

Current Water Conditions in Massachusetts

August 12, 2010



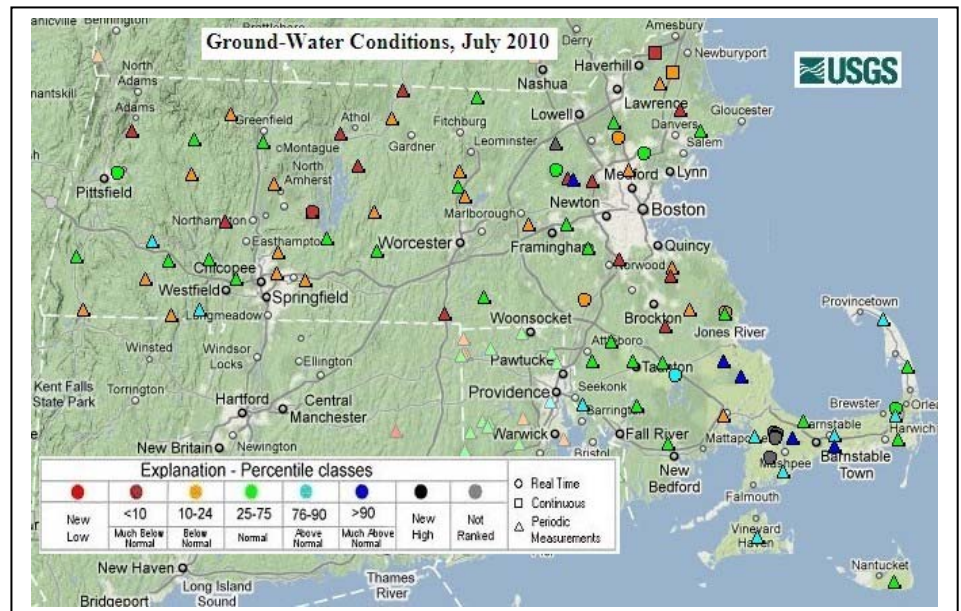
- July precipitation was above normal to below normal
- July streamflows were normal to much below normal
- July ground-water levels were above normal to below normal
- July reservoir levels were near normal and below normal

Precipitation Conditions

July was the 35th driest and 3rd warmest in the last 116 years in Massachusetts and the May-July period was the warmest on record for the Northeast according to the National Climate Data Center. Estimated July state-wide average precipitation was 3.18 inches, which is 87 percent of the long-term average for the month. The regions of Massachusetts received between 119 (Southeast) and 47 percent (Northeast) of average precipitation during July. In general, most rainfall occurred during the later two-thirds of the month as regionally and locally variable convective rainfall events. Rainfall during early August has been generally low ranging from 0.1- to 2- inches. Four months of below normal state-wide rainfall combined with above normal temperatures, has resulted in areas with very low stream flows and low soil moisture conditions. The fire danger index across the State has increased during this period especially in the eastern areas of the State. A table of July 2010 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 total rainfall in Massachusetts and adjacent areas of New England.

Ground-Water Levels

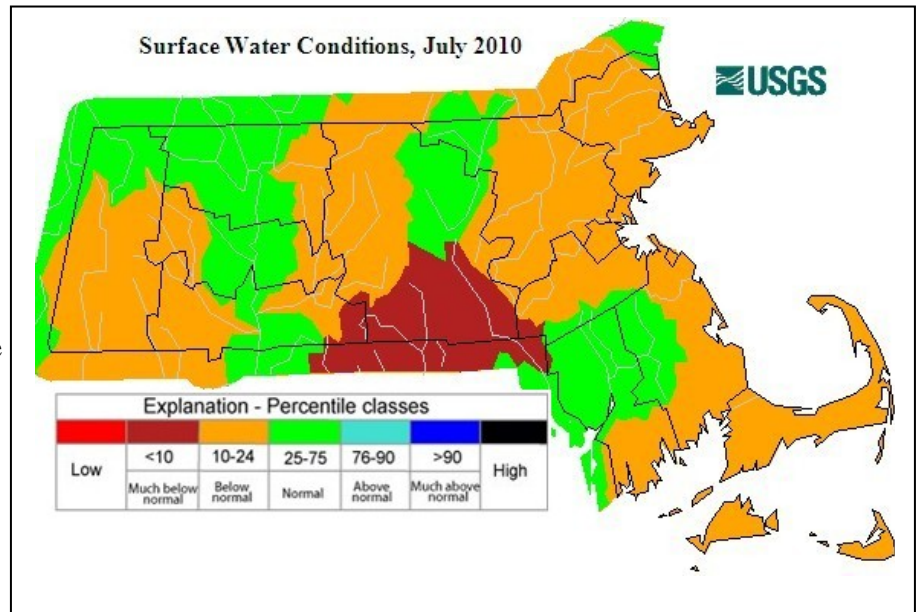
Ground-water levels reported by the United States Geological Survey (USGS) at the end of July were generally below normal across most of the State with the exception of the southeastern area and Cape Cod and the Islands where levels were normal to much above normal. The USGS assessment of ground-water levels is based on 89 wells in Massachusetts with 10 or more years of record. A USGS assessment of Ground-water conditions in the Massachusetts drought regions shows conditions ranging from above normal (Cape and Islands) to below normal and is shown in a table at the end of this report.



The USGS Groundwater Conditions Statement for the end of July 2010 can be viewed at the web site:
http://ma.water.usgs.gov/water_g.htm

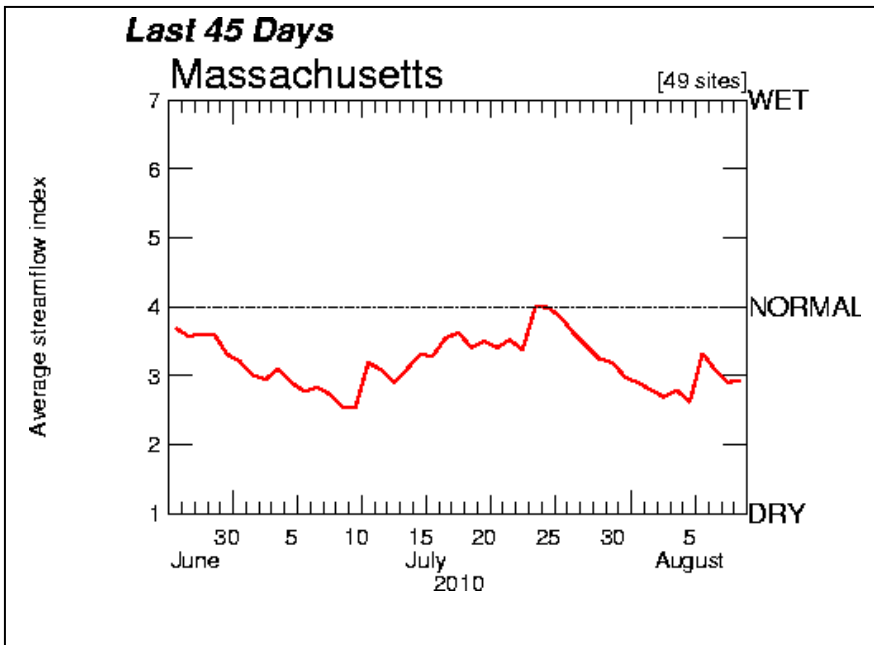
Streamflow

During July 2010, streamflows that are monitored by the Commonwealth of Massachusetts and United States Geological Survey (USGS) cooperative stream gaging program ranged from much below normal to normal. The Blackstone and Quinebaug River basins had much below normal flows. Basins with normal flows included the Connecticut, Deerfield, Hoosic, Nashua, and Taunton. On the map to the right, areas of below normal flow shown on Cape Cod and The Islands, have no data. As shown in a table at the end of this report, the USGS and MA DCR has listed the drought regions of Massachusetts as having below normal, normal, and no data (Cape Cod and islands) surface-water conditions for July.



The graph below depicts a composite daily streamflow relative to normal streamflow for Massachusetts for the period of June 25 to August 9, 2010. During July generally moderately below-normal flows at the beginning of the month declined until July 10th, rose to normal levels on July 24th, and declined toward the end of the month. The graph is a composite of 49 real-time gages across the state with a long period of record.

Additional information on streamflow is available from the USGS web page:
http://ma.water.usgs.gov/water/water_s.htm



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 July. Reservoirs in the Northeast and Central Regions are slightly below normal for this time of year. As of August 9th, 100 water suppliers had initiated water use restrictions in Massachusetts (see attached map).

July / August 2010 Massachusetts Reservoir Status

| Reservoir/City or Town | Percent Full | Reservoir/City or Town | Percent Full |
|-------------------------|--------------|----------------------------------|--------------|
| Quabbin | 95 | Beverly/Salem | 84.1 |
| Worcester | 77 | Lynn | 63.9 |
| Cobble Mt./ Springfield | 71 | Taunton/New Bedford/Assawompsett | 93.3 |

Note: NA Indicates data not available for this report

Drought Indices/Forecasts

US Drought Monitor

The National Drought Mitigation Center's (NDMC's) August 10, 2010, Drought Monitor Map for Massachusetts shown at right indicates abnormally dry conditions for about 70 percent of the State. The SE, Cape and Islands, and extreme NW are near normal.

Standardized Precipitation Index

The Western Regional Climate Center's (Desert Research Institute, University and Community College System of Nevada) 1-, 3-, 6-, and 12-Month Standardized Precipitation Index across Massachusetts at the end of July were moderately dry/normal(east), near normal, moderately wet/very wet, and moderately wet/very wet.

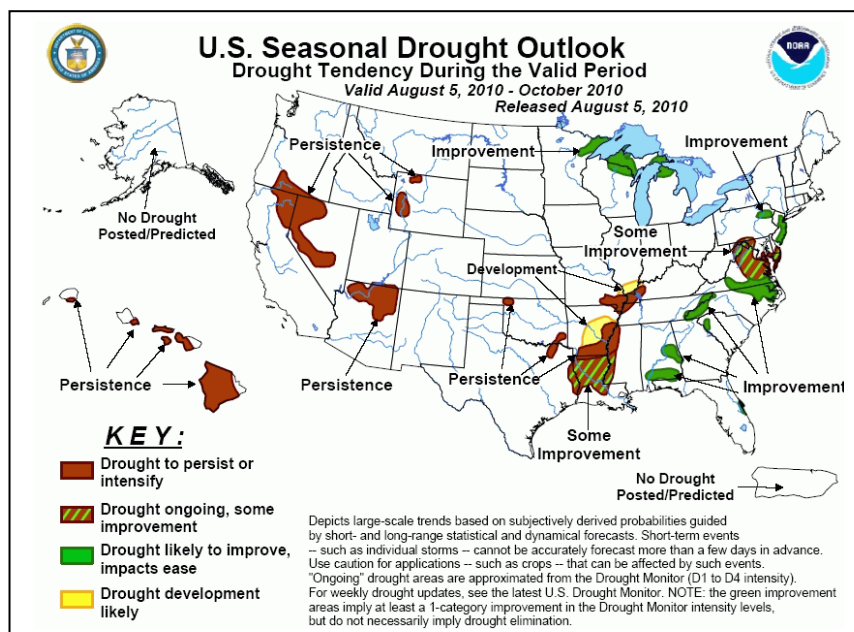
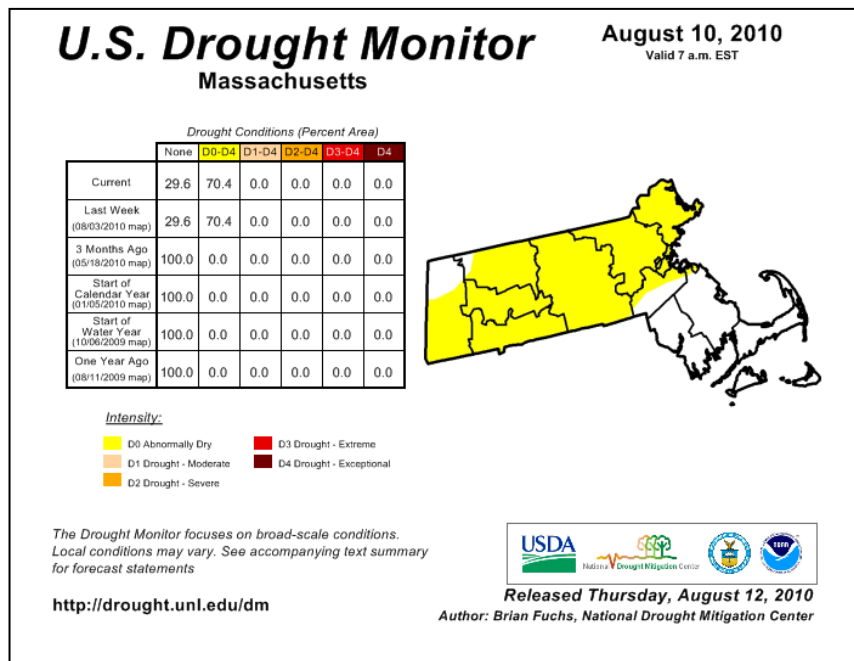
NWS/NOAA's Climate Prediction Center

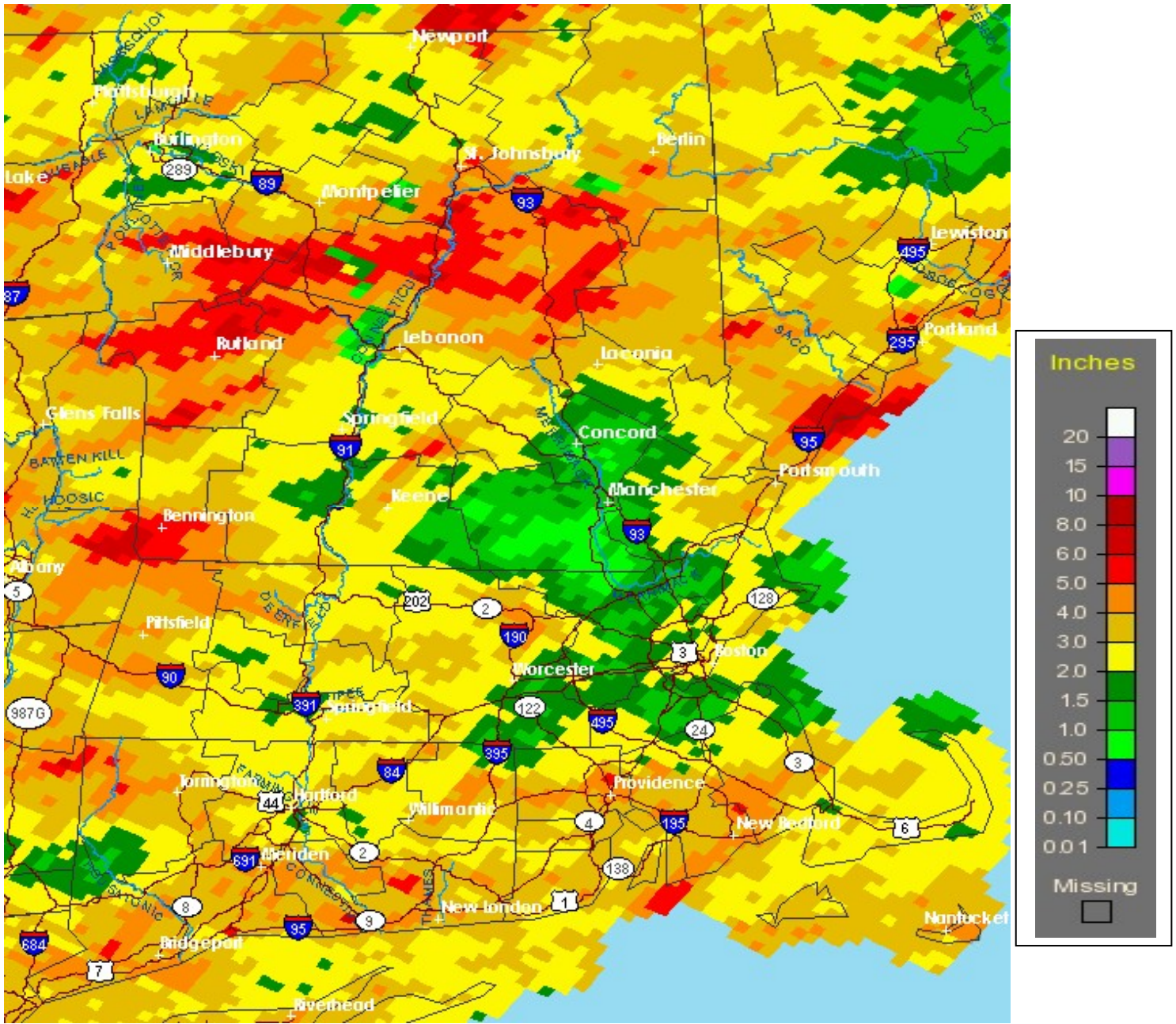
The U.S. Seasonal Drought Outlook dated August 1, 2010, predicts no tendency for drought conditions to develop in Massachusetts through October 2010.

Extended Forecasts

Generally dry, low humidity, and below normal temperatures through Saturday, slightly warmer and more humid weather Sunday is forecast. Showers and thundershowers are forecast for Monday through Wednesday. The National Weather Service Climate Prediction Center's extended 6 to 10-, 8 to 14 day, and 1-month forecasts are for above normal temperatures. The 6 to 10- and 8 to 14 day forecasts are for above normal rainfall. The 1-month forecast is for normal rainfall. The NWS Climate Prediction Information can be found at:

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





http://www.srh.noaa.gov/rfcshare/precip_analysis_new.php

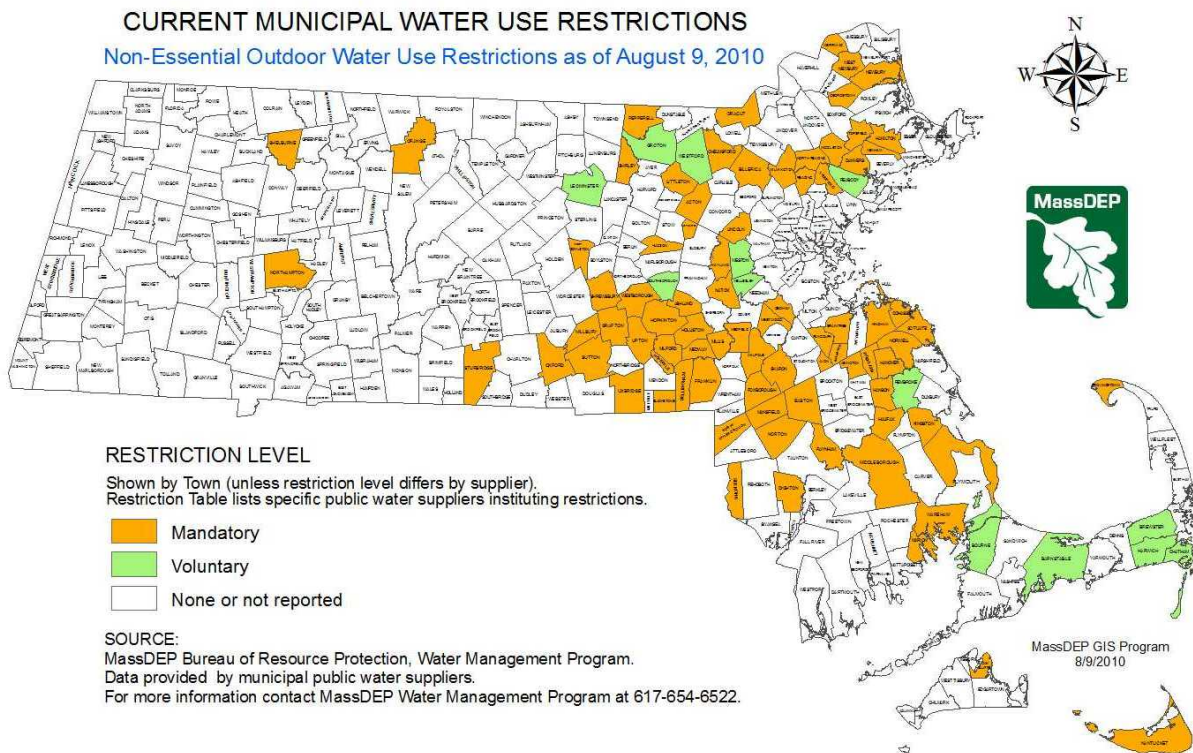
**TOTAL RAINFALL
JULY 2010**



GENERAL WATER CONDITIONS IN MASSACHUSETTS - JULY 2010
EOEEA and MEMA DROUGHT MANAGEMENT PLAN REGIONS

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



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/>