



### National Significant Events – June–August 2018

#### Selected U.S. Significant Climate Anomalies and Events for August and Summer 2018

CT, DE, MA, NH, and RI each had a record warm August. Overnight lows were record warm for much of the Northeast.



**June**

Drought developed in the Northeast with reports of low stream flows and dry soils.

**July**

Seven states had a top 10 warm July.

PA had its wettest July on record with 176% of average precipitation. MD had its 2nd wettest July.

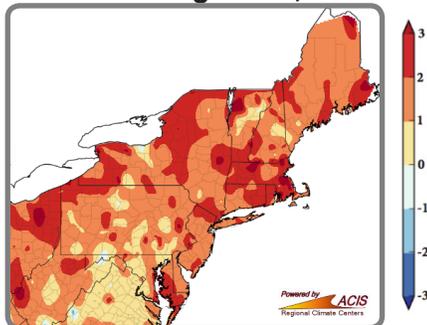
The contiguous U.S. had an average summer temperature of 73.5°F, 2.1°F above the 20th century average. Average temperatures for June, July, and August were 71.5°F, 3.0°F above average, 75.5°F, 1.9°F above average, and 73.6°F, 1.5°F above average respectively. It was the third warmest June on record. Globally, it was the fifth warmest June on record and the fourth warmest July on record. During summer, the contiguous U.S. received 8.95 inches of precipitation, slightly above average. June, July, and August precipitation totaled 3.08 inches, 0.15 inch above average, 2.80 inches, 0.02 inch above average, and 2.99 inches, 0.37 inch above average, respectively.

#### Highlights for the Northeast

Severe weather on June 13 spawned two EF-2 [tornadoes in Pennsylvania](#), in Bradford and Luzerne counties. The state had an EF-2 tornado last year as well, and has the highest [average number of tornadoes](#) in the Northeast. The storm also left trees and wires down, overturned cars, and collapsed multiple buildings and storefronts. Severe weather moved through much of the Northeast on June 18, and strong winds caused over 60,000 people in New Hampshire to lose power. Also on that day, an EF-0 [tornado](#) briefly touched down in Lincoln, NH, and a [microburst](#) created a path of damage that was over a mile long in Waitsfield, VT that brought wind gusts up to 80 mph, which downed dozens of trees and caused over 16,000 customers to lose power in the area. From July 1-4, high humidity along with [unusually warm temperatures](#) throughout the region, resulted in heat indices over 110°F in some areas, prompting Excessive Heat Warnings to be issued by the National Weather Service. On July 10, [severe weather produced hail](#) up to one inch in diameter in Maine, damaging cars and windows. Wind damage and fallen trees were also reported that day in parts of Maine and New Hampshire. An EF-0 tornado downed numerous trees and power lines in [Queens, NY](#), on August 2; this was the first tornado in Queens County since 2012. [Heat waves](#) throughout August led to heat advisories being issued and record warm overnight lows. Summer overall was hot and felt even hotter due to the extremely humid conditions. Syracuse, NY, had a [record number of hours](#) that the dewpoint reached or exceeded 70°F.

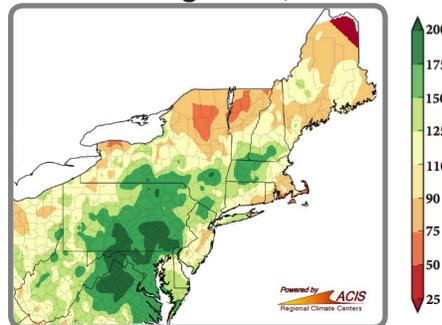
### Regional Climate Overview – June–August 2018

#### Temperature Departure from Normal (°F) June 1-August 31, 2018



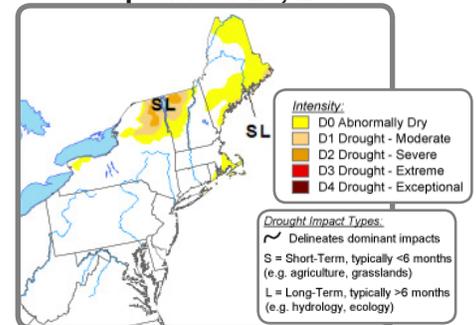
It was the sixth warmest **summer** for the Northeast and the record warmest for Rhode Island. In **June**, all twelve states had near-normal temperatures, with the month finishing at 0.3°F below normal. **July** was 2.1°F above normal, and all states were warmer than normal. Caribou, ME, and Burlington, VT, had their warmest months **ever recorded**. **August** was 3.4°F warmer than normal, the region's second warmest August on record. Six sites had their warmest August on record.

#### Precipitation Percent of Normal (%) June 1-August 31, 2018



**Summer** precipitation was 122% of normal for the region and was the wettest on record for Pennsylvania. **June** precipitation was near normal, with 103% of normal. **July** precipitation was 128% of normal. Pennsylvania had its wettest July on record, and Maryland had its 2nd wettest July. **August** precipitation was 135% of normal. Concord, NH, had its wettest August on record.

#### Drought in the Northeast U.S. Drought Monitor September 20, 2018



Dryness expanded throughout **June** in New England. By the middle of **July**, 12% of the Northeast was experiencing moderate drought conditions, and by the end of July, 9% of the region was in moderate drought. With little rain and above-normal temperatures, severe drought was introduced in northeastern New York, northern Vermont, and coastal Maine in early September. By mid-**September**, the U.S. Drought Monitor showed 5% of the region in a severe or moderate drought and 14% as abnormally dry.



## Regional Impacts and Updates – June–August 2018



Irrigation intake in Burlington, VT  
Credit: Rachael Schattman, USDA

### Drought

Over 75 public water suppliers enforced varying degrees of water bans in locations throughout Massachusetts, including a [water ban](#) in Northampton, MA, that came into effect starting June 15 as a result of the increasingly dry conditions. During July, reduced harvests and heat stress were both causing problems for growers as moderately dry conditions continued to impact New Hampshire, Vermont, and Maine. Low river levels and warm water temperatures were causing stress for [trout](#) in Vermont. By the end of July, moderate drought had spread throughout portions of northern New England and northern New York. With little rain and above-normal temperatures, severe drought was introduced in northeastern New York, northern Vermont, and coastal Maine in early September. Dry conditions led to small fruit and losses of [blueberries](#) in parts of Vermont. In addition, farmers in parts of that state were weeks behind in planting fall cover crops. There were fewer cases of [Lyme disease](#) in New England, possibly due to the hot and dry conditions.



Lancaster County, PA, on August 13.  
Credit: John Banghoff, NWS CTP

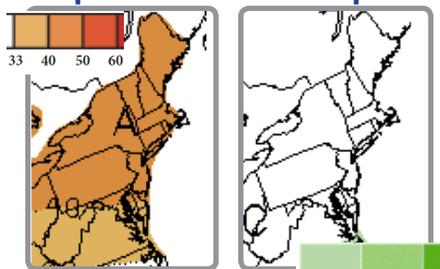
### Flooding

Heavy rain during the second half of summer led to [flooding](#) in many states. Dulles Airport, VA, received 5.02 inches of rain on July 21. Dunkirk, MD, received 16.55 inches of rain over the span of five days, ending on July 26. Heavy rain from July 23-27 caused some creeks and [streams to rise](#) up to seven feet in an hour, which led to flooding, [water rescues](#), road damage, and compromised home foundations. Knoebel's and Hershey Park in Pennsylvania had to [close park operations](#) for a period of time. In early August, waters rose [25 feet above the floodplain](#) in central Pennsylvania. On August 11-12, heavy rains flooded streets and homes on the North Shore of Massachusetts; [Lynn, MA](#), had 8.14 inches. Over [100 homes were evacuated](#) in Brick, NJ, beginning on August 13th. Road closures were reported along coastal New Jersey and in Seneca County, NY, that same week as rivers started to overflow their banks, prompting a [state of emergency](#) to be issued in many of those areas. Flooding in Lancaster County, PA, on August 21 resulted in closed parks and roadways as [streets became flooded](#). There was an increased number of West Nile virus cases in the region due to extreme rainfall and warmer-than-normal temperatures. Boston communities raised the risk level to [high](#) after four people were confirmed with the virus.

## Regional Outlook – Autumn 2018

## Northeast Regional Partners

### Temperature and Precipitation



Probability of above normal (A)

Normal October–December average temperatures range from the low 30s in northern New England to the low 50s in the Mid-Atlantic. [NOAA's Climate Prediction Center \(CPC\)](#) is calling for an increased chance of above-normal temperatures (left map). The precipitation outlook calls for equal chances of below-, near-, or above-normal precipitation (right map). Normal October–December precipitation ranges from less than 8 inches in portions of western New York and eastern West Virginia to more than 14 inches in portions of New England and southeastern and northern New York.

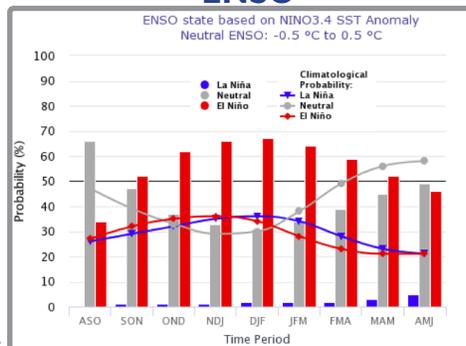
According to CPC, the chance of El Niño is 50–55% during fall and increasing to [65–70%](#) during winter.

### Atlantic Hurricane Season

	Through Sep. 20	Aug. 9 Outlook	Average Season
# of Named Storms	10	9-13	12
# of Hurricanes	5	4-7	6
# of Major Hurricanes	1	0-2	3

NOAA's 2018 updated Atlantic [hurricane outlook](#) indicates a 60% chance this season will be below normal, a 30% chance it will be near-normal, and a 10% chance it will be more active than normal. By mid-September there have been 10 named storms of which 5 were hurricanes. The likelihood of a below-normal season is due to the El Niño forecast, cooler-than-average sea surface temperatures, and strong wind shear. On September 14, Hurricane Florence made landfall on the east coast as a significant hurricane.

### ENSO



Early-Sept CPC/IRI Probabilistic ENSO

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](#)

[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](#)