

Massachusetts Drought Management Task Force – Meeting Summary
September 7, 2022 1:00 p.m. – 3:30 p.m. conducted remotely via Zoom

Attendees:

Vandana Rao, EEA (co-chair)	Kim Kastens, Green Action	Sara Zalieckas, MEMA (co-chair)
Anne Carroll, DCR - OWR	Lexi Dewey, WSCAC	Julie Blatt, Mass Rivers Alliance
Sara Cohen, DCR	Erin Graham, DCR - OWR	Viki Zoltay, DCR
Gardner Bent, U.S. Geological Survey	Vanessa Curran, DCR - OWR	Meg Blanchet, DPH
Britt Westergard – NWS Albany, NY	Elise Tarnauskas, Springfield Water & Sewer Commission	Deanna Marks, NWS Albany
Ronald Horwood, NOAA	Don Cooper, Seekonk Water District	Tom Trainor, Sherborn Groundwater Protection Commission
Kate Bentsen, DFG/DER	Melissa Simoncini, Concord Public Works	David Hilgeman, DEP Wetlands
Chris Bruet, USGS	Bruce Wittchen, CT OPM	Dave Celino, DCR Fire
Todd Melanson, Chelmsford Water District	Sarah Traore, Charles River Watershed Assoc.	Matt Walsh, MWRA
Jennifer Pederson, Mass Water Works Association	Jimmy Powell, Jones River Watershed Assoc.	Deanna Marks, NWS
Kara Sliwoski, DCR - OWR	Jen D’Urso, DEP	John Scannell, DCR
Duane LeVangie, MassDEP	Matt O’Connell, Lynnfield Water District	Helen Weatherall, Ipswich Planning Board
Michael Botelho, DAR	Tim Pasakarnis, Cape Cod Commission	Sara Cohen, DCR
Andrew Loconto, NOAA	Michael Souza, MEMA	Sean Harrington, Town of Medway
Lisa Kumpf, Charles River Watershed Association	Stephen Estes-Smargiassi, MWRA	Jason Pollender, USGS
Pine duBois, JRWA	Paula Phipps, Biodiversity for a Livable Climate	Rich LaTour, MEMA
Gerald Clarke, Dover	Bridget Munster, DEP	

1. Introductions: EOEEA, MEMA & Announcements

Rao called the meeting to order at 1:06 PM, introduced herself, thanked and welcomed task force members and other attendees. Introduced Sara Zalieckas as Co-Chair from MEMA on behalf of Director Dawn Brantley. Good news is that a good amount of rainfall fell in many areas of the state this past week and lucky to not have any flooding issues.

2. Updates on Drought Response: EOEEA & MEMA

- Quick updates at state & federal level: Rao met with stakeholder groups to share information about how we assess droughts, the drought declaration process, environmental, water supply and public health related issues, to receive feedback on impacts and needs, and direct them to our website.
 - EEA/MEMA call with cities and towns was attended by over 500 attendees, followed by a call with public and private water suppliers with over 250 attendees.

- EEA had a call with Massachusetts Association of Regional Planning Agencies (MARPA), and a separate meeting with watershed groups.
- Website has been updated with a new page on information for private wells owners. Includes information on access to federal funding from USDA available to low-income residents
- EEA Communications staff have been in touch with MassDOT to include messages on digital billboards on the drought and link to the www.mass.gov/conservEMAwater website; has gone live in September on 200 digital billboards across the Commonwealth.
- USDA declared a disaster for farmers in Barnstable, Bristol, Dukes, Essex, Middlesex, Norfolk, Plymouth, Suffolk, Worcester and neighboring counties. Only counties not included are Berkshire County and the Islands. Provides farmers with emergency loans.
- U.S. Small Business Association announced capital loans for small businesses, small agricultural cooperatives, that have had some economic losses due to the drought. These are in the form of loans up to \$2 million with lower interest rates.
- Rao continues to meet with the interagency drought mission group to enhance coordination among our Agencies. EEA & MEMA also meet separately on a weekly basis to coordinate on calls from communities or actions needed.

3. Brief Overview of MA Drought Management Plan: Staff

Viki Zoltay from DCR provided a brief overview of the 6 indices that we monitor and the number of stations that are reporting.

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

Hydrologic Conditions: USGS - Jason Pollender & Chris Bruet

Pollender showed 7-day streamflow hydrograph with jump up in July and into August. Map of August, much below average map, with red circles showing new lows. Southeast Massachusetts looks like it is close to normal range. Rao points out that there seem to be many new lows. The Westfield River is trending to much below normal, recent rain from this week shown at the end of the hydrograph. South River, critically low flow until this past Sunday where it jumped to normal range. N. Nashua River, similar to Westfield River, low then jumping way up and running close to normal. Rao re-iterated that some of these show streamflow up through August 31st. Fair amount of rainfall in last few days, but remains to be seen if these increases stay here. DMTF task is to look at conditions up through August 31st. Charles River, critically low in most of August and bounces up a little towards the end of August. Ipswich River, interestingly flows upstream, and still has not caught up and filled up those pools. Well below normal at 0.03cfs and not even showing in the graph. Herring River, critically low, it is groundwater fed, not getting much precipitation and is flatlining.

Bruet showed an overview of climate response network July 22nd through Aug. 31st; September 5th is real-time conditions. Realtime shows that even though we got some rain the groundwater does not instantly respond. Winchester discrete well is in the much below normal range. West Boylston 26, much below normal, we went up 6/10^{ths} from recent rain and still much below normal. Edgartown, in below normal category and did not get much, if any, of the rain. Monthly record lows for groundwater wells; Hawley was a period of record low and that well has been around for 33 years.

NERFC (NOAA) – Ron Horwood

Horwood showed 7-day rainfall map through yesterday, September 6 at 8am. Most of the state saw 2-4 inches rainfall except for coastal sections, Cape & Islands saw <1 inch. Over last 24 hours, along

MassPike saw another 1-2 inches rainfall. Horwood compared two maps of river flows, left map showed flows since the last meeting with record low flows. Map on the right from yesterday and most streams and rivers have seen drastic improvement, except in Cape Cod. NAEFS has 42-member ensemble for forecast of river flows of next 10 days based on rainfall and temperature forecasts. Westfield basin precipitation was 3.14 inches on September 6th. River flows starting a near or below the monthly median, and rainfall has rivers above the monthly median for the next 10 days in Western, MA. North Nashua at Fitchburg, shows slow recovery near average. Charles River, rainfall lighter than rest of the state, got 2.42 inches, but didn't produce recovery flows as pronounced as Western, MA.

Conclusions: 3-5 inch rainfall since Aug. 31st across central & western MA but missed immediate coast, Cape Cod and Islands. River flows improved drastically away from the coast and Cape Cod. The exception is across coastal eastern Massachusetts rivers which will not fare quite as well. Concerns remain for low flows across Essex County...metro Boston and Cape Cod as the most beneficial rainfall has remained to the west.

Fire Danger: Chief Forest Fire Warden (DCR) – Dave Celino

Celino reported any precipitation has been beneficial to the fire story by reducing fire danger. Remains to be seen how it affects ground fuels. KBDI map try to get as up to date as possible, all KBDI numbers received except NE are estimated to be around 500. Plymouth and Bristol dropped by over 150 points. Cape & Islands reflect the situation staying normal. Breakheart fires are close to 100% contained but not listing as out because it is burning very deep into the ground. Lots of media interest as to whether the rain helped us out in fire danger. Remains to be seen if rainfall helps put out ground fires.

Weather Conditions: National Weather Service - Andrew Loconto

In August, areas that missed out on rain were Cape Cod, Islands, and Northeastern MA. Temperatures were high for August - 3-5 degrees above normal. We are in the midst of a 2-day rain event which began on Labor Day. Eastern MA saw rain amounts ranging from 0.75 to 1.5", with much of Cape Cod about half inch or less. Much of the central and western portions of the state, 2 to 4 inches.

Longer range outlook (6-10 day) is for above normal temps, normal precipitation, maybe higher near Berkshire County. The 8-14 day outlook is forecasted above normal temps, near normal precipitation. Fall outlook is for above normal temps, and precipitation near normal. Drought monitor outlook – climate predictions center for September. Persistent drought conditions across the Commonwealth.

Water Supply: MassDEP - Duane LeVangie

LeVangie showed map of current municipal water use restrictions through September 2nd. May 12th there were 65 systems had restrictions, now we are up to 174 as of September 2nd. Of those, 119 have water restrictions limiting watering 1 -2 days per week, 84 of 174 are limiting to no irrigation at all. Many of these restrictions were because of conditions in permits. Towns can lift restrictions once triggers are above threshold for 7 consecutive days or after Sept. 30th. DEP will likely urge people to continue to limit restrictions and stay the course depending on the outcome of this meeting. No concerns have been reported from the water suppliers to DEP since the last meeting.

MWRA - Matthew Walsh

Quabbin Reservoir remains within normal operations at a volume of 90.4% but continues to drop. Since our last meeting on 08-19-22, the reservoir has lost 0.65' a 1.2% loss of volume which represents over 4.8 billion gallons. The seasonal Quabbin transfer to Wachusett Reservoir continues. Wachusett

operating in a lower band now due to a project going on at the Wachusett Dam. Wachusett Reservoir remains within the new lower band of 389' +/- . The prior operating band was 390' – 391.5'. Precipitation from combined watershed Quabbin and Wachusett, all below the 38-year average. Sudbury & Foss reservoirs continue to be below their respective operating bands and have been below their operating bands since late July. Lastly, MWRA continues to post their “responsible use” messaging to our water customers, both via website and Twitter.

Massachusetts Water Works Association – Jen Pederson

Don't have much to report only 4-5 responses in the last week. Another water supplier seeing water quality issues as a result of the drought. No one has concerns about ability to provide water. For water quality suppliers are seeing some spikes in PFAS levels and also disinfection byproduct concerns. Rao asked if MWWA was hearing from water suppliers on any flushing-related issues. Pederson responded that most are continuing to do limited flushing in fall to address water quality issues. DEP has similar message to water suppliers to talk to the DEP regional drinking water staff before flushing.

Environmental: MassDEP (wetlands) – David Hilgeman

Did not receive any feedback from the regions except the Southeast and Western regions which reported that conditions were the same and there was nothing new to report.

Department of Fish and Game - Kate Bentsen

Bentsen has several slides from sites recently visited. In the Central region at Parkers Brook, showing 2016, 2020, and 2022 drought conditions at that site. 10 years of data plotted on same graph (April – Oct) showing similar current 2022 conditions as observed in 2020. Timelapse photo taken on day of lowest flows this year. Browns Brook in Holland has a different composition of sand and gravel deposit, but same showing of 2016, 2020, 2022 conditions. This one more similar to 2016 drought conditions. Streamflows were the lowest in mid to late August but experienced some recovery with rainfall in late August. Conditions were site-dependent – in some areas, flows this year were lower than during the 2020 drought, while at other sites conditions were comparable to the 2020 drought. The timing of low flows differed between drought years.

Nashawannuck Brook in Northampton is a very small site with a perennial stream. In 2020 the stream didn't go dry, this year it did. August 31st same pool refilled from streamflow. Further downstream, same dry conditions on Aug. 18th and 31st. On streams with dams, conditions downstream of the impoundments might not have benefited from the recent rainfall since the water mostly went into refilling the impoundment and water levels might still be below spillway elevations.

Massachusetts Rivers Alliance - Julia Blatt

Mass River Alliance asks 83 members across the state to send in drought photos from their local rivers every couple of weeks. The photos shown were taken before recent rains and are of the Millers River in Templeton, Nissitissit in Pepperell, Spicket River in Lawrence, Stony Brook (Charles River) in Lincoln, Mill River in Plainville, Parker River, Georgetown, Cleveland Farm State Forest, Boxford, and Weweantic River in Wareham. Some notable changes: Concord River in Billerica is extremely unusual to not have enough water over the Dam. Bussey Brook (Arnold Arboretum) in Jamaica Plain had no water as of Sept. 4th.

WSCAC - Lexi Dewey

Comments sent by email and read by Rao - Over the past 2 weeks, Dewey took pictures of rivers and streams in Berkshire, Franklin and Hampshire counties in the same places that were shown to the task force in July to show the advancement of the drought. In addition, she took several pictures of the

Quabbin in the northern area from Gate 35 showing a shoreline drop of 5 feet. Streams, including the East Branch of the Swift River are extremely low and show that very little water is feeding into the Quabbin reservoir. Though they received a fair amount of rain over Sunday and Monday, there is very little difference in the streams she looked at today.

Agricultural: Department of Agricultural Resources – Michael Botelho

Wide variability of impacts reports that are site specific based on availability of streamflow or sufficient groundwater to irrigate crops. Into the fall season most farms reporting lower than normal yields and smaller fruits. Rain that occurred did help some farms but again very localized.

Public Health: Department of Public Health - Meg Blanchet

No updates to report.

5. Presentation of Index Severity Levels as per DMP

Zoltay gave a recap and overview of drought conditions from January 2022 through April, May, then June through August. Storms in late August brought limited improvement to parts of SE region. USDM since we last met, slight expansion of D3 in north central and a bit of retraction in Southeastern MA. She pointed out that there are 3 different drought conditions within the same region.

Standardized precipitation index showed some above normal precipitation in Plymouth County in August. Streamflow has consistently been the hardest hit indicator. A lot of record lows shown in the percentiles of monthly median over the last few months. About 75% of the state is below normal for streamflow. For August all regions were at a level 3 or 4 for median of individual streamflow gages. For groundwater, June and July were mixed, but July to August most of the wells are responding especially in Plymouth County. The median of individual well percentiles were mostly in level 2 and 3 category. Southeast has not moved up to level 1. Evapotranspiration with the 2-month EDDI dated August 29th shows majority of the state at a level 3 and some of the state at a level 2. KBDI shows the highest values of sites at level 2 or level 3 with the driest areas in the Northeast and parts of Central Regions. Since we last met 2 streamflow's at emergency levels (4) for Central and Southeast regions.

6. Discussion of Drought Level Recommendations

To recommend to the Secretary that Islands region hold steady at level 2. Next is CT River Valley and Northeast regions, hold both regions at level 3. Central and Cape Cod regions, both have similar spread of indices; recommend holding at a level 3. Jen Pederson comment regarding precipitation index looking at 3-month data versus 2-month data would put it at a level 1 but she's comfortable staying at the same level now for consistency of messaging. Comment from Zalieckas to talk through further explanation for level 3 status on the Cape. Rao toggles between July & August months. For the Cape, streamflows and EDDI at level 3 and the other indices at level 2. Groundwater is at 19 and continues to go down 9 points in the last month. Precipitation has improved even though the Cape missed most of the rain. The recommendation is to hold at this level for the next 2 weeks and see if some of these indices start to go up and can be changed at the next meeting.

Southeast region saw most improvement across month of August, however streamflow is still very low (level 4). Precipitation, groundwater, lakes and impoundments have all improved. Recommendation is to improve southeast to level 2.

- Rao is a little on the fence, if the streamflow wasn't so low, it would be a much clearer move to level 2. The 2nd percentile value we're seeing now is lower than in 2016.

- Bent look at Taunton River basin, groundwater levels toward Duxbury Plymouth are more normal levels and have improved. Charles and Neponset are a different story and have different drier conditions. Rao notes that separating the northern part of the SE region might make sense to point out as lagging compared to the rest of the region.
- Pederson flaw with plan is looking at end of month and not considering recent information. Some people (Celino and USGS) have data up to yesterday. Public doesn't understand that we're looking at the end of the month and not the most recent data in front of us.
- Blatt says it's important to our messaging to note it takes more than a few storms to get out of drought. Article this morning in Globe making the same point. Being conservative seems appropriate.

The recommendation for Western region is it's not appropriate to hold steady at level 2 but to move to level 3. Precipitation has gone down from 10 to 7, streamflow also has gone down from 17 to 7, groundwater jumped to 15 from 25, KBDI is at 2. Not much rainfall was received in August compared to neighboring region.

- Horwood doesn't think degrading after almost a month's worth of rain is a good idea. Public perception on that messaging would be tough to accept. Pederson agrees with this sentiment. Berkshire County received 2.5 inches of rain in the last week and 4+ inches in Southern Berkshire County
- Zoltay points out that we are always having to look retrospectively at the last 30 days rather than have the most up to date data to look at.
- Pederson comments that water suppliers are having hard time getting public to respond with constant push on restrictions.

Consensus after discussion is to hold at a level 2 for the Western Region.

7. Recommendations for Drought Level Response Actions

Western: DMTF members agreed on Level 2.

CT River Valley: DMTF members agreed on Level 3.

Central: DMTF members agreed on Level 3.

Northeast: DMTF members agreed on Level 3.

Cape Cod: DMTF members agreed on Level 3.

Southeast: DMTF members agreed on Level 2.

Islands: DMTF members agreed on Level 2.

Pederson has a comment on Private Wells info, specifically has issue with what to do when well has gone dry and suggestion to contact fire department or school for immediate connection to water. Rao explains that the instruction provides a homeowner with a 'go to' for basic water needs such as for showering, and to direct people to contact their local town resources. On a recent request, the homeowner was directed to and benefitted from information on the website including a listing of financial resources.

8. Next Steps

Next meeting - Oct 6th at 10am

Meeting Ended

The meeting was adjourned at 3:17 p.m.