

**Massachusetts Drought Management Task Force – Meeting Summary  
October 7, 2022 10:00 a.m. – 12:00 p.m. conducted remotely via Zoom**

**Attendees:**

|  |                                       |  |
|--|---------------------------------------|--|
| Vandana Rao, EEA   | Viki Zoltay, DCR                      | Anne Carroll, DCR                                      |
| Kara Sliwoski, DCR                                       | Duane DeVangie, DEP                   | Gardner Bent, USGS                                     |
| Ronald Horwood, NOAA/NWS                                 | Julia Blatt, Mass Rivers Alliance     | Britt Westergard, Albany, NY, NWS                      |
| Sara Zalieckas, MEMA                                     | Sam Houghton, CAI radio               | Gerald Clarke, Town of Dover                           |
| Chris Bruet, USGS  | Robert Megnia, NWS Boston/Norton      | John Gregoire, MWRA                                    |
| Elise Tarnauskas, Springfield Water and Sewer Commission | Kate Bentsen, MA DFG/DER              | Vanessa Curran, DCR OWR                                |
| Deanna Marks, NWS  | Kim Kastens, Green Acton              | Michael Souza, MEMA                                    |
| David Hilgeman, DEP Wetlands Boston                      | Kimberly Abraham, Town of Ayer        | Dave Celino, DCR FIRE                                  |
| Sam Pollak, reporter at Provincetown Independent         | Katharine Lange, Mass Rivers Alliance | Adam Kautza, MassWildlife                              |
| John Scannell, DCR                                       | Tim Pasakarnis - Cape Cod Commission  | Lexi Dewey, WSCAC                                      |
| Michael Botelho, MDAR                                    | Clayton Weglarz, Easthampton DPW      | Tom Trainor, Sherborn Groundwater Protection Committee |
| Erin Graham, OWR   | Greg Nuttelman, Director              | Pine duBois, Jones River WA                            |
| Greg Nuttelman, Easthampton Public Works                 | Don Cooper Seekonk Water District     | Lisa Kumpf, Charles River Watershed Association        |
| Jen Ryan, CRWA   | Sara Cohen, DCR                       | Meg Blanchet, DPH                                      |
| Loni Feinberg  | Patricia Correa                       | Jeff Skaza   |
| Bruce BouckRo  | Robert Megnia                         |  |

**1. Introductions: EOEEA, MEMA & Announcements**

Rao called the meeting to order at 10:06 AM, introduced herself, thanked and welcomed task force members and other attendees. Introduced Sara Zalieckas as Co-Chair from MEMA.

**2. Updates on Drought Response: EOEEA & MEMA**

Rao very thankful that we received so much rain during the month of September. It's been relatively quiet on drought updates. Not many calls have been received from municipalities. The cranberry industry has had a turn around. The fall season is very important to them for harvesting. Rao has been keeping in touch with Cranberry Growers Association.

MassDOT signs on the highways have been up, and will stay up for the month of Oct. The messaging on the signs will either be tweaked for November or taken down completely depending on what is decided during this meeting and how the next month goes.

EEA continues working on putting together financial support for drought. LeVangie said that DEP put out a M36 grant for water audit that water suppliers can apply for by the October 24<sup>th</sup> deadline. There's also a water management program grant for public water systems that would be needed to mitigate for drought plans and drought preparedness. That one is due by early November.

### **3. Brief Overview of MA Drought Management Plan: Staff**

Viki Zoltay of 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 - Chris Bruet**

The 7-day streamflow had plenty of runoff and streamflow is in the normal range. Also, the monthly average streamflow had lots of green i.e. normal streamflow, which is the first time we've seen that in a while. Daily averages for the Westfield River, Western Region, in the below normal range, but reached normal range for majority of September. South river, Conway, also in Western Region, is in the much below normal range even with recent rains. North Nashua River, Northeastern/Central MA, is in the below normal range bordering on much below. Charles River, Eastern MA is sitting in normal range for this site. Ipswich River (Northeast) is in much below normal range. Rao question, what does it mean when the graphs show lines below the x axis? Bruet responded that it indicates that it means that it gets close to 0 flow. Herring River, Cape Cod area, solidly in below normal category and hadn't shown much response to the recent rain we've had.

Moving on to groundwater and the climate response network. Circled wells are the ones we are looking at more closely. Red circles are lower than the 5<sup>th</sup> percentile. In Winchester, discrete well is much below normal range still. West Boylston, you can see it recovered in the past month and is on the border of normal and below normal range. Wellfleet is still in much below normal range. Edgartown is in the below normal category showing complete downward trend since May.

Question from Julie Blatt: When you showed the map of the state, most looked in the normal range and your presentation focused on the below normal locations. Was it because the time period was different or focusing on the ones still struggling? Bruet responded that he is focusing on the ones we've been showing for the entirety of the drought. Those are reacting a little bit slower than the rest of the state.

#### **NERFC (NOAA) – Ron Horwood**

Image on left from last month's meeting in September compared to image on right from yesterday does shows a net decline in flows compared to normal across the state. Exceptions to the rain continue in the hardest hit drought areas of Essex County and outer Cape continue to lag behind rest of the state as far as recharging. Expected precipitation across Hoosic river basin (Northwestern MA) for next week is showing very dry conditions with at or below half inch of rain. Projected river flows of the river are expected to be below the median.

N. Nashua River, similar flows to Hoosic, flows will likely remain below the median until the middle of October. More of a dry bias here, expected flows could get down to record daily flows in the next 10 days.

Hint of storminess at end of period. Charles River at Dover, received much more rain yesterday and last night. This forecast will end up higher than projected here, will likely be hovering around the median over the next 10 days rather than below it.

Taunton River at Bridgewater, very dry forecast moving forward. Purple shading represents less than half inch. Corresponding flows start off above median then forecast to gradually falls below the median. Rivers near and south of the Pike doing much better than farther north. River flows have been status quo but lowest flows to affect Essex County and East of Hyannis on Cape. Dry weather will cause flows to decrease more heading into Mid-October. Areas south of Boston continue to see wetter overall conditions over the past 45 days.

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

923 wildfires across state year to date and only 13 fires captured in reporting system since September 1<sup>st</sup>. KBDI is ranging from 2 in Plymouth County to 42 in Northeast. Fuels still want to try to burn but in much better condition than we were a couple months ago. Driest area for us is Northeast and Worcester County. Cool season grasses respond rapidly to the recent rain. Leaf litter still damp across the state will help slide out of the fire season.

**Weather Conditions: National Weather Service – Robert Megnia**

September was a good month of precipitation. We made up for precipitation deficits. Observed precipitation for the Commonwealth, areas west of I-95 received 5-7 inches of rain or more, Eastern areas were in the 3–5-inch range. Areas below normal precipitation are shown as dark red areas on the map. Everywhere else experienced normal precipitation. Generally, temperatures were within a degree of normal across the Commonwealth, with the exception of the Islands that saw temperature departures 1-3 degrees above normal. Rainfall through yesterday, most of the Commonwealth saw ½ to 1 inch of rainfall for October so far. The 7-day precipitation forecast, shows mostly dry for 7 days. Rainfall on map shows rainfall from yesterday and last night.

Monthly temperature looks like chance of below normal temperature for October (30-40% chance for Western half of state). Precipitation doesn't have clear indication of above or below precipitation for the month. Seasonal outlook over the next 3 months, predicting likely chances above normal throughout the months of Oct, Nov, and Dec. No strong indicator of above or below normal precipitation. Drought outlook, grey area is in D0 (abnormally dry conditions). Forecast is for drought persistence across most of Massachusetts with exceptions in the Islands, southeast and Cape likely for improvement by the end of the month.

**Water Supply: MassDEP - Duane LeVangie**

We have now entered the season where water use restrictions aren't required to be implemented; they end October 1<sup>st</sup>, and the map we have up is the last map DEP produced. One area LeVangie is hearing about is Essex County. Lynn has implemented their drought plan and is at 45% of their capacity in their reservoirs. They typically refill those reservoirs with water that they divert out of the Ipswich River. Gloucester has restrictions on Cape Ann.

#### MWRA – John Gregoire

Quabbin at 88.7% full, still within normal operating band. Reservoir is clearly dropping, lost over one foot of water since we last met. Seasonal Quabbin transfer to Wachusett but is ending at end of October. Wachusett is at a trial lower operating band. Precipitation is almost what it was last year in September. Sudbury & Foss Reservoirs, with the rains we are at middle of operating bands from being below operating bands during the drought. We've been working with Office of Water Resources to share some of our data for analysis by her group. Cohen asked now that Cambridge is fully on MWRA because of PFAS, is that demand a drain on your system? Gregoire said they are on MWRA and not a burden on their system. We have some other entities also interested in coming on MWRA and have plenty of water to serve additional communities.

#### Massachusetts Water Works Association – Jen Pederson

Pederson was not able to make this meeting.

#### DPU - Marcos

Rao read updates from Marcos who was unable to attend the meeting. Dover & Plymouth at level 2 drought. Millbury and Oxford level 3 drought. Aquarion is asking residents and businesses in these towns to voluntarily halt all non-essential outdoor water uses including irrigation and hand-held watering.

#### Environmental: MassDEP (wetlands) – David Hilgeman

Heard back from all 4 regions. Southeast reported rain but no drought issues. Northeast nothing new but not enough rain. West nothing new to report. Central says ground surface conditions improved significantly. Overall water levels low in lakes and streams but have had rains.

#### Department of Fish and Game - Kate Bentsen

Last meeting there were several dry stream beds (perennial) reported and generally those have started flowing again with the rainfall we've had in September. Several landowner partners talked to say conditions in 2022 were worse than 2016, drought mostly in northeast and in Western/CT valley region. Update from Brad Chase at DMF that low river flows at all locations they've gone to even after recent rainfall. Pond outflow in many systems will not allow juvenile river herring to exit yet on their migration to the Sea. Pond surface levels in many locations are a long way from releasing flow to streams. They're seeing similar flows to 2016 drought, and DMF will be watching this closely in the coming weeks. Fish populations will be affected by future year recruitment.

Comment from DCR Anne Carroll – lakes and ponds staff from DCR are reporting the same lower flows than 2016. Fish cannot get in or out of streams because the flow is still low. Adam Kautza from DFG-DFW has the same to report, but is encouraged that we're getting some rain. Low flows over fall and winter can impact the fall spawning fish and their year class strength. Last winter had good flows in similar places and trout had high populations in streams. If drought continues into the winter we may see the reverse for those fish.

#### Massachusetts Rivers Alliance - Julia Blatt

Picture of Upper Mill Pond, Brewster sent in with a comment where you can see normal water lines on the dam and the exposed bank that is normally under water. Also, check out the toxic cyanobacteria bloom.

Herring were not able to move downstream and kept getting stuck. Tried breaking fish ladder with a sledgehammer to increase flows and transporting fish in a bucket but still were dying.

#### WSCAC - Lexi Dewey

Observations seen for the Hoosic River, Green River, & South River are similar to what Chris Bruet already said. Surface Reservoirs in North Adams are 20 feet down. Streamflow in Amherst, Pelham and Shutesbury are still very low even with the rain we received. Dewey shared with staff a DCR Presentation on MWRA operations which showed Quabbin streams and tributaries. It provided good information about the streams and tributaries that feed the Quabbin.

#### **Agricultural:** Department of Agricultural Resources – Michael Botelho

We are in full harvest with limited crop production still in the field. Pick your own operations are doing well but some smaller fruit and yields. Cranberry sector in Southeast and Cape have recent rains which has decreased their anxiety moving into wet pick. Some bogs are harvesting as we speak.

#### DCR- John Scannell

Nothing new to report.

#### **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. September has had more widespread precipitation events and improvement across the state except for Northeast and Cape. US Drought Monitor shows improvement especially in D3 in the Northeast which has shrunk to the Parker and Ipswich area the only area still red.

Standardized Precipitation Index, northeast and Cape missed out in both months July & August. September shows normal or greater than normal precipitation in most of the state with only two gauges, one in Cape one in Islands below normal. Streamflow median of individual gauges has most back to normal range or higher except the Northeast (Parker & Ipswich) and the Cape which is level 2. For groundwater, below normal colors well spread out in terms of impacts. Most reds in Northeast and Cape, some in CT River Valley. Groundwater index still has a few with elevated levels with a full set of wells reporting. Three regions in level 1 (normal), CTRV, NE, CC in level 2. Evapotranspiration, CMI indicates crops have sufficient moisture and EDDI is at ED0 or ED1 for most of the state. KBDI has lots of recovering in this index, except NE, Cape and Islands. Two in normal range in West, remainder of state in level 1 or 2. Lake and impoundments are level 1 and level 2 except for west which is level 0.

### **6. Discussion of Drought Level Recommendations**

- **Western region:** recovery has been seen all around the region. The recommendation is to put this region back to normal (level 0).
- **Connecticut River Valley, Central, and Southeast** as one group: All 3 of these regions have one index at level 2, one at level 1, the other indices are severity level 0 or normal. Staff recommendation is to move these three (CTRV, Central, SE) regions out of their current status to a level 1. Ron Horwood

commented that he is hesitant about jumping 2 categories in a month but can live with it since we're going into the cool season. We have more time to react and are going into less water demand. Rao agreed with that sentiment. Part of our thinking is looking at the groundwater, particularly in SE has recovered. A good indication that things are starting to turn around. Perhaps if we met mid-month, we might have had more of a gradual change to a level 2 first and now a level 1.

Dewey disagreed with jumping 2 categories for CT Valley as it is overly optimistic with streamflows and river flows still low. Water levels are still going down. Rao suggested looking at streamflow's monthly median. Three are below normal in CTRV and rest are normal which is a drastic difference from August and July which were dark red; the index turned over in about 30 days. Dewey understands messaging is important and will keep a close eye on this area in the next month and report back what she is seeing. Rao encouraged others to chime in if they also think we should take a more conservative approach to CTRV. Bent commented that couple of the gages haven't gone up, some others in middle of CTRV have come up to normal range while there are still some below the normal range. Deerfield is below normal for the month, North and Green River are overall in below normal range. Rao points out what we're seeing for that area still shows a level 1 range, with only 1 of the indices in the level 2 range. Still think level 1 is the right call for CTRV. Bentsen is ok with level 1 for each 3 regions. Reason we're seeing downgrade for each is because we didn't have a mid-month meeting during the recent rainfall. Rao suggests perhaps the press release can note that CTRV is seeing recovery as a whole but the northeast area is still lagging behind.

- **Cape and Islands:** have seen some improvement, streamflow and groundwater are on an upward trajectory but still below normal range. Not a single index is at level 3; all are improving to level 2. Islands precipitation has been relatively low for the last month and the other indices are at a level 2. Rao feels pretty comfortable recommending a level 2 for both regions. Horwood said level 2 for regions as a whole is fine. One area has been semi-drought since 2020 around Yarmouth, Chatham, Wellfleet. Decent rains in the last week and haven't seen a budge at all in that area. Might want to think about a call out for that specific area. Rao agreed that area of the Cape is worse hit and lagging and we can mention it in the press release. Bentsen said we would be backtracking a little but noted that the Western region is also moving two levels from a level 2 to a level 0. Gregoire made a request to show last month's indices and this month's side by side on the presentation so we can see them at the same time. Rao agrees we can try and do that.
- **Northeast:** Precipitation is still a level 3 at the 6-months look back, but the 2-3 months look back isn't quite as bad. Streamflow has certainly improved even though 2 gauges were at level 4. Groundwater and lakes and impoundments both seeing improvement. Northeast region is fairly large, even though the Ipswich/Parker gauges are down, the rest of the region is not. Our recommendation is one level improvement to a level 2. Horwood commented that as a whole Essex County is not benefitting from the rain. The Ipswich basin is down 10 inches for the year. This would be the area for a call out to keep at a level 3 and the rest of the region at a level 2. Blatt commented that if we go to level 2 we should call out Ipswich and Parker areas. Rao agreed.

Final recommendation to the Secretary is as follows:

Western: DMTF members agreed on Level 0.

CT River Valley: DMTF members agreed on Level 1; although the northern part (Deerfield region) of the CTRV area is lagging the region as a whole has seen improvement.

Central: DMTF members agreed on Level 1.

Northeast: DMTF members agreed on Level 2; Ipswich and Parker basins are lagging behind.

Cape Cod: DMTF members agreed on Level 2; the elbow of the Cape is lagging behind.

Southeast: DMTF members agreed on Level 1.

Islands: DMTF members agreed on Level 2.

Rao suggested looking into the basins, the Ipswich and Parker to see how the indices fare and talk also about the streamflow. For the 1 gauge at the Ipswich being low, the basin as a whole streamflow is at 14 which is a level 2. Precipitation at level 2, EDDI is at 1, groundwater at 40 (normal), KBDI at level 2. The recommendation would continue to be a level 2. For the Parker, we don't have stations there for precipitation or KBDI. Streamflow is very low, EDDI at level 1, groundwater is at 31 (just over normal range). LeVangie commented that why are only 2 basins shown for Parker and Ipswich and not Cape Anne or Lynn? Should a call out be done that says coastal regions still exceptionally dry to cover the whole area. Rao thinks it makes sense to call out that northeast coastal region portion as lagging and seeing more of a deficit of rainfall. She suggested putting the watersheds map on the drought status webpage to show call outs for these areas.

Typically, this time of year we shift to focus on water conservation indoors and away from outdoor conservation. There is a national "Imagine a Day Without Water" coming up in October.

## **7. Recommendations for Drought Level Response Actions**

## **8. Next Steps**

Next meeting is November 9<sup>th</sup> at 10 a.m.

## **Meeting Ended**

The meeting was adjourned at 12:07 p.m.