

National Significant Events – December 2020–February 2021

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

A frontal boundary stalled from AR to WV from Feb 27 to Mar 1. Heavy rain caused flash flooding, with some water rescues.

December

Portions of the Northeast saw record-setting snowfall from Dec 16-17, with the greatest totals ranging from 36-44 inches.

January

2.4% of the Great Lakes were covered by ice on Jan 24 due to warm winter conditions, the smallest coverage for this date in 48 years.

The contiguous U.S. winter average temperature was 33.6°F, 1.4°F above the 20th-century average. Average temperatures for December, January, and February were 3.1°F above average, 4.5°F above average (ninth warmest), and 3.2°F below average (19th coldest), respectively. Globally, it was the eighth-warmest December, the seventh-warmest January, the 16th-warmest February, and the 8th-warmest winter. The contiguous U.S. winter precipitation total was 6.10 inches, 0.69 inches below average. December, January, and February precipitation were 0.36 inches below average, 0.30 inches below average, and 0.14 inches below average, respectively.

Highlights for the Northeast

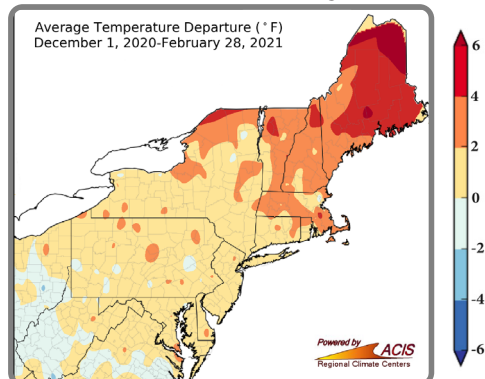
- Above-normal precipitation in **December** allowed abnormal dryness and **drought conditions to ease** in many areas. However, there was **little change** in conditions in **January** or **February**. See Climate Overview for details.
- There were **several significant storms** during winter. For instance, a storm from **December 16–17** became the **all-time largest snowstorm** on record for Binghamton, NY, and Williamsport, PA. Another storm from **February 1–3** dropped up to 36 inches of snow on the region, with a few sites having one of their **10 all-time snowiest days** on record. See Regional Impacts for details.
- Several **temperature and precipitation records** were set during winter:
 - *Warmest winter day*: Caribou, ME (60°F on Dec. 1)
 - *Warmest low temperature for winter*: Caribou, ME (50°F on Dec. 1)
 - *Snowiest December day*: Binghamton, NY (26.4 in. on Dec. 17) and Albany, NY (19.7 in. on Dec. 17)
 - *All-time snowiest day and largest December snowstorm*: Concord, NH (24.2 in. on Dec. 17)
 - *All-time largest snowstorm*: Binghamton, NY (40.0 in. Dec. 16–17) and Williamsport, PA (24.7 in. Dec. 16–17)
 - *Wettest January day*: Erie, PA (1.60 in. on Jan. 18)
 - *Wettest February day*: Huntington, WV (2.83 in. on Feb. 28)
 - *Snowiest winter (Dec.–Feb.)*: Binghamton, NY (94.3 in.)

Regional Climate Overview – December 2020–February 2021

Temperature

Departure from Normal (°F)

December 1, 2020–February 28, 2021



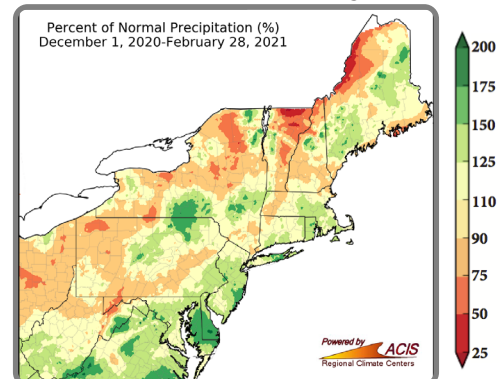
Climate normals based on 1981–2010 data; rankings based on 1895–2021.

The Northeast had its **20th-warmest winter** at 1.8°F above normal. It ranked among the 20 warmest winters since 1895 for the six New England states. It was the **19th-warmest December** at 2.7°F above normal. Seven states had one of their 20 warmest Decembers on record. **January** was 3.9°F above normal, ranking in the **warmest third** of all years. It was among the 20 warmest Januaries for four states. **February** was 1.3°F below normal, ranking in the **middle third** of all years.

Precipitation

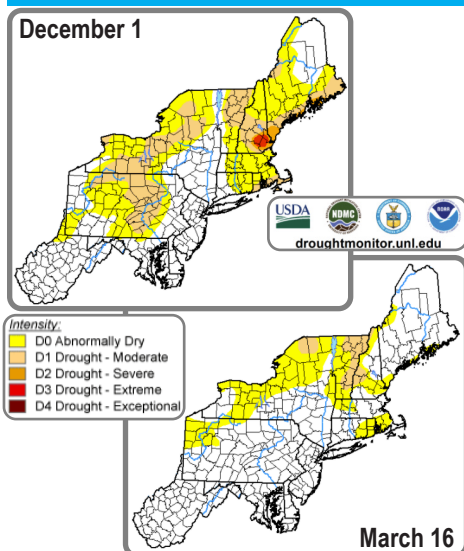
Percent of Normal (%)

December 1, 2020–February 28, 2021



The Northeast saw 104% of normal **winter** precipitation, ranking in the **middle third** of all years. It was among the 20 wettest winters for two states. The region had its **16th-wettest December** with 133% of normal. Seven states ranked this December among their 20 wettest. It was the region's **13th-driest January** with 66% of normal precipitation. Six states had one of their 20 driest Januaries. **February** precipitation was 110% of normal, in the **middle third** of all years. This February was among the 20 wettest for three states.

Regional Climate Overview – December 2020–February 2021



Drought in the Northeast

As of December 1, the [U.S. Drought Monitor](#) showed 21% of the Northeast in extreme, severe, or moderate drought and 33% as abnormally dry. A **wetter-than-normal December** helped **alleviate drought and abnormal dryness** in many locations; however, areas of dryness lingered in northern New England, New York, and Pennsylvania. The U.S. Drought Monitor [from January 5](#) showed 4% of the region in a moderate drought and 17% as abnormally dry. During **January**, **dryness** eased in central Pennsylvania but **persisted** in northern New England and New York due to below-normal precipitation. The U.S. Drought Monitor [from February 2](#) showed 5% of the region in a moderate drought and 14% as abnormally dry. **Conditions were unchanged** for most areas during **February** due to factors such as below-normal temperatures and decent snowpack. The U.S. Drought Monitor [from March 2](#) showed 4% of the Northeast in a moderate drought and 14% as abnormally dry. **Dry conditions** during the first half of **March** led to the **expansion of abnormal dryness** in Pennsylvania, New York, and New England, with the U.S. Drought Monitor [from March 16](#) showing 4% of the Northeast in a moderate drought and 22% as abnormally dry. For current conditions, see the [Northeast DEWS Dashboard](#).

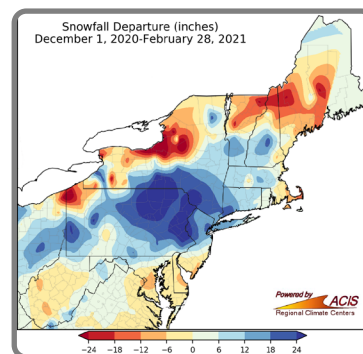
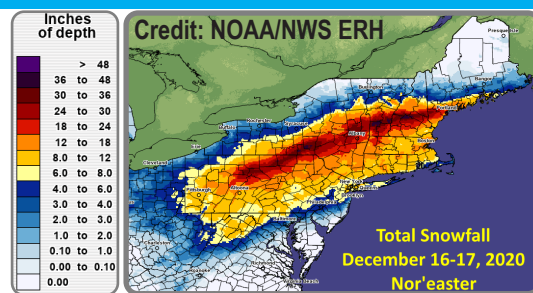
Regional Impacts and Updates – December 2020–February 2021

Winter Conditions

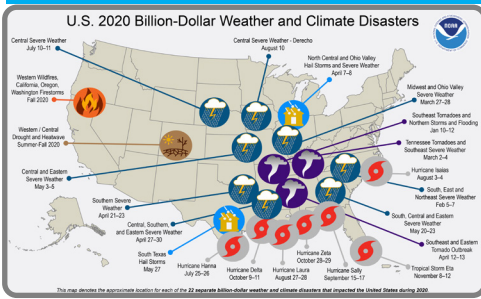
There were **several significant storms** during winter.

- From **November 30–December 1**, up to **5 inches of rain** in the Mid-Atlantic led to [flooded roads, stranded vehicles](#), and water rescues. **Three tornadoes damaged buildings and trees**. Non-thunderstorm **wind gusts of up to 70 mph** downed trees and wires in New England and New York.
- A **December 16–17** storm dropped snow across the Northeast. Snow totals [exceeded 24 inches](#) in parts of Pennsylvania, New York, and New England, with the greatest totals ranging [from 40–48 inches](#). Binghamton, NY, and Williamsport, PA, had their **all-time largest snowstorm** with 40.0 inches of snow and 24.7 inches, respectively. Concord, NH, saw 24.2 inches on December 17, the site's **all-time snowiest day** and **largest December snowstorm**. December 17 was the **snowiest December day** for Binghamton and Albany, NY. Snow totals were among the 10 greatest for December at other sites. Travel was difficult, with [many crashes](#) and some roads [shut down](#). Icy conditions, strong winds, and coastal flooding occurred in [southeastern parts of the region](#).
- A **December 24–25** storm dropped 1–4 inches of rain, with a few sites having one of their 10 wettest December days. **Flooding** occurred in the Mid-Atlantic due to wet antecedent conditions and in northern Pennsylvania and New York due to [heavy rain and melting snow](#). There were [flooded roads, water rescues](#), and evacuations. Wind gusts of up to 70 mph caused damage in coastal areas.
- A **February 1–3** nor'easter dropped up to 24 inches of snow, with some sites in eastern Pennsylvania and northern New Jersey [seeing over 30 inches](#). Several locations, including Central Park, NY; Bridgeport, CT; and Allentown, PA, had one of their **10 all-time snowiest days** on record. Coastal areas saw wind gusts of up to 64 mph, with parts of New York's Long Island [experiencing blizzard conditions](#). **Coastal flooding** occurred from Delaware to Massachusetts, [eroding beaches](#) and inundating roads and low-lying areas.
- A **series of storms** in mid-February brought **mixed precipitation** to the region. For example, a storm from **February 15–16** produced several inches of snow/sleet and up to 0.50 inches of **ice accumulation from freezing rain**, creating hazardous travel conditions and leaving [100,000 customers in West Virginia without power](#).
- From **February 26–March 1**, [up to 5 inches of rain](#) fell in West Virginia, with Huntington tying its **wettest February day**. [Widespread flooding led to closed roads](#), flooded buildings, water rescues, and rockslides. A few rivers had one of their **10 highest water levels**.

December snowfall ranged from more than 12 inches below normal in northern parts of New York, Vermont, and New Hampshire to more than 12 inches above normal in parts of Pennsylvania, central/eastern New York, and southern New Hampshire. A few sites had [one of their 10 snowiest Decembers](#). In **January**, most of the Northeast saw **below-normal snowfall**, with the largest deficits exceeding 12 inches. It was among the [10 least snowy Januaries](#) for several sites. In **February**, most of the region saw **above-normal snowfall** with some areas having a surplus of more than 24 inches. This February was among the [20 snowiest for some sites](#). With frequent storms, a few sites saw an **unusually high number of days with measurable snow** during February. **Winter snowfall** ranged from more than 24 inches below normal to more than 24 inches above normal (map right). This winter was the **snowiest on record** for Binghamton, NY, and among the 20 snowiest for other sites.



Regional Impacts and Updates – December 2020–February 2021

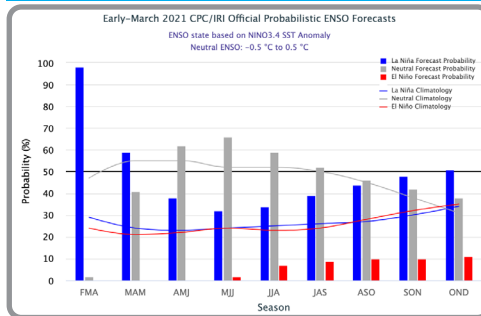


2020 Warmth and Billion-Dollar Disasters

2020 ranked as the third-warmest year on record for the Northeast region, with [each state having one of its seven warmest years](#) on record. 2020 was the **hottest year on record for six major climate sites**: Scranton and Harrisburg, PA; Atlantic City, NJ; Portland, ME; Central Park, NY; and Providence, RI. The [Northeast Shelf](#) experienced **several marine heat waves** in 2020. Georges Bank had six [marine heat waves](#) including the **warmest event on record**. The Gulf of Maine had five heat waves with the strongest event ranking seventh on record in terms of maximum intensity. The Middle Atlantic Bight is experiencing **more frequent** marine heat waves, including this year with eight heat waves.

Since 1980, there have been 285 weather/climate disasters in the U.S. that caused at least \$1 billion in damage, with the total cost of these [exceeding \\$1.875 trillion](#). There were [22 of these disasters in 2020](#), the **greatest number on record** and the sixth consecutive year with 10 or more billion-dollar disasters. [Seven of those disasters affected the Northeast](#), **tying 2018 as the most on record**. One of those events, **Hurricane Isaias**, produced up to 9 inches of rain and 17 tornadoes in the Northeast. [Significant flooding occurred](#), with some waterways in Pennsylvania having their **all-time highest water levels**. A tornado in Delaware was on the ground for over 35 miles, the **state's longest tornado track**. The other six disasters were severe weather events, including [a rare tornado outbreak in February](#). Maryland had its **largest winter tornado outbreak**, with several counties having their first February tornadoes.

Regional Outlook – Spring 2021



La Niña

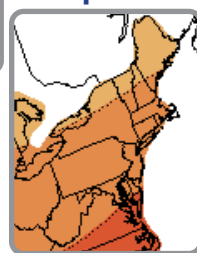
During February, **La Niña conditions** continued in the equatorial Pacific Ocean. NOAA's [Climate Prediction Center indicates](#) there is around a 60% chance La Niña conditions **will transition to ENSO-neutral conditions** during spring, with ENSO-neutral conditions likely continuing through summer.

Spring Flood Potential



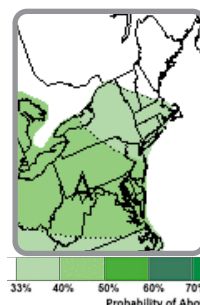
[According to NOAA](#), the **flood risk** during spring is **near normal** for most of the Northeast and **below normal** for parts of northern New England where dry conditions exist. However, southwestern Pennsylvania and much of West Virginia have an **above-normal** risk of minor flooding. In addition, "streams in Pennsylvania and New York draining into Lake Erie may experience high streamflow due to record elevated lake levels, especially in response to high winds from the north pushing water inland." The risk of **ice jam flooding** is **below or near normal** for the region. 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 New England to the mid 60s in Maryland. [NOAA's Climate Prediction Center \(CPC\)](#) favors **above-normal temperatures** for **April–June** for the entire Northeast (map left).

Above-normal precipitation is favored for most of the Northeast for **April–June** (map below). **Equal chances** of below-, near-, or above-normal **precipitation** were forecast for Maine, much of New Hampshire, and northern Vermont. Normal April–June precipitation ranges from less than 10 inches in parts of New York to more than 14 inches in parts of West Virginia. With wetter-than-normal conditions favored for the rest of March and April–June, **easing of drought conditions** is expected [in New York and New England](#).



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](#)