **Mandatory water restrictions** were enacted in multiple locations including parts of [Pennsylvania](#), [Massachusetts](#), and [New Jersey](#).

Agriculture: Water sources typically used for cattle dried up in West Virginia, causing farmers to [haul water](#) for livestock. With brown pastures, [reduced hay and corn yields](#), and limited supplies of winter feed, some farmers [purchased feed](#), and many [sold off livestock earlier than usual](#). During autumn grain harvest, [drought-related impacts](#) such as **soybean pods did not produce beans** in West Virginia, soybean **quality issues** and reduced yields in Pennsylvania, and reduced yields of corn in Delaware were noted. **Soil moisture plummeted**, with [USDA data](#) showing 90–100% of agricultural lands in various states in the **driest two categories** throughout autumn. Dry soil made it [difficult to plant seeds](#) and caused some seeds to [fail to germinate](#) or be [slow to emerge](#). To combat dry conditions, farmers [relied on irrigation](#), which [increased operational costs](#). Reduced water levels made cranberry harvest [slower and more expensive](#) in New Jersey. On Christmas tree farms, [saplings died off](#) and mature trees had [reduced needle retention](#), resulting in [lost revenue](#). Dry conditions this fall could lead to [fewer buds on fruit trees](#) next spring. The warm, dry weather [boosted agritourism](#).



Below-average streamflow along the West Branch Susquehanna River in central Pennsylvania in early November. Credit: USGS

Regional Impacts and Updates – September–November 2024



High Point Monument, NJ, during the November 20–23 storm. Credit: Shawn Viggiano

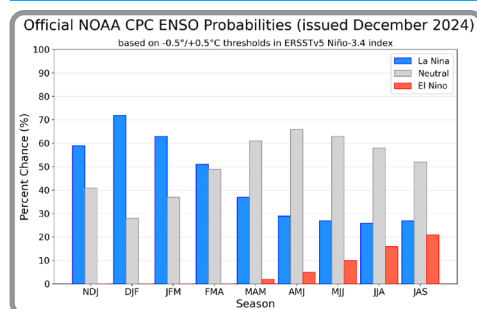
Autumn Conditions Continued

There were two notable storm events in late November. From November 20 to 23, **drought-stricken areas got much-needed rain**, while some higher elevations of the Mid-Atlantic and New York [saw snow](#). Islip, NY, picked up 2.26 inches of rain on the 21st, making it the site's fifth-wettest November day. Meanwhile, Scranton, PA, and Binghamton, NY, had their third and eighth snowiest November days, respectively, on the 22nd. The greatest snow totals were around 20 inches in Sussex County, NJ, and Lackawanna County, PA. A **major lake-effect snowfall event** produced [up to 64 inches of snow](#) from November 29 to December 4. Erie saw 22.6 inches of snow on the 29th, making it the site's **all-time snowiest day**. [The snow](#) shut down parts of major roadways on busy [post-Thanksgiving travel](#) and shopping days. Another lake-effect site, Rochester, NY, missed out, [not seeing even a trace of snowfall](#) in November or autumn for the **first time on record**. These storm events **paused drought deterioration** in coastal areas (where significant precipitation deficits persisted) and reduced drought coverage in some interior areas. The wet end to November could not outweigh the lack of precipitation during the rest of the season, with the [exceptional dryness of autumn](#) in stark contrast to the [excessive wetness of spring](#).

Hurricane Season

The [2024 Atlantic hurricane season](#) was **above average**, ending with 18 named storms of which 11 became hurricanes including five major hurricanes. Only one tropical system affected the Northeast this autumn: **Hurricane Helene** in late September. The storm brought historic amounts of rain and [catastrophic flooding](#) to the southeastern U.S. before affecting West Virginia. The **main impact was gusty winds** of [up to 70 mph](#), which downed numerous trees, [damaging homes](#) and blocking roads. Power outages in southern West Virginia affected [more than 80,000 customers](#) and [disrupted freight train service](#), with some outages lasting days. Most of West Virginia picked up some **much-needed rain**, but several southern counties saw heavy rain that caused localized flooding. Floodwaters from upstream in parts of North Carolina and Virginia caused [rises on some waterways](#) in West Virginia. For instance, Bluestone Lake rose more than 80 feet between September 26 and 29, reaching its [third-highest level](#), with storm debris butting up [against the dam](#).

Regional Outlook – Winter 2024–25

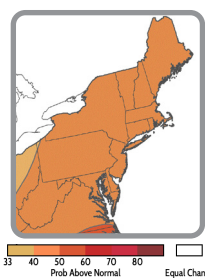


ENSO

ENSO-neutral conditions were present in the equatorial Pacific Ocean during November. NOAA's [Climate Prediction Center indicates](#) there is a 59% chance that **La Niña conditions will emerge** during the November 2024–January 2025 period. This **La Niña** is expected to be **weak and short-lived**, meaning it [could still affect weather conditions](#) but "would

be less likely to result in conventional winter impacts." By spring 2025, there is a 61% chance of **ENSO-neutral conditions**.

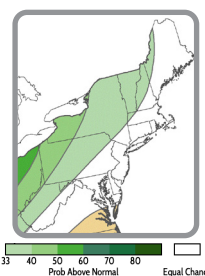
Temperature and Precipitation



Normal January–March average temperatures range from the teens in northern New England and northern New York to the 40s in parts of the Mid-Atlantic. [NOAA's Climate Prediction Center \(CPC\)](#) favors **above-normal temperatures** for **January–March** for the entire Northeast (map left). This is driven by long-term climate trends.

Normal January–March precipitation ranges from less than 6 inches in western/central New York to over 13 inches in several locations including Rhode Island,

southeastern Massachusetts, and higher elevations of West Virginia. The precipitation outlook resembles [La Niña precipitation anomaly patterns for the region](#), with **above-normal precipitation** favored for **January–March** for interior areas from West Virginia to Maine (map right). Equal chances of below-, near-, or above-normal precipitation is forecast for the rest of the Northeast.



Northeast Partners

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