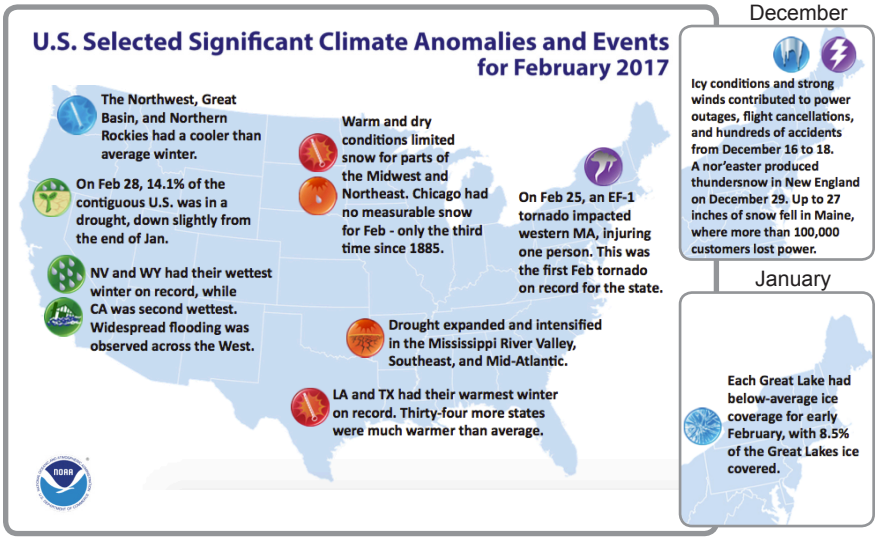
Quarterly Climate Impacts and Outlook

Northeast Region

March 2017

National - *Significant Events for December 2016–February 2017*



The contiguous U.S. had its sixth warmest winter on record with an average temperature of 35.9°F, 3.7°F above the 20th century average. December's average temperature of 32.9°F was 0.2°F above average, while January's average temperature of 33.6°F was 3.5°F above average. February's average temperature of 41.2°F was 7.3°F above average, making it the second warmest on record. The contiguous U.S. had its eighth wettest winter on record with 8.22 inches precipitation, 1.43 inches above average. The U.S. precipitation total for December was 2.69 inches, 0.34 inches above average. The U.S. had its ninth wettest January on record with 3.18 inches of precipitation, which was 0.87 inches above average. February precipitation totaled 2.21 inches, 0.08 inches above average.

Highlights for the Northeast

Drought conditions lingered, but generally improved during winter. For details, see Climate Overview and Impacts sections.

A nor'easter dropped several inches of sleet in Maine from **January 24–26**. The National Weather Service said, "It was likely one of the biggest sleet storms in northern Maine during the past 75 years." Elsewhere, strong winds and rough seas led to coastal flooding and beach erosion.

Three storms brought heavy snow to New England in February. On **February 9**, blizzard conditions occurred for up to seven hours at 38 sites in New Jersey, New York, and New England. Thundersnow was reported, as well. A storm from **February 12–13** dropped up to 40 inches of snow, with the greatest totals in Maine. A third storm, from **February 15–16**, dropped up to 21 inches of snow. On the 16th, Andover, ME, had 79 inches, or 6.6 feet, of snow on the ground, which was the second greatest one-day snow depth on record for Maine.

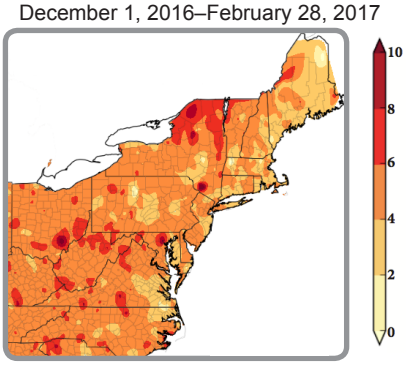
Four tornadoes and winds of up to 100 mph from thunderstorms downed hundreds of trees and damaged dozens of structures on **February 25**. Massachusetts had its first February tornado.

Nineteen sites had their warmest February on record, while Dulles Airport, VA, had its warmest winter. Seven sites had their warmest February day or winter day on record on **February 24 or 25**.

Regional - *Climate Overview for December 2016–February 2017*

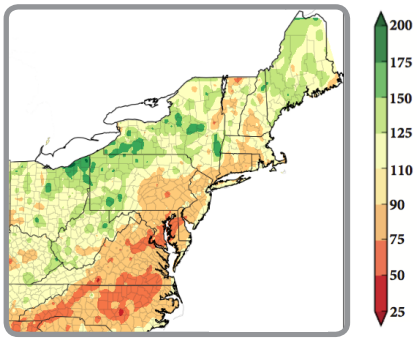
Temperature and Precipitation Anomalies

Departure from Normal Temperature (°F)
December 1, 2016–February 28, 2017



The Northeast had its fifth warmest **winter** since 1895 at 4.7°F above normal. This winter ranked within the top eight warmest for all twelve Northeast states and Ohio. In **December**, the Northeast was 0.7°F warmer than normal. Eleven states experienced above-normal temperatures, while Maine and Ohio were colder than normal. The Northeast had its ninth warmest **January** on record at 6.7°F above normal. This January ranked within the top 14 warmest for all twelve Northeast states and Ohio. The Northeast had a record warm **February** at 6.6°F above normal. Six states were record warm, as was Ohio. The other six states ranked it among their top 12 warmest.

Percent of Normal Precipitation (%)
December 1, 2016–February 28, 2017

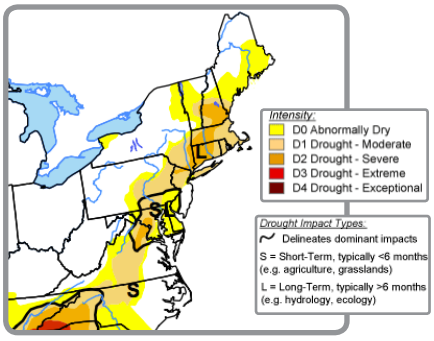


The Northeast received 109% of normal precipitation during **winter**. Five states, plus Ohio, were wetter than normal. **December** precipitation was 111% of normal for the Northeast. Six states were wetter than normal, as was Ohio. In **January**, the Northeast received 119% of normal precipitation. Seven states and Ohio saw above-normal precipitation. **February** precipitation was 90% of normal for the Northeast. Eight states and Ohio were drier than normal, with five ranking this February among their top 20 driest since 1895.

Normals based on 1981–2010

Drought in the Northeast

U.S. Drought Monitor
March 14, 2017



The U.S. Drought Monitor released on **December 1** showed 54% of the Northeast and 3% of Ohio in a moderate, severe, or extreme drought. Conditions eased during the month so that by early **January**, 44% of the region was in a drought and Ohio was drought-free. Conditions continued to improve and by early **February**, 35% of the Northeast was in a drought. In February, conditions improved in portions of New York and New England, but deteriorated in Maryland, Delaware, and southern New Jersey. Dry conditions contributed to a few wildfires in the Mid-Atlantic. By early **March**, the region was free of extreme drought for the first time since early August 2016.

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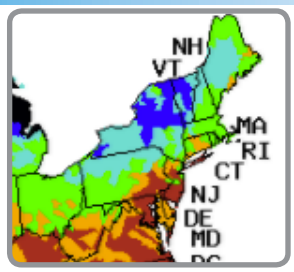
Regional - *Impacts and Updates for December 2016–February 2017*

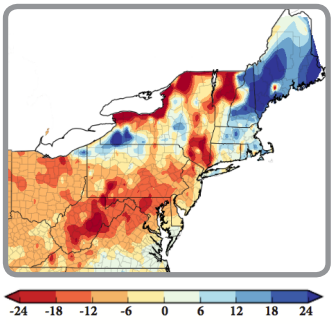
Drought

Streamflow on the region's waterways was generally near to below normal in December, near to above normal in January, and ranged from much below normal to much above normal in February. Groundwater and reservoir levels increased slowly during winter, returning to near normal in some areas, but remaining below normal in other areas.

- During winter, drought declarations were lifted in Kingston, NY, and Ipswich, MA, because their water supplies had recharged.
- Worcester, MA's reservoir system was at 52.1% of capacity on December 1 and 56.0% by January 1. On January 23, the city's drought status improved to a drought warning from a drought emergency, which had been in place since September 2016. By March 1, the reservoir system was at 83.2% of capacity compared its average of 94.1%.
- The New York City reservoir system was at 59.3% of capacity on December 7. By March 2, it was up to 88.9% compared to normal capacity of 87.2%.
- On January 18, the Delaware River Basin Commission lifted the drought watch for the basin, returning it to normal status.
- With Aquarion Water Company's Connecticut reservoirs well below normal, the Department of Public Health issued a second water supply emergency in early March for four cities the company services. The company asked its water users to reduce indoor use by 20%.



February streamflow from USGS.



Winter (December–February) snowfall departure from normal in inches.

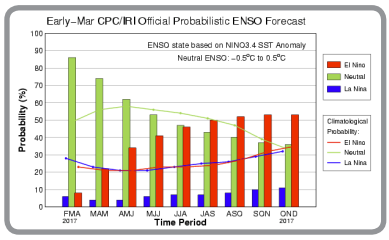
Winter Summary

December snowfall ranged from more than 12 inches below normal to more than 18 inches above normal. **January** snowfall was below normal for much of the region, except in coastal areas from eastern Maryland to southeastern Massachusetts. In **February**, snowfall ranged from more than 12 inches below normal to more than 24 inches above normal. Baltimore, MD, and Huntington, WV, tied their records for least snowy February, receiving only a trace (less than 0.1 inch) of snow. For **winter**, snowfall was below normal for many areas, with the main exceptions being southeast of Lake Erie and in eastern New England.

Warm winter temperatures had numerous impacts. With low ice cover on the Great Lakes, there were several large lake-event snow events. On January 5, over two feet of snow fell in 6–8 hours in Buffalo, NY's southern suburbs. Snowfall rates of 4–5 inches per hour snarled the evening commute. Hundreds of children were stranded at school or on buses. At least ten snowmobilers died this winter after falling through thin ice. Ski resorts in the Mid-Atlantic altered operations or closed weeks early, while Maine resorts saw a boost. Also, the maple season started earlier than usual. The Northeast has seen a trend towards warmer winters. Five of the region's warmest winters, including this year, have occurred since 1997–98. The Climate Resilience Toolkit is a resource to help people understand and address climate-related risks and opportunities, such as warming winters.

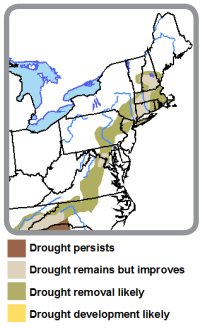
Regional - *Outlook for Spring 2017*

ENSO



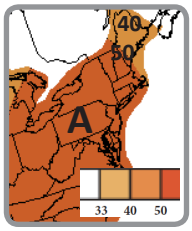
In February, sea surface temperatures in the equatorial Pacific Ocean and atmospheric conditions indicated ENSO-neutral conditions were present. NOAA's Climate Prediction Center indicates there's around a 60% chance that ENSO-neutral conditions will continue through spring. After that, the chances of El Niño increase to around 50% by autumn.

Drought



The U.S. Drought Outlook for March 16–June 30, 2017, indicates that drought conditions are expected to remain but improve in southern New Hampshire, western Massachusetts, western Connecticut, and portions of southeastern New York, northern New Jersey, and southern Maryland. Drought conditions are expected to ease in the rest of the region.

Temperature and Precipitation

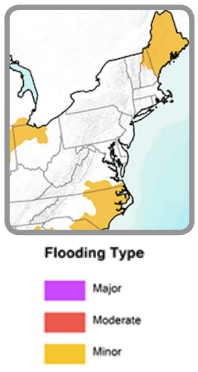


A: Above-normal
EC: Equal chances of above-, near, or below-normal
#: Probability of above-normal

NOAA's Climate Prediction Center is calling for an increased chance of above-normal temperatures (left map) for the Northeast and Ohio for April–June.

The April–June precipitation outlook calls for equal chances of below-, near, or above-normal precipitation.

Spring Flood Potential



The river flood potential during spring is generally near or below average for much of the Northeast. In Maine and northern New Hampshire, minor flooding is possible due to a deep snowpack and extensive river ice. Minor flooding is also possible in portions of northern Ohio. 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.

Northeast Region Partners

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