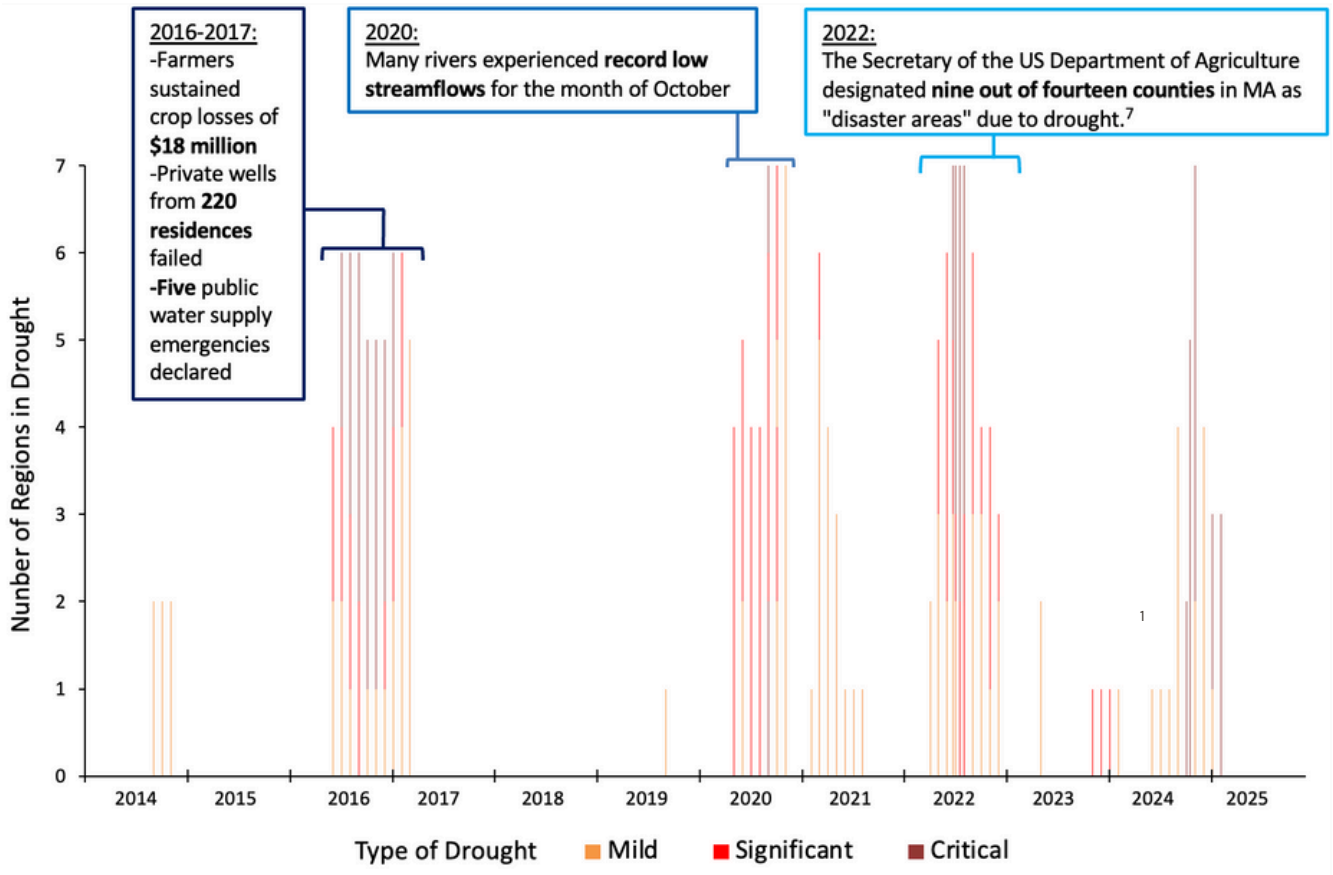
What about Drought?: Current Drought Policy in Massachusetts and the Drought Bill

KEY POLICY MESSAGES

- **To achieve climate resilience, the state must have the authority to require water conservation by region during a drought.**
- **The Drought Bill would enshrine the Drought Management Plan and the Drought Management Task Force in law, allowing the state to mandate consistent water conservation actions during drought conditions.**
- **Mass Rivers urges lawmakers to support the Drought Bill filed in the current legislative session (S586/H1003).**

WHAT DROUGHT DOES TO MASSACHUSETTS

Among the many environmental issues presented by climate change, increased risk of drought is a major concern. Previous droughts in Massachusetts have disrupted agriculture, industry, and public health and safety.[1] Massachusetts cranberries, an iconic local crop and the source of 25% of the nation's supply, are particularly vulnerable to drought with their growth in bogs.[2] Low river flows result in losses in tourism, recreation, and property values, along with detrimental impacts to aquatic species like river herring, mollusks, and rare turtles.[3,4] Low populations of river herring negatively affect commercial and recreational fishing species like bass and cod, which feed on the herring.

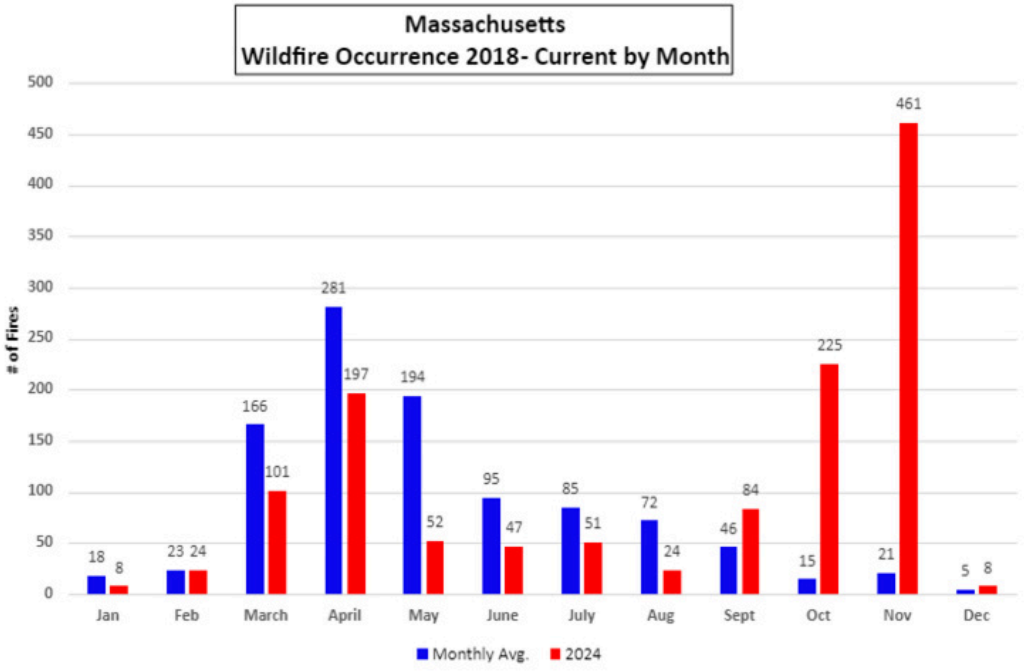


Levels of drought and impacts in Massachusetts over last 10 years. Figure by Lydia Olson, Technical Specialist. Data courtesy of MA Executive Office of Energy and Environmental Affairs [5,6]

During the drought of 2024-25, portions of the state saw their lowest recorded rainfalls ever for the month of October,[8] and the lowest groundwater levels ever recorded in November.[9]

Wildfire levels in October 2024 spiked 1,200%, reaching numbers similar to those seen in the early spring brush fire season.[10]

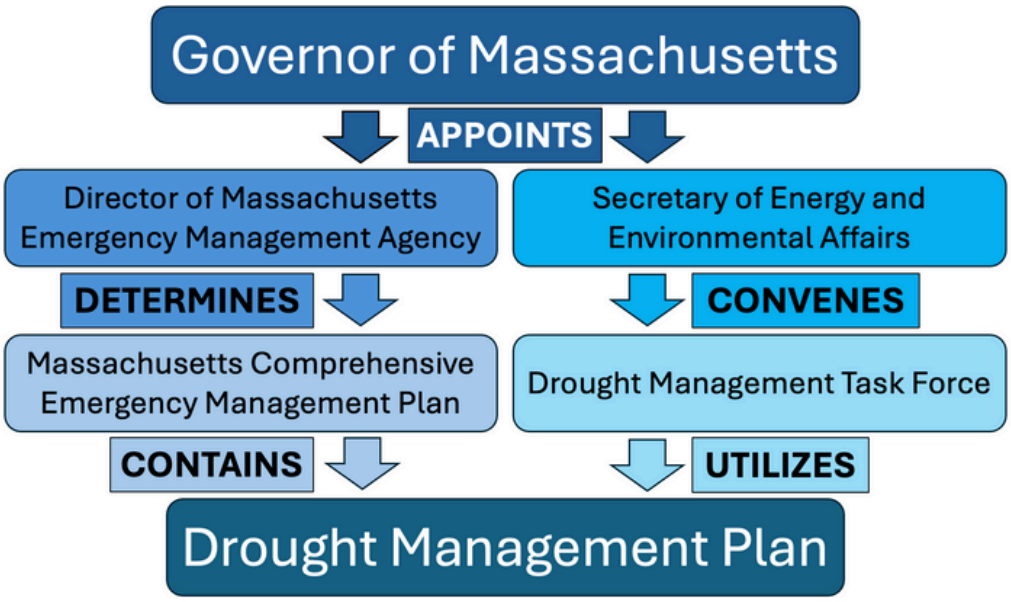
The economic and health effects of the drought in 2024 are still being assessed. In the coming years, more frequent, intense drought due to climate change will further exacerbate these issues. Massachusetts' response to drought needs to be swift, effective, and consistent across the state.



Massachusetts 2024 Wildfire Statistics courtesy of MA Bureau of Forest Fire Control and Forestry in the Department of Conservation and Recreation

GAPS IN MA'S DROUGHT DETERMINATION PROCESS

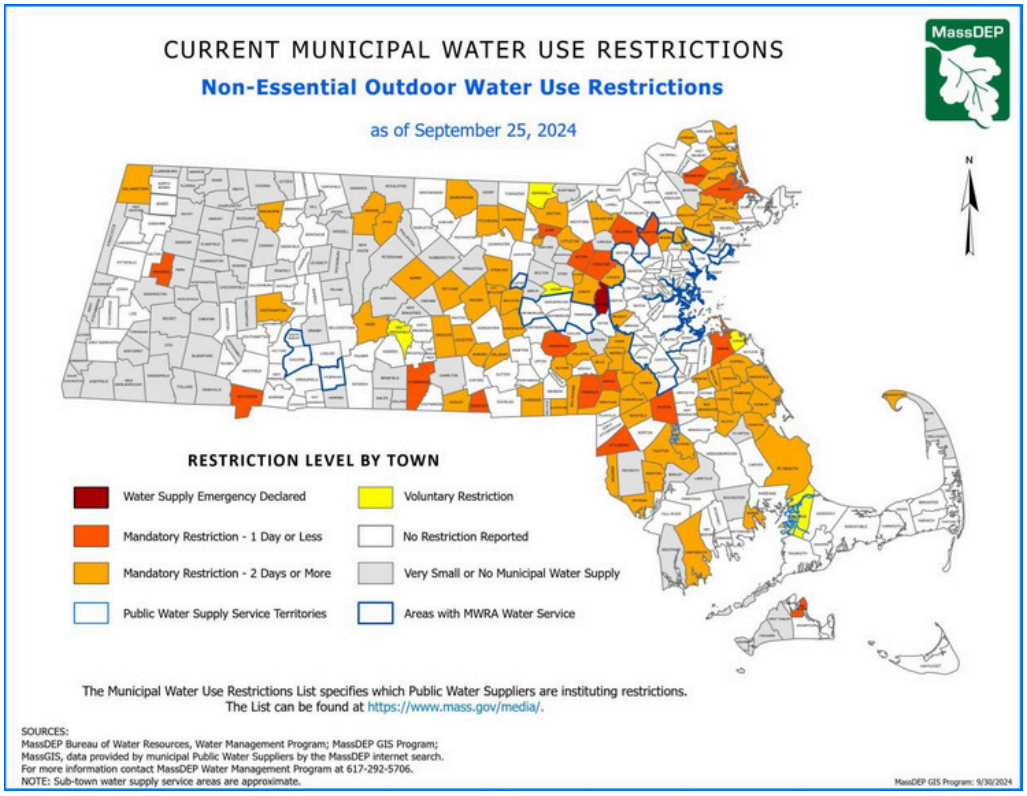
In Massachusetts, drought is determined by the Drought Management Task Force, as stated in the state's Drought Management Plan (DMP). The process of how agencies arrive at the DMP is shown in the figure below.



The existence of the Massachusetts Emergency Management Agency (MEMA) is currently the only part of the drought process mandated by law.

The agency was created under the Massachusetts Civil Defense Act in 1950.[11] Therefore, Massachusetts's drought determination, response, and management is subject to change by administration. Though the system illustrated above has operated consistently since the early 2000s, it does not have complete statutory authorization, leaving our state's drought response vulnerable to political changes and pressure.

Additionally, the current state-level drought management system only determines drought-related actions for state agencies; **local drought responses are left to the discretion of municipalities.** Drought responses based on level are recommended by the DMP and the DMTF, but the state of Massachusetts does not have the authority to require water conservation until the Governor declares a drought emergency- the highest level of drought. **Municipalities are not required to adhere to the actions recommended by the DMTF until a drought emergency is declared, and such an emergency has *never* been declared since the formulation of the DMP and DMTF.** Therefore, municipal water conservation measures during drought vary widely across the state, with some towns implementing watering bans and others only imposing voluntary measures (*see Municipal Water Use Restrictions figure*). Additionally, towns that get their water from water suppliers with large reservoirs, like the Massachusetts Water Resources Authority (MWRA), are exempt from water conservation restrictions.



The current system overlooks the importance of groundwater in the state's water cycle and water supplies. Groundwater is fed by surface water and vice versa, but most people do not realize that private wells are withdrawing water from sources that are interconnected with public water supplies. Public water suppliers and large water users are subject to drought restrictions under the Water Management Act, **but private well users are also not subject to the state drought recommendations.** Unregulated private well users make up a large portion of water users across Massachusetts, who are all potentially not conserving water during a drought.

The lack of uniformity in drought response statewide is confusing for the public to follow and inconsistent with scientific recommendations.

Varied drought responses can also seem inequitable as one municipality may adhere to the state's drought recommendations, while a neighboring town does not. Water conservation, when used properly, does work: an analysis of outdoor watering restrictions in the Charles River Watershed demonstrated water use savings of 20-50% when restrictions were implemented effectively.[12] However, effective water conservation relies on consistency in education and restrictions across regions.

The current reactive, irregular drought policy application and enforcement in Massachusetts conflicts with the state's climate resilience goals. With climate change, temperatures are expected to increase in Massachusetts, and precipitation is also expected to increase but occur over fewer days. These two predictions[13] indicate droughts are expected to increase in frequency, duration, intensity, and rapidness to develop.[14] **The 2023 ResilientMass Plan lists drought as having high consequences for humans, the economy, and the environment.**[15] Outdoor watering in the summer can account for up to a 60% overall increase in a town's water use. If non-essential uses of water are not properly curtailed during periods of drought, then the public and environmental health of Massachusetts will be put at even higher risk.

A DROUGHT BILL FOR MASSACHUSETTS

To increase climate resiliency and protect public health and the environment during drought, Mass Rivers and the Charles River Watershed Association formulated a drought bill for the state legislature (194th General Court S586/H1003: An Act relative to maintaining adequate water supplies through effective drought management). **The Drought Bill will preserve the DMTF and its duties, and turn water conservation actions recommended by the MA Secretary of Energy and Environmental Affairs into executive orders, to be enforced by cities and towns to the fullest extent permitted by law.** All water users will be subject to non-essential outdoor water conservation orders, such as lawn and garden watering, even private well users. Essential water use, including indoor use, is exempt from the law.

The Drought Bill will create an enforceable drought management system that will apply to all water users regardless of their location or water source, and a policy that is easy for municipalities to understand and implement.

Enshrining the Drought Management Task Force and the Drought Management Plan in law will provide us with procedural stability and drought response predictability grounded in science, making our state more able to protect public health and safety, the environment, and our economy during droughts. Mandatory water restrictions for all water users at lower levels of drought will ensure more water for use in the future, which aligns with Massachusetts' need for more housing. Conservation on a regional level is more likely to be effective, as people receive the same message from several sources, as noted by the MWRA. Additionally, municipalities will be able to take advantage of state messaging resources instead of having to produce their own materials for drought declarations. Passing the Drought Bill will make Massachusetts responsive to drought in an equitable way and much better prepared for an uncertain future.

Endnotes

1 Eastern Research Group (2023) ResilientMass Plan: 2023 Massachusetts State Hazard Mitigation and Climate Adaptation Plan. Massachusetts Emergency Management Agency and Massachusetts Executive Office of Energy and Environmental Affairs. Page 204
2 Terstein, Z. (2022, Sept. 14) "Northeast drought endangers Massachusetts' cranberry harvest." *Grist.*
3 Massachusetts Drought Management Task Force Meeting Summary. Page 3. November 8, 2016.
4 Abel, D. (2020, Sept. 25) "With record temperatures and little rain, a severe drought has gripped much of New England." *Boston Globe.*
5 Rao, V., Mascarenhas, N., Curran, V., and Sliwoski, K. (2019) Massachusetts Drought Retrospective 2016-2017. MA Executive Office of Energy and Environmental Affairs.
6 United States Department of Agriculture. Disaster designation information. Farm Service Agency.
7 *"disaster area" is a designation used by the USDA to allow farmers in those areas to apply for emergency loans.*
8 Wasser, M. (2024, Nov. 8) "The drought in Massachusetts is getting worse." WBUR
9 Loving, B. (2024, Nov. 6) *Streamflow and Groundwater Conditions in Massachusetts.* [Presentation]. Massachusetts Drought Management Task Force Meeting, online.
10 Klein, A. (2024, Nov. 2) "Mass. had more than 10 times as many brush fires than usual this October." NBC 10 Boston.
11 Ch. 639, Acts of 1950
12 Outdoor Water Restrictions During the 2016 Drought. Charles River Watershed Association. April 2018.
13 Eastern Research Group (2023). ResilientMass Plan, page 204
14 Ibid, pg. 187
15 Water Conservation Program. Town of Needham.
16 Massachusetts Water Resources Authority Drought Plan. p.6-2/90. 1989.

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