

Hydrologic Conditions in Massachusetts for *June 2025*

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DCR Office of Water Resources

Drought Management Task Force

July 9, 2025

Meeting Co-Chairs: EOEEA, MEMA



MA Drought Management Plan Indices

Numbers in parentheses indicate number of data points across the state



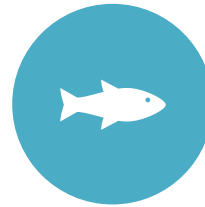
Precipitation (93)



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

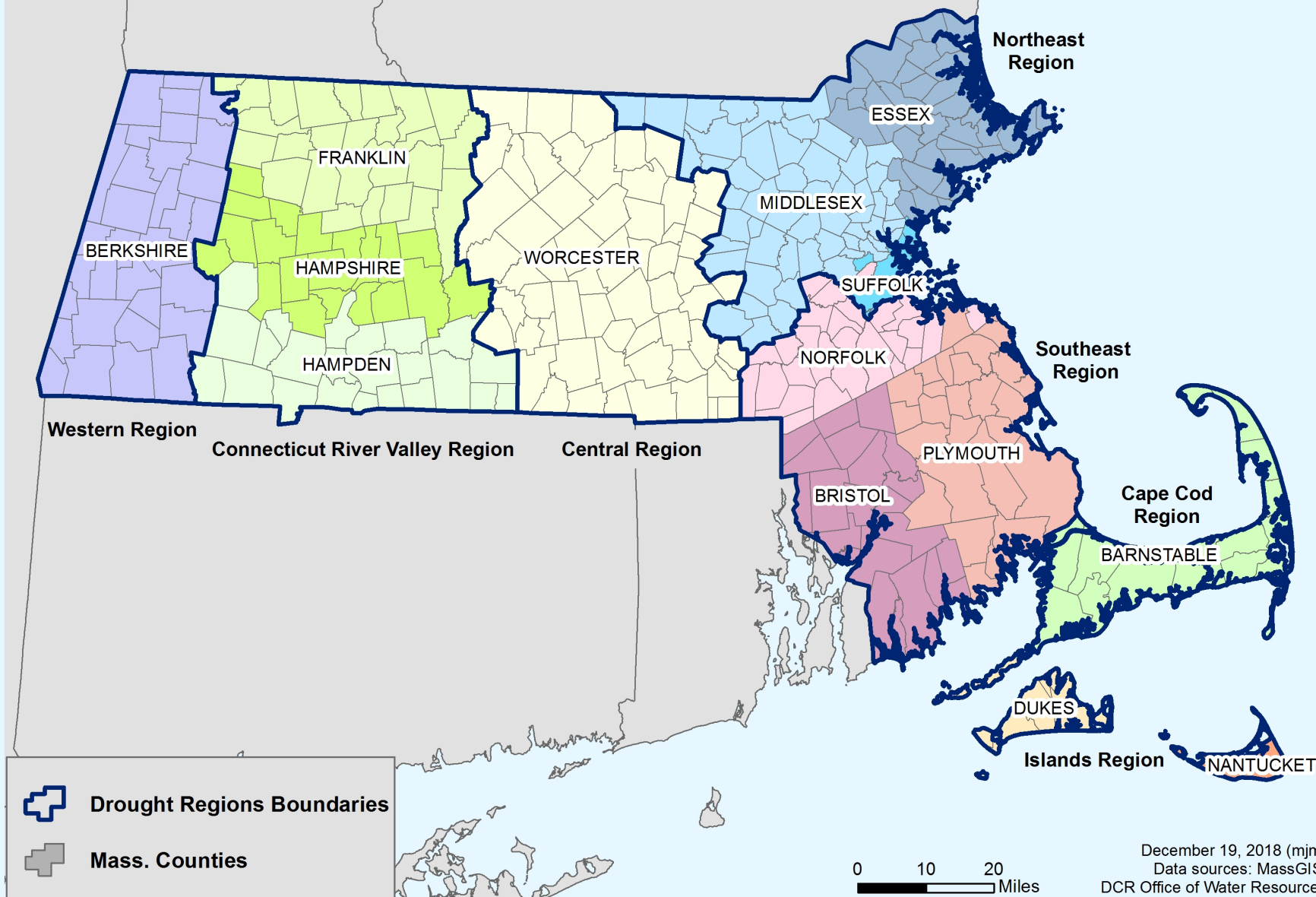
Drought Levels





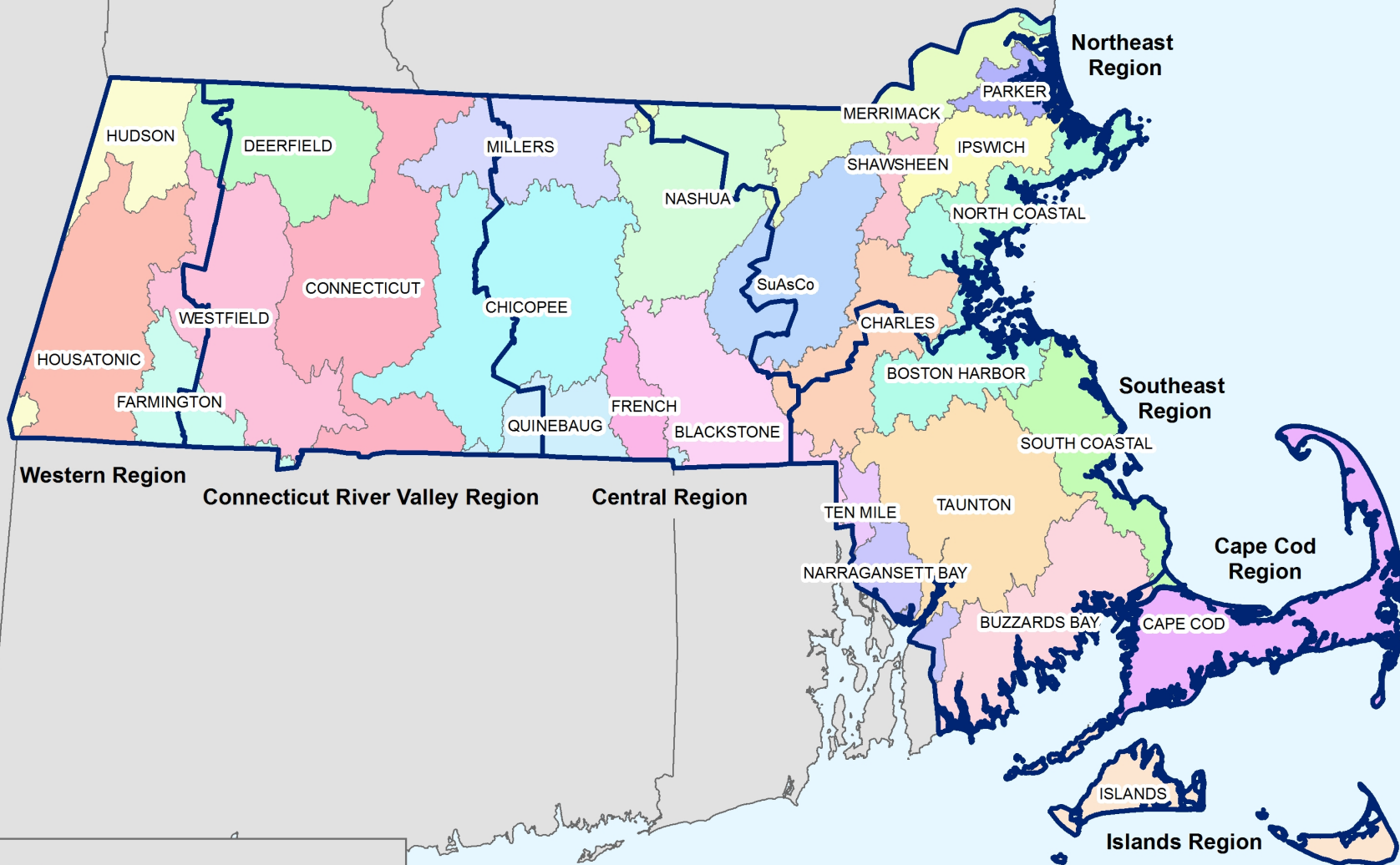
MASSACHUSETTS DROUGHT REGIONS



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



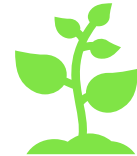
Weather &
Forecast



Water Supply
Impacts



Environmental
Impacts



Agricultural
Impacts



Fire Danger



Engineering/
Infrastructure
Impacts

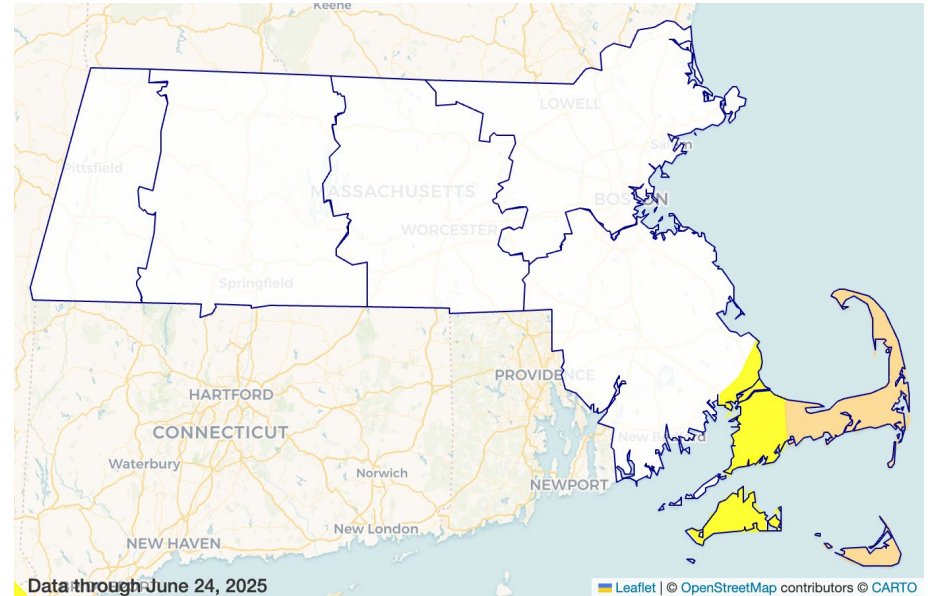
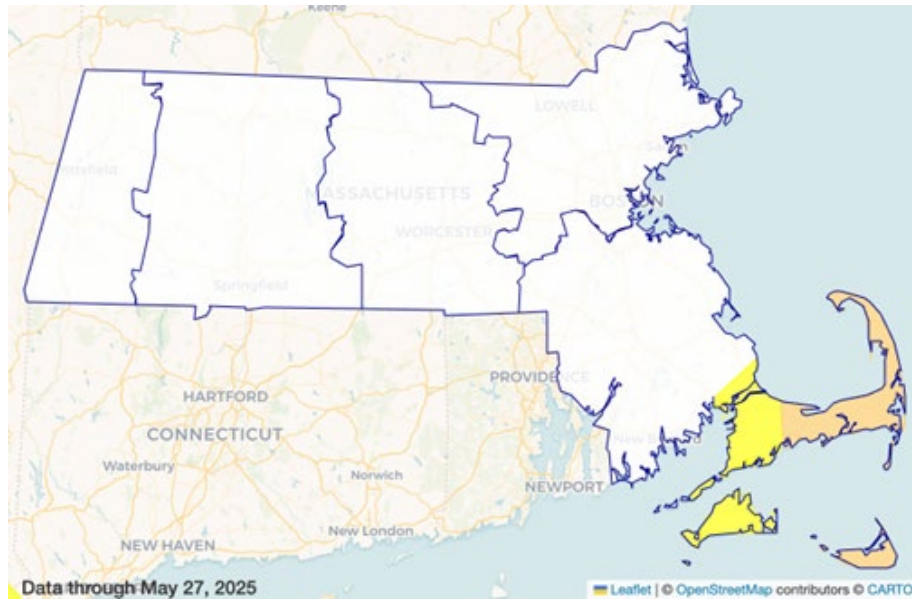


Public Health
Impacts

Recent Hydrologic History

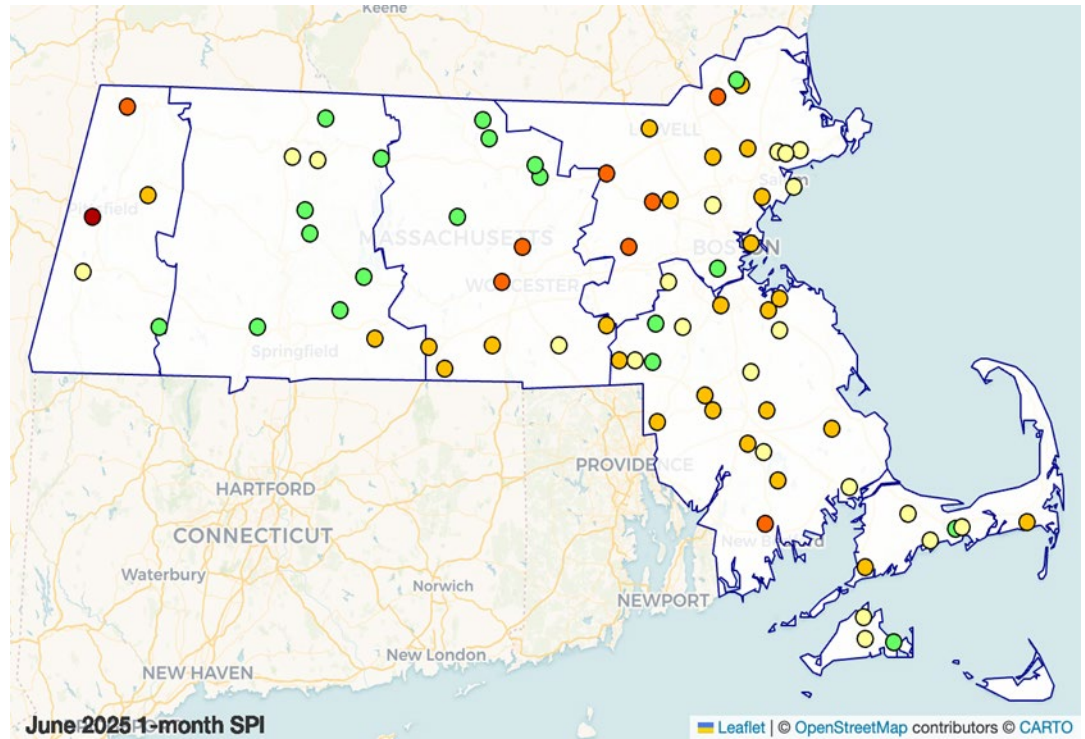
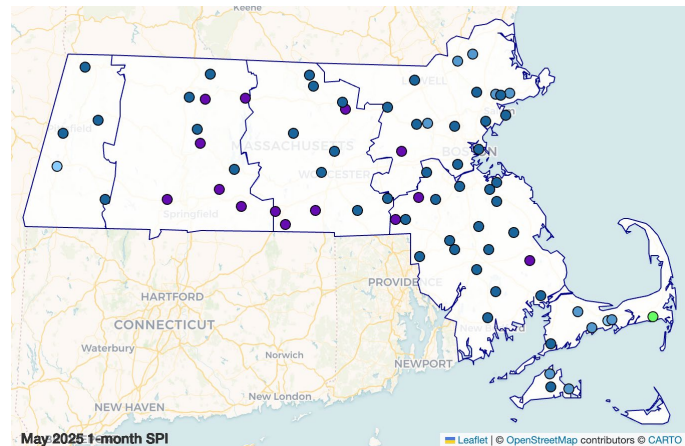
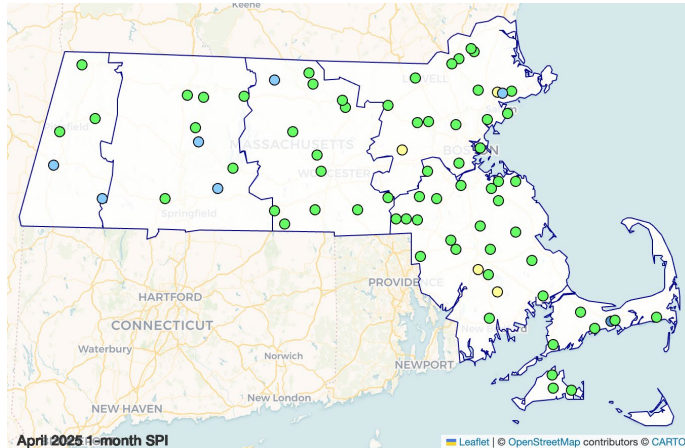
- **Mid-August through November - onset**
 - *Below-normal* precipitation drying out areas with impacts to streamflow and eventually groundwater
- **December-February – variable conditions**
 - Variable precipitation from *below normal* to *above normal*
 - Continued impacts to streamflow and groundwater with temporary relief in streamflow at times
- **March and April – start recovery**
 - *Normal* precipitation with some improvements to streamflow and groundwater except in the Cape Cod and Islands Regions
- **May – significant improvement**
 - *Above-normal precipitation* with significant improvements
- **June – mixed conditions**
 - *Below-normal* precipitation with some drying out
 - Groundwater still recovering in the Cape Cod, Islands, and southern part of the Southeast Regions

US Drought Monitor

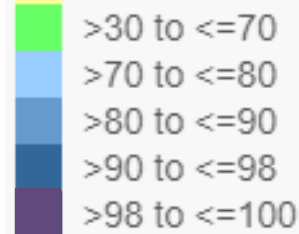
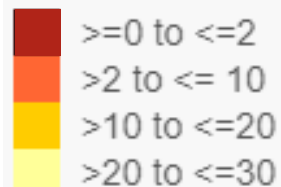


 None			
 D0 (Abnormally Dry)	USDM		MA DMP
	0	=	1
 D1 (Moderate Drought)	1	=	2
 D2 (Severe Drought)	2,3	=	3
 D3 (Extreme Drought)	4	=	4
 D4 (Exceptional Drought)			

Standardized Precipitation Index



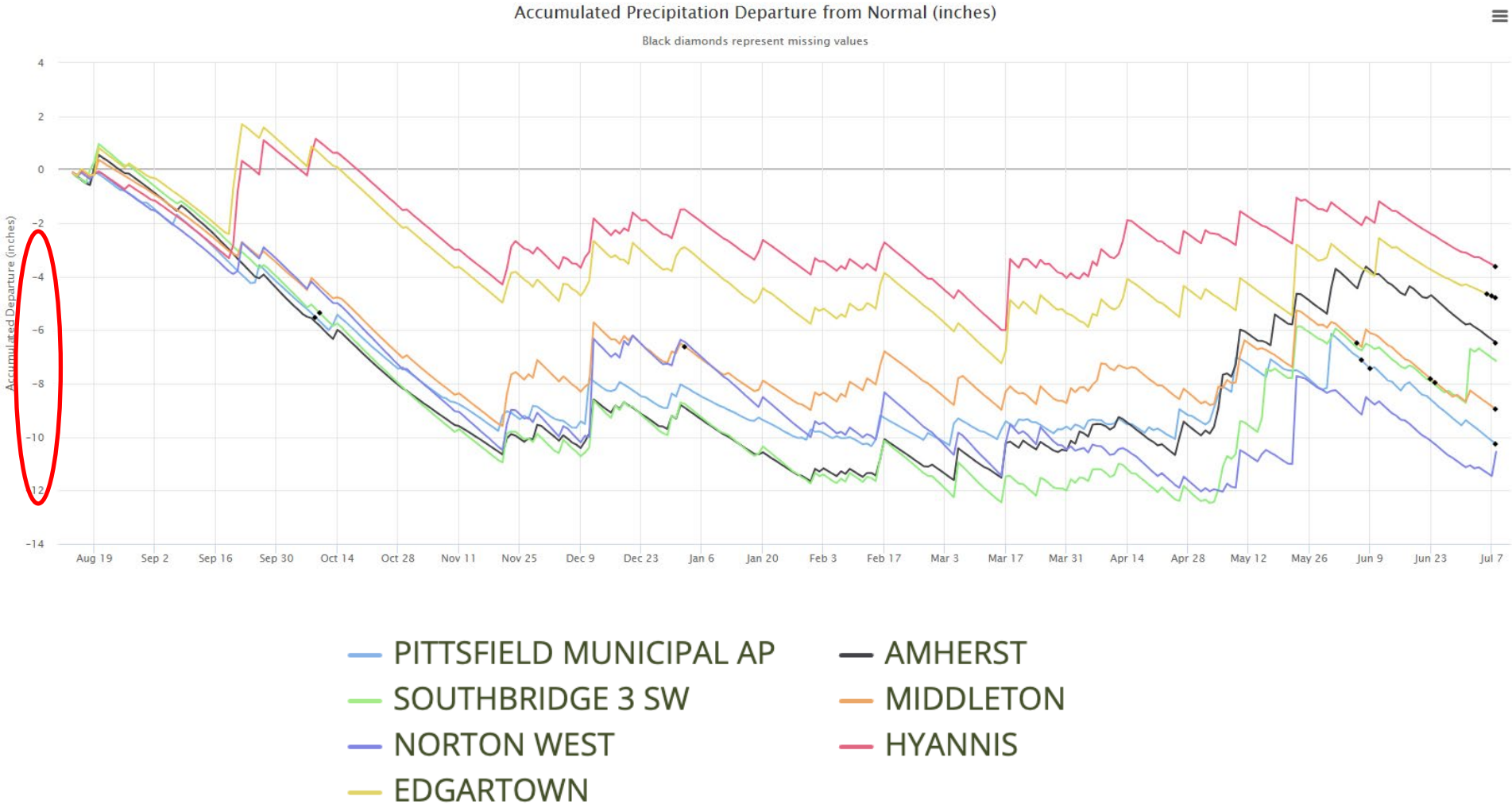
Percentiles



Index Severity Levels



4-12" of Precipitation Deficit since mid-August



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	5	14	70	72	53	32	34	69	63
CTRV	10	38	92	89	74	48	37	87	79
CENTRAL	12	21	86	82	61	31	21	91	89
NORTHEAST	18	19	71	66	48	28	20	80	71
SOUTHEAST	21	19	79	71	48	31	19	83	77
CAPE COD	6	24	52	60	28	13	13	33	41
ISLANDS	3	29	64	66	46	22	33	46	53

Index Severity Levels

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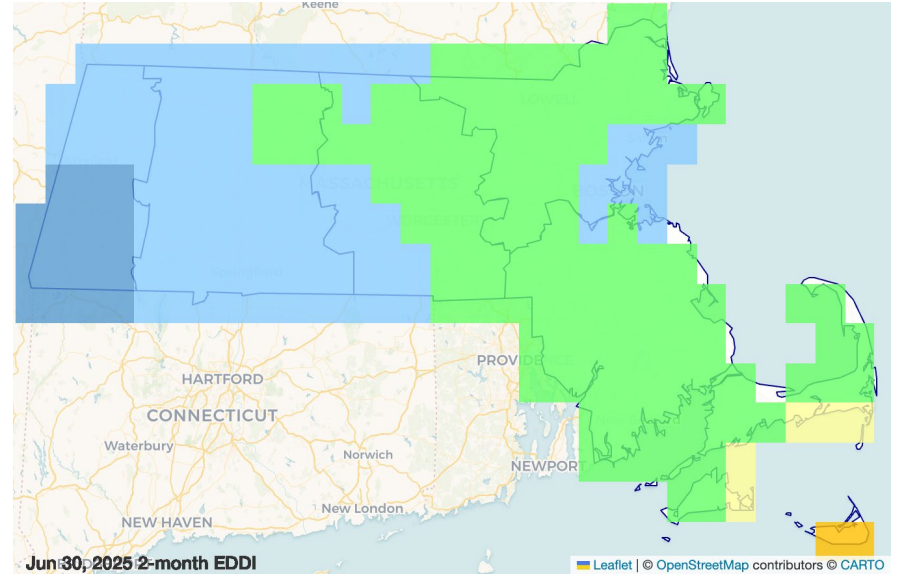
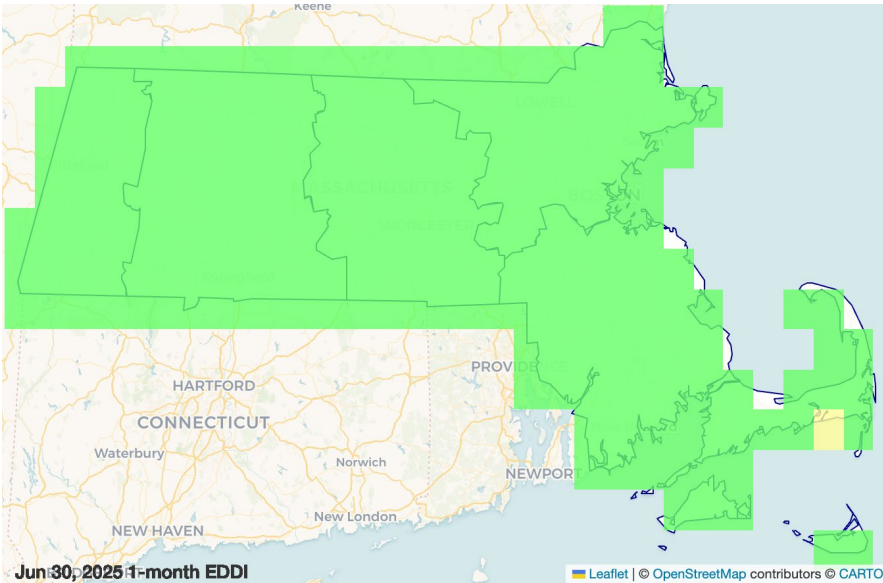
* 1- and 36-month SPI is for informational purposes only, not for drought determination. Of the 2- to 24-month look-back periods, the most relevant is selected each month depending on the phase of the drought - onset, during or recovery.

N/A: Not Available

Evapotranspiration

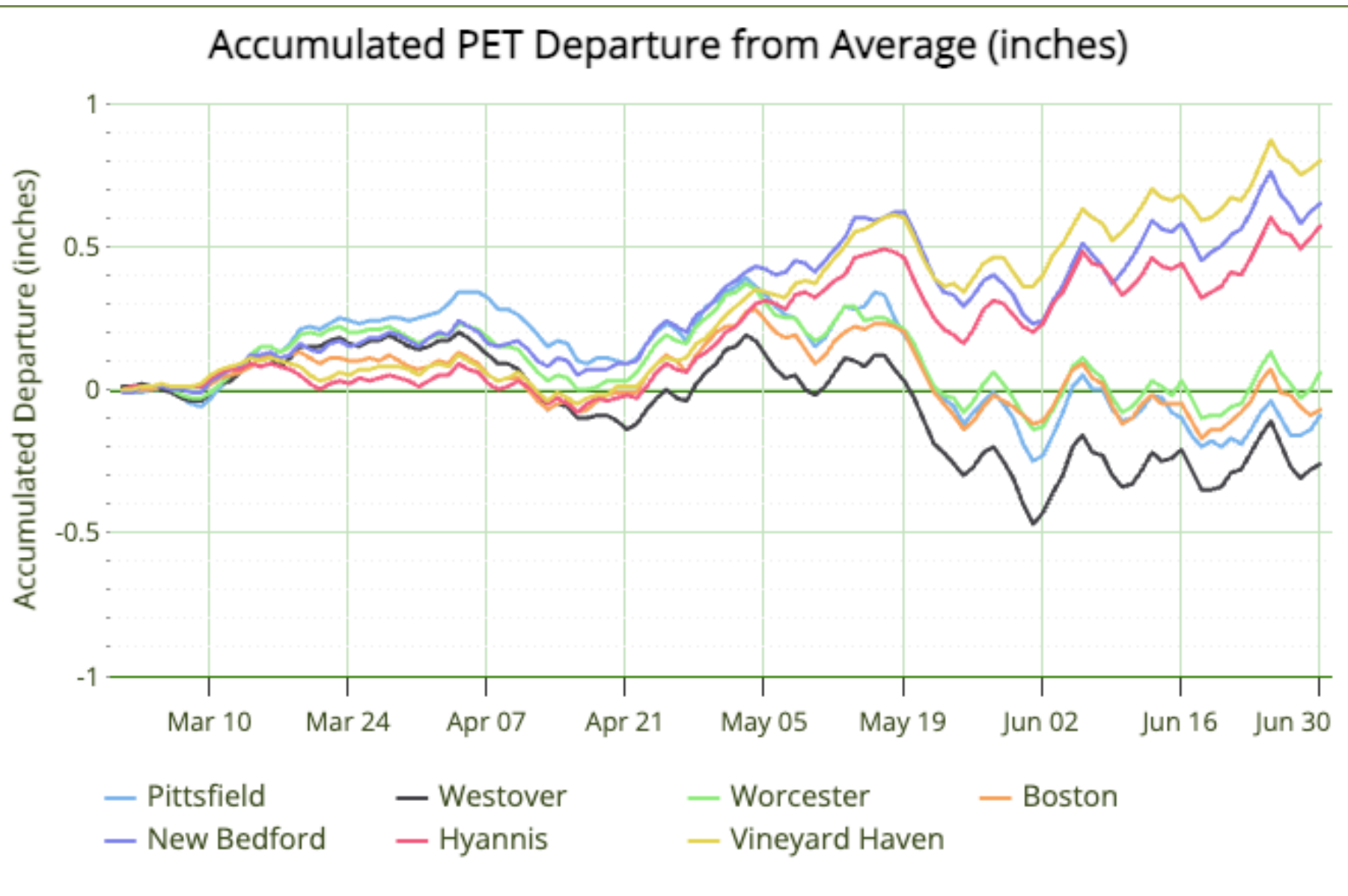
1-month

2-month



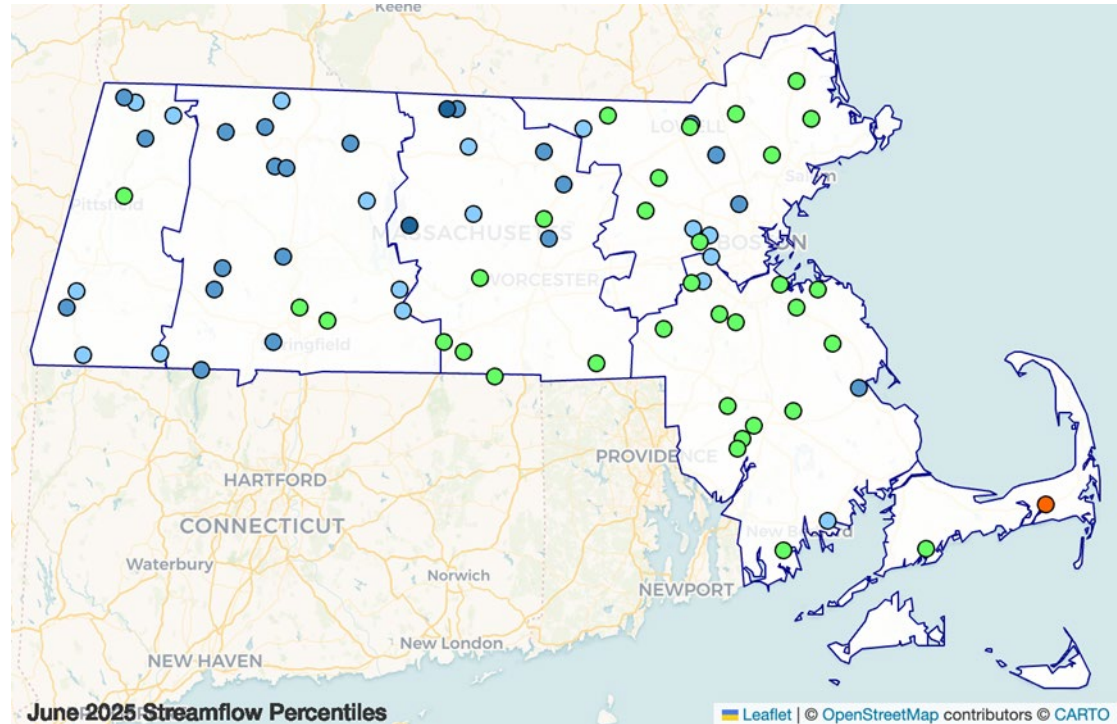
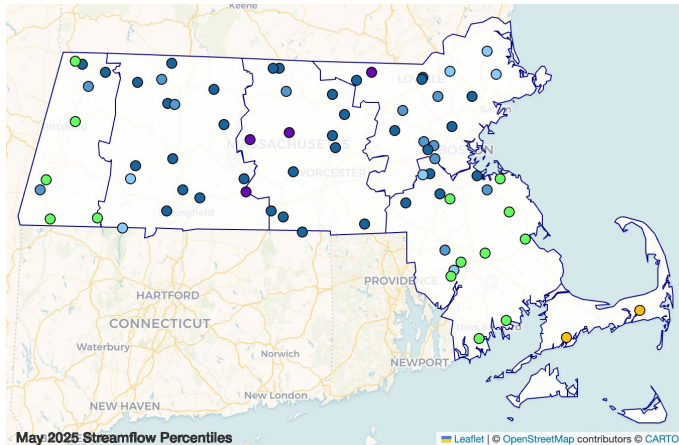
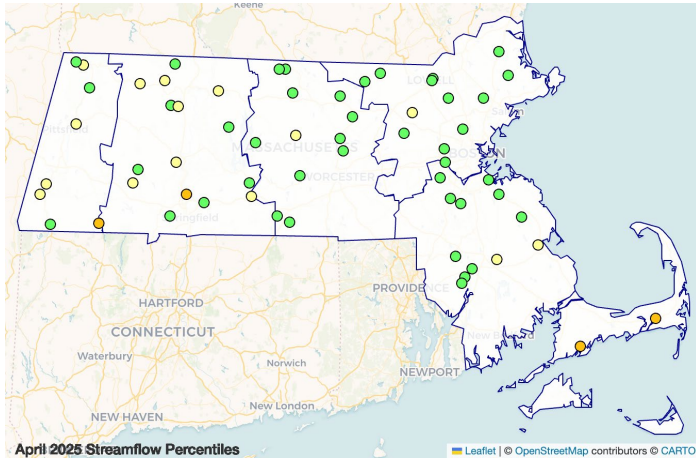
REGION	MEDIAN 2-MONTH EDDI (2025-06-30)
WESTERN	81
CTRV	77
CENTRAL	68
NORTHEAST	68
SOUTHEAST	61
CAPE COD	47
ISLANDS	35

Accumulated Potential Evapotranspiration Departure from 30-Year Average in inches

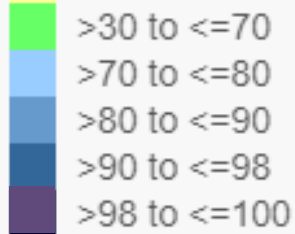
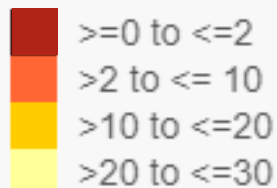


Streamflow

Percentiles of Monthly Median



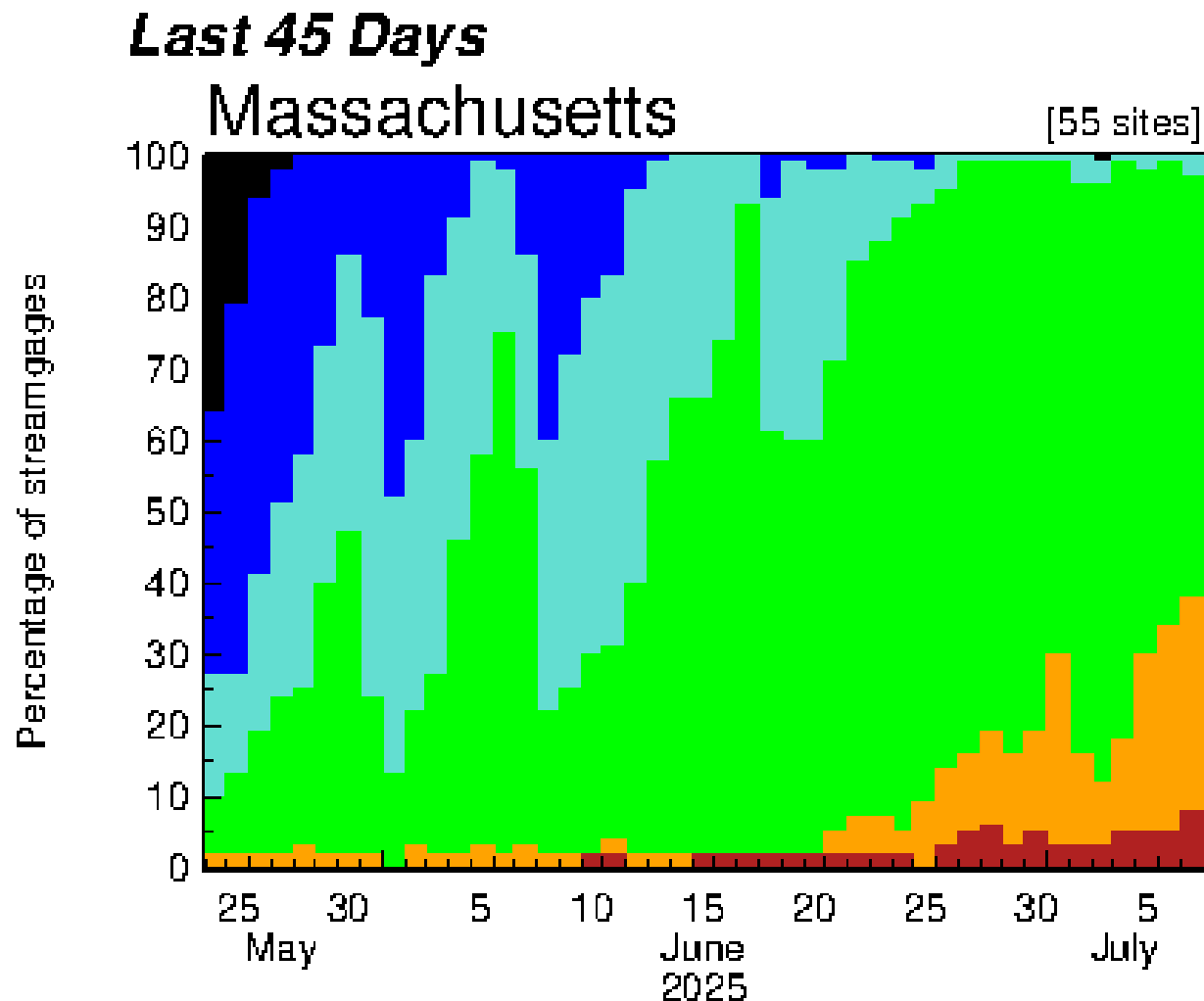
Percentiles



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	0	0	0	0	0	76
CTRV	16	0	0	0	0	0	83
CENTRAL	14	0	0	0	0	2	79
NORTHEAST	16	0	0	0	0	0	69
SOUTHEAST	17	0	0	0	0	0	57
CAPE COD	2	0	1	0	0	0	23

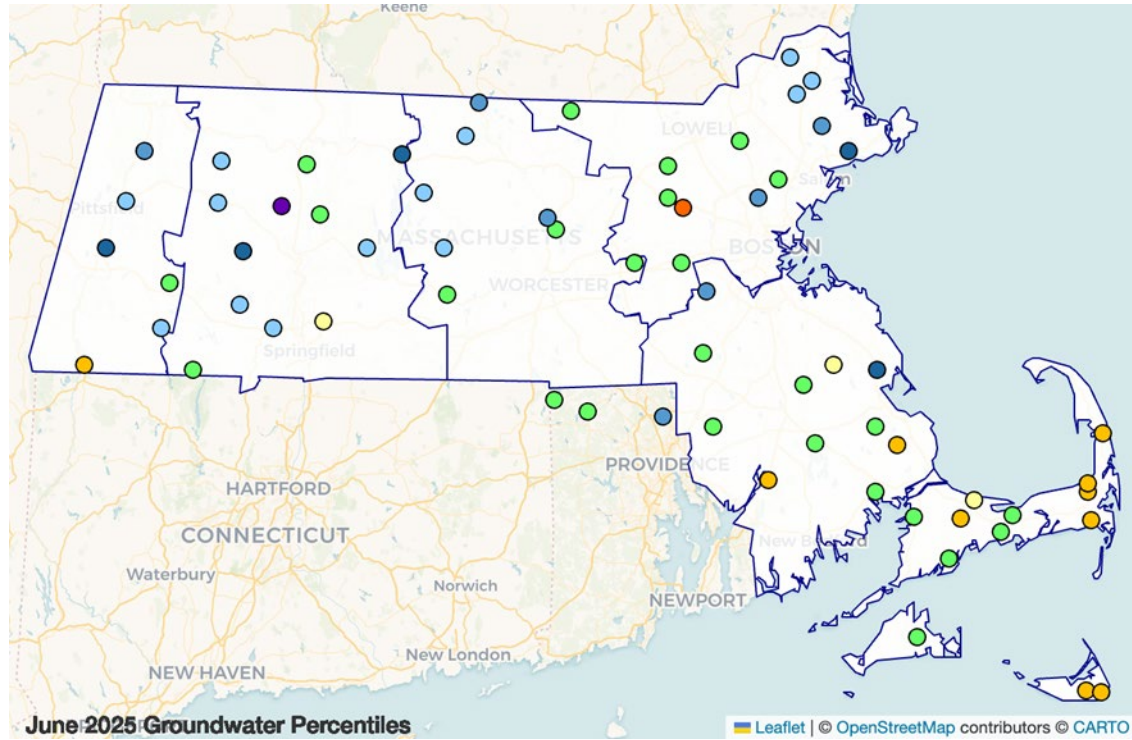
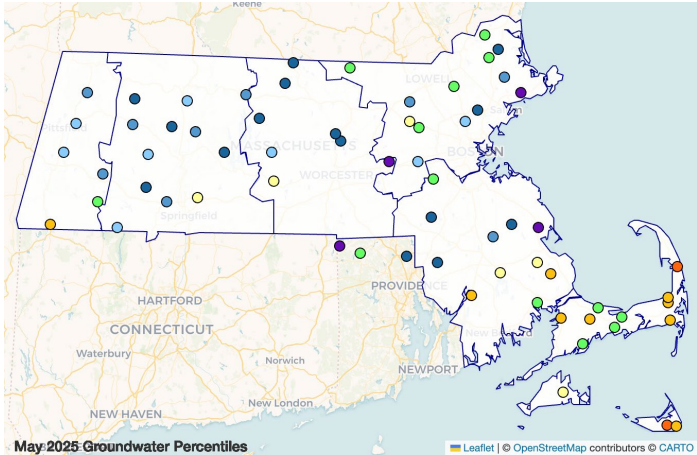
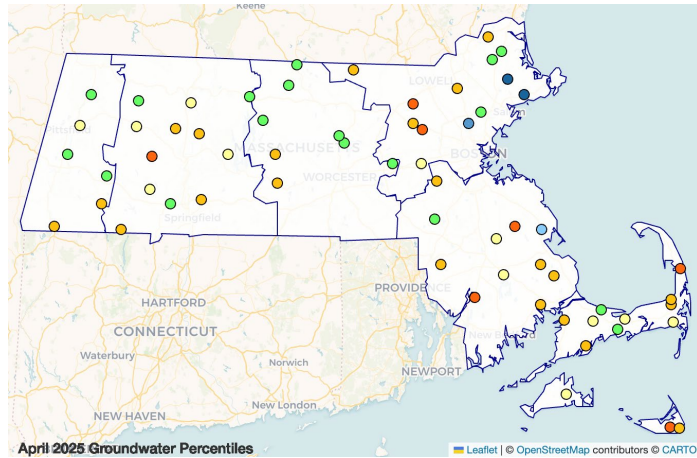
REGION	NUMBER OF GAGES IN NETWORK
WESTERN	9
CTRV	16
CENTRAL	15
NORTHEAST	16
SOUTHEAST	17
CAPE COD	2

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



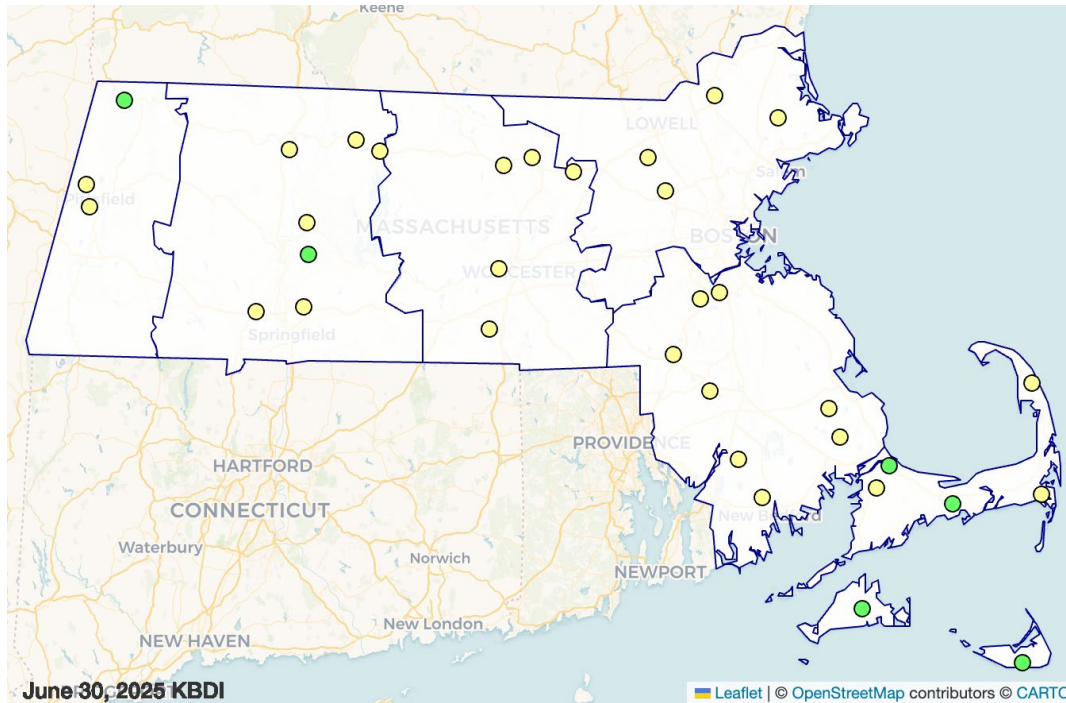
Groundwater Index

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	1	0	1	74
CTRV	12	0	0	0	1	3	75
CENTRAL	10	0	0	0	0	0	68
NORTHEAST	13	0	1	0	0	1	69
SOUTHEAST	13	0	0	2	1	1	48
CAPE COD	10	0	0	5	1	0	24
ISLANDS	3	0	0	2	0	0	14

Index Severity Levels

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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	3	269
CTRV	7	275
CENTRAL	5	327
NORTHEAST	4	372
SOUTHEAST	8	374
CAPE COD	5	273
ISLANDS	2	186

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	18th
CTRV	2	54th
CENTRAL	4	36th
NORTHEAST	5	19th
SOUTHEAST	1	69th
CAPE COD	1	25th

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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Drought Indices by Region

May 2025

Drought Index	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
Precipitation (6-mos)	81	84	81	70	72	57	71
Precipitation (9-mos)	26	25	25	26	32	32	44
Streamflow	70	92	96	91	70	14	N/A
Groundwater	75	88	96	73	85	20	17
Lakes/ Impoundments	100% full	43	31	31	100% full	25	N/A
ET*	48	41	39	44	23	20	15
KBDI**	<200	<200	<200	<200	<200	<200	<200

Month	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
May Declaration	Level 0	Level 0	Level 0	Level 0	Level 0	Level 2	Level 1

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

June 2025

Drought Index	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
Precipitation	70 (2 mo)	92 (2 mo)	86 (2 mo)	71 (2 mo)	79 (2 mo)	13 (9-mo)	22 (9-mo)
Streamflow	76	83	79	69	57	23	N/A
Groundwater	74	75	68	69	48	24	14
Lakes/ Impoundments	18	54	36	19	69	25	N/A
ET*	81	77	68	68	61	47	35
KBDI**	269	275	327	372	374	273	<200

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

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
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