

**Massachusetts Drought Management Task Force – Meeting Summary**  
**August 23, 2022 10:00 a.m. – 12:30 p.m. conducted remotely via Zoom**

**Attendees:**

Vandana Rao, EEA	Katharine Lange, Mass Rivers Alliance	Julia Blatt, Mass Rivers
David Hilgeman, MassDEP Wetlands Program Boston	Anne Carroll, DCR OWR	Vanessa Curran, DCR OWR
Duane LeVangie, MassDEP	Gardner Bent, USGS	Nicole Belk, NWS Boston/Norton MA
Brian Wick, CCCGA	Andrea Donlon, FRCOG	Britt Westergard, NWS Albany, NY serving Berkshire County
Michael Souza, State Meteorologist - MEMA	Jennifer Pederson, Mass Water Works Association	Deanna Marks, NWS Albany
Kate Bentsen, MA DFG/DER	John Gregoire, MWRA	Sarah Bower, Mass Rivers Alliance
Tim Pasakarnis, Cape Cod Commission	Chris Bruet, USGS	Kara Sliwoski, DCR OWR
Elisa Tarnaukas, Springfield Water and Sewer Commission	John Scannell, DCR	Dave Celino, DCR Fire
David Bryant, MEMA	Don Cooper, Seekonk Water District	Craig LeMoult – GBH News
Kim Kastens, Green Acton	John Gregoire, MWRA	David Bryant, MEMA
Joe Cerutti, DEP	Gayla Cawley, Boston Herald	Mark Aiken
Chris Lisinski, State House News Service	Kara Shemeth, Town of Chilmark and Town of Edgartown Conservation	Ronald Horwood - NOAA/NWS/Northeast River Forecast Center
Kristin Keefe, WCVB	Gerald Clarke, Town of Dover	David Clemons, Dept of Fire Services
Lisa Kumpf, Charles River Watershed Association	Chris McCue Potts, Medfield journalist	Viki Zoltay, DCR OWR
Kate Adams (for Meg Blanchet) - Mass Dept of Public Health	Andrew Marshall, SWSS LLC	Greg Lane, Public Relations Chair of the New England Water Works Association
Chris Van Buskirk, MassLive	Erin Graham, MA OWR	Bianca Beltrán, NBC10 Boston
Marisa Picone-Devine, Sarian Company, Inc.	Tom Trainor, Sherborn Groundwater Protection Comm	Marielena Lima, Charles River Watershed Association
Clint Richmond, Sierra Club	Emily Sweeney, Boston Globe	Angela Jaffarian, SWSS, LLC
Bridget Munster, DEP	Gus Steeves	Pine duBois

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

Rao called the meeting to order at 10:06AM, introduced herself, thanked and welcomed task force members and other attendees. Introduced Richard LaTour and David Bryan as co-chairs who are representing MEMA.

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

Rao has been actively reaching out to various stakeholder groups and provide information and share resources with them. Last week EEA-MEMA had a statewide call with municipal officials (emergency managers, town administrators, fire chiefs, city officials) from the 351 cities and towns. There were over

500 attendees. We shared resources with them, with presentations by EEA Secretary Beth Card, DEP Commissioner Suuberg, Fire Chief Celino, Fire Marshall Ostroskey, Sam Wong from DPH. On Monday, had a call with public and private water suppliers. We went through similar slide deck, focusing on water supply needs, and emergency interconnections. Later this week we will be meeting with Massachusetts Association of Regional Planning Agencies & with watershed groups. Goal is to reach a wide array of users. At DAR, Michael Botelho, has been reaching out to farmers to assess impacts. Rao made appeal to all task force members to add blurb about the drought in their newsletters and would provide any related material or infographics. EEA has launched a Water Impact Reporter Website to survey the public on local drought impacts they may be experiencing.

#### David Bryant – MEMA

MEMA has had weekly check ins with EEA. Communicated with EOPSS General Counsel on drafting state emergency declaration if necessary. Its been a busy week for fire mobilization and DCR & communities are doing an amazing job. There has been aerial support of water & surveillance on the fires. Reminder that we have established channels for making resource requests. Requests should be made to local emergency management director to regional offices to the MEMA bunker.

### **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. Displaying slides showing index severity levels that go along with the percentiles, drought levels 0 to 4, map of Massachusetts drought regions with Counties and watersheds.

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

#### Dave Celino: Chief Forest Fire Warden

Celino reported 97 wildfires in August 2022 and showed map of MA wildfire occurrence August to date. He pointed out that the fire occurrence map follows the KBDI if overlaid. Looking at the KBDI map, Plymouth County was in the 500s and dropped to 349 because of the recent 3 inches of rain on Monday. Berkshires starting to see small fires that can be traced back to campfires. Ground fuel burning is an ongoing issue and will not be much affected by the recent rain, especially a factor in the Southeast (Norfolk & Bristol County). The graphs for Blue Hills and Oxbow KBDI do not reflect the rain from Monday; both are at 700. Celino displayed a topographical map of the Breakheart Reservation Fire Complex in Saugus, MA. There are currently 75 acres burning made up of 5 different fires with 65-70% containment across the complex. The fire in Rockport is 100% contained in 19 acres but not out yet and continues to burn hard. This fire demands daily attention and resources after 30 days active. Celino pointed to the task force that when they do their deliberations for each region, to note that the fire is here long term and unless there is a significant multi-day storm, it would warrant a higher fire danger.

#### Hydrologic: Christopher Bruet - USGS

On the 7-day average runoff daily record of lows, North Nashua River is in 2<sup>nd</sup> percentile, Charles River is in first percentile, Taunton River, representing Southeastern Massachusetts is little higher but still in 9<sup>th</sup> percentile. Numbers from the graphs are from August 22<sup>nd</sup> but before the rain. The rain had minimal effect but didn't change the category they were in; all are still below or much below normal. The following rivers are all shown to be in the 1<sup>st</sup> percentile for the 7-day average: Neponset, Ipswich, Otter River, and South River. The Herring River (Cape Cod) is in the 5<sup>th</sup> percentile. Status overview is 4 stations at zero flow right now and 8 stations a min low flows for 7-day average.

For groundwater, after the recent rain, it hasn't shown much response and likely won't unless we get a lot more rain. Majority of wells are at 25-30 percentile on the groundwater map. Winchester well shows much

below normal category (discreet well). West Boylston well is much below normal (real time well). Edgartown well is below normal (real time well).

#### Ron Horwood -NERFC (NOAA)

Flows are lower across the Commonwealth since our last meeting on 8 August. Worcester, Essex, Norfolk and Bristol counties are in particularly bad shape. Verifying rainfall from 2 weeks ago is below the lowest forecast guidance from a 42-member ensemble, which is extremely rare & significant. Four different graphs of predictions, where the verifying flow was below the record lows for Charles River at Dover, Neponset River at Norwood, Fitchburg, and Taunton near Bridgewater. Taunton might have the only spike from the recent rainfall. After yesterday's and today's rainfall, the prospect for significant rainfall is not great through the end of August. Most areas are forecast to see near or below 0.25 inches of rainfall from 24-31 August (i.e. below normal for that 7 day period). Northeast River Forecast Center ensemble river forecasts signal only slight improvements over the next 10 days mainly in the near term with some rivers and streams likely to fall back to near or below record low daily flow levels by the upcoming weekend.

#### Weather & Forecast: Nicole Belk - National Weather Service

As a July recap, east coastal MA rainfall was 2 inches or less, with portions of the area having less than an inch of rain. Higher totals of 2 to 4 inches were noted across central and western MA, with localized higher totals of 4 to around 5 inches in extreme north central MA and from Springfield into the Berkshires. With the exception of these higher totals, rainfall across the Bay State was below to much below normal. Rainfall from August 1 to 22 ranged mostly between 0.5 inch to 1 inch across MA, with a few localized higher and lower totals. This rainfall was mostly less than 50 percent of normal month-to-date. Temperatures month-to-date averaged 3 to near 6 degrees above normal.

Rainfall forecast from Monday through Tuesday night, is showers and thunderstorms. 7-day rainfall forecast is mainly from this event, with 0.5 to 1.5 inches forecast. Locally higher amounts possible. Normal rainfall for a week in August is about 1 inch, so near normal rainfall except for those localized higher amounts. Mainly dry conditions forecast Wednesday through Sunday. Normal to above normal temps forecast through the forecast period. The 8-14 day outlook from August 29 to September 4 calls for above normal temps, and leaning towards above normal precipitation. Seasonal outlook for September to November, is likelihood of above normal temps, and equal chances of above, below or normal precipitation.

#### Water Supply: Duane LeVangie – DEP

LeVangie reached out to regional drinking water chiefs with nothing significant to report; no system had discussed preparing an emergency declaration at this point. Water management program has 345 permits in MA. Many have non-essential water use reductions from May-Sept. when certain triggers are hit. Groundwater elevations are drivers in southeast, monitoring wells shown earlier by USGS observations are used as the triggers. Currently 52 of 54 stream gages used in monitoring for permitting are triggering implementation of restrictions. Since May 12<sup>th</sup> with 65 systems to 168 systems by August 16<sup>th</sup> have restrictions. Most have gone up; from 58 systems doing 3 days or more of watering now 114 with 2 days or less of watering. No emergencies as yet.

#### John Gregoire – MWRA

Quabbin Reservoir remains within normal operations at nearly 93.6% full but is clearly dropping. Since our last meeting on 08-08, the reservoir has lost about 1 Ft. which represents ~7 BG. High demand season + the drought are factors. The seasonal Quabbin transfer to Wachusett Reservoir continues. Wachusett Reservoir continues to hold at the lower band of 389' +/-; the prior operating band was 390' – 391.5'. We monitor precipitation across the watershed system, and this shows the continued deficit. Just one month in the last 7 was above the 38-year average.

The City of Worcester's reservoirs are fed from the western side of Wachusett watershed. Worcester also has an emergency connection to the Quabbin Aqueduct at Shaft 3 but they more routinely withdraw from the Quinapoxet River to add water to their supply. Gregoire showed their withdrawals since the last 2015-16 drought. 2022 withdrawals are increasing so we'll see how this continues with the ongoing drought. On the Sudbury system reservoirs, they more closely respond to drought conditions as the area lakes and ponds. They are showing sharp declines below our normal operating band. Lastly, MWRA continues to post our "responsible use" messaging to our water customers, both via website and Twitter.

#### Jen Pederson – Massachusetts Water Works Association

Heard from about 12 water systems this past week, all reporting that they are quite comfortable with their supply. Restrictions imposed have resulted in reduced use but also have water quality impacts. We should be watching for some bacteria issues that may crop up due to stagnating water. Water suppliers are not seeing the same groundwater impacts that those maps are showing from a drinking water standpoint. A number of systems have gone above what they're required to do, and some registered systems are following the guidance to restrict use. Some residents not happy with restrictions and water suppliers are having to grapple with that. There was some visible outreach in Attleboro and Pembroke about the need to abide by the restrictions by the public and pay attention to the social media and other materials.

#### DPU Update – Rao on behalf of Marcos Pareto who could not attend meeting

Significant water conservation policy changes since last time. Dover and Plymouth are now level 3 drought and are placing higher restrictions. They join Millbury, Oxford, Dover, Plymouth at a Level 3 critical drought. Until September 30, Aquarion is directing residents and businesses to halt all non-essential outdoor water uses including irrigation of lawns via sprinklers and automatic irrigation systems. These are mandatory restrictions. Sheffield is in its Level 1 drought.

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

Reached out to the DEP regional offices for updates on stream and wetlands impacts. Also get reports from watershed planning program and other internal personnel. Drought conditions affect the ability for applicants to assess perennial streams as intermittent. Which in turn affects how our riverfront regulations are implemented. The DEP watershed planning group has been out assessing streams and on two different occasions came across 4 new dry streambeds on August 17 & 18<sup>th</sup>. Prior to that they saw two new dry streambeds on August 16<sup>th</sup>. From the Western region, they reported dry wells and similar water use restrictions. From the Northeast region, wetlands are looking crispy and dry there too.

#### Kate Bentsen – DFG

Bentsen has several slides from recent field work. First is the Nashawannuck Brook, Northampton drainage area downstream at a culvert is completely dry and could not sample for fish there. Stagnant water near irrigation impoundment, no water flowing out of pipe. Plunge pool had some fish which were stressed because of high temperatures, low dissolved oxygen. Of note, this same site was still flowing 3 weeks ago and did not go dry during 2020 drought. Also visited Broad Meadow Brook restoration site in Worcester. Head waters to Dorothy Pond in Millbury. These are some of the lowest water levels Mass Audubon staff have observed and again worse than 2020 drought.

#### Julie Blatt – Massachusetts Rivers Alliance

Mass River Alliance asks members to send in photos of what the drought looks like every couple of weeks. Hoosic River August 14<sup>th</sup> looks like concrete bed. Cold River, Florida along Route 2 in Western Mass looking very dry or a trickle. Roaring Brook Falls, Leverett usually has falls and there are no falls or brook to see. Ware River, Ware is just muck from August 19<sup>th</sup>. Ipswich River is disconnected puddles along the main stem over a week ago. Parker River, Georgetown is completely dry. Jones River, Kingston shows a fish ladder but

the river is dry. Main stem photo of Cutler Park in Needham (part of the Charles River). Merrimack River is not usually associated with low flows but was also very low a week ago. Blackstone River, Uxbridge had a video of people trying to paddle kayaks and having to walk with them because it was not navigable.

**Agricultural: Michael Botelho – DAR**

Farms across all regions are reporting significant impacts to crops, excessive cost for irrigating throughout the day. Reports of smaller sized fruits. Farms using surface water are in a more extreme situation as they continue to report streams & rivers too low to siphon and pull from or completely dry. Significant losses of crop as we move into the Fall season. Concern with impact from low levels of water at the surface and retention ponds affecting the microbial quality of water. A particular concern is E.coli coming from fecal matter from birds or mammals. A few ponds reported algal blooms and have discontinued using those sources. Many farms reporting equipment failures and having to replace due to excessive use. Pumps are being used more frequently than a normal season. Cranberries will be affected if the pattern of no rain continues as we move toward fall harvest; they typically utilize water to harvest and float their crop. Animal operations also reporting heightened concern moving towards the Winter for hay & bedding availability. In the last 7-10 days received more calls asking for what type of assistance might be available and we're having internal discussions on how best to address those questions.

**Public Health: Kate Adams – DPH**

Nothing specific to report. We're receiving the usual number of cyanobacteria calls. We don't really track that by water body as we do for bathing beaches. Droughts are good for bathing beach water quality because there's no runoff.

**5. Presentation of Index Severity Levels as per DMP**

Zoltay gave a recap and overview of drought conditions since January 2022 to date. USDM since we last met, D3 has been introduced for most of the state except for a small portion of the Northwest and Nantucket are at level 2.

- Streamflow moving towards 0-2% percentiles. Of 55 stream gauges across MA, almost all below normal at about 30% are record low.
- Groundwater percentiles have been mixed throughout because they are at various depths. However, for the groundwater index most are at level 1 or level 2 across the regions.
- Evapotranspiration (EDDI) map shows most of the state is in ED2 or ED3, and in the Southeast is ED4 with a small part of Nantucket also ED4.
- KBDI (top 8 inches of soil moisture), as of August 20<sup>th</sup>, most are at below normal range at either level 2 or level 3.

**6. Discussion of Drought Level Recommendations**

Not looking to change 4 regions from a Level 3 (CT River Valley, Central, NE, SE) keep them at the same level for now as indices clearly indicate a Level 3. We will keep a close watch at southeast, for two of the indices at a level 4, recent rain in SE might have helped slightly.

Western region, precipitation & streamflow, KBDI have all gotten worse. Suggest moving Western region to level 2. Four of these indices are at a level 2 at least. Mid-month meeting comes with some constraints. Pederson was concerned that the data sets are not consistent from when meeting monthly to mid-month. Rao noted Pederson's concern and said that we're working on getting more of the data in real time. We've secured grant funding to bring our groundwater wells to real time, we started a study with USGS for lakes and impoundments to bring them into the fold.

Islands were at level 1 last meeting. Precipitation and groundwater have both gone down, KBDI & EDDI are both high. The recommendation is to move to level 2 from level 1.

For the Cape, precipitation has plummeted from 20 to 3, streamflow from 70 to 10, groundwater dipped to a level 1, KBDI & EDDI are still high at a level 3. Task force discussed whether the Cape should be at level 2 or move to level 3. Blatt commented that indicators are similar to Central which is level 3 so should be moved to level 3. Horwood commented that the elbow of the Cape (Hyannis to Chatham) has been more of a level 3 the last few years whereas the rest of the Cape is faring a little better. Belk clarified that the precipitation for Cape were confined to Falmouth, Bourne, Sandwich, but remainder of Cape were less than a half inch, which warrants going to level 3 for Cape. Pederson noted that the Cape has less data points than Central. Worry about optics of moving to level 3 considering the recent rain. Many of Cape suppliers have water restrictions in place already. She would recommend waiting till Sept 7<sup>th</sup> meeting and reassess. Gregoire said it is hard to split the Cape into two regions and given Celino's report or worsening KBDI, level 3 makes sense. Sliwoski notes that there are two streamflow sites in Cape and both are reporting for this period. On a question about how many groundwater wells for Cape are reporting, Sliwoski responded 10 for this month and 11 last month. Bent commented that 2 wells that are above 25<sup>th</sup> percentile now will fall below normal below 25<sup>th</sup> percentile within the next few days. Pederson asked about outreach actions in the plan such as signs on the highway utilized in past droughts. She hopes the level escalated that so does the public communication. Rao answered that EEA was coordinating with MassDOT to put signs up on transit and communicating messages on water conservation.

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

To recap, the recommendation to the Secretary is that CTRV, Central, NE, and SE all stay at level 3, Western & Islands move to level 2, Cape moves to Level 3.

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 3

Islands: DMTF members agreed on Level 2.

Rao pointed out that private wells need to practice the same restrictions on water use as those on public water supply. Appeals to the task force to get that message to private well owners as well. Pederson suggested Governor press conference as a response action. Blatt called out and thanked the media outlets on the call and their willingness to get the message out across the state.

## **8. Next Steps**

Next few meetings: September 7<sup>th</sup> at 1pm; September 22 at 10am; October 6<sup>th</sup> at 10am

## **Meeting Ended**

The meeting was adjourned at 12:33 p.m.