

# Massachusetts Drought Management Task Force – Meeting Summary

November 6, 2024, 10:00 am – 12:00 pm conducted remotely via Zoom

## Attendees, Drought Management Task Force Members:

Vandana Rao, Co-Chair, Executive Office of Energy and Environmental Affairs (EEA)  
Benjamin Hiltunen, Co-Chair, Massachusetts Emergency Management Agency (MEMA)  
Neal Strauss, National Weather Service (NWS), Northeast River Forecast Center  
Brian Loving, United States Geological Survey (USGS)  
Duane LeVangie, Department of Environmental Protection (MassDEP), Water Management Act  
Tom Maguire, MassDEP, Wetlands  
Dalene LaPointe, Department of Public Health (DPH)  
Anne Carroll, Department of Conservation & Recreation (DCR)  
Kate Bentsen, Department of Fish and Game (DFG)  
Jennifer Pederson, Massachusetts Water Works Association (MWWA)  
Lydia Olson, Massachusetts Rivers Alliance (MRA)  
Dave Celino, DCR Fire  
John Gregoire, Massachusetts Water Resources Authority (MWRA)

## Other Attendees:

Abe Farley	NWS/NERFC	Erin Graham	DCR OWR
Adam Kautza	DER	Jason McCarthy	Town Of Danvers
Andrew Loconto	NWS	Jimmy Powell	Jones River Watershed Association
Andrew Trice	MEMA	Joe Holbeche	MA DMF
Ben Gahagan	DMF	John Scannell	DCR
Britt Westergard	NOAA	Jon Gervais	City of Worcester
Brittany Segill	MassDEP	Marcos Pareto	DPU
Craig LeMoult	GBH News	Moussa Siri	WSCAC
Don Cooper	Seekonk Water District	Patrick Cunningham	Worcester DPW&P Water
Dr. Christine Hatch	UMass Amherst	Pine duBois	Jones River Watershed Association
Elise Tarnauskas	Springfield Water and Sewer Commission	Purvi Patel	EEA
Elizabeth McCann	MassDEP	Sam Banas	USGS
Emilia Dick Fiora del Fabro	Charles River Watershed Association	Sara Cohen	DCR OWR

### 1. Introductions: EEA, MEMA & Announcements

Rao called the meeting to order at 10:06 am and introduced herself and her co-chair from MEMA, Ben Hiltunen. She asked everyone to put their name and affiliation in the chat window for attendance purposes and said the meeting was being recorded for the purpose of meeting notes. Hiltunen reminded task force members to review their responsibilities as listed in the DMP.

### 2. Approval of October 8, 2024 DMTF Meeting Notes

Rao asked for votes to accept the meeting notes for the October 8<sup>th</sup> task force meeting. Pederson made the motion to accept the notes, which was seconded by LeVangie. Pederson noted that there was a

mention of Aquaria which should be changed to Aquarion. Maguire requested clarification in the notes of a statement he made regarding the main stems of the Sudbury and Blackstone Rivers being perennial with Riverfront Area regardless of flow due to their status as major Rivers, so the concerns over designations getting overturned are for non-major rivers. Pederson made a motion to accept with edits, LeVangie seconded. The vote passed unanimously.

### **3. Brief Overview of MA Drought Management Plan (MA DMP): OWR Staff**

Rao offered to present the overview of the MA DMP for anyone new to the process at the meeting. There were no requests for this presentation, so the discussion moved to task force updates.

### **4. Updates on Current Conditions and Impacts**

Presentations for the updates below can be found on the mass.gov website [here](#); a summary of each presentation is below.

Before the presentations began, Bentsen asked why mid-Sept through mid-Oct was being evaluated rather than all of October. Rao explained that staff tried to capture the rapid onset of the drought conditions from the middle of September to the end of September. She noted that multiple lookback scenarios would be presented during this meeting. Bentsen asked if that meant that mid-to-late September would potentially be revised from the full month declaration already issued. Rao responded that that was a possibility, but it would be open for discussion during the meeting. Pederson asked if the decision to change the lookback period was related to the Wetlands Protection Act, to which Rao explained that that was part of the consideration, but that we also want to make sure accurate drought conditions are being captured. Maguire commented that he did an analysis on the SPI which showed that this is a hundred-year drought for much of the state, so the current conditions are very rare.

#### **Weather & Forecast: Andrew Loconto - National Weather Service Observed Precipitation and Temperatures:**

Much of the Commonwealth saw well below precipitation during the month of October. Other than across Cape Cod, which saw a significant wetting rainfall early in the month, and across northern Berkshire County, 3 to 4.5 inch rainfall departures were commonly observed across the Commonwealth. Above normal temperatures were also observed across the Commonwealth during the month of October.

Over the past six months, most of the state saw rainfall totals which were around or slightly below normal (60-100% of normal), although the North Shore and northeast Massachusetts saw more significant departures at around 40 to 60% of normal. However, the lack of rainfall across the state has been more noticeable in precipitation data over the last three months (August 1st to October 31<sup>st</sup>), with many areas in the Commonwealth seeing rainfall totals corresponding to 20 to 40% of normal, with slightly higher values over southeastern Massachusetts.

Rainfall amounts in the month of November have been sparse, with no more than 0.1 inches of rain across the Commonwealth.

#### **Forecast:**

Dry weather is expected to continue until late Sunday night and Monday, with rain amounts up to 0.5 inches with this one anticipated rain event.

A tilt in the odds toward above normal temperatures are still expected through the rest of the month, with odds also favoring above normal temperatures through meteorological winter (December, January, and February). Drier than normal precipitation is favored through the rest of November, although may trend closer to normal through December, January, and February.

**Hydrologic: Brian Loving - USGS**

Streamflow conditions relative to the monthly normal have been steadily declining across Massachusetts since late September, except for a brief rise related to an October 14 precipitation event. At present, about 20% of USGS streamgages in Massachusetts are at record low flows for the day of year.

Groundwater levels are also trending down relative to seasonal norms across the Commonwealth, with wells not showing the water level increases in areas that normally experience recharge in the fall. Many wells outside of the Cape and Islands Drought Regions are at or near record low levels so far in November.

Pederson asked for clarification on the date for the individual well data presented on the second groundwater conditions slide. Loving explained that the map with the dots was showing conditions as of October 7. Pederson also asked for clarification on the statement regarding record low flows for the day of year, and if “day” should say “time of year”. Loving replied that the intent is to show a comparison for the time of year, but the comparison is specific to the day.

**Hydrologic: Neal Strauss, Northeast River Forecasting Center**

From mid-September to late-October, river flows across most of the Commonwealth gradually decreased. Below to well-below normal flows were observed across most of the state. The lowest stream flows for late October were found in the following counties: Essex, Middlesex, Suffolk, Norfolk, Bristol, Plymouth, and Worcester. Areas of low flows were also observed in western Massachusetts. The weather pattern looks somewhat more active next week. Ensemble data indicates the possibility for some rainfall but with some significant spread in amounts. As a result, the NERFC river forecast ensembles call for decreasing flows to continue near term followed by some increase in river flows next week. Temporary increases in rivers and streams develop longer term over the next 10 days.

**Water Supply: Duane LeVangie – MassDEP**

LeVangie explained that he reached out to drinking water chiefs in each region to ask about which systems are concerned about meeting demand. The following systems replied with concerns:

**Lynn Water & Sewer**

- Reservoir capacity has fallen to 46.6% as of Monday and they have implemented a Mandatory Water Ban as outlined by their Drought Management Plan. Based on their evaluation it appears that there has not been observed outside water use.
  - 2022 Comparison: July use 10.82 MGD vs. January 9.50 MGD

**Ipswich**

- Rainfall obviously way down. Both September and October rainfall was less than 1”.
- Combined reservoir storage is at 50% total capacity, but only 25% of usable capacity remains.
- Customer demand is in the winter use range, but without recharge, our options are limited.
  - 2022 Comparison- July use 1.05 MGD vs. January 0.82 MGD

- Consistent with their Drought Plan moved to Emergency drought status on Monday.
- Considering requesting an emergency declaration from DEP to allow them to exceed their registered volumes in the Ipswich River Basin.

## **Attleboro**

### Background-

- Precipitation for the year down 12" as compared to the previous 10 years. September & October down 8".
- Manchester Reservoir is at the 8<sup>th</sup> lowest on record.
- 9 AM-5 PM restrictions began as usual on May 1;
- Ban on all non-essential outdoor use starting on July 22.
- Encouraging indoor conservation as of mid-October. Includes outreach to local businesses.
- All these efforts have reduced production to below winter volumes.
  - 2022 Comparison: June use 5.80 MGD vs. January 4.00 MGD

### What has been done so far-

- Interconnection with Pawtucket RI is near complete. Hope to be online in a couple of weeks. Testing underway. Will be able to provide up to 1 MGD.
- Restarted Wading River Source yesterday to help meet demand. Source has had quality issues in the past. Hoping alternatives will meet most or all the demand, allow reservoirs to refill.
- Evaluating re-establishing older well sites. Testing soon.
- Evaluating options of purchasing from neighboring systems. Likely hydrant to hydrant connections.

### Future plans-

- Evaluating a dredging assessment of Orr's Pond, Blake's Pond, and Hoppin Hill Reservoir. This will improve capacity in all three, and water quality in the first two.
- Evaluating future ground water sources.

### **Water Supply: John Gregoire – MWRA**

Quabbin is at 86% full, 6 feet below lower spillway elevation. The minor rain through mid-September to mid-October has not had a meaningful impact on reservoir level. Since the last task force meeting, the reservoir has dropped about 1.8 feet (about 13.5 billion gallons), so they are starting to see drought impacts. The trend in elevation drop is also steeper than normal, so they will keep a close eye on this. The Wachusett transfers were shut down as of October 31<sup>st</sup>. The Wachusett increase in elevation during this period was due to transfer, not rain. Precipitation is much below the averages for this time period. He explained the Sudbury and Foss reservoirs are more responsive to drought conditions. The Sudbury drawdown shown in the chart is due to construction needs, but the Foss has been seeing drought impacts. He explained they would not be doing their normal winter drawdowns for invasive plants because of the drought conditions. Gregoire also explained the unexpected dry conditions they are experiencing for their Quinapoxet Dam work due to the drought conditions.

### **Water Supply: Jen Pederson– MWWA**

Pederson explained most members are okay right now, but that they are concerned about what might happen over the winter/spring. Highlights include Peabody which has lowered their plant mgd and are supplementing with MWRA. Worcester's capacity is still hovering around their historic stage 1 drought

level at around 60% and without precipitation they are expecting to cross their own stage 1 drought level within the next couple of weeks, but they have not enacted restrictions beyond what is outlined in their registration. Discussions on enhanced restrictions will take place in the near future if the lack of precipitation continues. Pederson received reports from the following other systems with varying degrees of concern:

- CT River: Monson, Chester, Belchertown, Holyoke
- Islands: Edgartown
- Southeaster: Fall River, Sharon, Foxborough, Stoughton, Attleboro,
- Northeast: Amesbury, Ipswich, Peabody, Ayer, Billerica, Acton, Lynn, Salisbury
- Central: Worcester

**Private Water Supply: Marcos Pareto- DPU**

Pareto explained the Millbury and Dover locations of the Aquarion system are experiencing mild drought and implemented restrictions. The Plymouth and Pine Hill locations are not experiencing drought and have not implemented restrictions.

**Wetlands: Tom Maguire- DEP**

MassDEP has been getting complaints from several regional offices and conservation commissions about low streamflows. He also noted that parts of the Blackstone River Basin that have been experiencing low flows are outside of the Central Region and therefore were not included in the last drought declaration.

DEP started a website to note the start and end dates of drought declarations for purposes of riverfront area observations:

<https://www.mass.gov/news/massachusetts-drought-implications-for-riverfront-area>

Maguire also displayed his analysis of monthly rainfall data. His analysis showed that several locations have had the lowest September and October precipitation on record, reaching 1,000-year drought conditions in some areas.

**Fish and Game: Kate Bentsen- DER**

Bentsen described several sites that are showing low conditions throughout the state. Adam Kautza reiterated the dry conditions he is seeing. Joe Holbeche spoke on behalf of DMF. He reiterated that they are observing low flows and dry conditions overall. He showed several photos of low flows, focusing on the Parker system. He explained that drought conditions are being compounded by beaver activity.

**Massachusetts Rivers Alliance: Lydia Olson**

Olson presented reports from six watersheds. In the Nashua, Bow Brook is completely dry, which has never been seen. In the Concord, the Centennial Falls Dam in Lowell has flow much lower than normal. The South Natick Dam in the Charles River has very low water with rocks exposed, and there were low flow reports from Bogastow Brook, Cress Brook, and Stop River. In the Boston Harbor, Lake Masapoag in Sharon has exposed beach that is 6-8 feet from the normal water line. In the South Coastal, First Herring Brook is completely dry, and Silver Lake in Kingston is about 40 inches below the normal water level, which is too low for the juvenile herring to make it out of the lake. The low water level in the lake is likely also impacting other species like freshwater mussels. In the Taunton, the Great Quittacas Pond Complex in Lakeville is also showing low levels and exposed beach.

Gregoire added that they are currently releasing 3.5 mgd via a siphon into the Nashua from Wachusett Reservoir. He also added that DCR did a mussel relocation at the project site prior to beginning work on the dam.

**Water Supply Citizens Advisory Committee: Moussa Siri**

Siri explained that WSCAC is concerned over the drought conditions and low water levels and are promoting water conservation.

**Agricultural: Michael Botelho- DAR**

Not present at meeting.

**Fire Danger: Dave Celino**

Celino explained that fire activity has really increased since the last task force meeting. October fire numbers have been historic, and the same pattern is consistent so far in November. KBDI has been steadily increasing across state, although cooler temperatures are slowing progression. All Districts are showing an increase in fire control challenges, with fires burning in up to 8". Fuel moistures are historically low for early November. There have been increasing stresses on fire response capacity at the state and local levels. Local burn bans are going into effect across the state in many communities. There are 10 priority ongoing incidents across the western, central and northeast. Smoke effects from extended drought fires have impacted local communities.

Cohen asked Celino to explain how the percent containment is calculated. He explained that it is a judgement call by the fire manager on the ground and that it means there is a fire perimeter holding the fire back, and the extent of that perimeter is how the percent containment is calculated. He said they are asking fire managers to be cautious with their estimates of containment because of the current conditions.

Pederson asked Celino how the decisions for the national guard and other fire crews taking water from water supply reservoirs fits in with the DMP. Celino said they make sure they get permission, and they also evaluate how much water would be used. He said overall the amount of water is probably not substantial (45-50k gallons of water in a day, maximum).

**Engineering: John Scannell- DCR**

Scannell did not have any additional updates.

**Public Health: Dalene LaPointe**

LaPointe did not have any specific updates. She provided a link to a new DPH resource on dealing with wildfire smoke: <https://www.mass.gov/info-details/climate-fact-sheet-wildfire-smoke-events>

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

Carroll provided an overview of the recent hydrologic history that led to current conditions. There has been up to 9 inches of precipitation deficit since mid-August. There has also been fast deterioration in conditions starting around the second week of September. In September overall, the Western, CTRV, Central, and Northeast Regions received significantly below-normal precipitation, drying out areas with mild to significant impacts to streamflow. Only the Central and Northeast were declared as Level 1 – Mild Drought. In October, there was a continued lack of rain with windy and dry conditions, leading to

significant to record low streamflows across the Western, CTRV, Central, Northeast and Southeast Regions. The US Drought Monitor reinforces the progression of the drought from mid-September through the end of October.

For the period of mid-September to mid-October, the 60-day SPI is showing the Western, CTRV, Central, and Northeast Regions at level 3, and the Southeast at level 2. The EDDI index is showing level 0 for all regions, which is not surprising given the ET going down at this time of year and this drought being driven more by lack of precipitation than high temperatures. Streamflow is at level 3 in the Western Region, level 2 in the CTRV, Central, and Northeast, and level 1 in the Southeast. Groundwater is at level 1 in the CTRV and Northeast, and normal in the rest, but there is likely a lag-time in the response of this index to the current drought conditions. KBDI is at level 1 in the Western Region, and level 2 in the CTRV, Central, Northeast, and Southeast. Lakes and impoundments are currently normal (level 0) for all regions. The individual indices are showing either the same or worsening conditions when looking at the full month of October instead of mid-September to mid-October.

The drought indices by region were presented for mid-September through mid-October to capture the rapid deterioration in conditions that occurred in the second half of September. Using this lookback period, the drought indices by region show the Western, CTRV, Central, and Northeast at ISL2 and the Southeast at ISL1. Using the full month of October as a lookback period, the Western, CTRV, and Northeast would still be at ISL2, but the Central would be elevated to ISL3 and the Southeast would be elevated to ISL2.

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

There was extensive discussion on what lookback period should be used for making drought level recommendations.

Bentsen commented that that it would be cleaner to evaluate all of October and then reevaluate mid-to-late September separately. Rao responded that that was an option, but having two separate declarations could get confusing with messaging. There was additional discussion on the pros and cons of these two approaches. Maguire also restated his concern over the Blackstone River Basin with rivers below normal flow that were not included in the previous drought declaration, which has implications for certain riverfront areas losing their designations. Bentsen noted that the concern over the Blackstone is another case for revising the declaration for mid-September to the end of September separately. Pederson agreed that looking at mid-month to mid-month comparisons will be confusing to the public. Carroll added that there is precedent for mid-month lookbacks and that the difference this time is that we were not able to have a meeting two weeks prior due to scheduling conflicts.

LeVangie asked if the Secretary would be willing to change the previous declaration and questioned the purpose of looking at such short time intervals since conditions are constantly changing. Rao responded that the general approach is to look month to month, but the conditions are unusual with the rapid deterioration the state is experiencing. Maguire added that the geographic distribution is an important context in addition to the time period. The previous drought declaration did not include the Western, Southeast, or CTRV Regions, despite there being extremely low streamflows observed in these regions.

Carroll mentioned that staff found at least three other instances when mid-month lookback periods were used. Pederson commented that the mid-month lookbacks used in previous drought declarations were

capturing the latest information for a new declaration, not going backwards and changing a declaration that already occurred. She also raised concerns that the index levels shift a lot depending on the lookback period, so changing the approach is a risky precedent to set, especially if the only reason for changing the lookback period is due to the Wetlands Protection Act. Maguire explained that the Wetlands Protection Act is part of the drought management process and the reason that it is being discussed so frequently recently is because of the unprecedented precipitation deficits that the state is experiencing.

There was additional discussion over the implications of changing a past drought declaration. There are clear implications for the Wetlands Protection Act, but there are also implications for water suppliers because they are now expected to message about watering restrictions even during non-growing seasons. Messaging about changing what the restrictions should have been retrospectively would be an issue.

Bentsen added that the reason the current debate is happening is because the task force recommendation at the previous meeting was more conservative, which is resulting in the need to jump two levels now.

Rao asked in the chat for task force members to comment if they would prefer looking at the full month of October or mid-September through October. The majority of members indicated preference for looking at the full month of October. Rao then reviewed the initial drought level recommendations based on the data for the month of October. Pederson suggested the Northeast should also be a Level 3, to which there was widespread agreement among members. Celino added that the ongoing fire activity in the Northeast Region is of particular concern and another reason it should be at Level 3.

Rao asked for a vote on the following (for the month of October only):  
Central, NE – Level 3; Western, CTRV, SE – Level 2; Cape, Islands – Level 0

Maguire suggested doing Level 3 for all regions for ease of messaging and because of the historic lack of precipitation. He also reiterated his concern about the Blackstone towns that were not included in the previous declaration. Rao asked how the task force feels about doing some type of streamflow declaration separate from the overall drought declarations. There was general agreement that doing some form of separate stream declaration would be worth considering, although this would be unprecedented and potentially difficult to communicate to the public.

#### **Summary of Recommendations:**

Central, Northeast – Level 3

Western, Connecticut River Valley, Southeast – Level 2

Cape Cod, Islands – Level 0

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

The above recommendation on the regional and basin-specific drought levels will be given to the Secretary.

#### **8. Next Steps**

The task force will meet again in two weeks and will update recommendations accordingly. The idea to separate out streamflow as a declaration will be evaluated.

**Meeting Ended:** The meeting adjourned at 12:24 pm.