

Current Water Conditions in Massachusetts

September 8, 2011



- August precipitation was much above normal
- August streamflows were generally above normal
- August ground-water levels were generally normal and above normal
- August reservoir levels were above normal

Precipitation Conditions

Estimated August state-wide average precipitation is 9.48 inches, which is 251 percent of the long-term average for the month. The regions of Massachusetts received between 329 (West) and 119 percent (Cape and Islands) of average precipitation during August. Several moderate and large rain events were spread over the month of August. August 2011 was the 2nd wettest August in the last 117 years in Massachusetts according to the National Climate Data Center. A table of August 2011 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 August rainfall in Massachusetts.

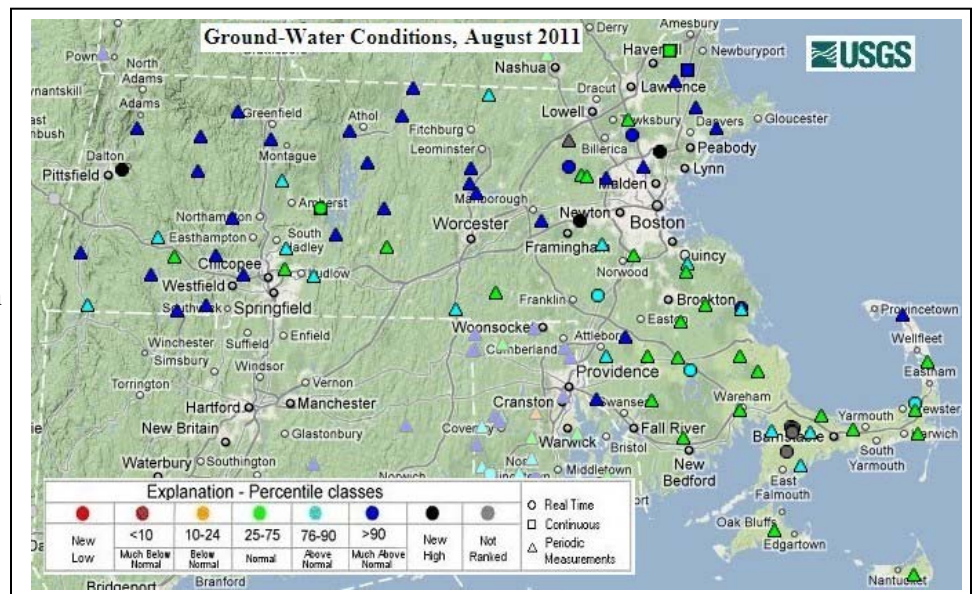
During August 28th Tropical Storm Irene, downgraded from a Hurricane Irene, passed over the western area of Massachusetts. The storm's large wind field caused extensive damage especially to coastal areas of southeastern MA. Beach erosion, minor to moderate marine infrastructure damage, and power outages caused by falling trees were wide spread. Heavy and intense rainfall, of up to 9+ inches in parts of western Massachusetts, caused flooding of many streams and rivers. The Deerfield and Hoosic River Basins were especially hard hit. Flood levels were the highest ever recorded at several stations and several gaging stations were inundated by flood waters. Many roads were washed out and several state roads including Route 2 and I-91 South remain closed.

Ground-Water Levels

Ground-water levels reported by the United States Geological Survey (USGS) at the end of August were generally above normal on the Cape and Islands, southeast, and northeast. Conditions in the rest of the state are unavailable but are most likely normal or above. An assessment of ground-water conditions in the Massachusetts drought regions is shown in a table at the end of this report.

The USGS Groundwater Conditions for the end of August 2011 can be viewed at the web site:

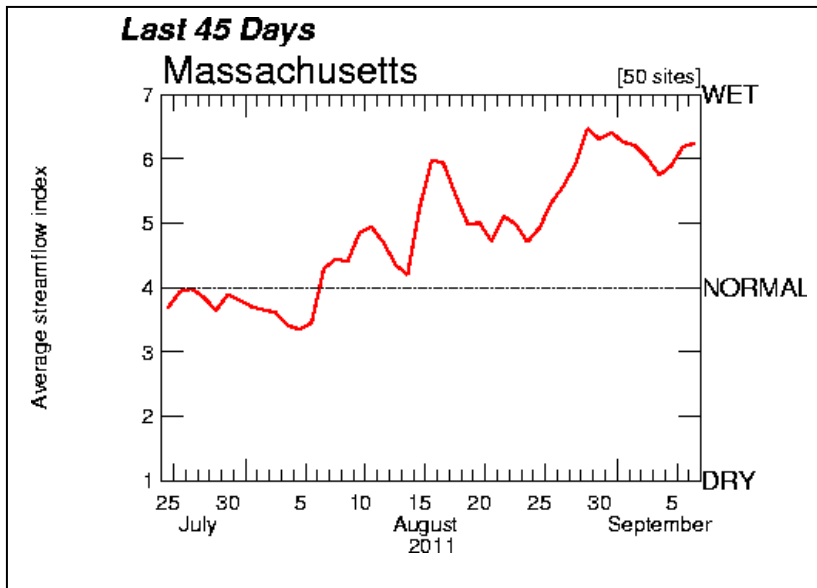
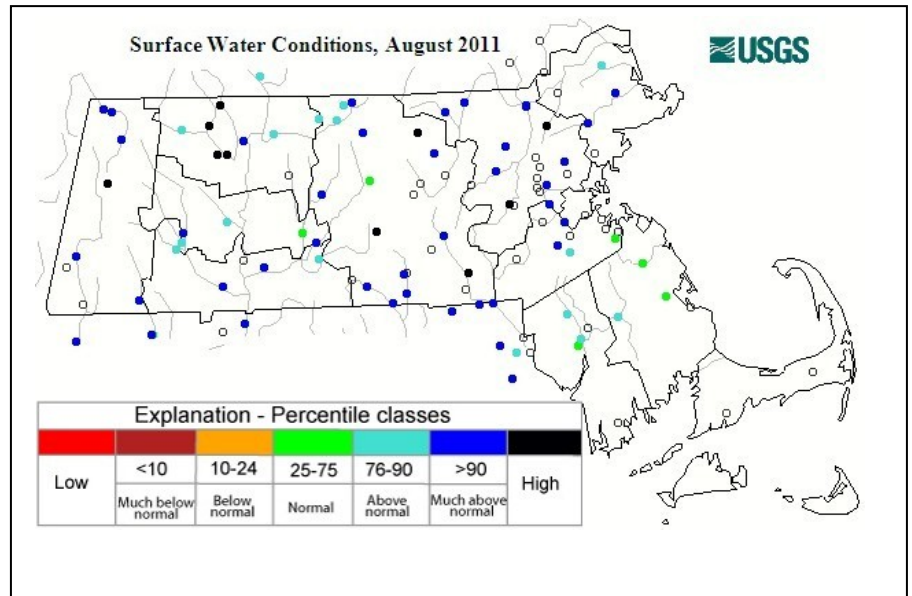
<http://groundwaterwatch.usgs.gov/StateMapsNet.asp?ncd=cm&sc=25>



Streamflow

Average August 2011 streamflows that are monitored by the Commonwealth of Massachusetts and United States Geological Survey (USGS) cooperative stream gaging program were generally normal in the southeast and above to much above normal throughout the rest of the State. As shown in a table at the end of this report MA DCR has listed the drought regions of Massachusetts as having normal, above normal, and no data (Cape Cod and Islands) surface-water conditions for August.

The graph below depicts a composite daily streamflow relative to normal streamflow for Massachusetts for the period of July 25 to September 7, 2011. Slightly below normal flows during the first few days of August rose to normal and continued to generally rise to well above normal by the end of the month and into the first part of September. These above normal streamflows were the as a result of several moderate to large precipitation events during the month. The graph is a composite of 50 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

Surface water reservoir percent-full values for water supply sources provided by water suppliers are listed below. The reservoir percent-full values listed are for the end of August. Reservoirs are generally above normal for this time of year.

August / September 2011 Massachusetts Reservoir Status

Reservoir/City or Town	Percent Full	Reservoir/City or Town	Percent Full
Quabbin	95.9	Beverly/Salem	86.4
Worcester	95.2	Lynn	76.1
Cobble Mt./ Springfield	95.8	Taunton/New Bedford/Assawompsett	92.7

Note: NA Indicates data not available for this report

Drought Indices/Forecasts

US Drought Monitor

The National Drought Mitigation Center's (NDMC's) September 6, 2011 Drought Monitor Map for the United States shown at right indicates no drought conditions in Massachusetts.

Standardized Precipitation Index (SPI)

The Western Regional Climate Center's (Desert Research Institute, University and Community College System of Nevada) Standardized Precipitation Index values for Massachusetts at the end of August were not available as of this date.

Massachusetts SPI values for the drought regions are all normal or wet.

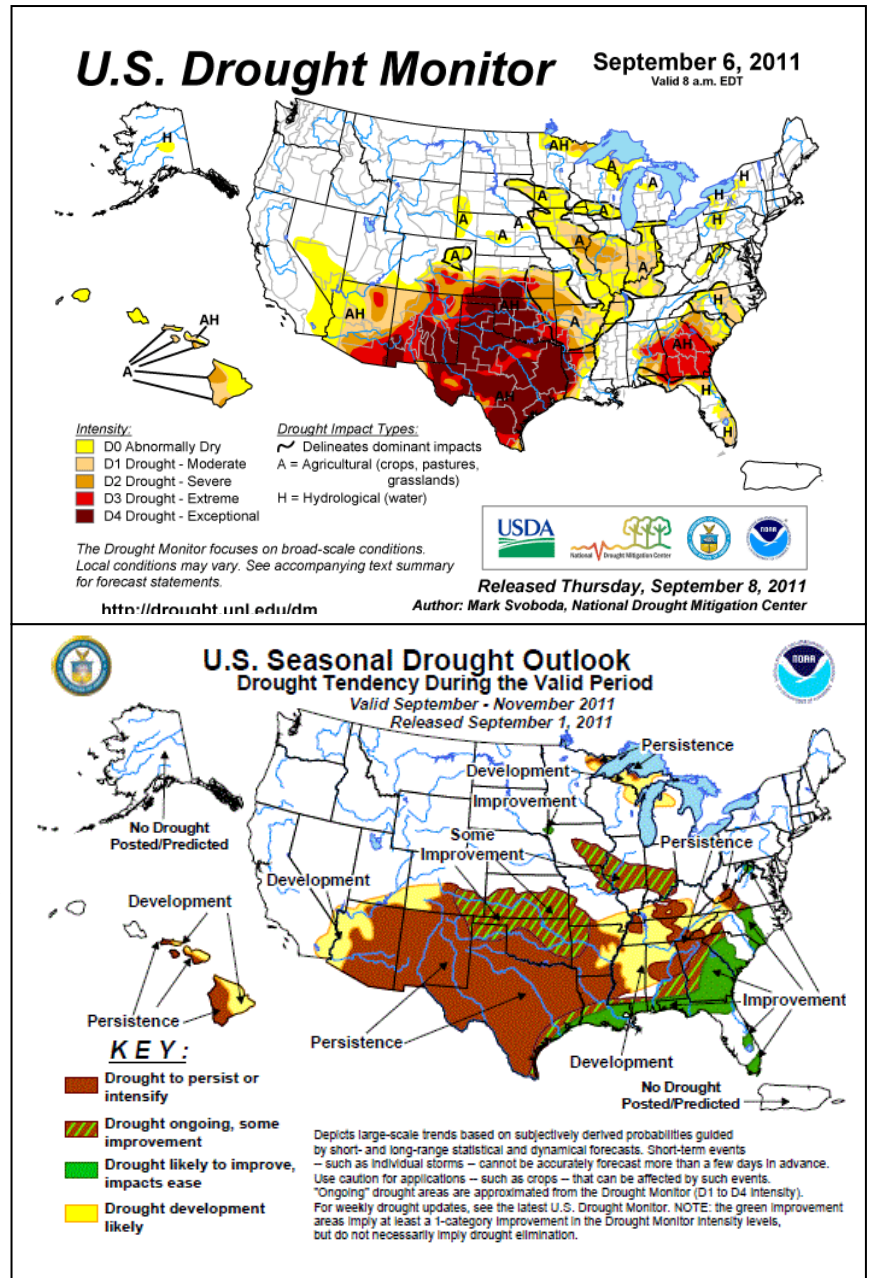
NWS/NOAA's Climate Prediction Center

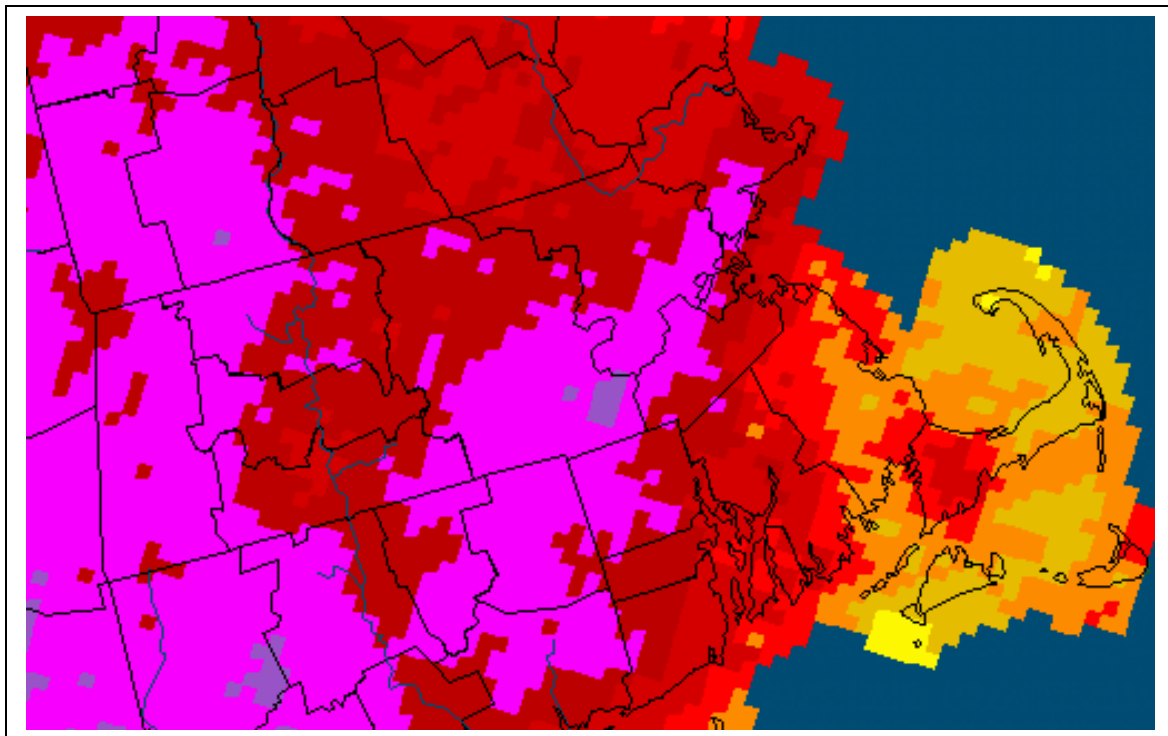
The U.S. Seasonal Drought Outlook dated September 1, 2011, predicts no tendency for drought conditions to develop in Massachusetts through November 2011.

Extended Forecasts

Hurricane Katia is forecast to pass several hundred miles SE of Nantucket generating high surf to exposed coastal areas of MA.

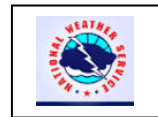
The unsettled rainy conditions today should give way to dryer conditions as a Canadian high moves southward into the area. Remnant low pressure from Tropical Storm Lee may result in a few periods of showers Saturday and Sunday. Warming with a few showers Monday and Tuesday followed by a cold front passage later in the week is forecast. The National Weather Service Climate Prediction Center's extended 6 to 10 day and 8 to 14 day forecasts are for above normal precipitation and normal temperatures. The 1-month forecast is for normal precipitation 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
AUGUST 2011**



GENERAL WATER CONDITIONS IN MASSACHUSETTS - AUGUST 2011
EOEEA and MEMA DROUGHT MANAGEMENT PLAN REGIONS

Massachusetts Regions	Surface-Water Conditions	Ground-Water Conditions
Cape and Islands	ND	Normal
Southeast	Normal	Normal
Northeast	Above Normal	Normal
Central	Above Normal	Much Above Normal
Connecticut River	Above Normal	Much Above Normal
Western	Above Normal	Much Above 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/dcr/watersupply/rainfall/>