

Massachusetts Drought Management Task Force – Meeting Summary

October 5, 2016, 100 Cambridge Street, 2nd floor, Room B & C

Attendees:

Vandana Rao, EEA	Alan Dunham, NWS	Viki Zoltay, DCR
Liz Walk, Office of Representative Dykema	Adam Kautza, DFW	Jennifer Pederson, MWWA
Steve Brown, WBUR	John Gregoire, MWRA	Lexi Dewey, WSCAC
Duane LeVangie, MassDEP	Beth Card, MassDEP	John Lebeaux, MDAR
Anne Carroll, DCR	Jonathan Yeo, DCR	Dave Celino, DCR
Vanessa Curran, DCR	Julia Blatt, Mass Rivers Alliance	Gardner Bent, USGS
Margaret Van Deusen, CRWA	Alison Field-Juma, OARS	Veronica Eady, CLF
Gabby Queenan, Mass Rivers Alliance	Stephen Boksanski, Irrigation Association NE	Thomas Maguire, MassDEP Wetlands
Michelle Craddock, DFG/DER	Catherine deRonde, MDAR	Antonio Caban, State House News Service
Kate Adams, DPH	Wayne Castonguay, IRWA	Brian Wick, CCCGA
Pine duBois, JRWA	Michael Celona, DPH	

Introductions and Update on Drought Response Actions

- Rao called the meeting to order at 1:09 pm.
- EEA has set up a separate drought webpage at <http://www.mass.gov/eea/drought/>. Water conservation/drought-related messaging is appearing on electronic billboards on major roadways. The interagency coordination between EEA and MEMA is active and aggressive.
- Meeting attendees were asked to introduce themselves.

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

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

- Some parameters improved and some worsened from the prior month.
- Precipitation Normal and SPI: Below normal rainfall across the state. Many regions are into 3-6 month deficits. The Northeast is the epicenter of the drought. Overall, the SPI for the Cape & Islands is at Advisory, the Connecticut River, Central, and Southeast regions are at Watch, and the Northeast is at Warning. The Percent of Normal Index is at Watch for the Cape & Islands, Central, and Connecticut River regions, at Warning for the Southeast, and at Emergency for the Northeast region. Both parameters were in the Normal range for the Western region.
- Reservoirs: the Central, Northeast, and Southeast regions are at the Watch level. The Northeast and Central regions each have at least one reservoir at 2 standard deviations below normal.
- Streamflow: Very poor conditions, many streams are at the 10th percentile and below. There are many record low flows. All regions are at the Warning level except the West where it is at Watch and the Cape & Islands where it is not applicable.
- Groundwater: Levels are low across the state, except for some parts of the Cape which are ok, and Nantucket is in good shape. The Central, Connecticut River, Northeast, and Western regions are at

Warning; the Southeast region is at Watch; and the Cape & Islands is at Normal. Record lows in some regions.

- Crop Moisture Index: some improvement from the previous week (some of early October's rainfall is included in the index).
- Keetch-Byram Drought Index (Dave Celino, DCR Fire Control): The Cape & Islands improved. KBDI should continue to stabilize/improve due to lower fall temperatures.
- The U.S. Drought Monitor from September 27, 2016 showed the Northeast and Southeast, most of the Central, and part of the Connecticut River regions in extreme drought conditions.

Adoption of September 8, 2016 Meeting Minutes

- There was a motion made and seconded to adopt the minutes of September 8, 2016.

Weather- National Weather Service Update, Alan Dunham

- The Southeast region benefited most from the rain on 10/1 and 10/2. Totals outside Route 495 dropped considerably.
- The 30 day and 60 day percent of normal did not improve. The 90 day values are running between 50 and 70 percent of normal.
- The Drought Monitor did not change much and he is not anticipating any real changes in the near future.
- The Palmer drought index as of 9/24 is showing moderate drought. It would take 9-12 inches of rainfall to bring it to normal conditions.
- The 6-10 day outlook had been showing above normal temps and precip. The 8-14 day outlook had been showing normal precip. These forecasts included the possibility of Hurricane Matthew bringing rain to MA. Both the October outlook and the October-December outlook show equal chances for above or below normal precip.
- The Drought outlook for October through December shows some improvement for the Cape and Southeast regions but the drought may persist through December.
- The current forecast for Hurricane Matthew shows it going out to sea but there is still some uncertainty.
- Without the impacts of Matthew, less than 0.1 inches of rain is forecast for the next 7 days. The 6-10 day forecast shows barely normal precip and the 8-14 day forecast shows below normal precip.

Streamflow and Groundwater Conditions in Massachusetts- USGS, Gardner Bent

- Streamflow is below normal for the whole state. The Nashua River is at extreme lows (1% of normal).
- In August there was relief in the northwest part of the state/the Connecticut River and the rest of the state was low. In September the northwest part of the state was again at the lower percentiles (5%).
- Looking at four representative rivers in Massachusetts,
 - the Ipswich – at new record lows, below 1 cfs (cubic feet per second)
 - the Wading – there are 90 years of data, now at new record lows
 - the Quaboag – approaching record lows
 - the Housatonic – not as bad as others, there was some relief in August. In the very low range but not record lows
- Groundwater conditions: levels are in the lower percentiles, September conditions almost identical to August. Looking at some representative wells:
 - Haverhill – approaching a record low

- Lakeville – in the lowest 5%
- Pittsfield – not as low (10-24%)
- The Ipswich River is lower now than it was during the 1960's drought.
- It will take several months of above average rainfall to bring groundwater levels back up. Under normal precip conditions it will take time to recharge groundwater. There should be some bounce back after October (and the evapotranspiration season) ends.

Water Supply

Massachusetts Department Environmental Protection – Beth Card and Duane Levangie

- DEP has been reaching out to, communicating and coordinating with water suppliers. After each Drought Management Task Force meeting, DEP sends mailings to public water suppliers. The suppliers are doing well with requiring and implementing water use restrictions, which have been showing results.
- In cases where there are concerns about having enough water to meet needs, some emergency declarations have been issued. Water suppliers may need to get water from other towns, draw more from their existing sources, or connect to MWRA.
- After 9/30 systems are not required by permits to continue water use restrictions but DEP is encouraging them to do so.
- There are currently 184 systems with outdoor water use restrictions.
- 5 systems (Ashland, Plymouth, Ipswich, Foxborough, and Burlington) have requested emergency declarations. This triggers an immediate ban on non-essential water use and systems must report on notification and implementation measures.
- Scituate was highlighted as a system taking many actions to reduce water usage. Water use during the last ten days of August was down near wintertime usage levels.

Massachusetts Water Resources Authority, John Gregoire

- The Quabbin is 82.5% full - about a 5 year supply. Levels are hovering near below normal but are not there yet.
- Yield modeling indicates a drought warning is 24 months away.
- Wachusett Reservoir is kept in its operating range by transferring water from the Quabbin.
- MWRA is still encouraging conservation.

Massachusetts Water Works Association, Jennifer Pederson

- Has not heard too much lately from her systems.
- Some wear and tear on equipment from meeting demands.
- Systems are opting to continue restrictions beyond 9/30.
- Rao asked about Worcester. Pederson said they are at 50% capacity and there are no water quality issues.
- Pederson commended the state for all the information being put out about the drought.

There was no representative from the Department of Public Utilities.

Environmental

Department of Fish and Game- Division of Fisheries and Wildlife, Adam Kautza

- There are two concerns
 - First, fish are becoming concentrated in areas with remaining water and dying as those areas dry up. Permanent water bodies are drying up.
 - Secondly, fall is the time for spawning for multiple species including brown and brook trout. Spawning typically occurs in small groundwater-fed streams, many of which are dry. So the drought is not only affecting fish this year, but will affect future years if there isn't much reproduction this year.

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

- Martin's Brook is an example of a very dry headwater stream.
- Stocking of fish in streams will be curtailed due to low flows.
- Many herring runs have large dry sections.

Massachusetts Department of Environmental Protection- Wetlands Protection, Tom Maguire

- Replicated wetlands that were constructed through the spring are experiencing water stress. Some of these are being irrigated in the short term. Permits require DEP to be notified of irrigation. This may need to be addressed in the future.

Agricultural- Department of Agricultural Resources, John Lebeaux

- All crops in all of MA are experiencing impacts and losses.
- DAR's message is for consumers to take advantage of crops at farmer's markets. There is great variability of products across farms.
- Two of the leading sectors are greenhouse nurseries and food production. For food crops, once the product is at market the need for water ends. For greenhouse products, the consumer still needs access to water after purchase which is causing a disincentive to buy these products.
- Cranberries, the largest food crop, need water for harvest and also for frost protection. There are concerns about having enough water for both. The berries are small this year so more are needed to make a barrel. Bogs with water conserving technology (drip irrigation, tail water reclamation) are doing best.
- DAR has a farm-specific page related to drought on its website, including information on resources for farmers and the emergency loan program for farms impacted by the drought.

There was no representative from DCR Engineering.

Public Health- Department of Public Health, Michael Celona

- Local health updates: DPH Commissioner Monica Bharel provided drought updates via conference call to local boards of health. The Office of Local and Regional Health sent a newsletter to all local health departments with drought information and links.
- Cyanobacteria: This year there were 18 advisories at 12 waterbodies. The previous 3 years averaged 19 advisories at 16 waterbodies. There are 4 advisories in place: the Charles River, Lake Chauncy in Westborough, West Monponsett Pond in Halifax/Hanson, and Wampatuck Pond in Hanson. After October 1st there could be another one or two blooms; they are less common in the fall.

Discussion of Drought Level Recommendations

- West Region: Current level is Advisory. Groundwater remained at and streamflow increased to the Warning level, while precipitation remained normal. KBDI remained at Watch. Recommendation: Increase level to Watch.
- Connecticut River Region: Current level is Watch. Groundwater and streamflow increased to Warning, while KBDI and precipitation remained at Watch. Crop moisture decreased to Advisory based on recent rain. Recommendation: Increase level to Warning.
- Central Region: Current level is Warning. Groundwater and KBDI increased to Warning, while precipitation increased to Watch. Crop Moisture decreased to Advisory. Recommendation: Remain at Warning.
- Northeast: Current level is Warning. Crop moisture and KBDI improved from Warning to Watch, while Groundwater and SPI increased to Warning, and Precipitation % of Normal moved to Emergency. Initial proposal was to keep at Warning. There was discussion by members of the public to go from Warning to the Emergency level. It was suggested that a subregion of Essex and Middlesex counties change to Emergency. Until an Emergency is declared there is not much action on the ground. The poor outlook also weighed into the request for Emergency status. However the Drought Management Plan is not predictive and is meant to address what has happened, not what may. On the other hand, Emergency status would provide more tools to conserve the water. There was concern about sending the wrong message about water supply which is doing okay though environmental conditions are not good. The Task Force's consensus was to remain at Warning but several members of the audience felt strongly about moving to Emergency. Rao will relay the discussion and audience comments to Secretary Beaton.
- Southeast Region: Current level is Warning. 5 indicators are at Watch and 2 are at Warning, which is the same as the prior month. Recommendation: Remain at Warning.
- Cape Cod & Islands Region: Current level is Watch. Conditions improved a bit with SPI and KBDI decreasing to Advisory and Crop Moisture decreasing to Watch. The initial proposal was to drop from Watch to Advisory. It was suggested to keep the level where it is to avoid changing the levels around too much until things improve further.
- Rao said these points will be taken under advisement for Secretary Beaton to consider.

Recommendations for Drought Level Response Actions

- Attendees were asked to review the Drought Management Plan and provide specific feedback on what changes they would like to see in the plan.

The meeting was adjourned.