

National Significant Events – December 2021–February 2022

Selected U.S. Significant Climate Anomalies and Events for February and Winter

A winter storm stretched from TX to ME during the first week of Feb and brought heavy snow, freezing rain, ice, and cold temperatures.

December

The Northeast experienced a mild, dry December, leading to below-normal snowfall.

January

A powerful nor'easter dumped 1–2 feet of snow across the Mid-Atlantic and Northeast on Jan 28–30 causing widespread power outages in MA.

Jan 16–17 snowstorm brought 6–12 in. of snow from the S. Appalachians to ME. Parts of NY received 18–24 in.

The contiguous U.S. winter average temperature was 34.8°F, 2.5°F above the 20th-century average. Average temperatures for December, January, and February were 6.7°F above average (warmest on record), 0.9°F above average, and 0.1°F below average, respectively. Globally, it was the fifth-warmest December, the sixth-warmest January, the seventh-warmest February, and the fifth-warmest winter. The contiguous U.S. winter precipitation total was 5.76 inches, 1.03 inches below average (12th driest). December, January, and February precipitation were 0.03 inches above average, 0.71 inches below average (14th driest), and 0.40 inches below average, respectively.

Highlights for the Northeast

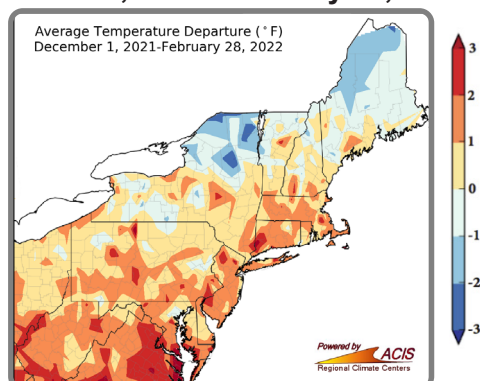
- **December** was **unusually mild**, ranking among the five warmest Decembers on record for nine of the 12 Northeast states.
- **January** was **cold and stormy**, with a late-month **blizzard** bringing Boston, MA, and Providence, RI, their **all-time snowiest day** on record. Atlantic City, NJ, had its **snowiest January** and saw two days with at least 12 inches of snow in a single month for the **first time on record**. For the first time in nearly three years, Dulles Airport, VA, and Islip, NY, recorded **single digit temperatures** and Washington, D.C., recorded a temperature lower than 20°F, **ending their longest streaks** on record.
- During **February**, there were **large temperature swings** and storms produced a **mix of precipitation types**. Bridgeport, CT, and Islip, NY, tied their **warmest February temperatures** with highs in the upper 60s.
- Daily **sea surface temperatures** in the North Atlantic were **well above average** in [January and February](#).
- **Drought** and abnormal dryness **persisted** in parts of the Northeast during winter.
- [A report](#) from NOAA and partners indicates **sea level** along the U.S. coast is expected to rise, on average, 10–12 inches between 2020 and 2050, which is equivalent to the rise measured between 1920 and 2020, leading to **increased coastal flooding**. “Moderate” (typically damaging) **flooding** from **high tides** in the Northeast is expected to occur, on average, **10 times as often** by 2050 as it does today.

Regional Climate Overview – December 2021–February 2022

Temperature

Departure from Normal (°F)

December 1, 2021–February 28, 2022

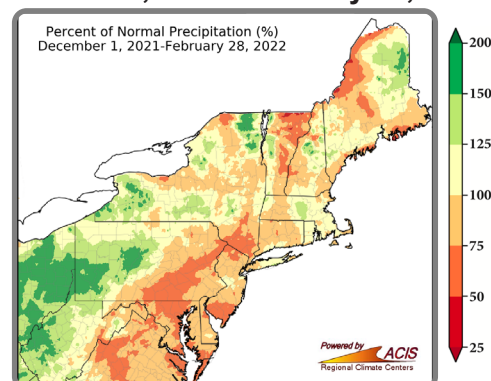


The Northeast's winter average temperature was 0.7°F above normal, ranking in the **warmest third** of all years. Six states had one of their 20 warmest winters. It was the **fourth-warmest December** at 4.9°F above normal. This December was among the 20 warmest for all states. **January** was 4.4°F below normal, in the **coldest third** of all years. **February** was 1.8°F above normal, in the **warmest third** of all years. Eight states had one of their 20 warmest Februaries.

Precipitation

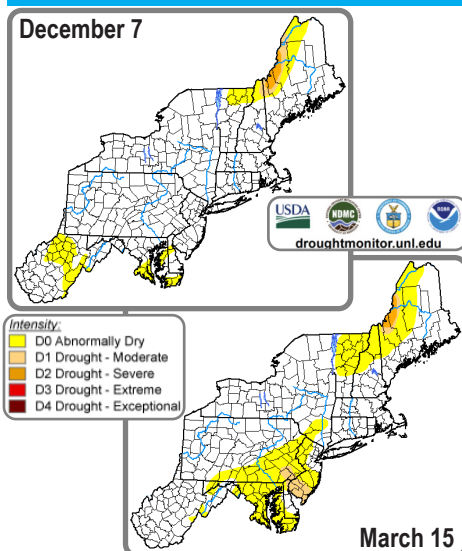
Percent of Normal (%)

December 1, 2021–February 28, 2022



The Northeast saw 88% of normal **winter** precipitation, ranking in the **middle third** of all years. This winter was among the 20 driest for four states. **December** precipitation was 68% of normal, in the **driest third** of all years. Five states had one of their 20 driest Decembers. **January** precipitation was 83% of normal, in the **middle third** of all years. Vermont had its ninth driest January. **February** precipitation was 120% of normal, in the **wettest third** of all years. Delaware had its 17th driest February, while Vermont had its 19th wettest.

Regional Climate Overview – December 2021–February 2022



Drought in the Northeast

As of [December 7](#), the [U.S. Drought Monitor](#) showed 2% of the Northeast in severe/moderate drought and 9% as abnormally dry. **Below-normal December precipitation** led to the **expansion/introduction** of drought and abnormal dryness in southern parts of the region and allowed dryness to **persist** in northern New England. The [December 28](#) U.S. Drought Monitor showed 3% of the region in drought and 19% as abnormally dry. **January precipitation eased dryness** in western areas; however, **dry conditions expanded** in southeastern parts of the region and northern New England. The [February 1](#) U.S. Drought Monitor showed 2% of the Northeast in drought and 16% as abnormally dry. There were **minimal changes** during **February**, with dryness present in parts of eight of the 12 Northeast states. The [March 1](#) U.S. Drought Monitor showed 2% of the Northeast in drought and 16% as abnormally dry. During the **first half of March**, **drought contracted** in northern New England due to improving streamflow and groundwater levels. However, moderate **drought was introduced** and **abnormal dryness persisted/expanded** in southern parts of the region where short-term precipitation deficits led to declining streamflow and soil moisture. For current conditions, see the [Northeast DEWS Dashboard](#).

Regional Impacts and Updates – December 2021–February 2022

Winter Conditions

There were **few storms** during **December**. With above-normal temperatures and below-normal precipitation, **snowfall was below normal in December**, with the [largest deficits exceeding 12 inches](#).

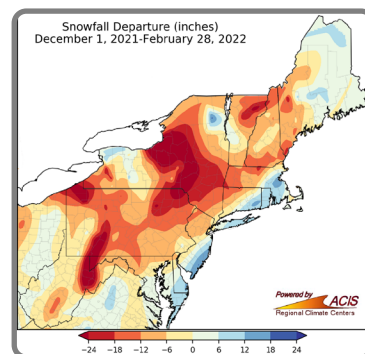
There were **several significant storms** during **January**.

- **January 3 and 6–7:** Back-to-back storms blanketed the Mid-Atlantic and coastal areas with as much as 16 inches of snow, with Atlantic City, NJ, having its **third snowiest January day**. Lake-effect areas saw up to 20 inches of snow, with Buffalo, NY, having its **second snowiest January day**.
- **January 16–17:** A storm produced widespread snowfall. The greatest totals of 18–24 inches were in western parts of New York and Pennsylvania, with Erie, PA, and Buffalo, NY, having one of their **three snowiest January days** on record. Some coastal areas saw [heavy rain and thunderstorms](#). Winds gusted to 30–50 mph in interior areas and up to 70 mph in coastal areas.
- **January 28–29:** A rapidly-strengthening storm brought **heavy snow** and **strong winds** to coastal areas. The greatest snowfall totals of **24–30 inches** were in southern New England and on Long Island. January 29 was the **all-time snowiest day** for Boston, MA, with 23.6 inches, and Providence, RI, with 18.8 inches, and was among the [10 snowiest January days](#) at other sites. Wind gusts were up to 50 mph, with localized gusts over 65 mph. **Blizzard conditions** occurred at multiple sites including Atlantic City, Providence, and Boston. Storm impacts included difficult travel, power outages, and coastal flooding. **January snowfall** ranged from 12 inches below normal in parts of New York and Vermont to more than 12 inches above normal in coastal areas. January was among the [20 snowiest Januaries](#)/all-time snowiest months for some sites including Atlantic City which had its **snowiest January** (and third all-time snowiest month).

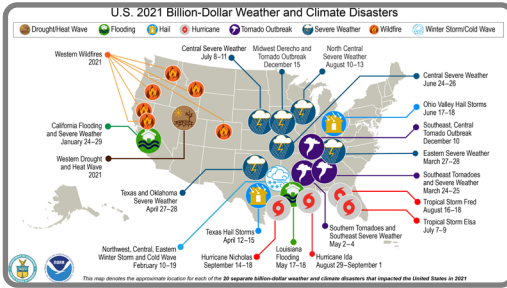
February featured **large temperature swings** and storms that produced a **mix of precipitation types**.

- **February 3–4:** An area from western New York into Maine, which was on the cold side of the storm, saw 12–18 inches of **snow**, while warmer areas to the south and east saw **rain, ice**, and limited snowfall. As the [cold front crossed](#) the region, Harrisburg, PA, was at 37°F while 20 miles away York, PA, [was at 59°F](#), an **unusually warm morning temperature** for early February.
- **February 17–18:** **Warm air** allowed precipitation to fall as **rain**; however, temperatures dropped rapidly behind the storm's cold front, causing a **quick changeover to snow**. Parts of New Jersey and southeastern Pennsylvania saw thunderstorms. Wind gusts of up to 66 mph downed trees and wires, leading to scattered power outages.
- **February 24–25:** The greatest **snow totals** of 8–12 inches were in parts of New York and New England. Ice accumulations of up to 0.50 inches from **freezing rain** downed trees/wires, closing roads and leading to power outages in parts of Pennsylvania, New Jersey, and Delaware.

Warm temperatures, rain, and snowmelt led to **flooding** in parts of West Virginia, Pennsylvania, and New York. For instance, on February 18 an **ice jam** on the East Branch of the Ausable River in northern New York caused water levels to [spike to 15.19 ft.](#), the **third highest level on record**, flooding vehicles and buildings, leaving some uninhabitable. **February snowfall** was **below normal** in most areas but ranged from more than 12 inches below normal in parts of West Virginia, Maryland, and Pennsylvania to more than 12 inches above normal in northern New York. **Winter snowfall** (map right) ranged from more than 24 inches below normal to 18 inches above normal, with most areas seeing **below-normal snowfall**.



Regional Impacts and Updates – December 2021–February 2022



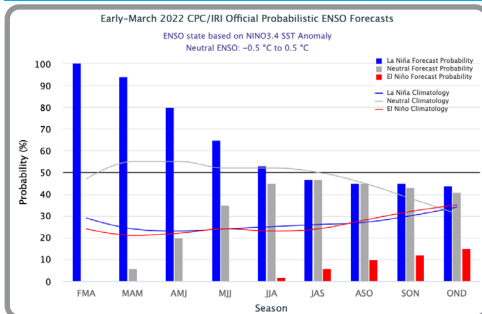
2021 Warmth and Billion-Dollar Disasters

2021 ranked as the **third-warmest year** on record for the Northeast region, with 11 states having one of their five warmest years and West Virginia having its 11th warmest. This year was the **warmest on record** for several sites including Boston, MA, and Harrisburg, PA. **Ocean temperatures** were also **exceptionally warm**, with the Gulf of Maine having **one of its warmest, if not the warmest**, year on record and the 2021 [Northern Hemisphere ocean temperature](#) ranking as the seventh warmest.

Since 1980, there have been 310 weather/climate disasters in the U.S. that caused at least \$1 billion in damage, with the total cost of these exceeding \$2.155 trillion. There

were **20 of these disasters in 2021**, the **second greatest number** on record and the seventh consecutive year with 10 or more billion-dollar disasters. These disasters led to 688 deaths, the sixth greatest number on record. Eight of the disasters (four severe weather events, three tropical cyclones, and a winter storm) affected the Northeast, the **region's most on record**. One of those events was **Hurricane Ida** in early September. The storm's remnants dropped **unprecedented amounts of rain** on parts of the region, with sites such as Newark, NJ, and Central Park, NY, having their **all-time wettest day** and/or **hour** on record. Multiple waterways, particularly in New Jersey and eastern Pennsylvania, experienced **historic flooding**. Multiple **destructive tornadoes** also touched down. The storm claimed at least 50 lives and was **New Jersey's second deadliest weather event**.

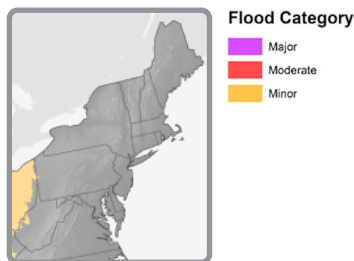
Regional Outlook – Spring 2022



La Niña

During February, **La Niña conditions continued** in the equatorial Pacific Ocean. NOAA's [Climate Prediction Center indicates](#) there is a 94% chance **La Niña will continue** through **spring** and a 53% chance of La Niña conditions during summer. After that, there is a 40% to 50% chance of La Niña or **ENSO-neutral conditions**.

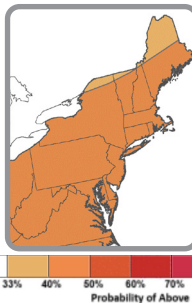
Spring Flood Potential



The **river and ice jam flood risk** during spring is **near to above normal** for northern New Hampshire and western/northern Maine, according to the [Northeast River Forecast Center](#). However, [NOAA indicates](#) that the **spring flood risk** is **below or near normal** for the rest of the Northeast (map above).

Very heavy rain can cause flooding at any time of the year, even in areas experiencing drought or that have little to no snow on the ground.

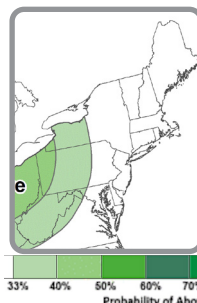
Temperature and Precipitation



Normal April–June average temperatures range from the upper 40s in northern New England to the mid 60s in southern West Virginia and parts of the Mid-Atlantic. [NOAA's Climate Prediction Center \(CPC\)](#) favors **above-normal temperatures** for **April–June** for the entire Northeast (map above).

Normal April–June precipitation ranges from 9 inches in western New York to more than 15 inches in parts of West Virginia.

Above-normal precipitation is favored for western parts of the region for **April–June** (map below). **Equal chances** of below-, near-, or above-normal **precipitation** were forecast for the rest of the Northeast.



Northeast Partners

[National Oceanic and Atmospheric Administration](#) offices including:

[NESDIS/National Centers for Environmental Information](#)

[NWS, Eastern Region](#)

[NWS, Climate Prediction Center](#)

[NWS, National Operational Hydrologic Remote Sensing Center](#)

[NMFS, Fisheries Science Centers and Regional Office, Atlantic](#)

[NOS, Office for Coastal Management](#)

[NOS, National Centers for Coastal Ocean Science](#)

[OAR, Climate Program Office and Geophysical Fluid Dynamics Lab](#)

[OAR, National Sea Grant Office](#)

[NOAA's North Atlantic and Great Lakes Regional Collaboration Teams](#)

And the following other offices:

[Northeast Regional Climate Center](#)

[National Integrated Drought Information System](#)

[Consortium of Climate Risk in the Urban Northeast](#)

[Cooperative Institute for the North Atlantic Research](#)

[Northeast Region State Climatologists](#)

[Mid-Atlantic RISA](#)