

# MASSACHUSETTS WATER RESOURCES COMMISSION

## Hydrologic Conditions in Massachusetts

### November 2015 Summary



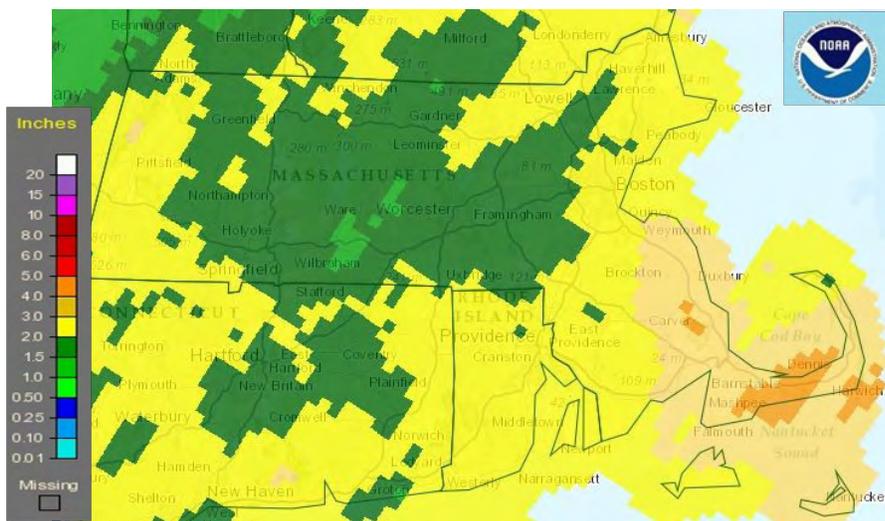
- November precipitation was below normal, except for Cape Cod and the Islands.
- November streamflows were below normal for the Central, Northeast, and Southeast regions.
- November groundwater levels were below normal in the Central and Northeast regions.
- November reservoir levels were generally normal.

### PRECIPITATION CONDITIONS

**Summary:** November precipitation was below normal except for Cape Cod and the Islands.

Region	November Estimated Rainfall: Composite Sites Reporting (inches)	Departure from Normal (inches)	MA Drought Management Plan Levels		Key to Levels
			Standardized Precipitation Index	Percent of Normal Index	
Cape Cod & Islands	4.20	-0.02	Normal	Normal	Normal
Central	2.14	-1.98	Normal	Advisory	Advisory
Connecticut River	2.34	-1.66	Normal	Normal	Normal
Northeast	1.85	-2.14	Normal	Advisory	Advisory
Southeast	3.48	-0.74	Normal	Normal	Normal
Western	2.58	-0.91	Normal	Normal	Normal

**Nov 2015 Total Observed Rainfall from National Weather Service**  
 found at <http://water.weather.gov/precip/> estimated from radar data correlated to NWS rainfall gauge reports



### Weather Events of Note

**Source: NWS Taunton E-5 Report**  
 November 2015 brought well above normal temperatures. Temperatures for the month averaged 2 to 5 degrees above normal, with the highest departures from normal across western Massachusetts and northwest Connecticut. Three out of the 4 major climate sites (Boston, Worcester, Hartford) experienced a top 10 warmest November on record.  
 No freshwater flooding occurred in southern New England during November 2015. Gaged rivers and streams across much of southern New England averaged below normal flows for the month. However flows averaged near normal for much of the Connecticut River watershed within Massachusetts.

# STREAMFLOW CONDITIONS

**Summary:** November streamflow conditions were below normal for the Central, Northeast, and Southeast regions and normal for the Connecticut River and Western regions.

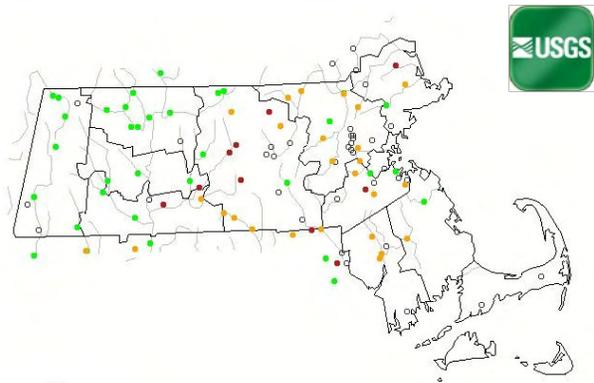
General Streamflow Conditions in Massachusetts November 2015		
Region	Streamflow Conditions	MA Drought Management Plan Streamflow Index
Cape Cod & Islands	ND	Normal
Central	Below Normal	Advisory
Connecticut River	Normal	Normal
Northeast	Below Normal	Advisory
Southeast	Below Normal	Advisory
Western	Normal	Normal

Key to Levels
Normal
Advisory
Watch
Warning
Emergency

**Note:** Streamflow conditions for individual streamflow-gaging stations may differ from general conditions. ND, no data

### November 2015 Monthly Streamflow Compared to Historical November Streamflow

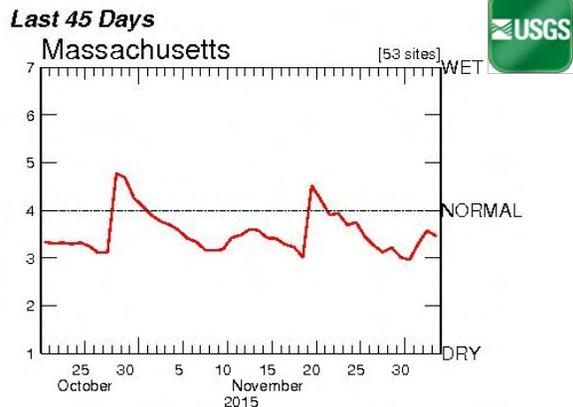
Average November 2015 streamflow monitored by the Commonwealth of Massachusetts and United States Geological Survey (USGS) cooperative stream gaging program. See map at right found at: <http://waterwatch.usgs.gov/index.php?r=ma&id=mv01d>



Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

### Time Series Plot of Real-Time Streamflow Compared to Historical Streamflow for the Day of the Year

This graph depicts a composite daily streamflow relative to normal streamflow for Massachusetts for the 45-day period of Oct. 21 to Dec. 3. An updated summary plot may be found at: <http://waterwatch.usgs.gov/index.php>



KEY:
1 = New record low for day
2 = < 10 <sup>th</sup> percentile
3 = 10 <sup>th</sup> – 24 <sup>th</sup> percentile
4 = 25 <sup>th</sup> – 74 <sup>th</sup> percentile
5 = 75 <sup>th</sup> – 89 <sup>th</sup> percentile
6 = 90 <sup>th</sup> percentile
7 = New record high for day

## GROUNDWATER LEVELS

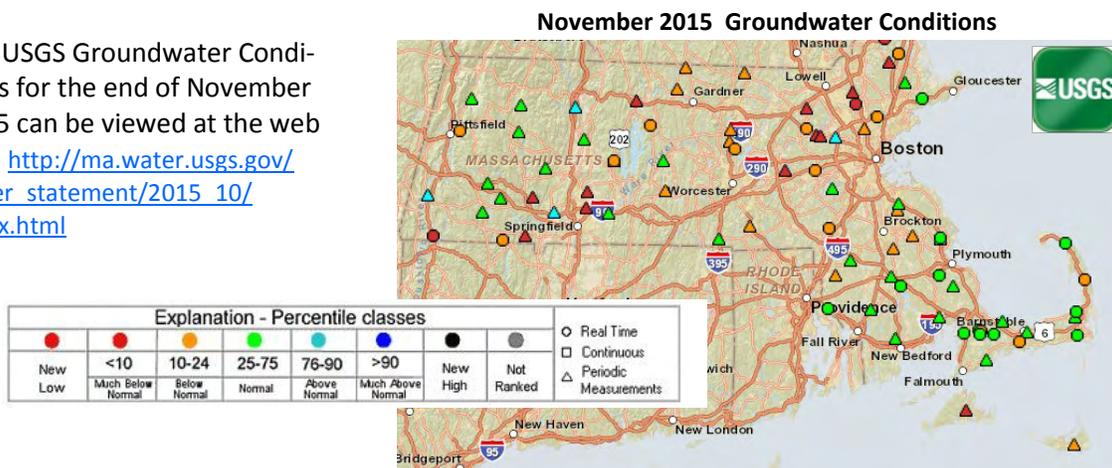
**Summary:** November groundwater levels were below normal in the Central and Northeast.

### General Groundwater Conditions in Massachusetts at the end of November 2015

Region	Groundwater Conditions	MA Drought Management Plan Groundwater Index
<b>Cape Cod &amp; Islands</b>	Normal	Normal
<b>Central</b>	Below Normal	Normal
<b>Connecticut River</b>	Normal	Normal
<b>Northeast</b>	Below Normal	Normal
<b>Southeast</b>	Normal	Normal
<b>Western</b>	Normal	Normal

**Note:** Groundwater conditions for individual wells may differ from general conditions. ND, no data

The USGS Groundwater Conditions for the end of November 2015 can be viewed at the web site: [http://ma.water.usgs.gov/water\\_statement/2015\\_10/index.html](http://ma.water.usgs.gov/water_statement/2015_10/index.html)



## RESERVOIR LEVELS

**Summary:** November reservoir levels were generally normal based on percent full values, as reported by participating water suppliers.

### General Reservoir Levels in Massachusetts at the end of November 2015

Region	Streamflow Conditions	MA Drought Management Plan Reservoir Index
<b>Cape Cod &amp; Islands</b>	Normal	Normal
<b>Central</b>	Below Normal	Watch
<b>Connecticut River</b>	Normal	Normal
<b>Northeast</b>	Normal	Normal
<b>Southeast</b>	Not Available	Not Available
<b>Western</b>	Normal	Normal

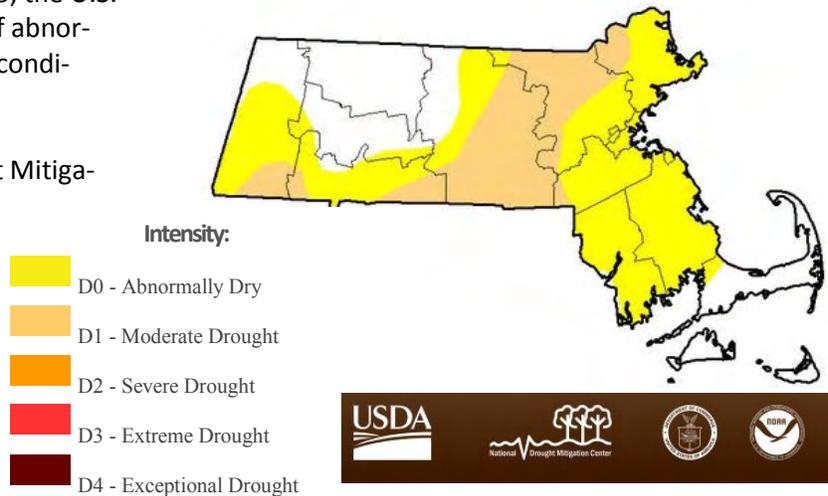
Key to Levels
Normal
Advisory
Watch
Warning
Emergency

## NWS/NOAA DROUGHT OUTLOOK AND FORECAST

### U.S. Drought Monitor: Massachusetts December 8, 2015

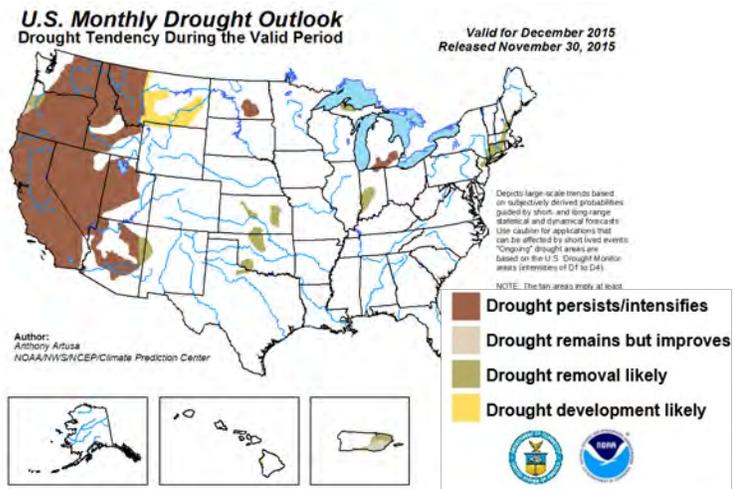
**Summary:** As of December 8, 2015, the U.S. Drought Monitor shows regions of abnormally dry and moderate drought conditions in Massachusetts.

Produced by the National Drought Mitigation Center (NDMC). Intensity based on NDMC criteria. For updated map see: <http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?MA>



### Monthly Drought Outlook November 2015

The NOAA Monthly Drought Outlook (released Nov. 30, 2015 valid for December 2015) indicates drought removal likely in central Massachusetts. [http://www.cpc.ncep.noaa.gov/products/expert\\_assessment/month\\_drought.png](http://www.cpc.ncep.noaa.gov/products/expert_assessment/month_drought.png)



## NOAA NATIONAL WEATHER SERVICE CLIMATE PREDICTION CENTER

The Climate Prediction Center 6-10 day Outlook valid Dec. 15– Dec. 19 shows above normal temperature and above normal precipitation in the Massachusetts region. (<http://www.cpc.noaa.gov/products/predictions/610day/>). The Center's November 19<sup>th</sup> three-month outlook for December 2015 and January & February 2016 shows above normal temperatures and above normal precipitation. ([http://www.cpc.noaa.gov/products/predictions/long\\_range/seasonal.php?lead=1](http://www.cpc.noaa.gov/products/predictions/long_range/seasonal.php?lead=1)). More information is available at (<http://www.cpc.noaa.gov/index.php>).

**Key Links:** Massachusetts Drought Management Plan: <http://www.mass.gov/eea/docs/eea/wrc/droughtplan.pdf>

**December 10, 2015:** This report was prepared by the Massachusetts Department of Conservation and Recreation. Data may be preliminary in nature. Additional information, previous and future water conditions reports can be found on our web site: <http://www.mass.gov/eea/agencies/dcr/water-res-protection/water-data-tracking/precipitation-composite-current-conditions.html>