

# Current Water Conditions in Massachusetts

## October 9, 2014



- September precipitation was below normal
- September streamflows were normal and below normal
- September groundwater levels were normal and below normal
- September reservoir levels were generally normal

### Precipitation Conditions

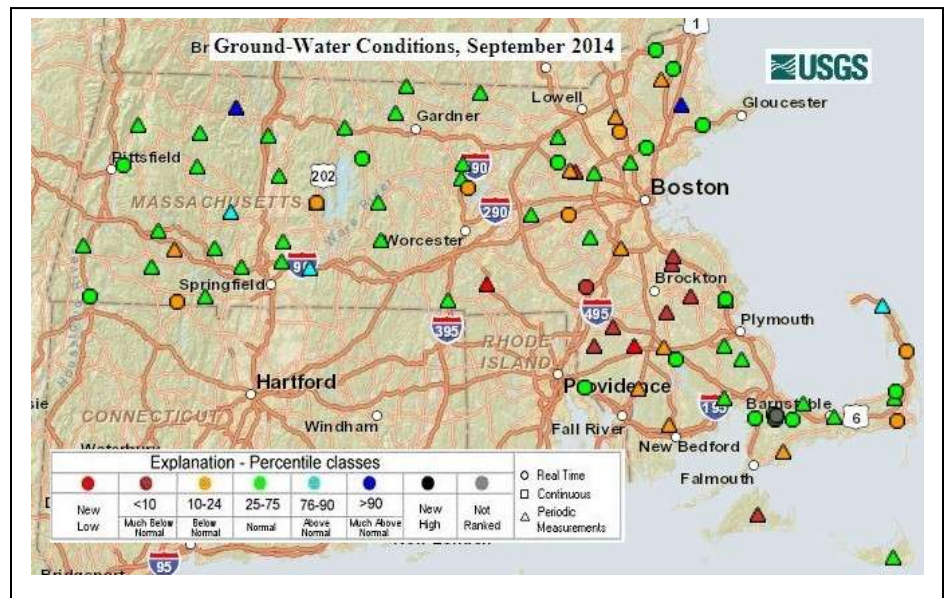
Estimated September state-wide average precipitation is 1.44 inches, which is 37 percent of the long-term average for the month. Rainfall in the regions of Massachusetts ranged from 46 percent (Cape Cod and islands) to 20 percent (Southeast). A table of September 2014 estimated precipitation statistics, based on preliminary precipitation data from the Department of Conservation and Recreation and National Weather Service precipitation monitoring networks, is attached. A map at the back of this report shows the distribution of September rainfall

Crop Moisture Index for Massachusetts at the beginning of October are reported to be slightly dry to favorably moist (normal range). The Keetch-Byram-Drought Index (KBDI) values measured by DCR's Bureau of Forest Fire Control at the end of September and the first of October are in the Drought Management Plan Advisory and Watch ranges. The KBDI includes a measure of soil moisture that reflects the potential forest fire spread.

### Ground-Water Levels

Based on preliminary data, ground-water levels reported by the U.S. Geological Survey at the end of September or beginning of October were generally below normal in the southeastern area of the state. Generally, they were normal in the remaining areas of the state. An assessment of ground-water conditions in the Massachusetts drought regions is shown in a table at the end of this report. The southeast region is assessed as having below normal groundwater levels. The remaining regions are assessed as normal. The USGS Groundwater Conditions for the end of September 2014 can be viewed at the web site:

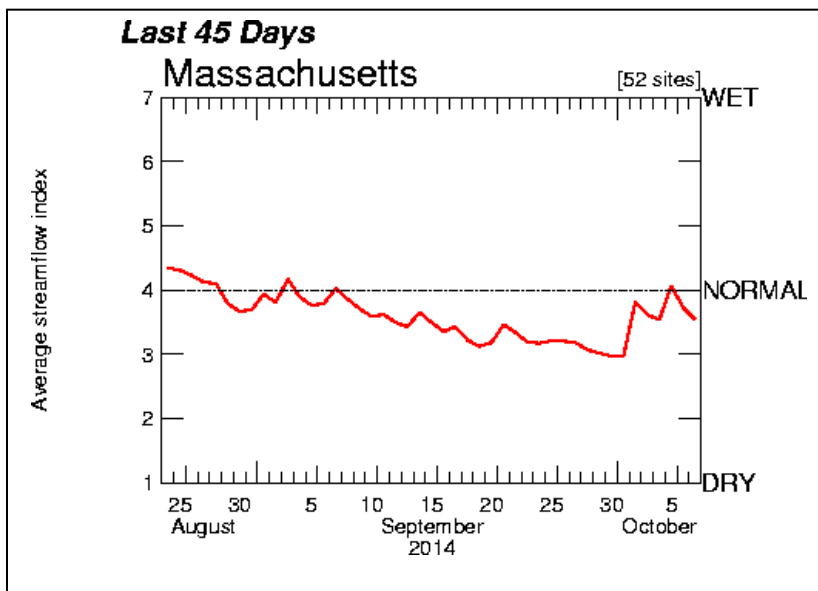
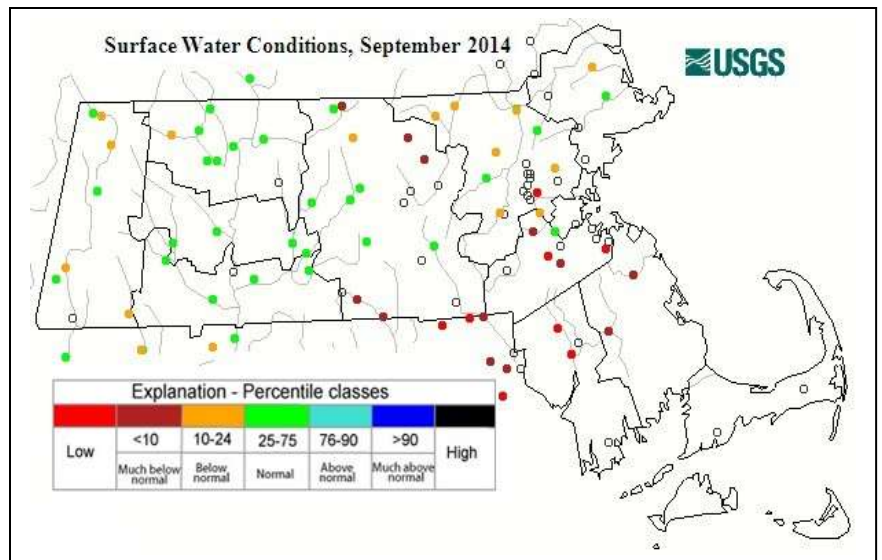
<http://groundwaterwatch.usgs.gov/State/MapsNet.asp?ncd=crn&sc=25>



## Streamflow

Average September 2014 streamflows that are monitored by the Commonwealth of Massachusetts and United States Geological Survey (USGS) cooperative stream gaging program were generally below normal in the northeast, south-central, and southeast areas of the state. In the remaining areas of the state flows were generally in the normal range. The graph below depicts a composite daily streamflow relative to normal streamflow for Massachusetts for the period of August 23, to October 7, 2014. Flows were predominantly in the low normal range during September but dipped into the below normal range at the end of the month. During early October flows have risen into the low normal range as a result of several rain events. This composite doesn't reflect some of the very low flows in the southeast region which have reached record lows in the month of September. The graph is a composite of 52 real-time gages across the state with a long period of record. This streamflow plot can be found at:

[http://waterwatch.usgs.gov/index.php?map\\_type1=pa07d&map\\_type2=&map\\_type3=&map\\_type4=&web\\_type=pa07d%2Cplot&state=ma&huc=us&xinfo=&map\\_type=real&group\\_idx=1&region\\_cd=ma&group\\_idx\\_changed=1&sel\\_nm=map\\_type1&sel\\_va=real](http://waterwatch.usgs.gov/index.php?map_type1=pa07d&map_type2=&map_type3=&map_type4=&web_type=pa07d%2Cplot&state=ma&huc=us&xinfo=&map_type=real&group_idx=1&region_cd=ma&group_idx_changed=1&sel_nm=map_type1&sel_va=real)



### 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

## Water Supply Reservoir Levels

Selected surface water reservoir percent-full values for water supply sources provided by water suppliers are listed below. These levels are generally normal to a little below normal for this time of year. The reservoir percent-full values listed are for the end of September or the beginning of October 2014. Two small reservoirs in southeast MA are below normal. The Cohasset system at 43.5 percent full is at its lowest level since January 2007.

*September /October 2014 Massachusetts Reservoir Status*

Reservoir/City or Town	Percent Full	Reservoir/City or Town	Percent Full
Quabbin	91.4	Beverly/Salem	79.5
Worcester	66.5	Lynn	59
Cobble Mt./ Springfield	87.0	Taunton/New Bedford/Assawompsett	86

Note: NA Indicates data not available for this report

## Drought Indices/Forecasts

### US Drought Monitor

The National Drought Mitigation Center's (NDMC's) October 12, 2014 Drought Monitor Map shown at right indicates a moderate drought in the southeast and abnormally dry conditions in the northeast, east central, Cape Cod and the Islands, and far western areas of Massachusetts.

### Standardized Precipitation Index (SPI)

All the Standardized Precipitation Index values for the regions used for the Massachusetts Drought Management Plan are in the normal range with the exception of the 6- and 12-month SPI values for Cape Cod and the Islands, which are at the Advisory level.

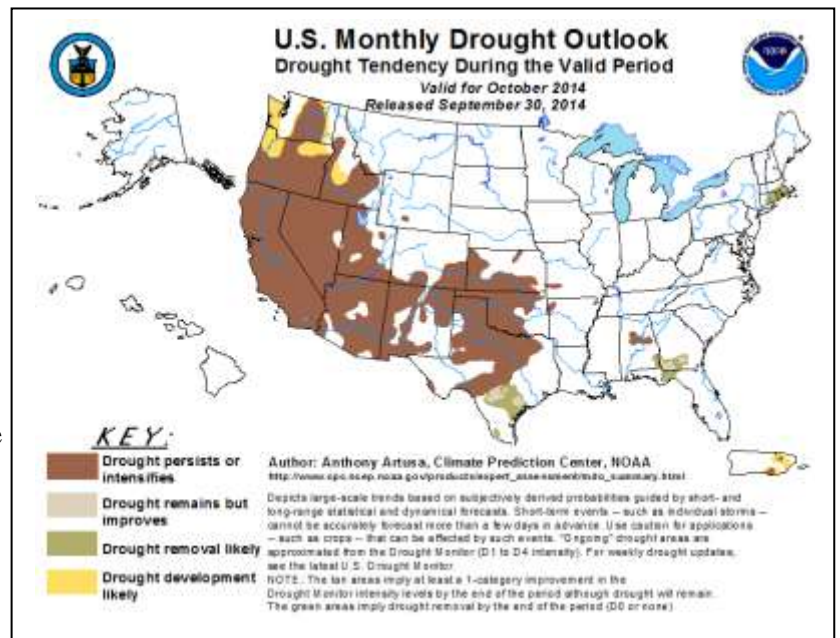
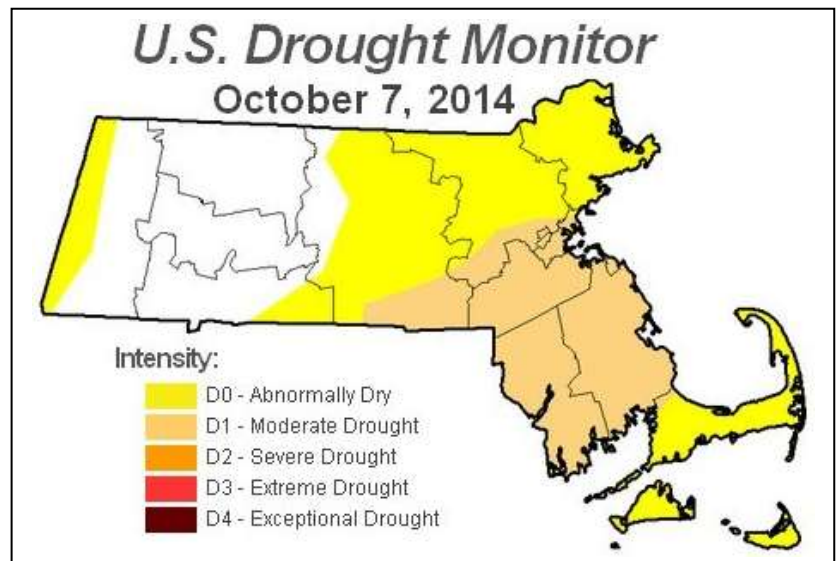
### NWS/NOAA's Climate Prediction Center

The U.S. Monthly Drought Outlook for October (shown at the right) forecasts that drought conditions will continue but improve by the end of the month. The seasonal drought outlook (not shown) predicts that there will be no drought condition by the end of December in Massachusetts.

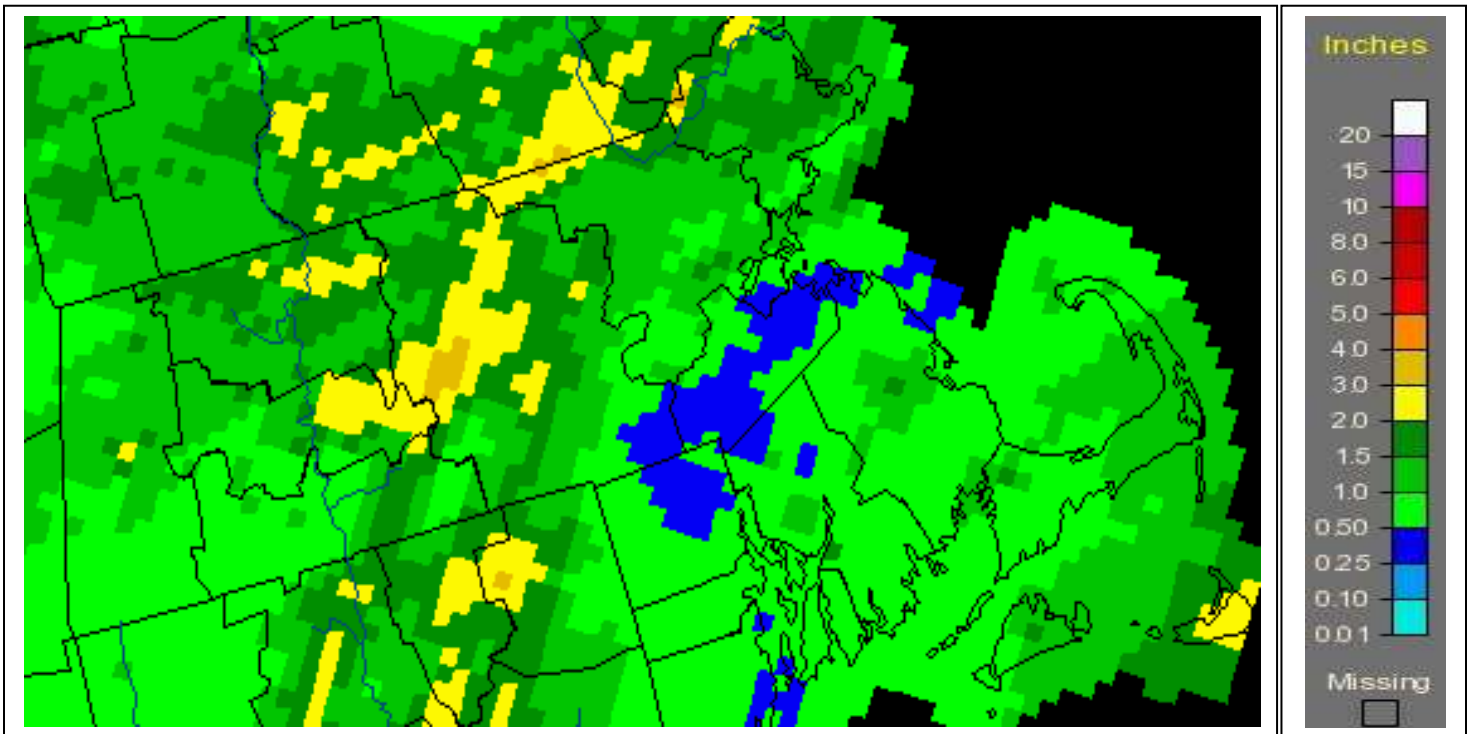
### Extended Forecasts

Short term forecast is for dry and seasonable weather through Friday. Cloudy and damp weather is forecast for Friday night and Saturday with probable showers south of the Mass Pike. Sunday should have improving conditions that will extend into next week. Unsettled weather is forecast for late next week. The National Weather Service Climate Prediction Center's extended 6 to 10- day forecast is for above normal precipitation and temperatures. The 8 to 14-day, 1-, and 3-month forecasts are for normal precipitation and above normal temperatures. The NWS Climate Prediction Center Information can be found at:

<http://www.cpc.noaa.gov/index.php>







<http://water.weather.gov/precip/>

**TOTAL RAINFALL  
SEPTEMBER 2014**



**GENERAL WATER CONDITIONS IN MASSACHUSETTS - SEPTEMBER 2014**  
EOEEA and MEMA DROUGHT MANAGEMENT PLAN REGIONS

Massachusetts Regions	Surface-Water Conditions	Ground-Water Conditions
Cape and Islands	ND	Normal
Southeast	Below Normal	Below Normal
Northeast	Below Normal	Normal
Central	Normal	Normal
Connecticut River	Normal	Normal
Western	Normal	Normal

**Note:** Surface- and ground-water conditions for individual streamflow-gaging stations and wells may differ from general conditions. ND, no data

This report was prepared by the Massachusetts Department of Conservation and Recreation. Data were obtained from the sources described in the report and 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>