

Hydrologic Conditions in Massachusetts for *September 2025*

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DCR Office of Water Resources

Drought Management Task Force

October 8, 2025

Meeting Co-Chairs: EOEEA, MEMA



MA Drought Management Plan Indices

Numbers in parentheses indicate number of data points across the state



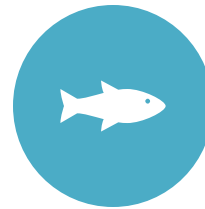
Precipitation (93)



Streamflow (75)



Groundwater (63)



Lakes and
Impoundments (20)



KBDI - Fire Danger
(36)



Evapotranspiration
(national map)

MA Drought Management Plan

Index Severity Levels

Index Severity Level	Percentiles for: Precipitation, Streamflow, Lakes and Impoundments, Groundwater, and Evapotranspiration	Keetch-Byram Drought Index
0	>30 th percentile	< 200
1	≤30 and >20	200-400
2	≤20 and >10	400-600
3	≤10 and >2	600-700
4	≤2	700-800

MA Drought Management Plan

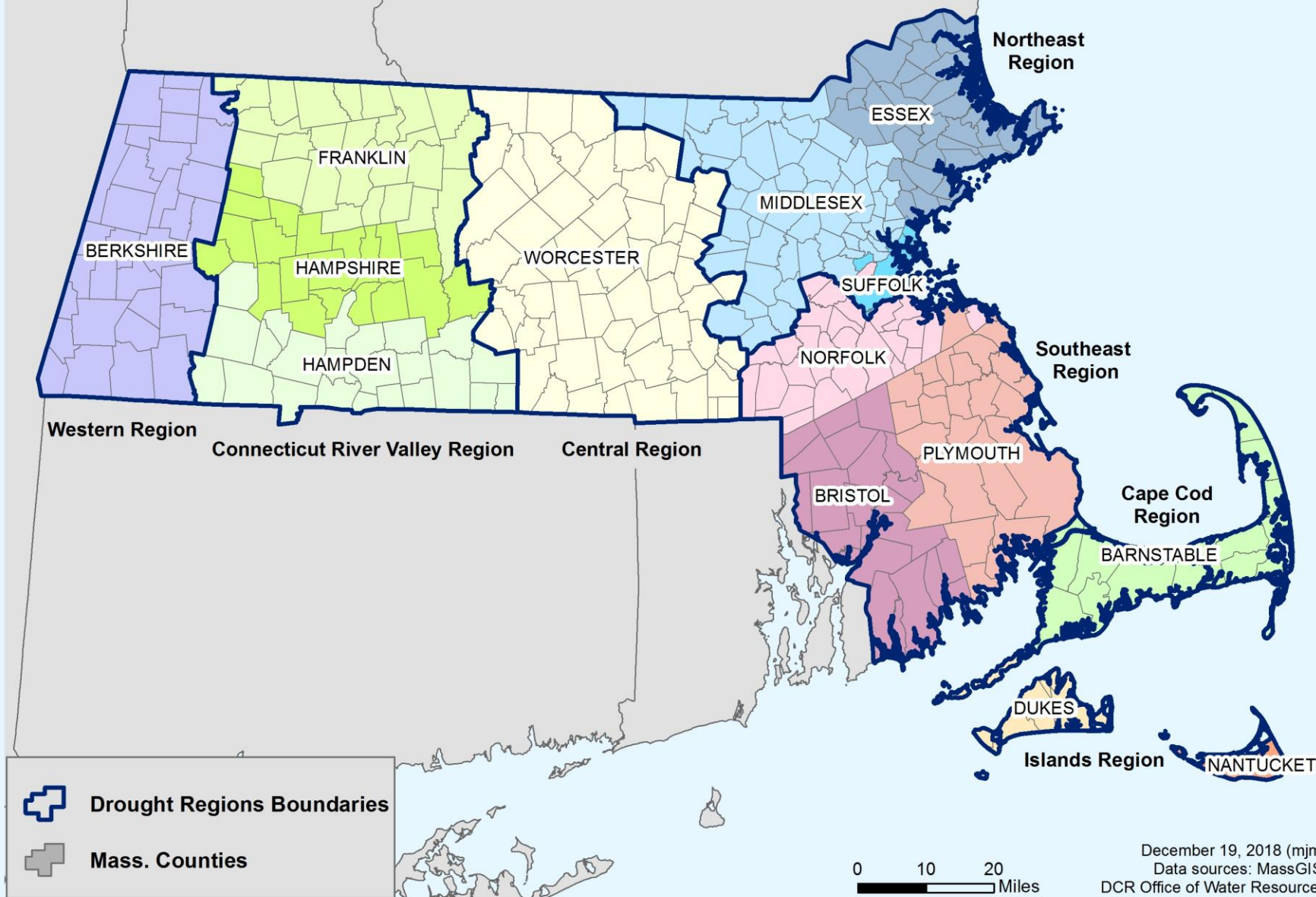
Drought Levels





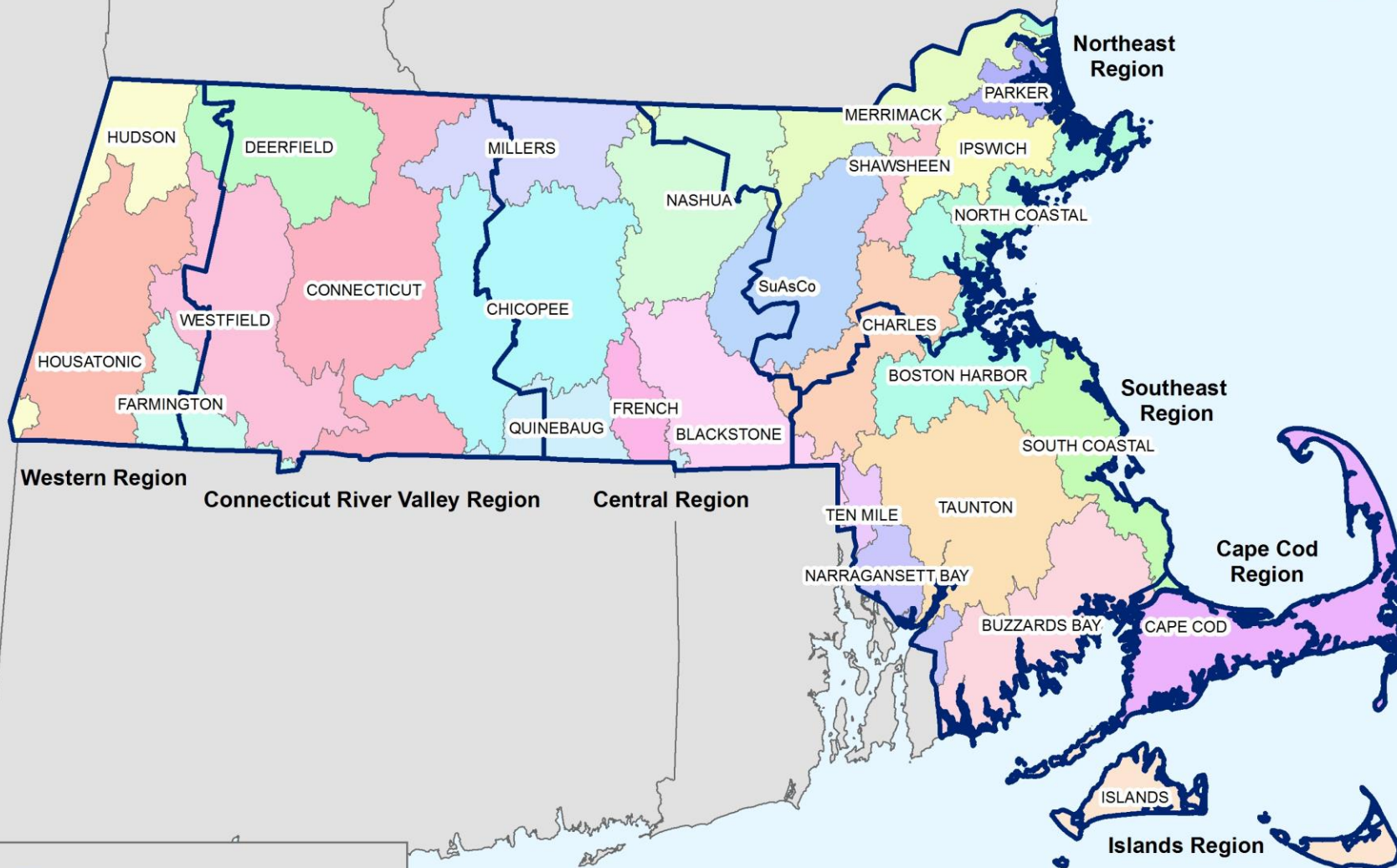
MASSACHUSETTS DROUGHT REGIONS

with Counties





MASSACHUSETTS DROUGHT REGIONS with Watersheds



-  Drought Regions Boundaries
-  Mass. Counties

0 10 20
Miles

October 11, 2019 (mjm)
Data sources: MassGIS,
DCR Office of Water Resources

Task Force Member Updates



Hydrologic
Conditions



Weather &
Forecast



Water Supply
Impacts



Environmental
Impacts



Agricultural
Impacts



Fire Danger



Engineering/
Infrastructure
Impacts

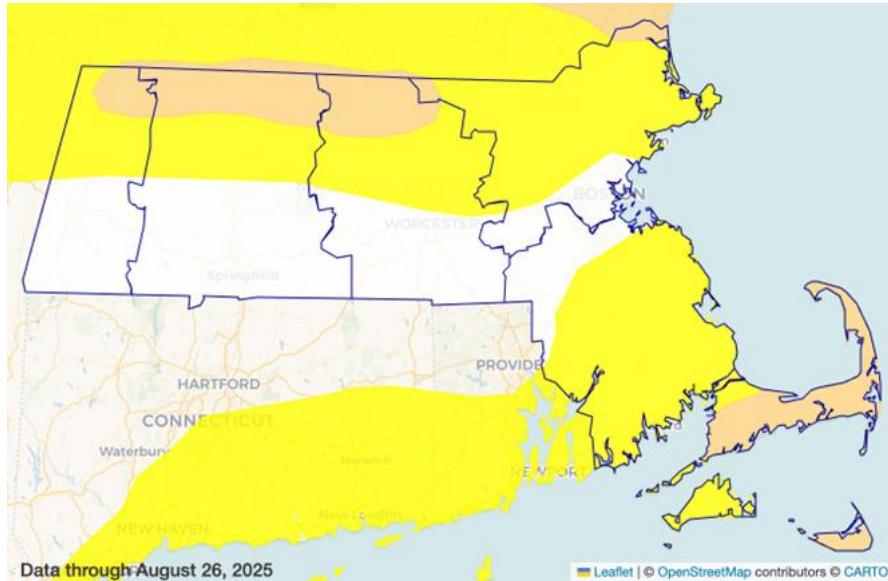


Public Health
Impacts

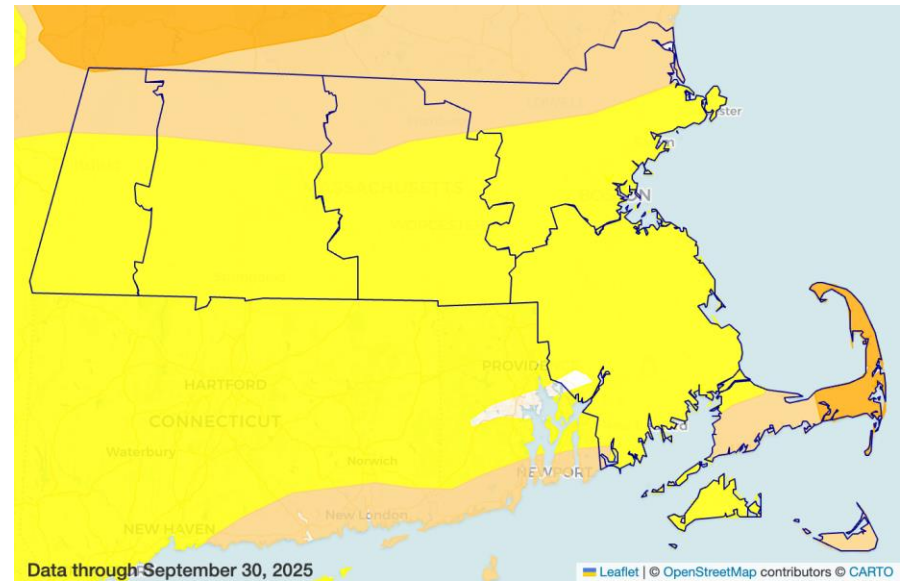
Recent Hydrologic History

- **Mid-August through February – onset and variable conditions**
 - Impacts to streamflow and groundwater develop and persist
- **March through May – recovery except Cape and Islands**
 - Improvements to streamflow and groundwater except in the Cape Cod and Islands Regions
- **June and July – mixed conditions**
 - Mixed precipitation across the state with some areas drying out
- **August – significantly below normal streamflow emerging**
 - Precipitation and streamflow below normal and groundwater low to normal
- **September – continued low streamflow and impacts to groundwater**
 - Precipitation normal except for the Islands
 - Below-normal streamflow throughout much of the state
 - Below-normal groundwater

US Drought Monitor



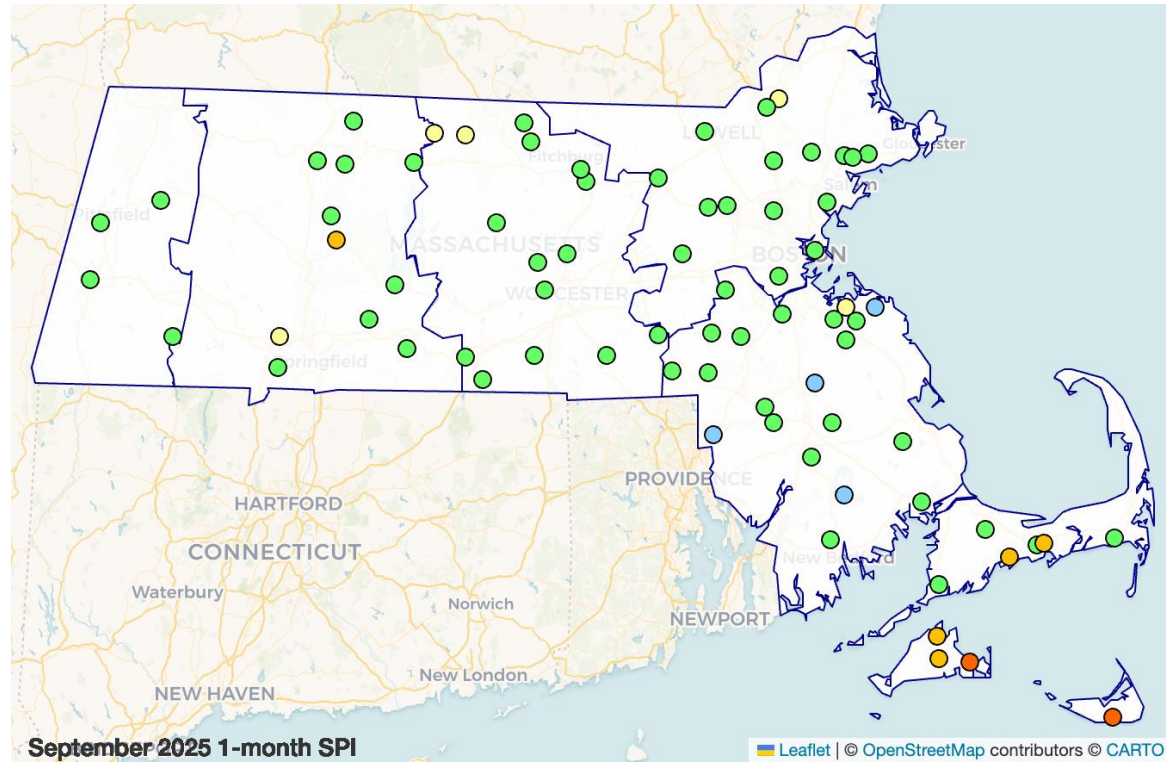
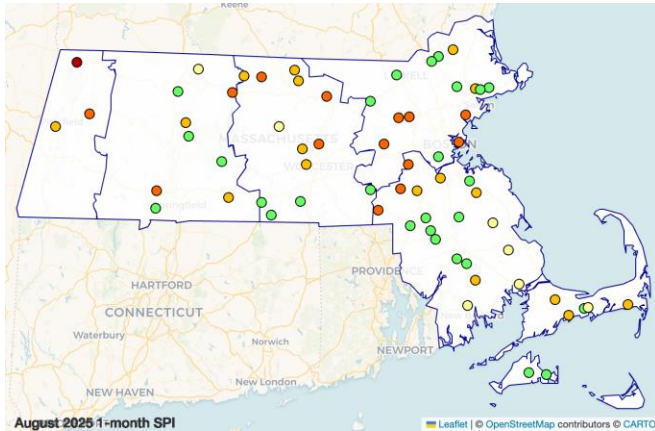
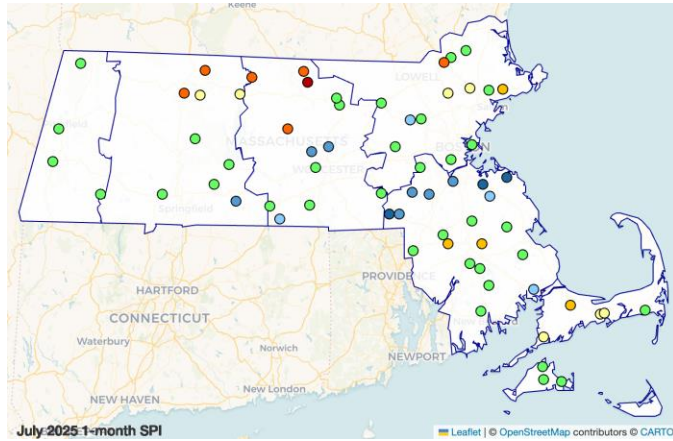
Data through August 26, 2025



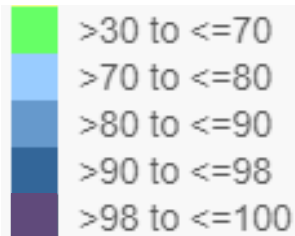
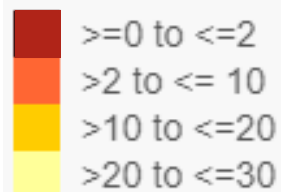
Data through September 30, 2025

	None		
	D0 (Abnormally Dry)	USDM	MA DMP
	D1 (Moderate Drought)	0	= 1
	D2 (Severe Drought)	1	= 2
	D3 (Extreme Drought)	2,3	= 3
	D4 (Exceptional Drought)	4	= 4

Standardized Precipitation Index



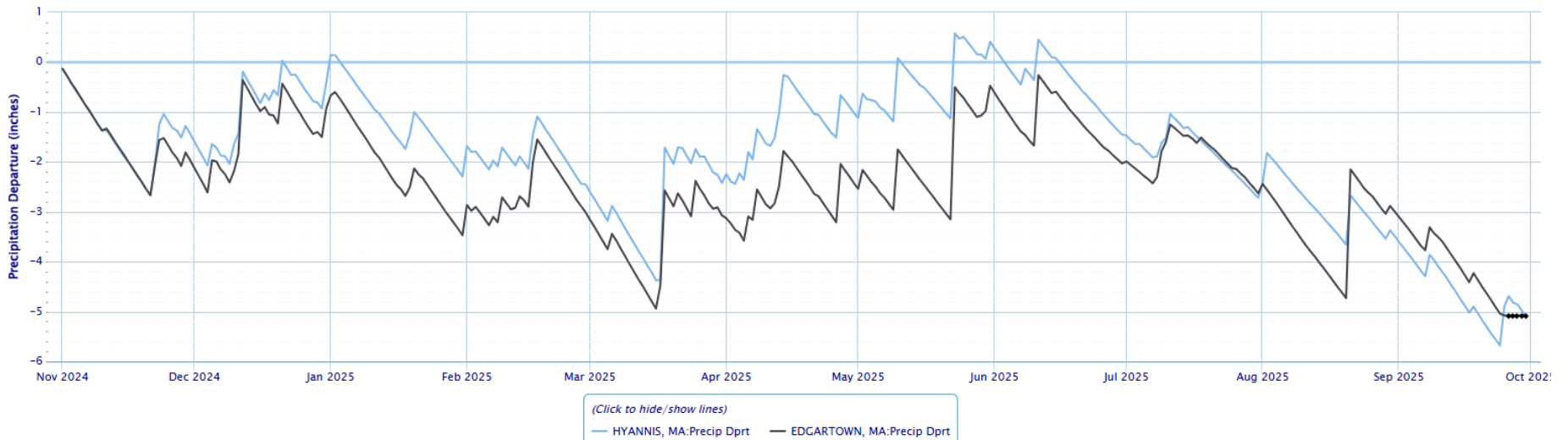
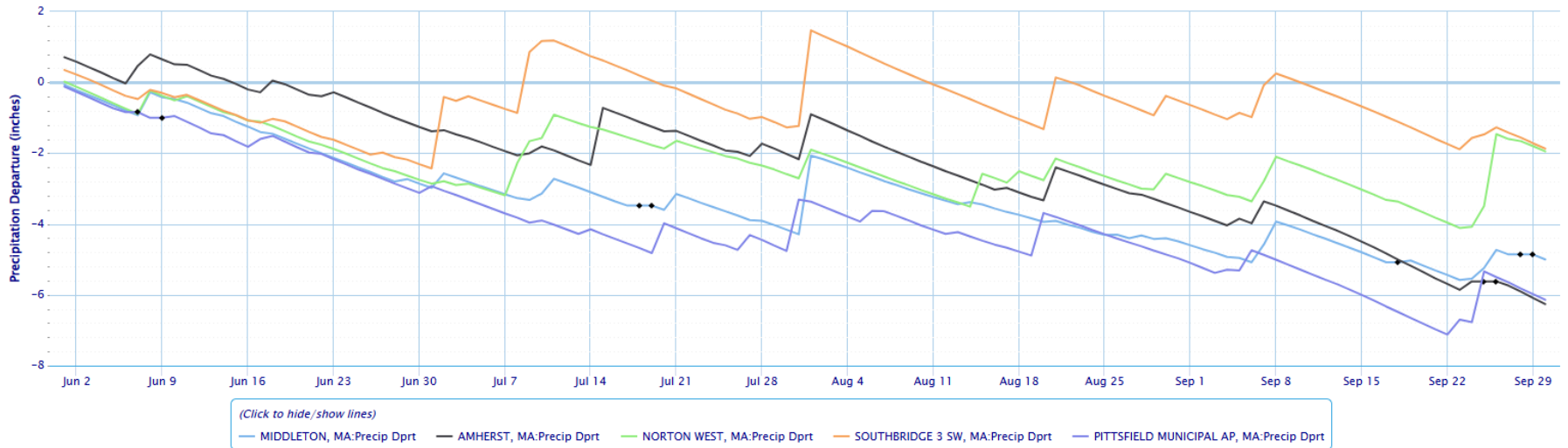
Percentiles



Index Severity Levels



Up to 5" of Precipitation Deficit



Standardized Precipitation Index as Percentile

Region	Number of sites	1-mo *	2-mo	3-mo	6-mo	9-mo	12-mo	24-mo	36-mo *
Western	4	45	27	24	42	40	34	56	76
CTRV	11	48	30	18	58	50	29	46	79
Central	15	41	24	33	45	41	24	53	84
Northeast	16	47	31	26	42	32	20	43	70
Southeast	21	60	39	52	58	48	34	56	77
Cape Cod	6	36	22	13	24	10	5	8	42
Islands	4	11	18	14	32	23	9	3	28

Index Severity Levels

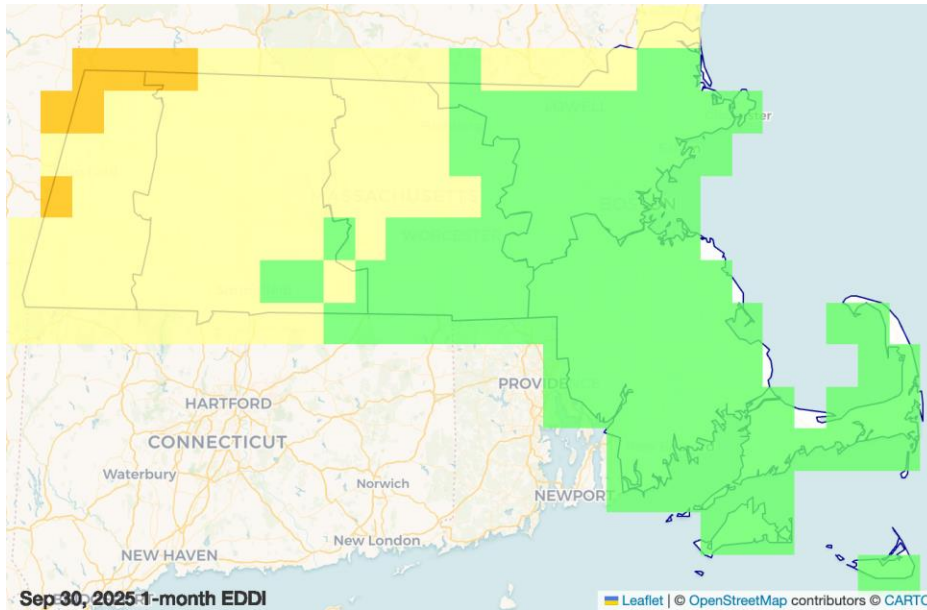
Level 0	Level 1	Level 2	Level 3	Level 4
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* 1- and 36-month SPI is for informational purposes only, not for drought determination. Of the 2- to 24-month look-back periods, the most relevant is selected each month depending on the phase of the drought - onset, during or recovery.

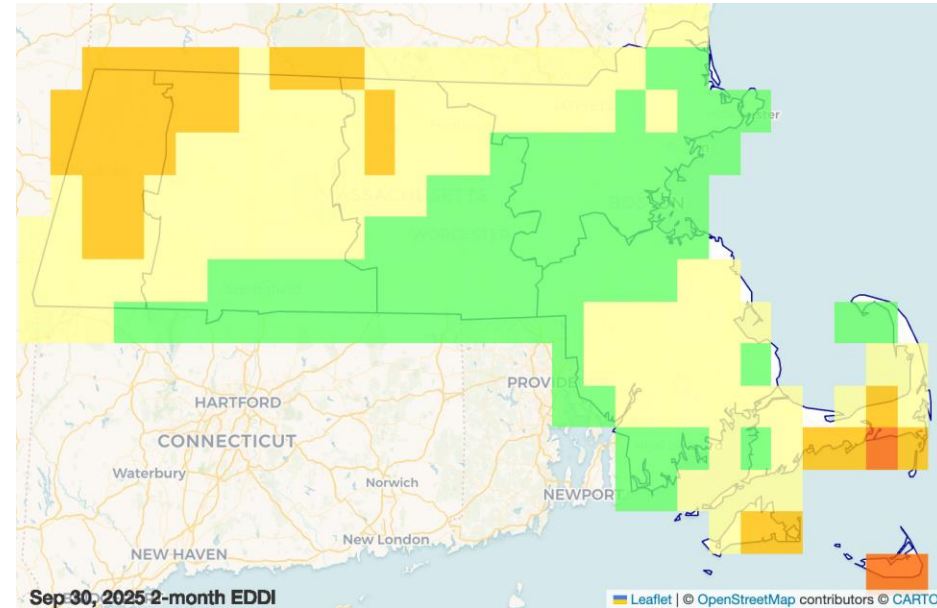
N/A: Not Available

Evapotranspiration

1-month

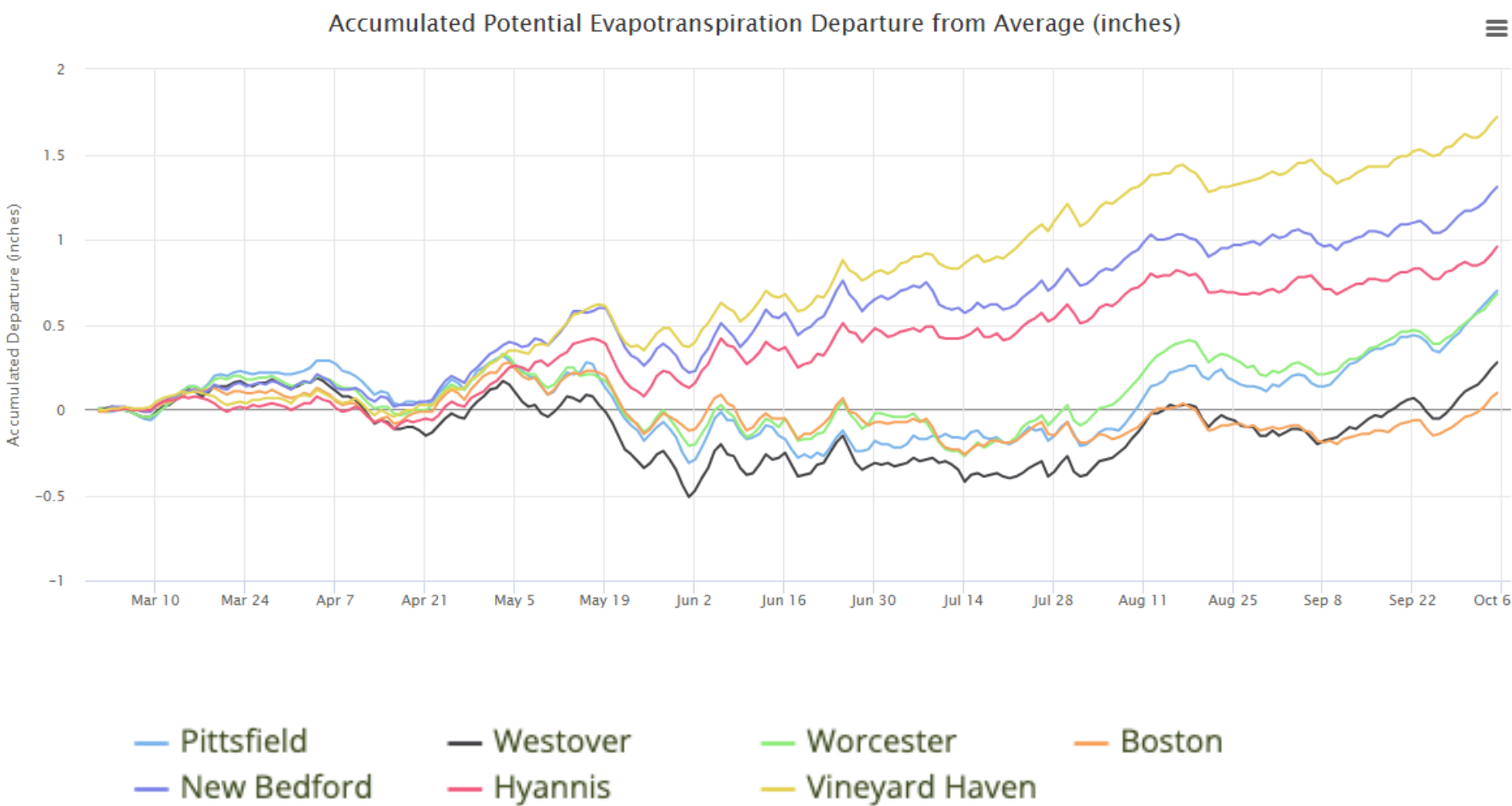


2-month



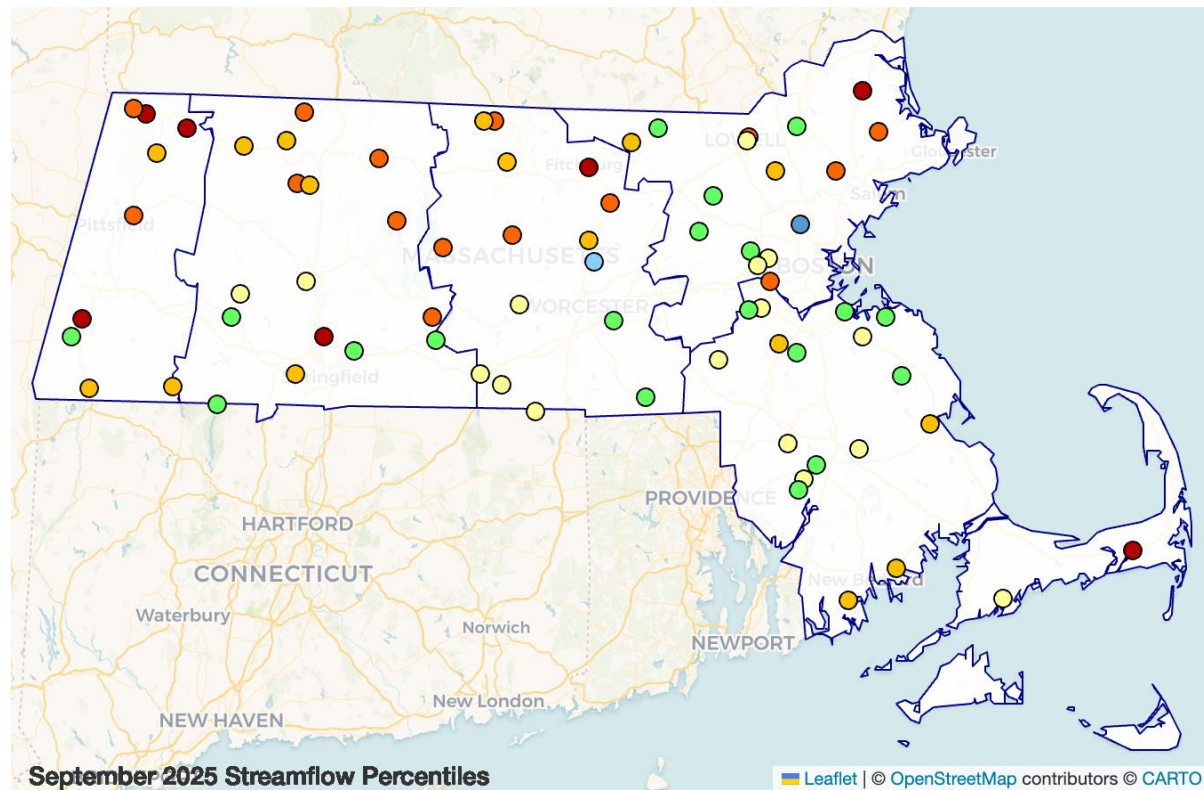
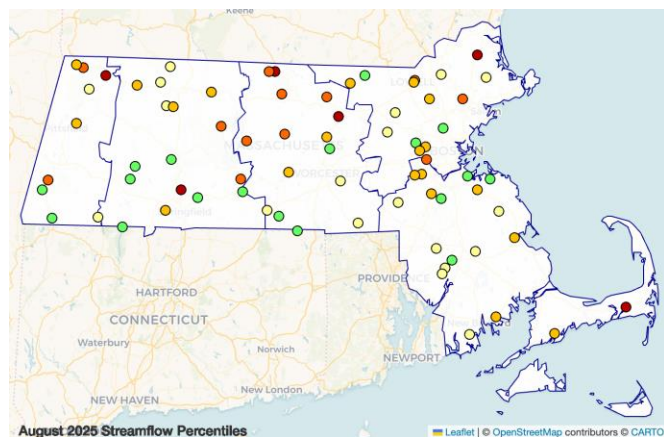
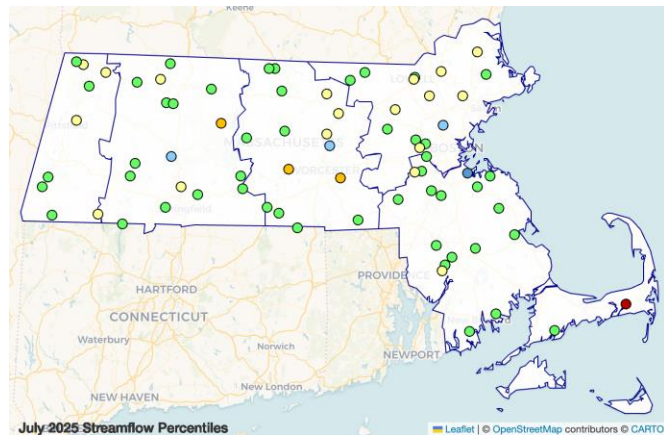
Region	Median 2-month EDDI (2025-09-30)
Western	22
CTRV	25
Central	33
Northeast	32
Southeast	30
Cape Cod	23
Islands	20

Accumulated Potential Evapotranspiration Departure from 30-Year Average in inches

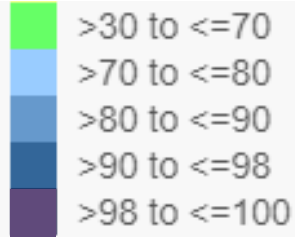
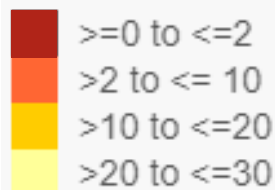


Streamflow

Percentiles of Monthly Median



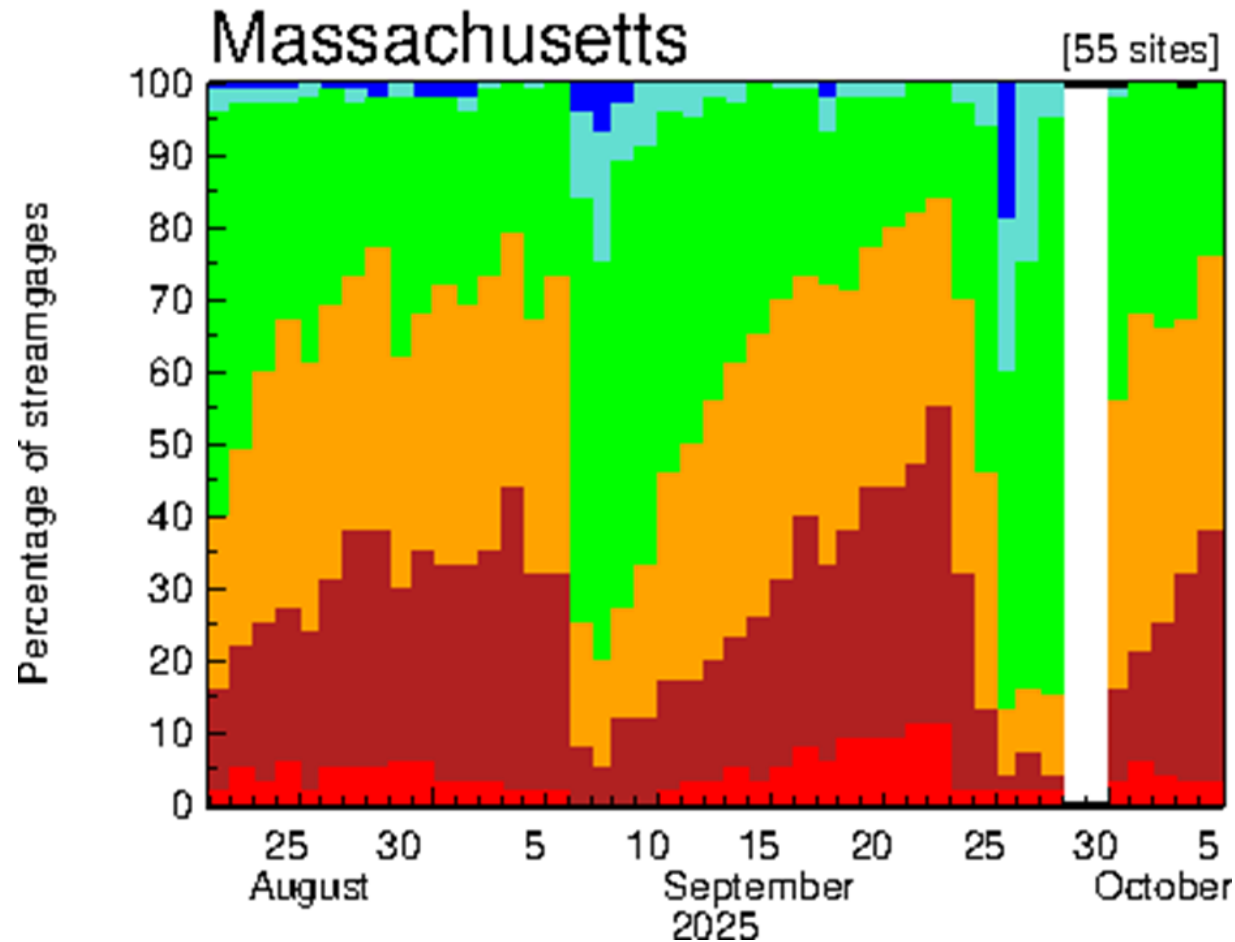
Percentiles



Index Severity Levels



Percent of Gages at Various Percentiles



Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Streamflow Index

Region	Number of gages reporting	≥0 to ≤2 percentile	>2 to ≤10 percentile	>10 to ≤20 percentile	>20 to ≤30 percentile	>90 percentile	Median of individual gage percentiles
Western	9	3	2	3	0	0	8
CTRV	16	1	5	4	2	0	14
Central	15	1	4	3	4	0	20
Northeast	16	1	4	2	3	0	21
Southeast	17	0	0	4	6	0	25
Cape Cod	2	1	0	0	1	0	12

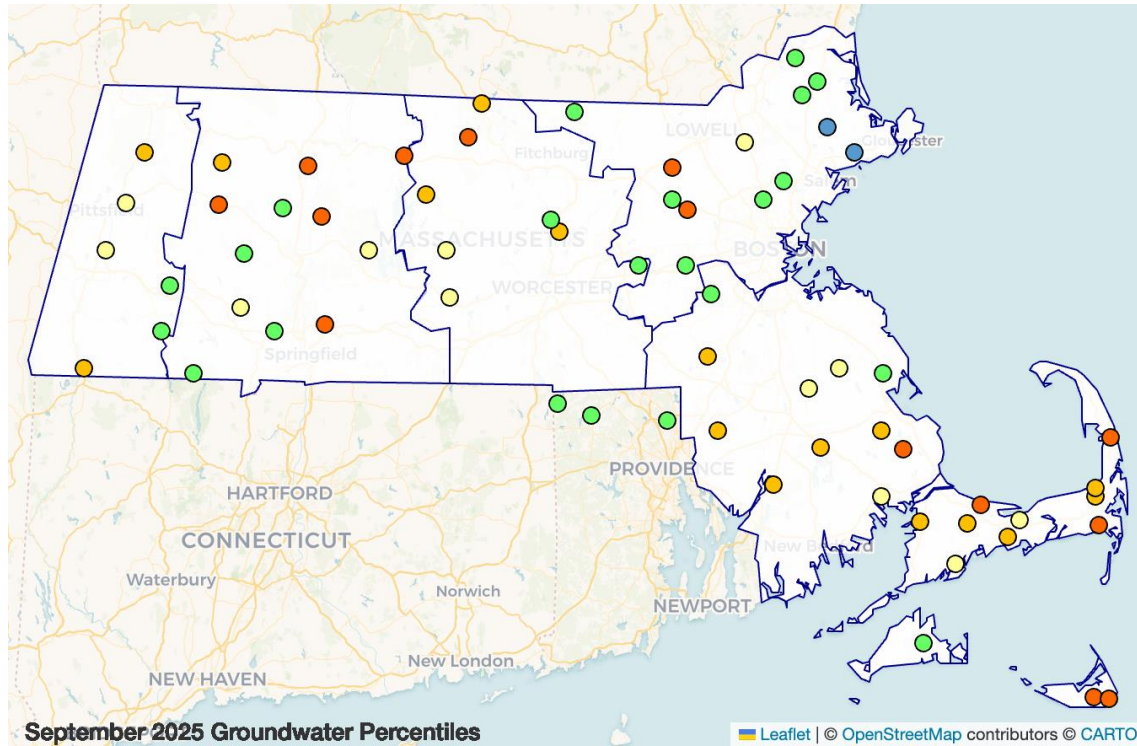
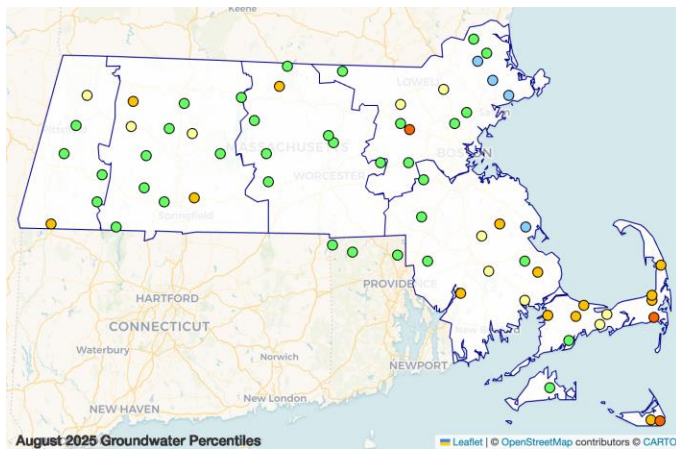
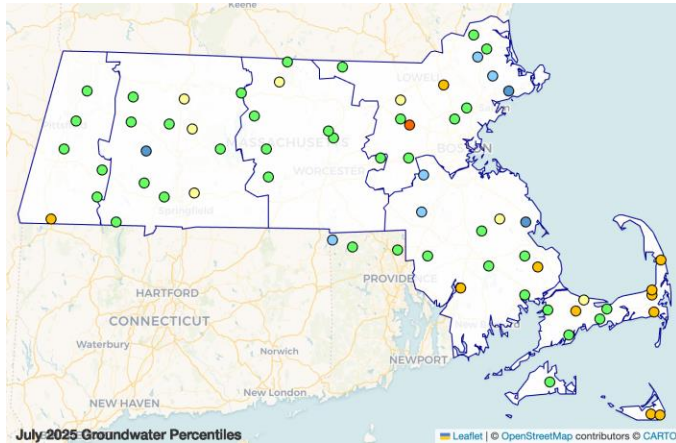
Region	Number Of Gages In Network
WESTERN	9
CTRV	16
CENTRAL	15
NORTHEAST	16
SOUTHEAST	17
CAPE COD	2

Index Severity Levels

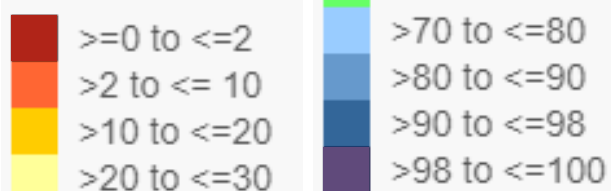
Level 0	Level 1	Level 2	Level 3	Level 4
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Notes: Not all gages report in all months due to ice, beaver dams, or other conditions. The Islands Region does not have any streamflow gages.

Groundwater Percentiles



Percentiles



Index Severity Levels



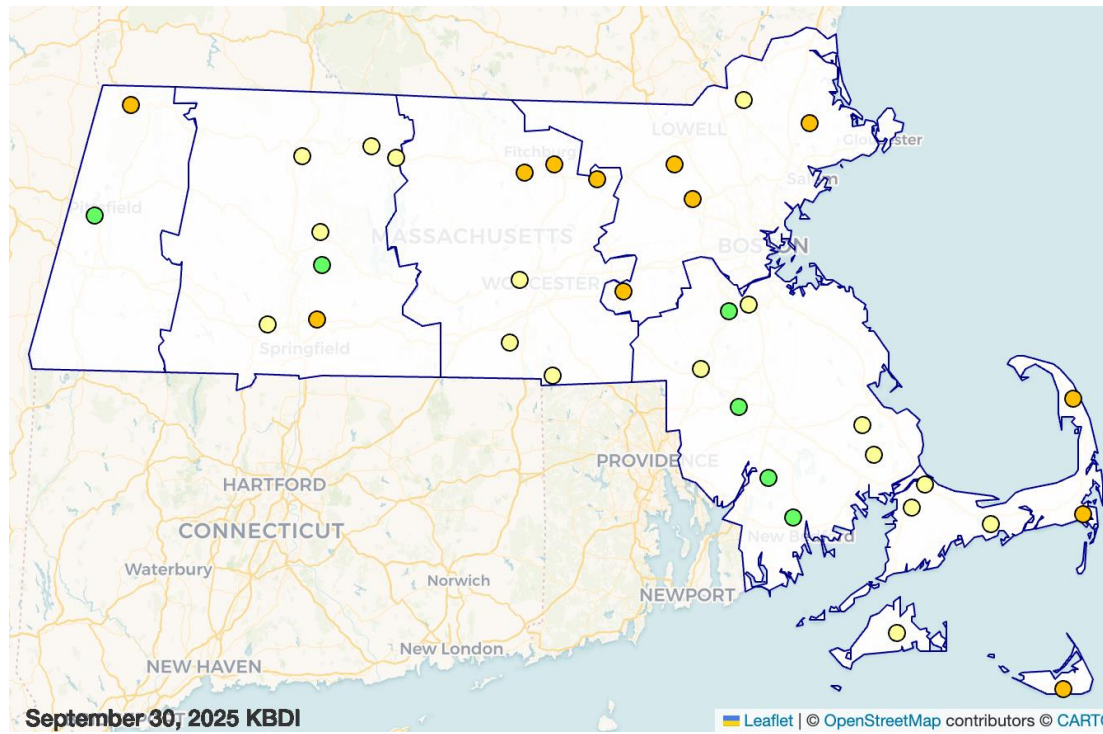
Groundwater Index

Region	Number of wells reporting	≥0 to ≤2 percentile	>2 to ≤10 percentile	>10 to ≤20 percentile	>20 to ≤30 percentile	>90 percentile	Median of individual well percentiles
Western	6	0	0	2	2	0	27
CTRV	12	0	5	1	2	0	18
Central	10	0	1	3	2	0	27
Northeast	13	0	2	0	1	0	43
Southeast	13	0	1	5	3	0	26
Cape Cod	10	0	3	5	2	0	13
Islands	3	0	2	0	0	0	9

Index Severity Levels

Level 0	Level 1	Level 2	Level 3	Level 4
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KBDI - Top 8 inches of soil moisture



Point Values - KBDI Range

● ≥700 to ≤800	● ≥600 to <700	● ≥400 to <600	● ≥200 to <400	● ≥0 to <200
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Region	Number of sites reporting	Highest of site values
Western	2	502
CTRV	7	414
Central	6	552
Northeast	5	517
Southeast	8	333
Cape Cod	5	470
Islands	2	500

Index Severity Levels

Level 0	Level 1	Level 2	Level 3	Level 4
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Lakes & Impoundments

Region	Number of sites reporting	Median of individual percentiles or percent full
Western	2	34th
CTRV	2	47th
Central	4	26th
Northeast	5	31st
Southeast	1	71st
Cape Cod	1	20th

Region	Number of Sites in Network
WESTERN	2
CTRV	2
CENTRAL	6
NORTHEAST	6
SOUTHEAST	2
CAPE COD	1

Notes:

DMP index severity levels do not necessarily reflect water supply status.

ID = insufficient data

ND = data unavailable

Index Severity Levels

Level 0	Level 1	Level 2	Level 3	Level 4
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National Drought Mitigation Center (NDMC)

Condition Monitoring Observer Reports (CMOR)

Reports for Massachusetts for the Month of September 2025

County	Dryness Level	Date	Impact
Franklin	Mildly Dry	9/22/2025	Wilting on annual flowers/crops/vegetables;Wilting on perennial flowers/shrubs; low_or_dry_well,water_rate_change

Reports for Massachusetts for the Month of August 2025

County	Dryness Level	Date	Impact
Worcester	Moderately Dry	8/9/2025	Wilting on annual flowers/crops/vegetables;Leaf scorch on annual flowers/crops/vegetables;Wilting on perennial flowers/shrubs;Leaf scorch on perennial flowers/shrubs;Dusty/cracked soil;
Franklin	Severely Dry	8/14/2025	Reduced pasture, forage;Feeding hay early;Supplemental feed;Purchased hay;Animal stress;Less water in ponds, creeks, etc.;Hauled water;
Franklin	Moderately Dry	8/25/2025	Wilting on annual flowers/crops/vegetables;Wilting on perennial flowers/shrubs;Leaves discolored, shriveled, burnt;Leaf drop or sparse canopy;Poor - Pastures are providing marginal feed; supplemental feeding required.
Plymouth	Severely Dry	8/20/2025	Great Sandy Bottom Pond is the lowest I have seen it since I moved to this location in 1978

Drought Indices by Region - August 2025

Drought Index	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
Precipitation	5 (3 mo)	20 (3 mo)	11 (3 mo)	15 (3 mo)	28 (3 mo)	15 (9-mo)	47 (9-mo)
Streamflow	20	26	16	14	23	9	N/A
Groundwater	41	38	39	46	32	15	13
Lakes/ Impoundments	40	44	26	23	35	19	N/A
ET*	14	16	22	27	41	19	14
KBDI**	463	572	600	532	513	493	450

Month	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
August Declaration	Level 2	Level 2	Level 2	Level 2	Level 1	Level 2	Level 2 – Nantucket County Level 0 – Dukes County

Lakes & Impoundments Index does not reflect water supply status. This summary is provided for informational purposes. No changes in drought status are official until the Secretary of the Executive Office of Energy and Environmental Affairs makes the final drought declaration for the state after receiving a recommendation from the Drought Management Task Force. Data are preliminary and not final until all data are reported. N/A = not applicable. ID = insufficient data. ND = data unavailable *ET not reported outside growing season **KBDI not reported Dec-March outside fire danger season .mos=months

Index Severity Levels

Level 0	Level 1	Level 2	Level 3	Level 4
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Drought Indices by Region - September 2025

Drought Index	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
Precipitation	24 (3 mo)	18 (3 mo)	33 (3 mo)	26 (3 mo)	52 (3 mo)	10 (9-mo)	23 (9-mo)
Streamflow	8	14	20	21	25	12	N/A
Groundwater	27	18	27	43	26	13	9
Lakes/ Impoundments	34	47	26	31	71	20	N/A
ET*	22	25	33	32	30	23	20
KBDI**	502	414	552	517	333	470	500

Month	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
<i>August Declaration</i>	<i>Level 2</i>	<i>Level 2</i>	<i>Level 2</i>	<i>Level 2</i>	<i>Level 1</i>	<i>Level 2</i>	<i>Level 2 – Nantucket County</i> <i>Level 0 – Dukes County</i>
<i>September Recommendation</i>	<i>Level 2</i>	<i>Level 2</i>	<i>Level 2</i>	<i>Level 1</i>	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3 – Nantucket County</i> <i>Level 1 – Dukes County</i>

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Index Severity Levels

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Counties

County	Precip (9-mo)	ET	KBDI	Groundwater	Rec'd Level
Dukes	10	Level 2	Level 1	38	1
Nantucket	0	Level 3	Level 2	9	3

Major Basins Different From Regions

Basin	Drought Region(s)	Precip (3-mo)	ET	KBDI	Streamflow	Groundwater	Rec. Level
Deerfield	CTRV	8	20	376	10	7	3
Millers	CTRV/Central	5	25	353	10	10	3