

NWS Form E-5 (04-2006) (PRES. BY NWS Instruction 10-924)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE	HYDROLOGIC SERVICE AREA (HSA) Taunton MA	
		REPORT FOR: MONTH YEAR August 2016	
MONTHLY REPORT OF HYDROLOGIC CONDITIONS		SIGNATURE Nicole M. Belk Senior Service Hydrologist	
TO: Hydrologic Information Center, W/OS31 NOAA's National Weather Service 1325 East West Highway Silver Spring, MD 20910-3283		DATE September 9th, 2016	

When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).

An X inside this box indicates that no flooding occurred within this hydrologic service area.

- **Drought Advisory issued for the State of Rhode Island.**
- **Drought Warning issued for Northeast and Central Massachusetts, Drought Watch for Southeast MA and the Connecticut River Valley, and Drought Advisory for the Western and Cape Cod/Islands areas**
- **Drought Advisory continued for the State of Connecticut **

Drought conditions persisted and worsened within NWS Taunton's Hydrologic Service Area during August 2016. With the issuance of the August 30, 2016 U.S. Drought Monitor (Map 1), southern New England was at best in Moderate (D1) Drought conditions. Most of central and southeast MA were in Severe Drought (D2) conditions, and the Boston Metropolitan area was in Extreme Drought (D3) conditions.

The following State Drought Declarations were issued, or remained in effect, within southern New England during August 2016:

- *On August 17th the Governor of Rhode Island issued a Drought Advisory for the State of Rhode Island.
- *On August 12th the Massachusetts Executive Office of Energy and Environmental Affairs issued a Drought Warning for the Northeast and Central portions of the State. A Drought Watch was issued for the Southeast and Connecticut River Valley drought regions. A Drought Advisory was issued for the Western and Cape Cod/Islands portions of the State.
- *On June 27th the Connecticut Department of Public Health issued a Drought Advisory for the entire State of Connecticut. This Drought Advisory remained in effect through August.

A Drought Warning has never been in effect for any portion of MA since the original creation of the State's Drought Plan in 2001. A map showing the MA Drought Regions can be accessed at this link:
<http://www.mass.gov/eea/images/dcr/watersupply/rainfall/drought-regions-map.jpg>

As of early September 2016, active web links to individual State's Drought pages follow:
 MA: <http://www.mass.gov/eea/agencies/dcr/water-res-protection/water-data-tracking/drought-status.html>
 CT: <http://www.ct.gov/waterstatus/cwp/view.asp?a=3233&q=397052&waterstatusNav=|>
 RI: http://www.wrb.state.ri.us/work_programs_drought.html

For Boston, this was the driest meteorological summer (June/July/August) on record with only 3.92 inches of rainfall. The previous record low summertime rainfall was 3.97" in 1957. Boston also had its record warmest August on record, 4.3 degrees F warmer than normal. All 4 major climate sites in southern New England ranked within their top 5 warmest Augusts on record. However, none of the 4 sites ranked a top 10 driest August on record. August and Summer 2016 information for major climate sites within southern New England are available on Tables 1 and 2.

August 2016 brought mainly below normal rainfall to southern New England. A portion of the region inclusive of central MA, north Central CT and far northwest RI had normal to above normal rainfall, with totals ranging from 3.5 to locally over 5.5 inches. Two CoCoRaHS sites in northeast CT had higher totals for the month- East Killingly reported 8.95 inches, and Dayville reported 8.87 inches. Much of the Connecticut River Valley Region of MA, and northeast to central RI, had 3 to 4 inches of rainfall, which was 0.25 inch to 1.5 inches below normal. Much of eastern MA as well as Nantucket and southern RI had only 1 to 3 inches of rain, which was 1 to 3 inches below normal. The driest portion of southern New England was the Cape and Martha’s Vineyard, with only around an inch of rainfall for the month. This was close to 3 inches below normal. Maps 3 and 4 show the larger-scale picture of rainfall and rain departure from normal for August.

<i>Location</i>	<i>August 2016 Rainfall (Inches)</i>	<i>Rainfall Departure (Inches)</i>	<i>Temperature Departure from Normal (Degrees F)</i>	<i>Ranking Warmest August on Record (Preliminary)</i>
<i>Boston</i>	1.72	-1.63	+4.3	#1 Warmest
<i>Worcester</i>	3.96	+0.25	+3.4	5 th Warmest
<i>Providence</i>	2.71	-0.89	+3.7	2 nd Warmest
<i>Hartford</i>	4.19	+0.26	+3.9	2 nd Warmest

Table 1. August rainfall and temperature departure from normal at major climate sites within southern New England.

<i>Location</i>	<i>Summer 2016 Rainfall (Inches)</i>	<i>Rainfall Departure (Inches)</i>	<i>Ranking Driest Summer on Record (Preliminary)</i>	<i>Temperature Departure from Normal (Degrees F)</i>	<i>Ranking Warmest Summer on Record (Preliminary)</i>
<i>Boston</i>	3.92	-6.54	#1 Driest	+2.6	5 th Warmest
<i>Worcester</i>	7.68	-4.45	NA	+2.1	NA
<i>Providence</i>	7.71	-2.82	NA	+2.4	3 rd Warmest
<i>Hartford</i>	8.40	-4.06	NA	+2.5	3 rd Warmest

Table 2. Meteorological Summer rainfall and temperature departure from normal at major climate sites within southern New England. NA= Not Applicable (Not in top 10).

Examples of water restrictions follow. In Massachusetts, an August 30th report from MA Department of Environmental Protection (DEP) indicated mandatory non-essential outdoor water use restrictions were in place for many communities within central and eastern MA. A few communities in the Commonwealth had voluntary water restrictions in place. Map 2 shows a MA DEP map of Water Use Restrictions as of August 30th.

In northern Connecticut, an August 15th report from the CT Department of Health indicated that mandatory water restrictions continued in Southington. Voluntary water conservation continued within areas covered by Aquarion Water and Connecticut Water Company. The University of Connecticut had a Stage 1A Water Conservation Alert in place.

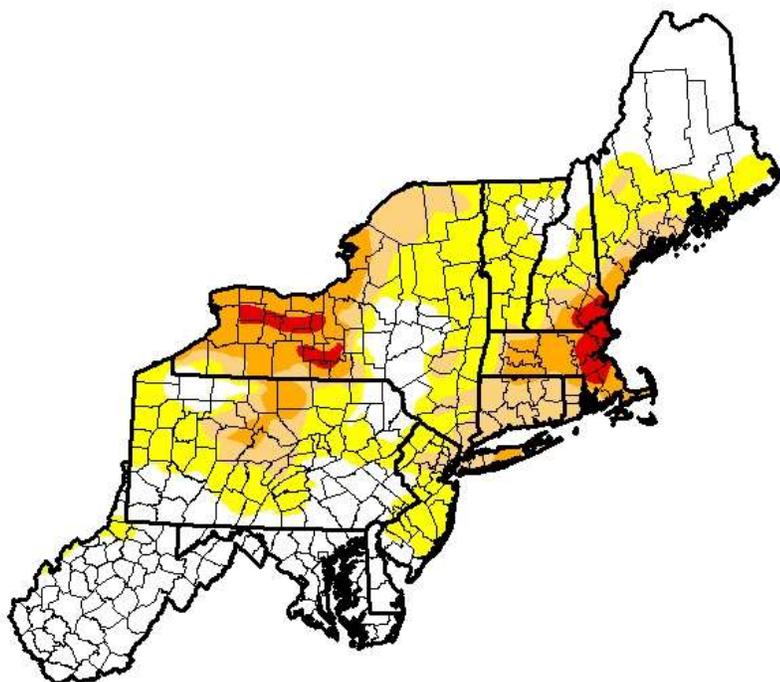
As part of Rhode Island’s Drought Advisory, voluntary water conservation and adherence to any local water restrictions were encouraged. There were various water restrictions in place by water suppliers across the Ocean State. Examples for August 2016 follow: Jamestown had an outdoor water ban. Some communities had limited days for outdoor watering, including North Kingstown, Westerly, South Kingston, Lincoln Water Commission and Narragansett.

The majority of USGS gaged rivers and streams had below to well below normal flows for the month of August 2016. At the end of August, many USGS groundwater wells across southern New England were at below to well

below normal levels. However, some wells were within a normal range, including some on the Cape and Islands and within northern to central Rhode Island.

U.S. Drought Monitor Northeast

August 30, 2016
(Released Thursday, Sep. 1, 2016)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	41.51	58.49	27.29	12.82	2.52	0.00
Last Week 9/23/2016	44.14	55.86	25.61	12.16	2.32	0.00
3 Months Ago 5/31/2016	60.56	39.44	0.78	0.00	0.00	0.00
Start of Calendar Year 12/29/2015	62.10	37.90	6.60	0.00	0.00	0.00
Start of Water Year 9/29/2015	42.41	57.59	9.00	0.00	0.00	0.00
One Year Ago 8/1/2015	72.76	27.24	3.26	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Chris Fenimore
NCEI/NESDIS/NOAA



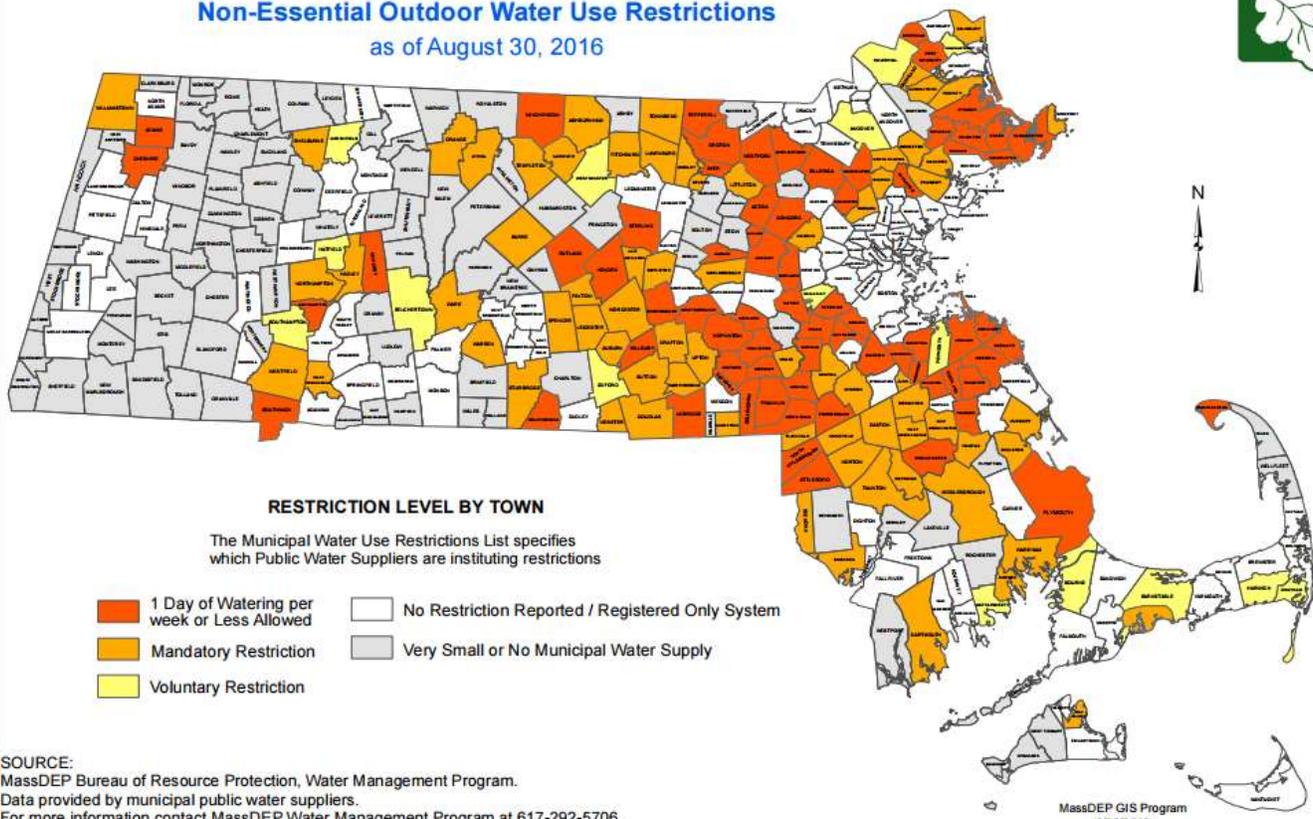
<http://droughtmonitor.unl.edu/>

Map 1. US Drought Monitor as of August 30th, 2016.

CURRENT MUNICIPAL WATER USE RESTRICTIONS

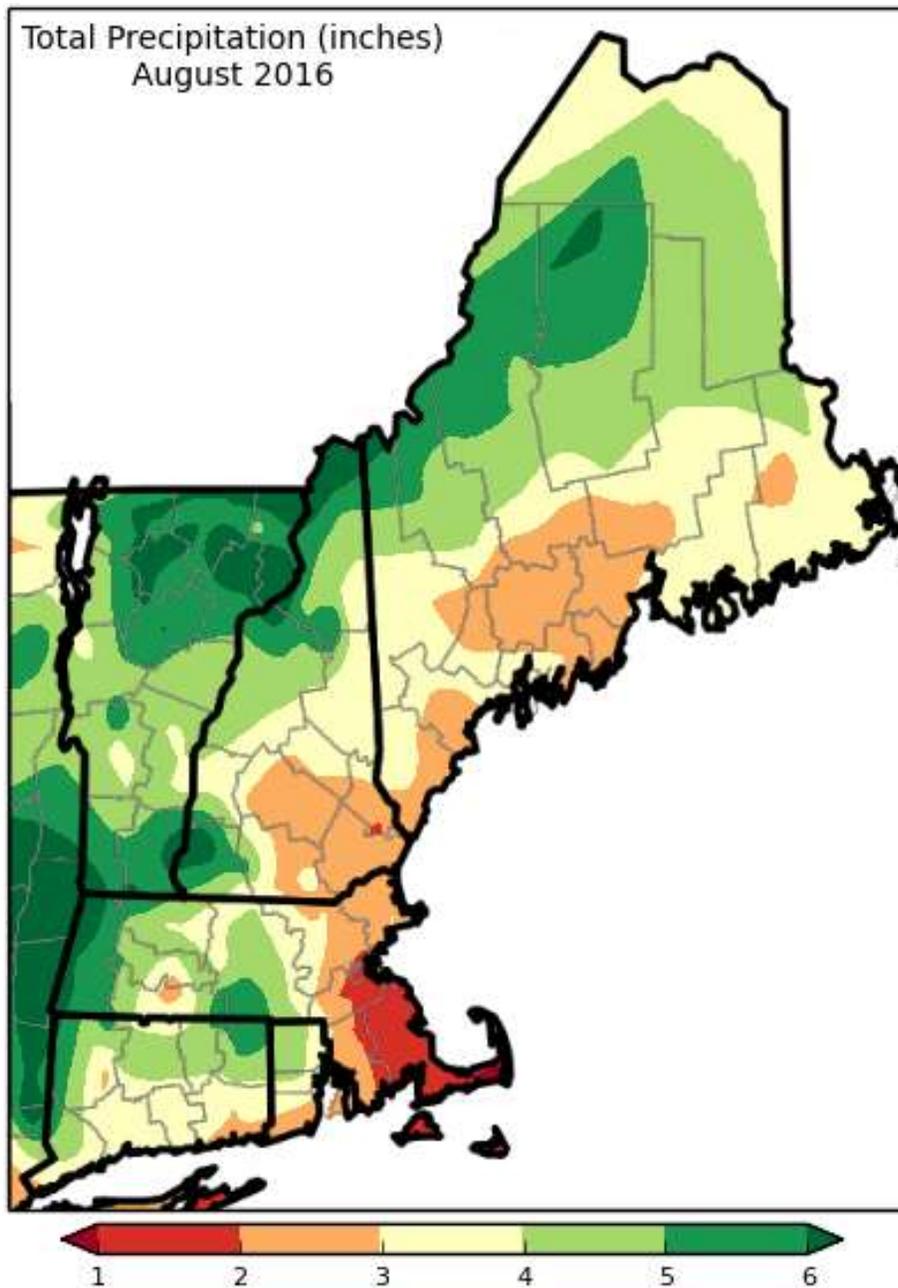
Non-Essential Outdoor Water Use Restrictions

as of August 30, 2016

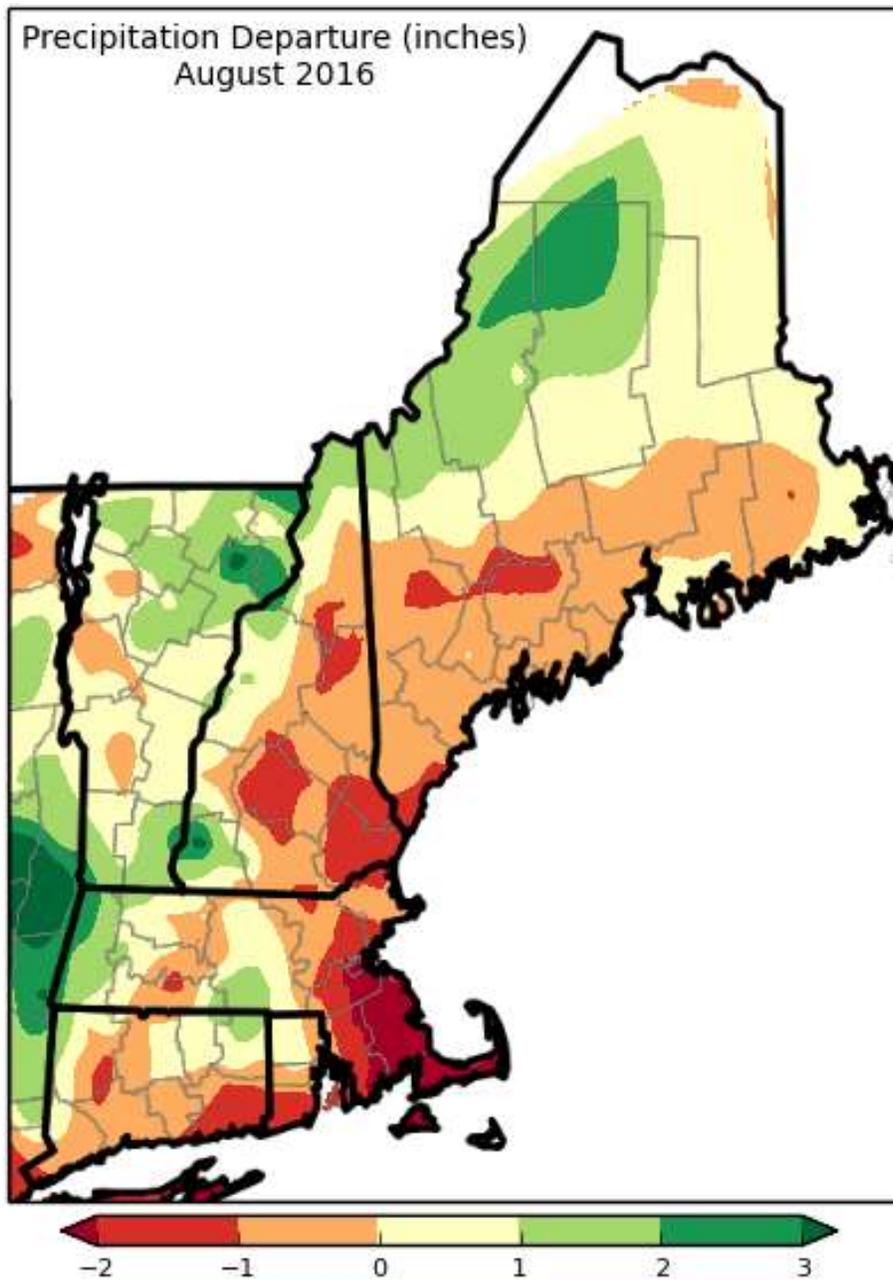


SOURCE:
MassDEP Bureau of Resource Protection, Water Management Program.
Data provided by municipal public water suppliers.
For more information contact MassDEP Water Management Program at 617-292-5706.

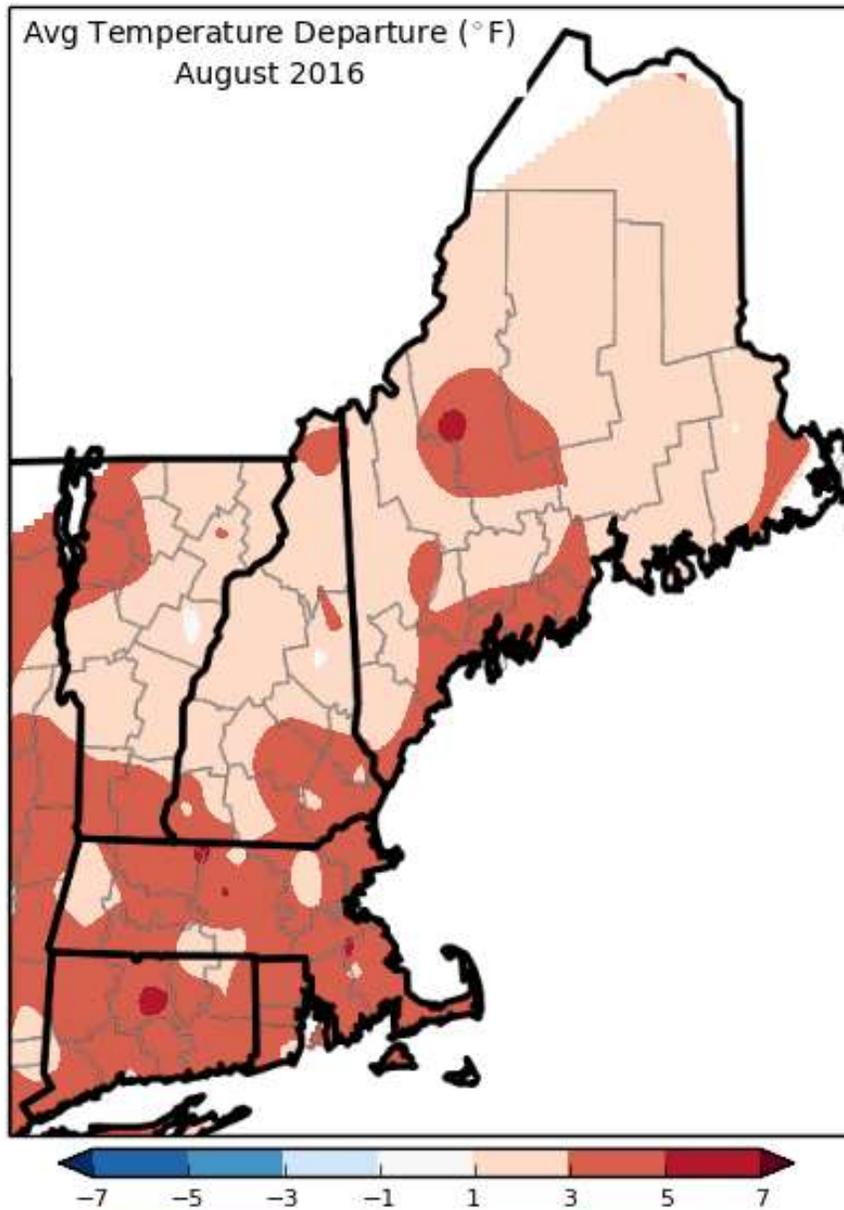
Map 2. Municipal Water Use Restrictions in MA as of August 30th, 2016. Map is from the MA Department of Environmental Protection (DEP).



Map 3. August 2016 precipitation for New England, from the Northeast Regional Climate Center.



Map 4. August 2016 rainfall departure from normal for New England from the Northeast Regional Climate Center.



Map 5. Average temperature departure from normal across New England for August 2016.
From the Northeast Regional Climate Center.