

Current Water Conditions in Massachusetts

November 18, 2010



- October precipitation was above normal
- October streamflows were normal and above normal
- October ground-water levels were normal to above normal
- October reservoir levels were generally below normal

Precipitation Conditions

Estimated October state-wide average precipitation was 6.32 inches, which is 169 percent of the long-term average for the month. The regions of Massachusetts received between 224 (Western) and 129 percent (Northeast) of average precipitation during October. October was the 12th wettest October in the last 116 years in Massachusetts according to the National Climate Data Center. As of November 17 there has generally been 3 to 5 inches of rain which is well above normal for this time of month.

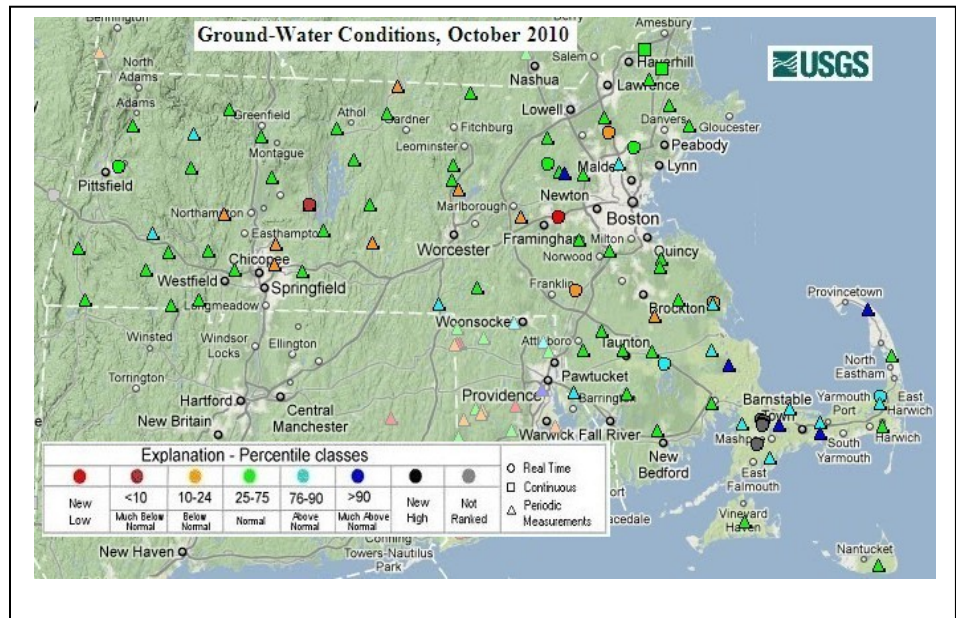
In early November some rivers in western Massachusetts came close to flood stage as a result of heavy rainfall during late October and early November. A table of October 2010 estimated precipitation statistics, based on precipitation data from the Department of Conservation and Recreation and National Weather Service precipitation monitoring networks, is attached. A map at the back of this report shows the distribution of October rainfall in Massachusetts.

Ground-Water Levels

Ground-water levels reported by the United States Geological Survey (USGS) at the end of October were generally above normal on Cape Cod and normal across the rest of the State. This assessment of ground-water levels is based on 89 wells in Massachusetts with 10 or more years of record. 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 October 2010 can be viewed at the web site:

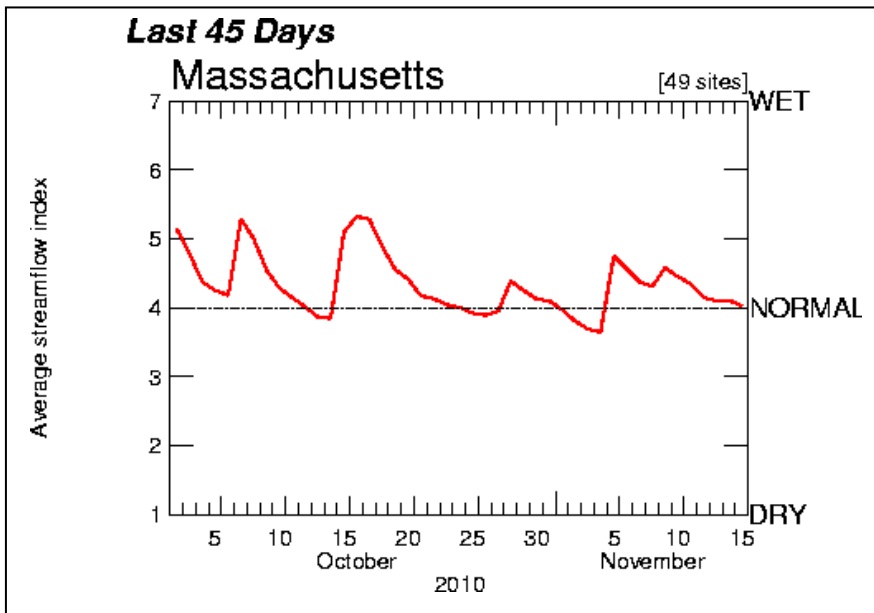
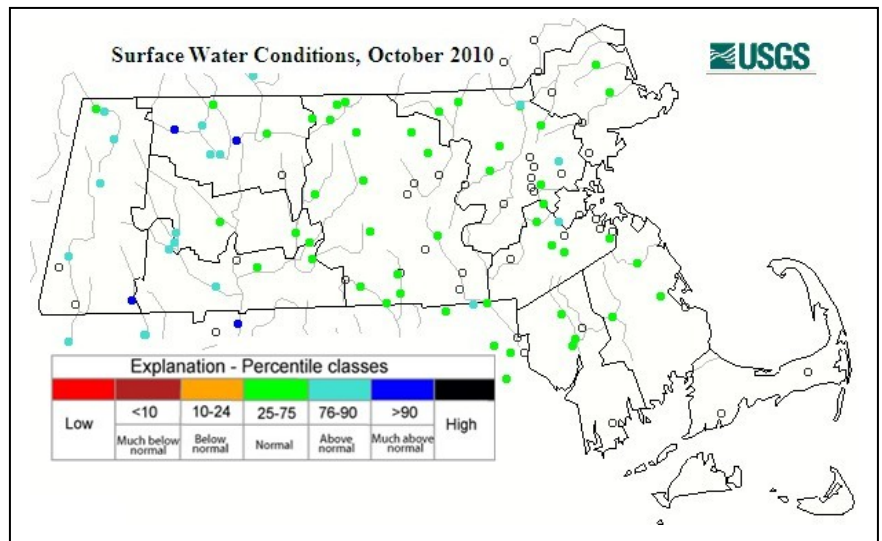
http://ma.water.usgs.gov/water_statement/2010_09/index.html



Streamflow

Average October 2010, streamflows that are monitored by the Commonwealth of Massachusetts and United States Geological Survey (USGS) cooperative stream gaging program ranged from above normal to normal. In general, streams in the Hoosic, Housatonic, and Connecticut Basins in western Massachusetts had above normal flows. Streams in the remainder of the State, in general, had flows in the normal range. Several rivers in western Massachusetts came close to flood stage during the beginning of November as a result of several precipitation events in late October and early November. As shown in a table at the end of this report, MA DCR has listed the drought regions of Massachusetts as having above normal, normal, and no data (Cape Cod and islands) surface-water conditions for October.

The graph below depicts a composite daily streamflow relative to normal streamflow for Massachusetts for the period of October 1 to November 15, 2010. During October, streamflows were generally above-normal. The graph is a composite of 49 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 October. Reservoirs with the exception of Quabbin and Assawompsett are generally below normal for this time of year.

October / November 2010 Massachusetts Reservoir Status

Reservoir/City or Town	Percent Full	Reservoir/City or Town	Percent Full
Quabbin	88.4	Beverly/Salem	69.6
Worcester	61	Lynn	46.8
Cobble Mt./ Springfield	56.5	Taunton/New Bedford/Assawompsett	89

Note: NA Indicates data not available for this report

Drought Indices/Forecasts

US Drought Monitor

The National Drought Mitigation Center's (NDMC's) November 16, 2010, Drought Monitor Map for the United States shown at right indicates no drought conditions in Massachusetts or New England.

Standardized Precipitation Index (SPI)

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 values across Massachusetts at the end of October ranged from normal to very wet. Massachusetts SPI values for the drought regions are all normal.

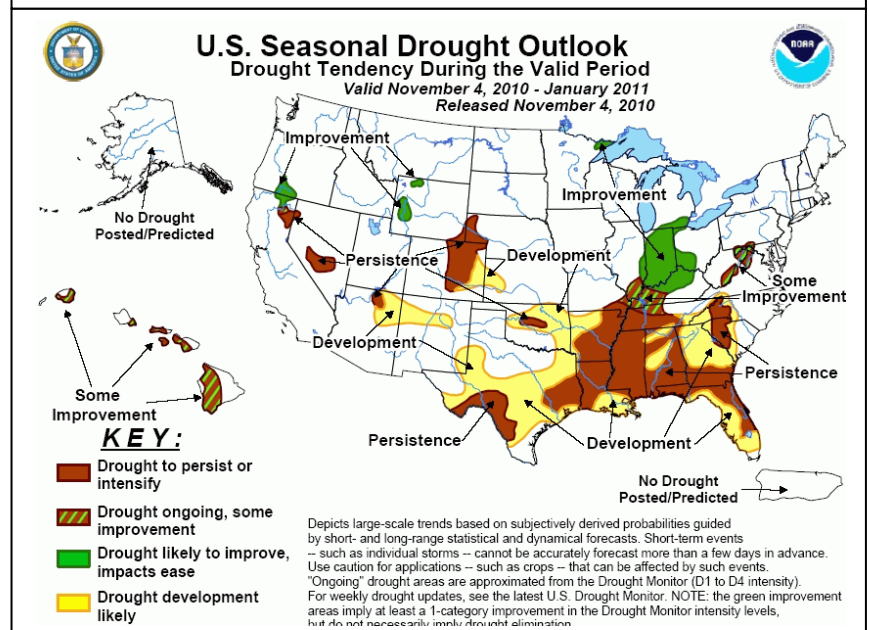
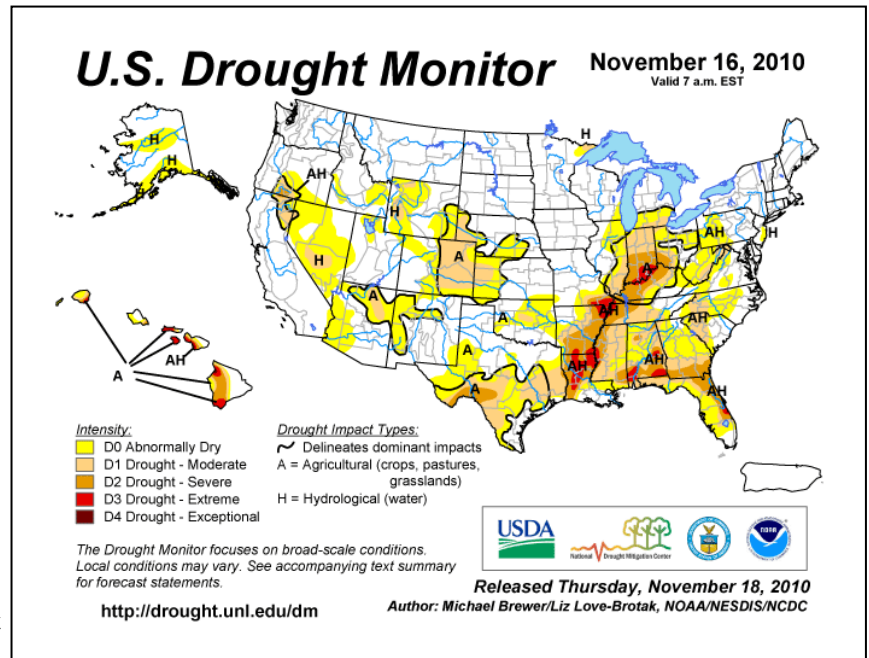
NWS/NOAA's Climate Prediction Center

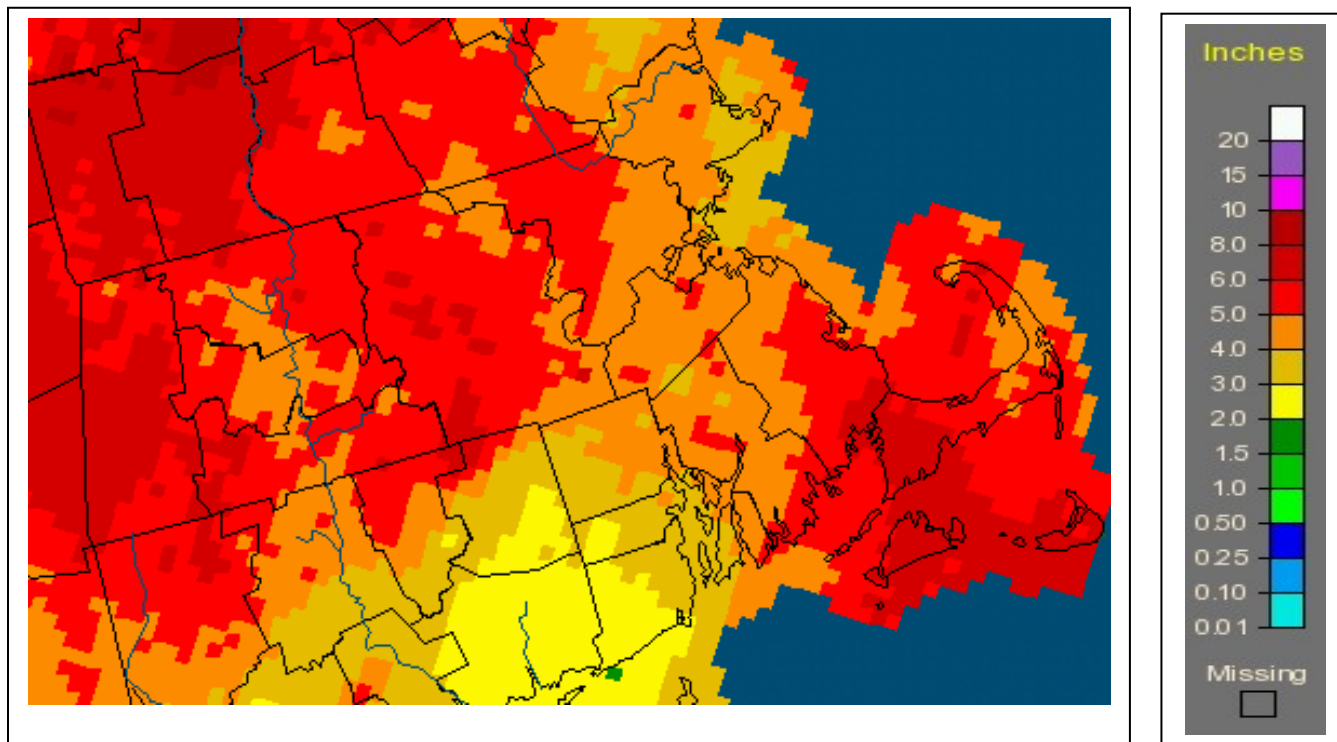
The U.S. Seasonal Drought Outlook dated November 4, 2010, predicts no tendency for drought conditions to develop in Massachusetts through January 2011.

Extended Forecasts

Several weak cold fronts will pass across the State through the weekend bringing progressively cooler temperatures and a slight possibility of a shower. Milder weather is forecast for next week. The National Weather Service Climate Prediction Center's extended 6 to 10 day forecast is for normal rainfall and temperatures. The 8 to 14 day forecast is for above normal rainfall and below normal temperatures. The 1- and 3-month forecasts predict normal conditions. The NWS Climate Prediction Center Information can be found at:

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





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

**TOTAL RAINFALL
OCTOBER 2010**



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

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

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

Weather Ramblings --- Winter Forecast for the Northeast

According to the annual Winter Outlook, released today by [NOAA's Climate Prediction Center](#), a moderate to strong La Niña will be the dominant climate factor influencing weather across most of the U.S. this winter. La Niña is associated with cooler than normal water temperatures in the Equatorial Pacific Ocean, unlike El Niño which is associated with warmer than normal water temperatures. Both of these climate phenomena, which typically occur every 2-5 years, influence weather patterns throughout the world and often lead to extreme weather events. Last winter's El Niño contributed to record-breaking rain and snowfall leading to severe flooding in some parts of the country, with record heat and drought in other parts of the country. Although La Niña is the opposite of El Niño, it also has the potential to bring weather extremes to parts of the nation.

"La Niña is in place and will strengthen and persist through the winter months, giving us a better understanding of what to expect between December and February," said Mike Halpert, deputy director of the Climate Prediction Center – a division of the [National Weather Service](#). "Other climate factors will play a role in the winter weather at times across the country," added Halpert. **"Some of these factors, such as the North Atlantic Oscillation (NAO), are difficult to predict more than one to two weeks in advance. The NAO adds uncertainty to the forecast in the Northeast and Mid-Atlantic portions of the country."**

Winter Forecast for the Northeast:

- **Northeast and Mid-Atlantic:** equal chances for above-, near-, or below-normal temperatures and precipitation. Winter weather for these regions is often driven not by La Niña but by weather patterns over the northern Atlantic Ocean and Arctic. These are often more short-term, and are generally predictable only a week or so in advance. If enough cold air and moisture are in place, areas north of the Ohio Valley and into the Northeast could see above-average snow;

This seasonal outlook does not project where and when snowstorms may hit or total seasonal snowfall accumulations. Snow forecasts are dependent upon winter storms, which are generally not predictable more than several days in advance.

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/>