

Massachusetts Drought Management Task Force – Meeting Summary

August 11, 2016, 100 Cambridge Street, 2nd floor, Room B

Attendees:

Julia Blatt, Mass Rivers Alliance	David Celino, DCR	Mike Russas, MEMA
Gabrielle Queenan, Mass Rivers Alliance	Jennifer Pederson, MWWA	Christine Packard, MEMA
Alison Field-Juma, OARS	Steve Brown, WBUR	Erin Graham, DCR
John Gregoire, MWRA	Gardner Bent, USGS	Adam Kautza, DFG
Margaret Van Deusen, CRWA	Roy Socolow, USGS	Caroline Higley, ANF
Ivey St. John, Charlestown Waterfront Coalition	Hirak Shah, Office of Senator Bruce Tarr	Aaron Beitman, ANF
Richard Verdi, USGS	Evan Dombrowski, Office of Senator Bruce Tarr	Bob Zimmerman, CRWA
Gardner Bent, USGS	Trisha Thadani, Boston Globe	Lexi Dewey, WSCAC
Brad Avery, MetroWest Daily News	Peter Lorenz, EEA	Trevor Battle, MDAR
Becky Weidman, MassDEP	Anne Carroll, DCR	Kate Adams, DPH
Robert Lowell, DCR	Vandana Rao, EEA	Michelle Craddock, DFG
Michele Drury, DCR	Daniel Sieger, EEA	Marilyn McCrory, DCR
Edward Capone, NOAA, NWS, Northeast River Forecast Center	Todd A Melanson, Chelmsford Water District	Katie Gronendyke, EEA
Alan Dunham, NOAA/NWA/Taunton Forecast Office	Chris Roberson, The Bulletin Newspapers	Colin Young, State House News Service
Leo Roy, DCR	Todd Richards, DFW	Doug Cope, WBZ Radio
Mike Deehan, WGBH	Beth Card, MassDEP	Duane LeVangie, MassDEP

Opening Remarks

- Rao and Packard opened the meeting at 10:00 and asked meeting attendees to introduce themselves.
- The minutes of July 7, 2016 were adopted.

Updates on Current Conditions and Impacts from Members of the Task Force

Current Hydrologic Conditions - DCR Office of Water Resources, Jonathan Yeo and Anne Carroll

- Precipitation Normal and SPI: Lower than normal rainfall across much of the state. Overall, the SPI for the Connecticut River and Northeast regions is at Advisory, and is Watch for the Central region. The Percent Normal Index is at Advisory for the Cape Cod & Islands and Southeast Regions, and Watch for the Central, Connecticut River, and Northeast regions.
- Reservoirs: The West, Connecticut, and Cape Cod & Islands regions are normal; the Central, Northeast, and Southeast regions are well below normal at the watch level.
- Streamflow: Below normal at the Watch level for all regions except the Cape & Islands where it is not applicable.
- Groundwater: Levels are low across the state, except the Cape. However, even on the Cape some wells are low and low-normal. The Central, Connecticut River, Northeast, and Western regions are at Watch; the Southeast region is at Advisory; and the Cape Cod & Islands is at Normal.

- Crop Moisture Index: As of July 30th, much of the state is Excessively Dry.
- Keetch-Byram Drought Index: Overall, the Keetch Byram Index is still elevated.

Streamflow and Groundwater Conditions in Massachusetts- USGS, Richard Verdi

- Streamflow has been below normal except on the Cape. Overall for May 1-Aug 1 New England has been extremely dry and the streamflows have been below normal.
- Looking at four representative streams in Massachusetts, the Ipswich, the Wading, the North, and the Westfield, the average monthly streamflows have been significantly below normal. The rivers in July are at low flows not normally seen until September and October. In addition, the Nashua River is extremely low.
- Groundwater conditions: The real-time and monthly-read wells are significantly below normal, although the Cape is still normal or on the low side of normal.

Weather- National Weather Service Update, Alan Dunham

- The Drought Monitor as of August 9th has parts of Middlesex, and a small portion of Essex and Norfolk counties in D3, Extreme Drought. This is the first time since the Drought Monitor was first published in 2000 that NWS staff can remember that there were D3 conditions in Massachusetts.
- Crop Moisture Index in late July is showing abnormally dry for most of Massachusetts except for the West, and Excessively Dry for the Eastern part of Massachusetts.
- Through August 10th, the Berkshires have had the most rainfall. However, the northeast portion of the state has had very little rain.
- The forecast for the next 7 days is for 1-2" of rain. The 6-10 day forecast and the August 17th-23rd forecasts have well above temperatures, but uncertainty about the precipitation outlook.
- The CPC 1-month and 3-month outlook show above normal temperatures with normal precipitation.
- Drought outlook for July 21- October does not show improvement; hurricane outlook is average activity.

Water Supply

Massachusetts Department Environmental Protection-Water Management Act (WMA), Duane LeVangie

- WMA permits have nonessential outdoor water use restrictions with drought level triggers.
- Water suppliers may implement restrictions that are more stringent than MassDEP's requirements.
- 53 suppliers have instituted mandatory restrictions 1 day or less water restrictions (no watering or hand watering only); some systems are doing mandatory restrictions.
- 182 permitted water suppliers potentially subject to conditions, 99 of them have conditions requiring triggered water use restrictions; most triggered by a drought status level of Advisory or higher.
- MassDEP reached out to communities to review permit conditions, ensure they are following the permits, and be notified of permit restrictions that have been implemented. Compliance has been very good.
- No one has asked for emergency declaration or to buy from another supplier.

Massachusetts Water Works Association, Jennifer Pederson

- Some registered-only systems like Leominster have restrictions in place.
- The Cape and Western regions have reported that they are in good shape.
- Some suppliers had a hard time enforcing restrictions; many have gone above and beyond requirements.

Massachusetts Water Resources Authority, John Gregoire

- Quabbin is at 88% full - level is below the 25-yr average, but still within the normal band; Wachusett Reservoir is at a normal level because of transfers from Quabbin.
- At the current demand of 200 MGD, there is enough water for 4.9 years.
- If conditions are dry (75% percentile) where we are now, the Quabbin still would remain normal for the next year; nonetheless, the MWRA is still asking customers to use water wisely and to conserve as needed.

There was no representative from the Department of Public Utilities.

Environmental

Massachusetts Department of Environmental Protection- Wetlands Protection, Tom Maguire

- Several organizations have been contacted including the Massachusetts Association of Conservation Commissioners and the Massachusetts Wetland Scientists to let them know about the limitations on observations to overcome the Riverfront Area under the Rivers Protection Act.
- Have heard from a group in the Ipswich that streams are very low.

Department of Fish and Game- Fisheries, Todd Richards

- Despite groundwater conditions on the Cape, the smaller streams are very low.
- Would like a subcommittee to look at exempt activities and response actions so that endangered species may be better protected. A temporary water withdrawal pump in the last pool of a reach stream was observed.

Department of Fish and Game- Division of Ecological Restoration, Michelle Craddock

- Smaller headwater streams have dried a lot earlier than normal so they will be dry for a longer period of time than in the past.

Agricultural- Department of Agricultural Resources, Trevor Battle

- Conditions have deteriorated; irrigation ponds are lower; farmers are spending a lot of effort on irrigation.
- UMass conducted survey of farmers, which is due Aug. 19th. Preliminary findings are crop losses are $\geq 30\%$.
- Cranberry growers were contacted in response to a question at the last meeting. They are worried that cranberry fruit size will be small if conditions don't improve, but because the cranberry harvest is later in the season; there is still time for improvement if the weather pattern changes.

Fire Danger- Department of Conservation and Recreation Bureau Forest Fire Control, David Celino

- Drought has long-term impacts on fire danger: there are ground fuels in first 8" of soil profile.
- Short-term: Low dew points haven't been an issue; but there is an increase of dead fuels as the herbaceous and grass fuels have died off.
- There has been a steady occurrence of fires. Over the last week there have been 3-5 fires daily in northeast even though relative humidity is only 40-45%, which is telling of the fuel conditions.
- There have been 1,330 wildland fires so far this year.

Engineering/Infrastructure- Department of Conservation and Recreation- Engineering, Robert Lowell

- Both the Charles and the Mystic River basin depths are in the middle of their normal operating range enabling recreation to continue. The flow over the Moody dam is low, and the level at the Upper Mystic Dam is 1" below the spillway, which isn't unusual for summer conditions.

Public Health- Department of Public Health, Kate Adams: Nothing to add at this point.

Discussion of Drought Level Recommendations

- Cape Cod & Islands Region: Low precipitation numbers, some reports of low stream flow, and forest fire danger. Groundwater overall ok, but some wells starting to get low. Crop Moisture Index has not rebounded in this region, but lower Cape has received rain. It might be better to err on the side of caution, and to have a consistent message with the Drought Monitor. Two Massachusetts Drought Plan indices have tripped Watch and one has tripped Advisory. The consensus was the Advisory level.
- West Region: There is low groundwater and low streamflow, while precipitation was normal. There was discussion about going to a Watch given the conditions of the streams since the hydrologic conditions are weighed more heavily when coming out of a drought. In addition, the river gages provide better spatiality than the precipitation stations. At the end of the discussion, the consensus was to go to Advisory level.
- Connecticut Region: Groundwater, streamflow, crop moisture, and Keetch-Byram have all moved from Advisory to Watch. There was a consensus to go to a Watch level.
- Central Region: Crop Moisture and groundwater have gone to the Watch level. There was some concern that severity of the drought isn't being considered enough. Streamflow is approaching record lows, but we don't have a way to capture that in the "below normal" drought plan index nor is waiting so many consecutive months when streams are already dry. A Warning level should be considered to reflect the Drought Monitor and other local information of dry streams. There was discussion that the streamflow index should be at Warning given that some are approaching record lows. There was debate whether the region as a whole should go to a Watch or a Warning level. Many recommended a Warning level.
- Northeast: Similar to the discussion about the Central Region given the deteriorating conditions, there was discussion to go from Advisory to Watch level, with streamflow at the Warning level. However, with streamflow conditions moving from moderate drought to severe drought, there was debate whether the region as a whole should go to a Watch or a Warning level. Many recommended a Warning level.
- Southeast Region: Precipitation was not bad. There was consensus to go from Advisory to a Watch level.
- Rao and Sieger said these points will be taken under advisement for internal discussions and for Secretary Beaton to consider.

Recommendations for Drought Level Response Actions

- MEMA has relationships with municipalities, which in turn have systems to get the word out. In addition, MEMA can have DOT do messaging on highways and well as Clear Channel do messaging on bill boards.
- EEA will assemble a smaller group of agencies to reach out to various agricultural and water supply users. EEA will continue to coordinate with the governor's office.
- The DCR Bureau of Fire Control will coordinate with the State Fire Marshall.

Next Steps- Subcommittees

- Report back next month on expanding the reservoir list
- Need to continue to look at drought indices and the Rivers Protection Act.

The next meeting is September 8, 2016 at 10:00.

The meeting was adjourned at 12:10.