

Current Water Conditions in Massachusetts

August 9, 2012



- July precipitation was below normal
- July streamflows were generally normal and below normal
- July ground-water levels were normal and below normal
- July reservoir levels were generally normal

Precipitation Conditions

Estimated July state-wide average precipitation is 2.91 inches, which is 78 percent of the long-term average for the month. The regions of Massachusetts received between 57 (West) and 163 percent (Cape Cod and Islands) of average precipitation during July. In general, the western 3 regions had considerably below normal rainfall during July. In general, most of the rainfall occurred at the beginning and end of the month. A table of July 2012 estimated precipitation statistics, based on 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 July rainfall in Massachusetts.

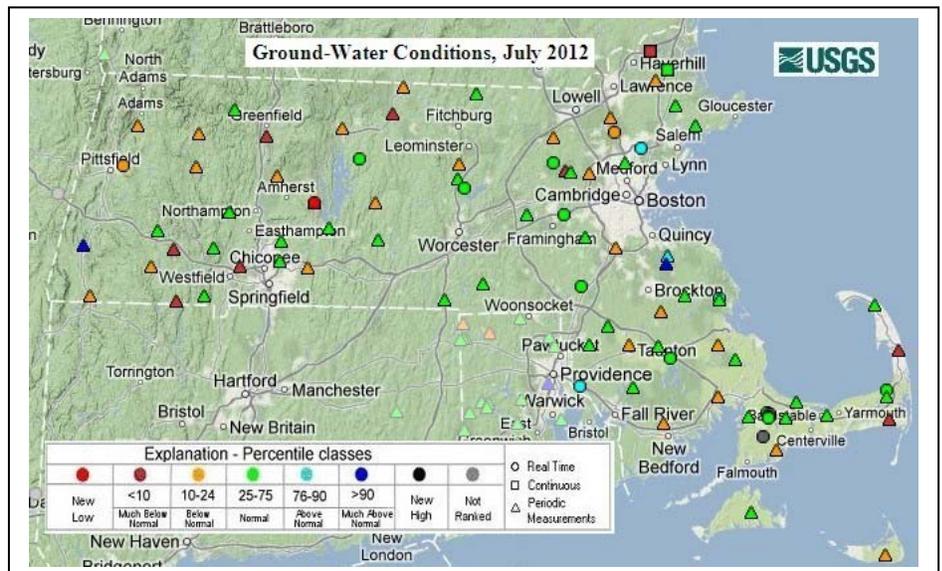
So far in August most of the state has received about 1 inch of rain but depending on location has ranged from zero to 4 inches.

Ground-Water Levels

In general state-wide ground-water levels reported by the United States Geological Survey (USGS) at the end of July were normal in the eastern half of the state and below normal in the western half. The normal areas of the state had a few wells with below normal levels. An assessment of ground-water conditions in the Massachusetts drought regions is shown in a table at the end of this report. The Connecticut Valley and Western drought regions were below normal.

The USGS Groundwater Conditions for the end of July 2012 can be viewed at the web site:

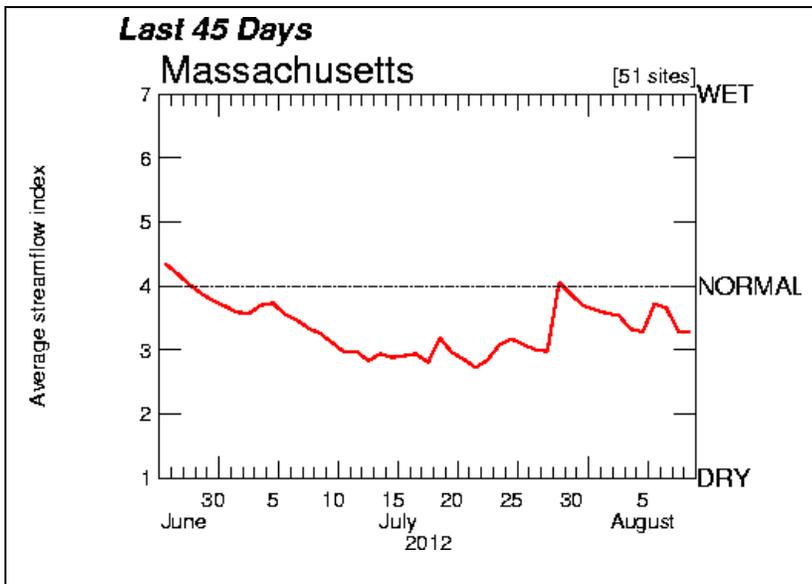
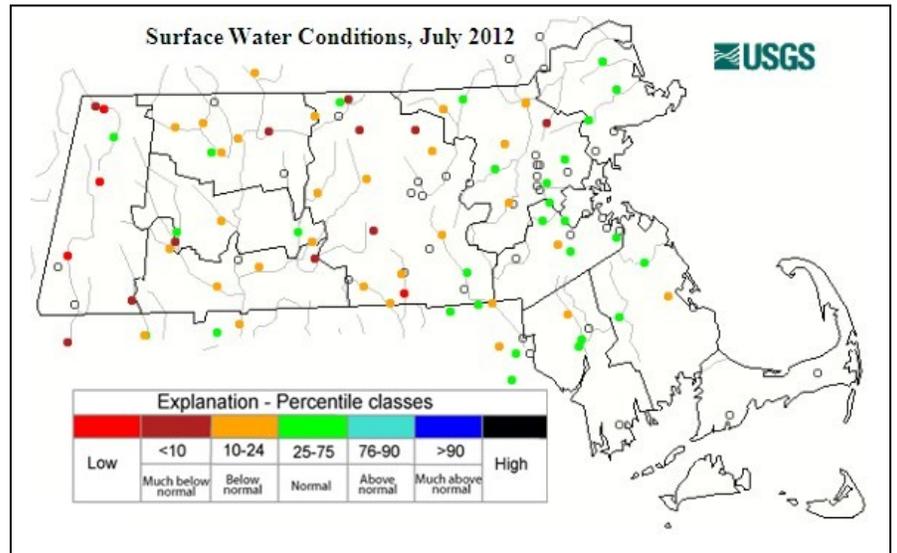
<http://groundwaterwatch.usgs.gov/State/MapsNet.asp?ncd=crn&sc=25>



Streamflow

Average July 2012 streamflows that are monitored by the Commonwealth of Massachusetts and United States Geological Survey (USGS) cooperative stream gaging program were generally normal in the eastern third of the state and below normal in the western two thirds. The far western part of the state was much below normal. As shown in a table at the end of this report MA DCR has listed the Southeast and Northeast drought regions of Massachusetts as having normal conditions. The Central, Connecticut Valley, and Western region had below normal conditions.

The graph below depicts a composite daily streamflow relative to normal streamflow for Massachusetts for the period of June 26, to August 9, 2012. During the beginning and end of July state-wide flows were generally in the low normal range (between 3 and 4 on graph), and below normal (below 4 on graph) during the middle of the month. During the 1st part of August flows have generally been in the low normal range. The graph is a composite of 51 real-time gages across the state with a long period of record.



KEY:

- 1 = New record low for day
- 2 = < 10th percentile
- 3 = 10th – 24th percentile
- 4 = 25th – 74th percentile
- 5 = 75th – 89th percentile
- 6 = ≥ 90th 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 slightly below normal for this time of year. The reservoir percent-full values listed are for the end of July or the beginning of August 2012.

July / August 2012 Massachusetts Reservoir Status

Reservoir/City or Town	Percent Full	Reservoir/City or Town	Percent Full
Quabbin	92.4	Beverly/Salem	89.5
Worcester	81	Lynn	75.1
Cobble Mt./ Springfield	78.3	Taunton/New Bedford/Assawompsett	89.6

Note: NA Indicates data not available for this report

Drought Indices/Forecasts

US Drought Monitor

The National Drought Mitigation Center's (NDMC's) August 7, 2012 Drought Monitor Map for Massachusetts shown at right indicates that all of the state is abnormally dry and that the western half is experiencing a moderate drought. This is an increase in intensity of conditions reported last month.

Standardized Precipitation Index (SPI)

The Massachusetts standardized Precipitation Index values for 1-, 3-, 12- and 6-months were all in the normal range, with the exception of the 6-month values for the Central and Connecticut River drought regions which are below normal (MA Drought Plan advisory level).

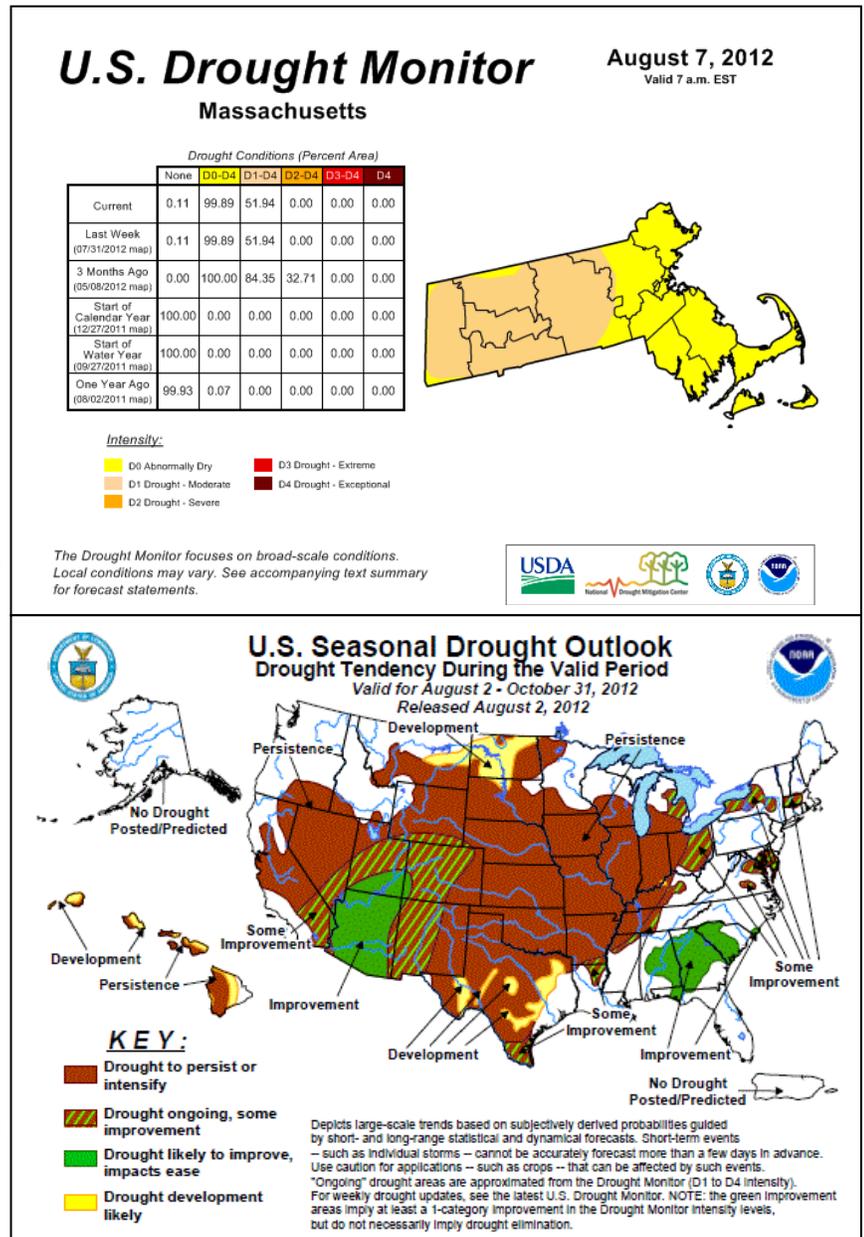
NWS/NOAA's Climate Prediction Center

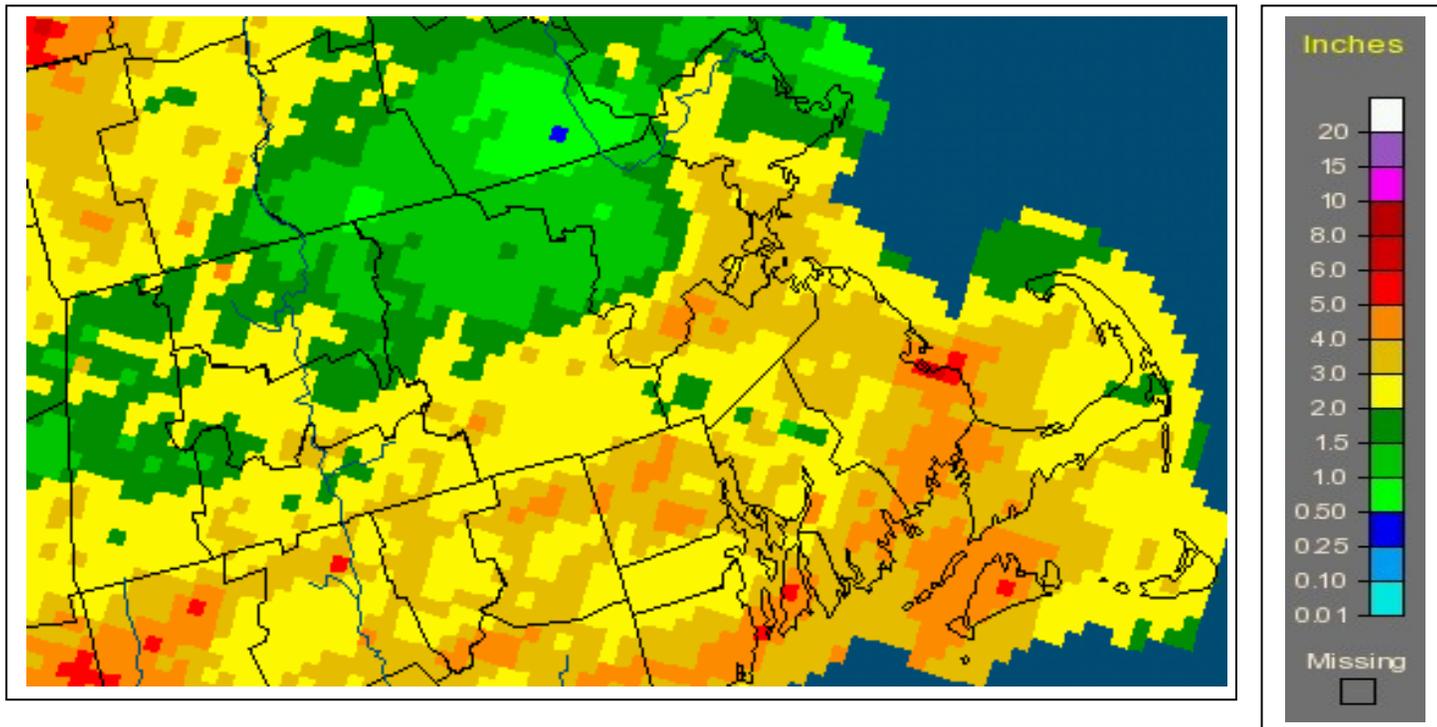
The U.S. Seasonal Drought Outlook dated August 2, 2012 predicts ongoing drought conditions in the western two thirds of the state with some improvement through October 2012.

Extended Forecasts

Humid weather continues today with some chance for afternoon thunderstorms. Friday through early Sunday will continue to be unsettled with increasing possibility of showers and thunderstorms that may bring some locally heavy rain. Drier and less humid weather returns late Sunday and into the first part of next week. The National Weather Service Climate Prediction Center's extended 6- to 10-day forecast predicts above normal rainfall and normal temperatures. The 8- to 14-day forecast is for normal precipitation and above normal temperatures. The 1- and 3-month forecasts are for normal rainfall and 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
JULY 2012**



GENERAL WATER CONDITIONS IN MASSACHUSETTS - JULY 2012
EOEEA and MEMA DROUGHT MANAGEMENT PLAN REGIONS

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

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

Weather Ramblings – New report shows storm intensity increasing in US

An analysis of more than 80 million daily precipitation records from across the contiguous United States reveals that intense rainstorms and snowstorms have become more frequent and more severe.

Extreme downpours are now happening 30 percent more often nationwide than in 1948. In other words, large rain or snowstorms that happened once every 12 months, on average, in the middle of the 20th century now happen every nine months. Moreover, the largest annual storms now produce 10 percent more precipitation, on average.

See next page

New England has experienced the greatest change with intense rain and snow storms occurring 85 percent more often than in 1948.

Figure ES-1: Extreme Downpours Have Become More Frequent Across Much of the United States

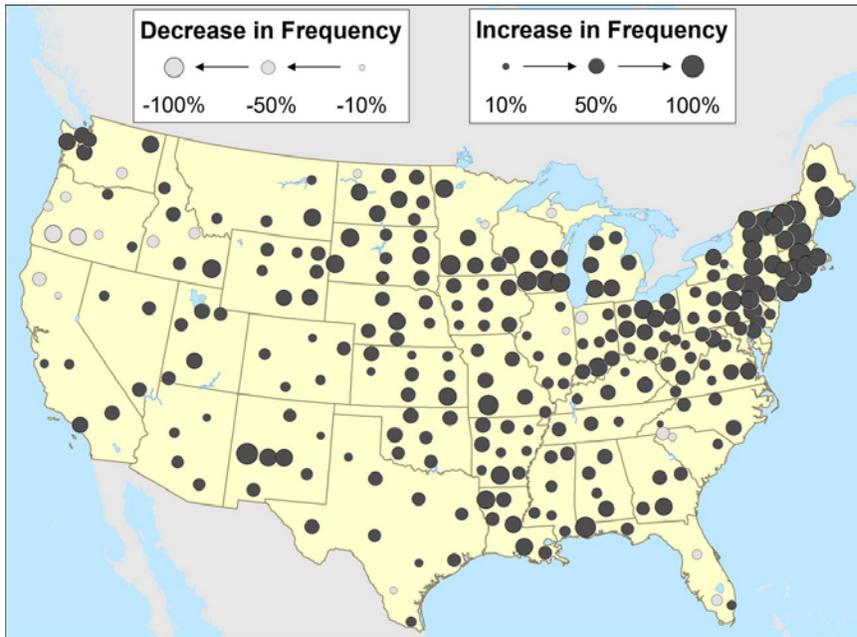
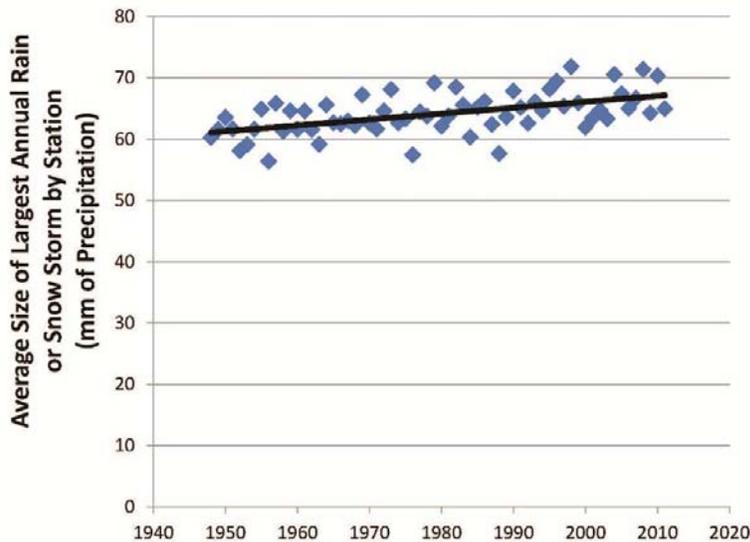


Figure ES-2: The Biggest Storms are Getting Bigger



This new report “**When It Rains It Pours – Global Warming and the Increase in Extreme Precipitation from 1948 to 2011**” can be found at:

<http://www.environmentamerica.org/reports/ame/when-it-rains-it-pours>

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/dcr/watersupply/rainfall/>