

Hydrologic Conditions in Massachusetts for *mid-May 2025*

Data through 5/15/2025

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DCR Office of Water Resources

Drought Management Task Force

May 19, 2025

Meeting Co-Chairs: EOEEA, MEMA



MA Drought Management Plan Indices

Numbers in parentheses indicate number of data points across the state



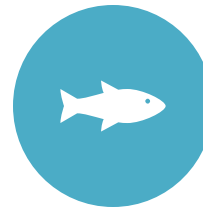
Precipitation (93)



Streamflow (63)



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

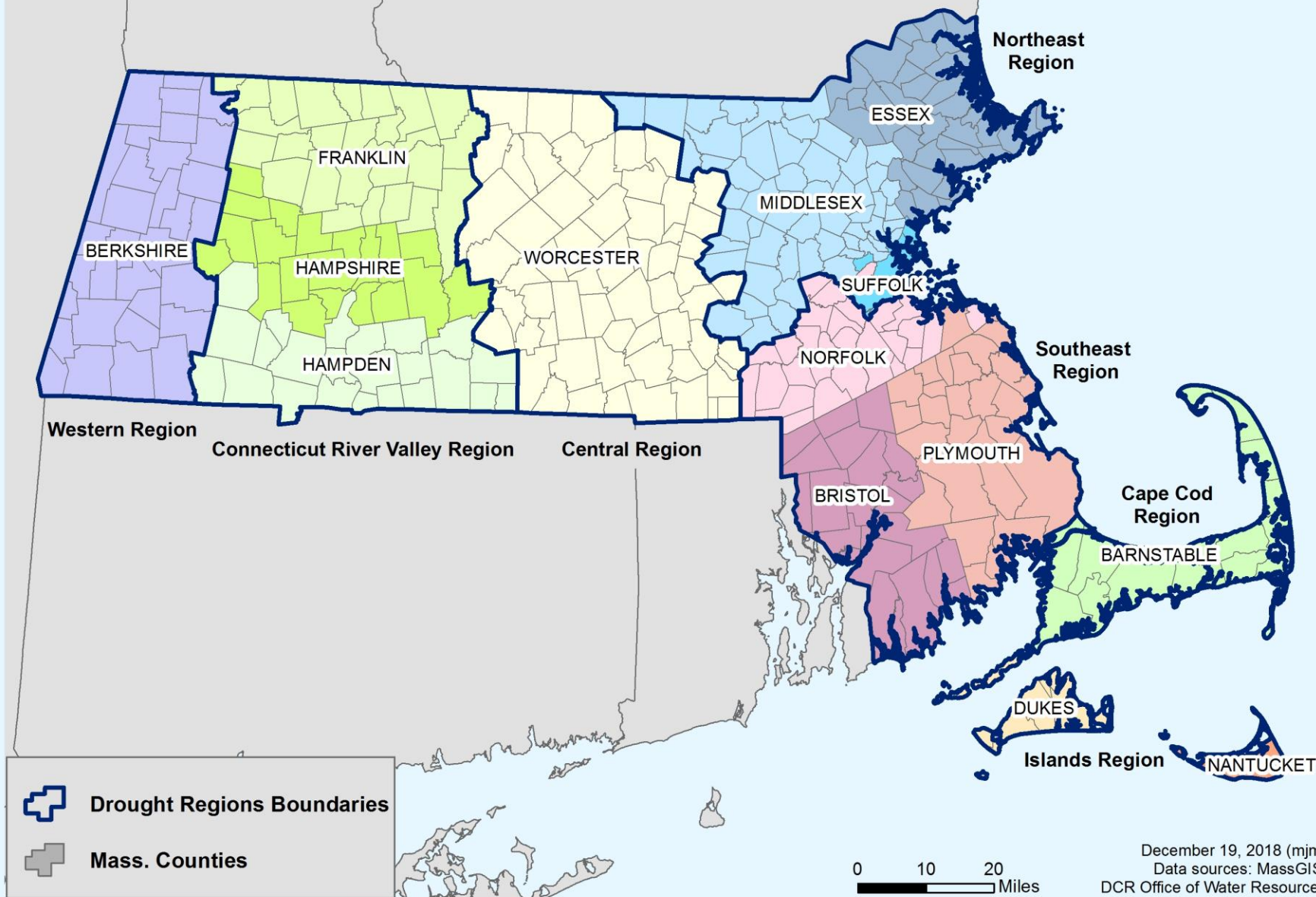
Drought Levels





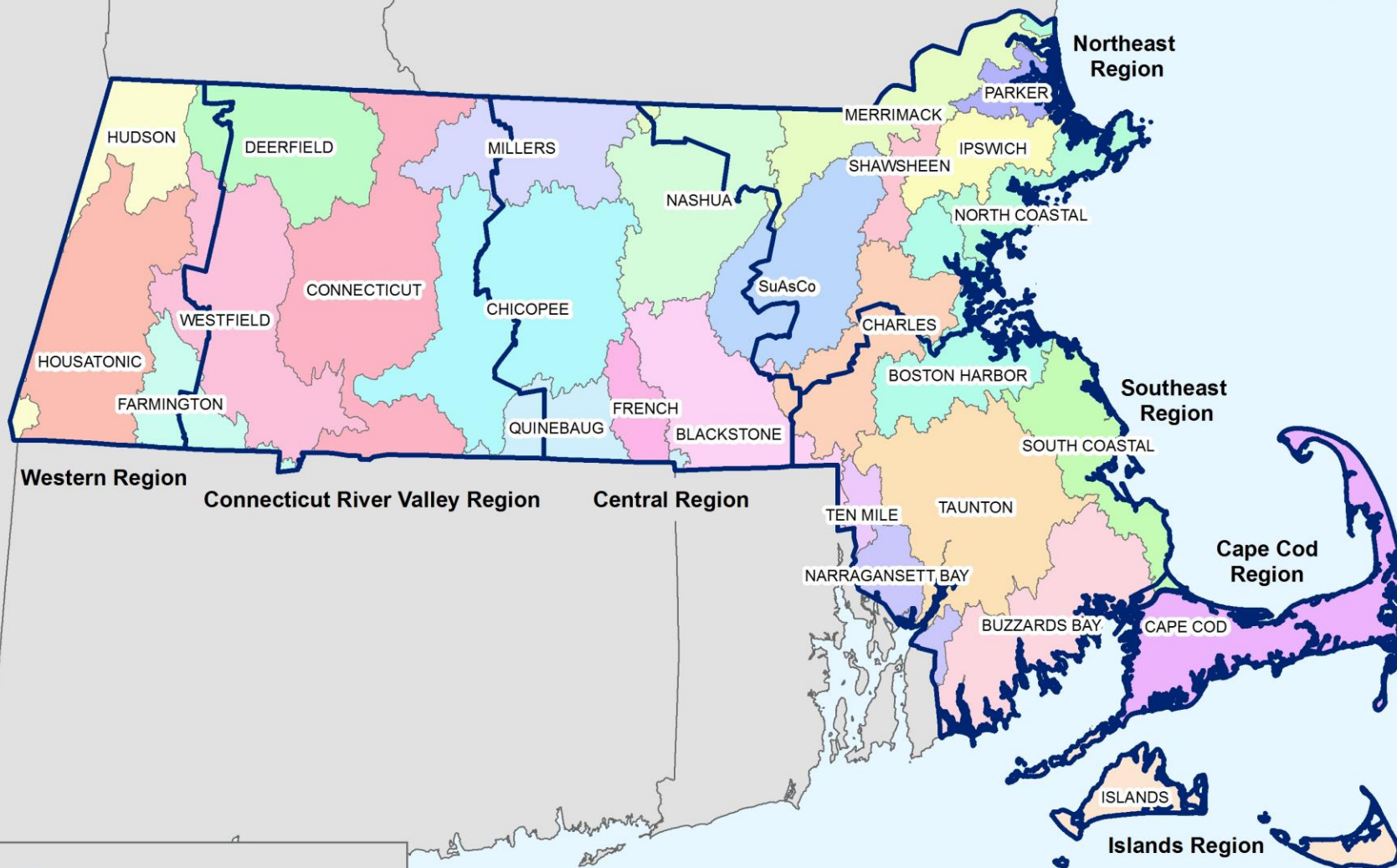
MASSACHUSETTS DROUGHT REGIONS

with Counties





MASSACHUSETTS DROUGHT REGIONS with Watersheds



-  Drought Regions Boundaries
-  Mass. Counties

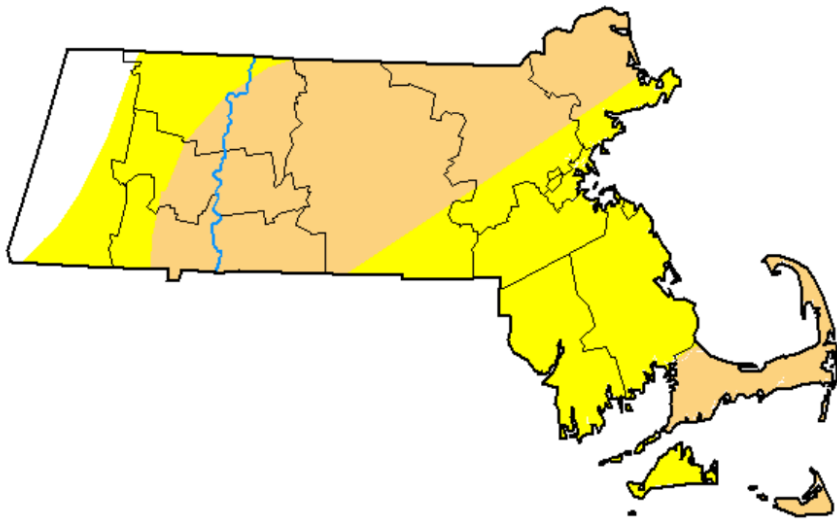
0 10 20
Miles

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

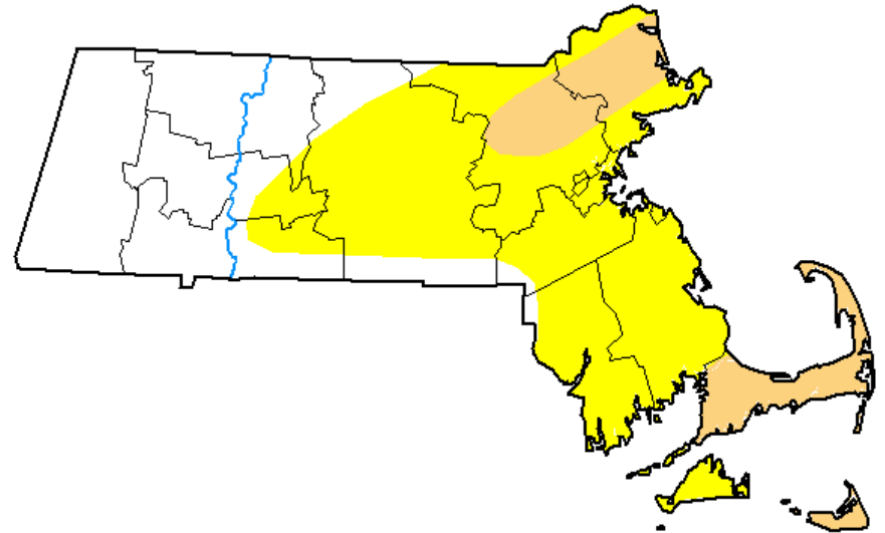
Recent Hydrologic History

- **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
- **Mid-May – continue recovery**
 - Continued improvements especially central and westward parts of the state

US Drought Monitor



Data through April 29, 2025



Data through May 13, 2025

None

D0 (Abnormally Dry)

D1 (Moderate Drought)

D2 (Severe Drought)

D3 (Extreme Drought)

D4 (Exceptional Drought)

USDM **MA DMP**

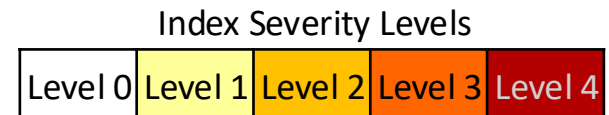
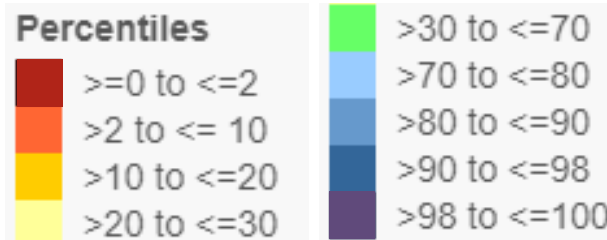
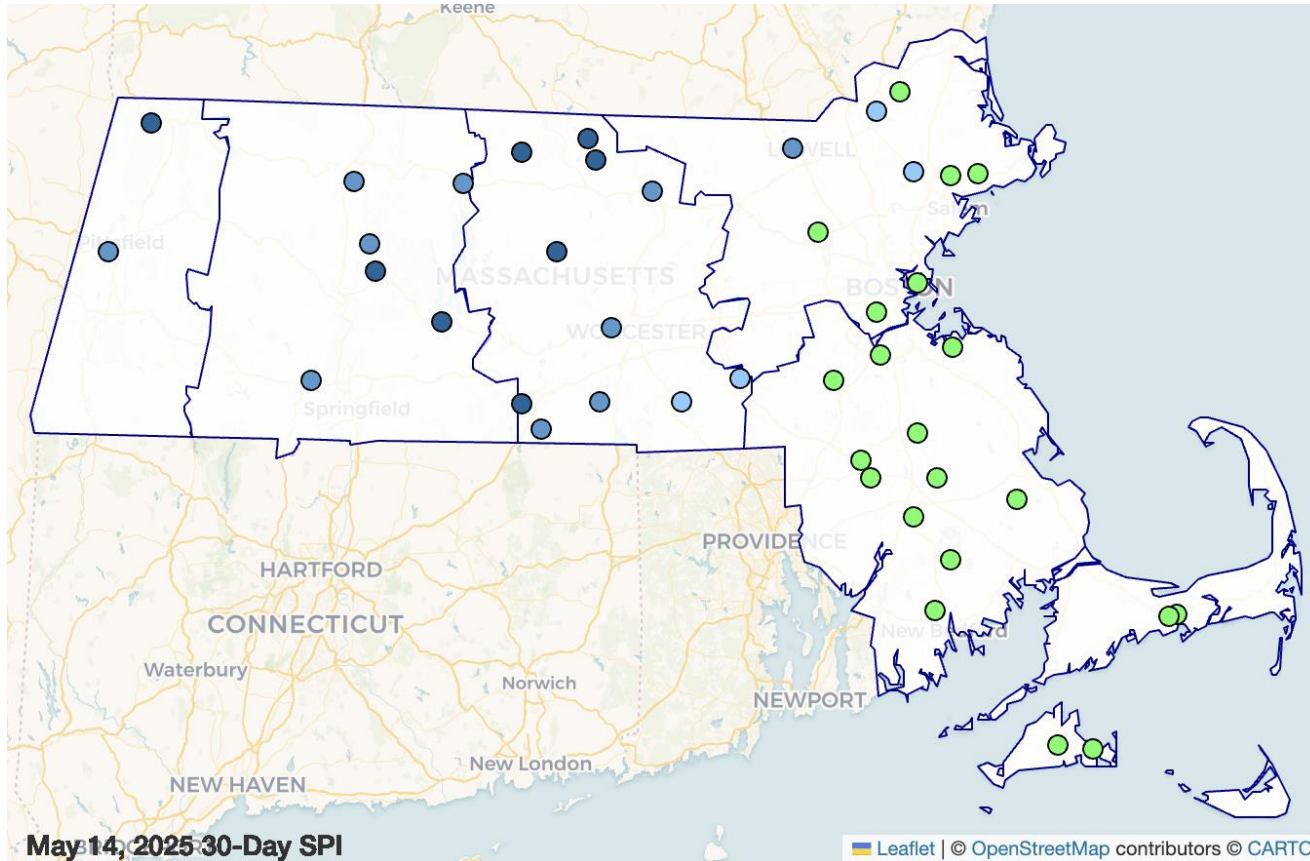
0 = 1

1 = 2

2,3 = 3

4 = 4

Standardized Precipitation Index



Standardized Precipitation Index as Percentile

REGION	NUMBER OF SITES	30-day [*]	60-day	90-day	180-day	270-day	365-day	730-day	1095-day
WESTERN	2	93	95	92	81	10	18	65	51
CTRV	6	89	95	91	75	14	27	82	69
CENTRAL	11	87	89	84	74	14	24	91	87
NORTHEAST	9	61	76	61	59	15	22	84	65
SOUTHEAST	11	53	68	50	57	15	24	79	73
CAPE COD	2	51	91	73	58	37	37	50	43
ISLANDS	2	41	73	48	33	18	23	39	47

Index Severity Levels

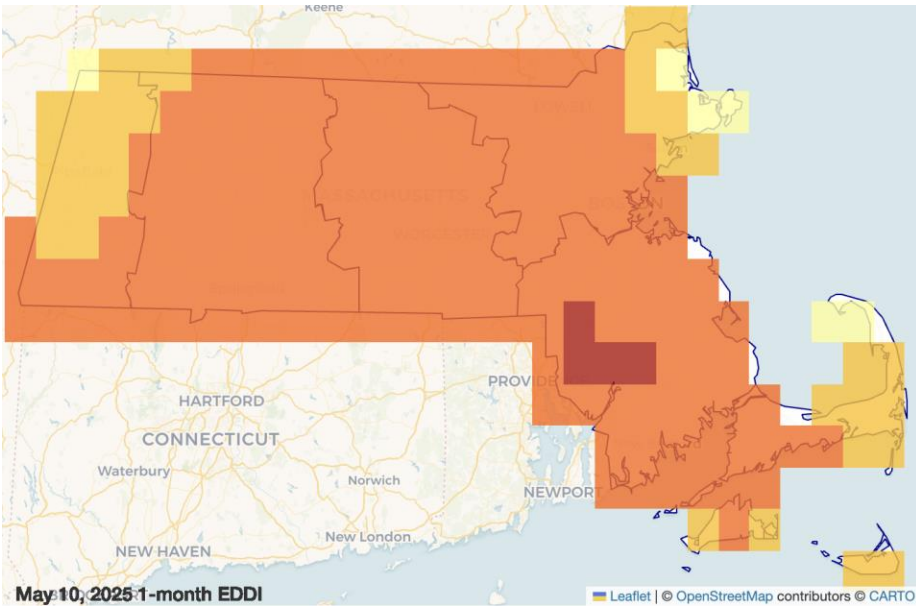
Level 0	Level 1	Level 2	Level 3	Level 4
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* 1- and 36-month SPI is for informational purposes only, not for drought determination. Of the 2- to 24-month look-back periods, the most relevant is selected each month depending on the phase of the drought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

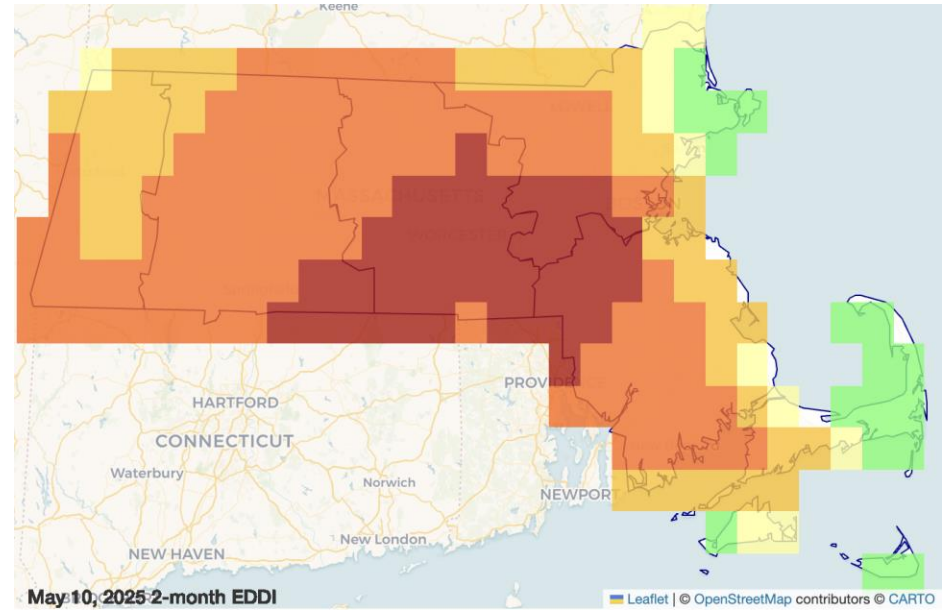
N/A: Not Available

Evapotranspiration

1-month

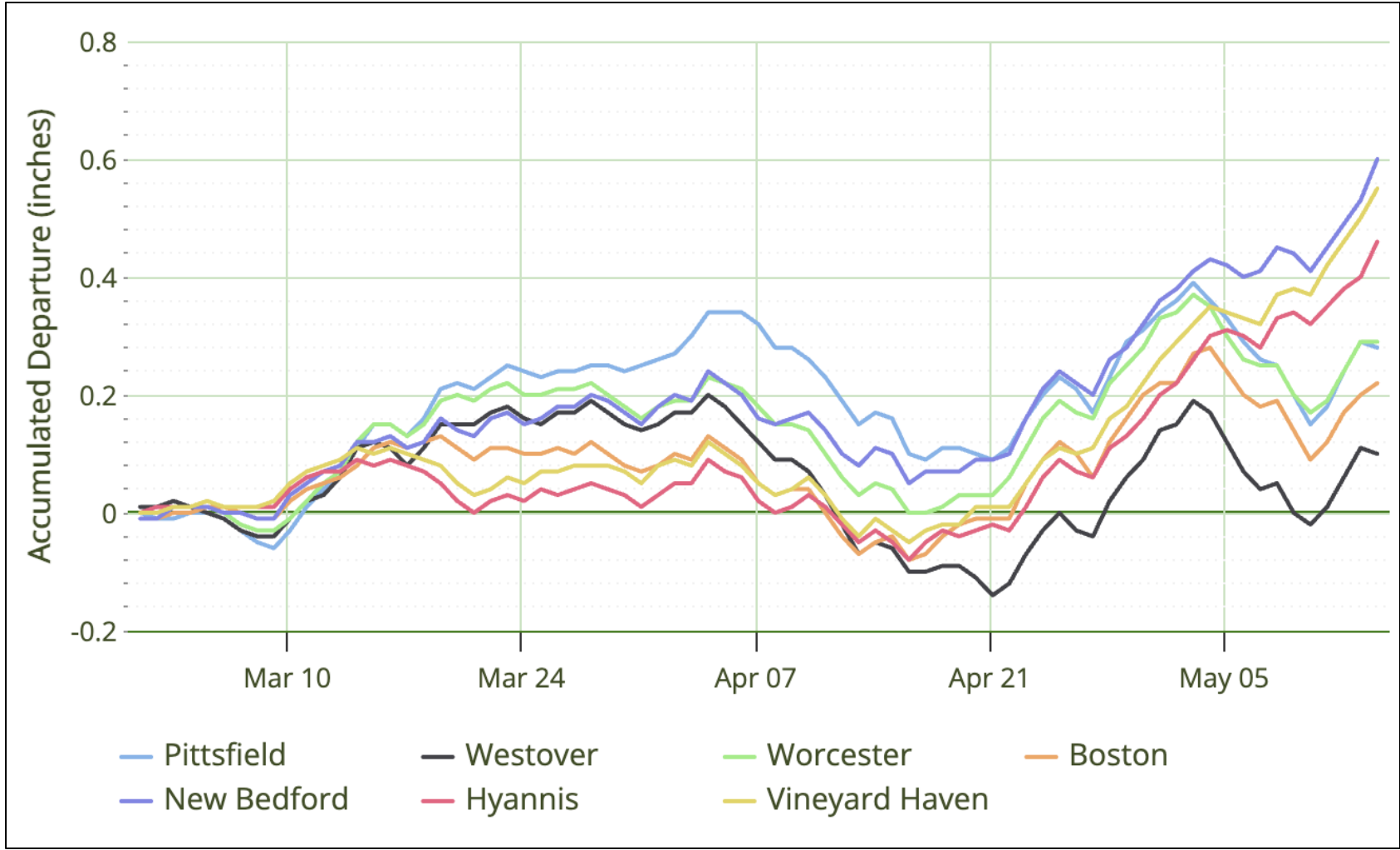


2-month



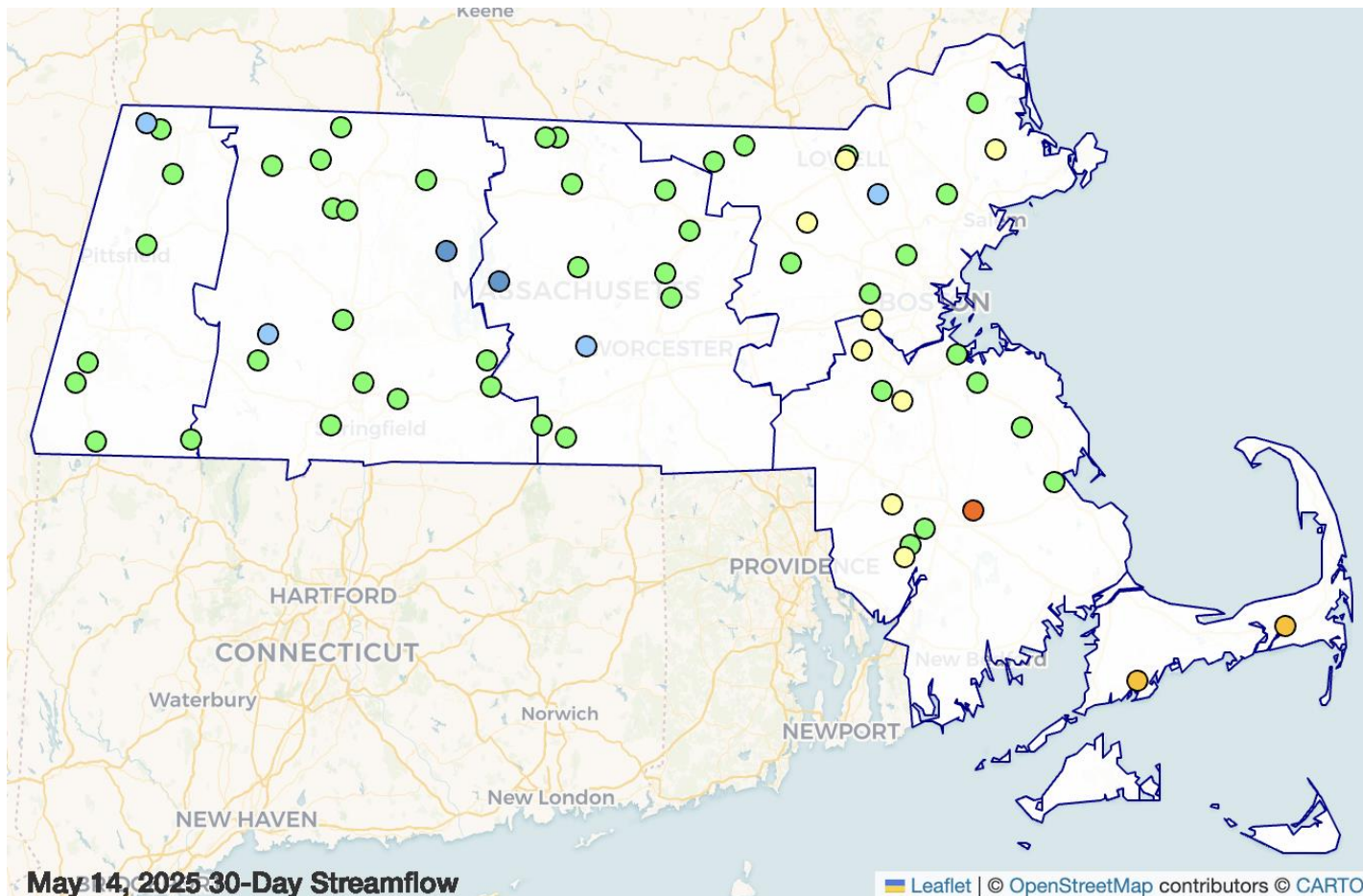
REGION	MEDIAN 2-MONTH EDDI (2025-05-10)
WESTERN	9
CTRV	7
CENTRAL	2
NORTHEAST	9
SOUTHEAST	7
CAPE COD	31
ISLANDS	28

Accumulated Potential Evapotranspiration Departure from 30-Year Average in inches

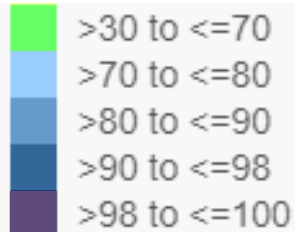
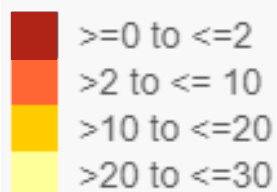


Streamflow

Percentiles of Monthly Median



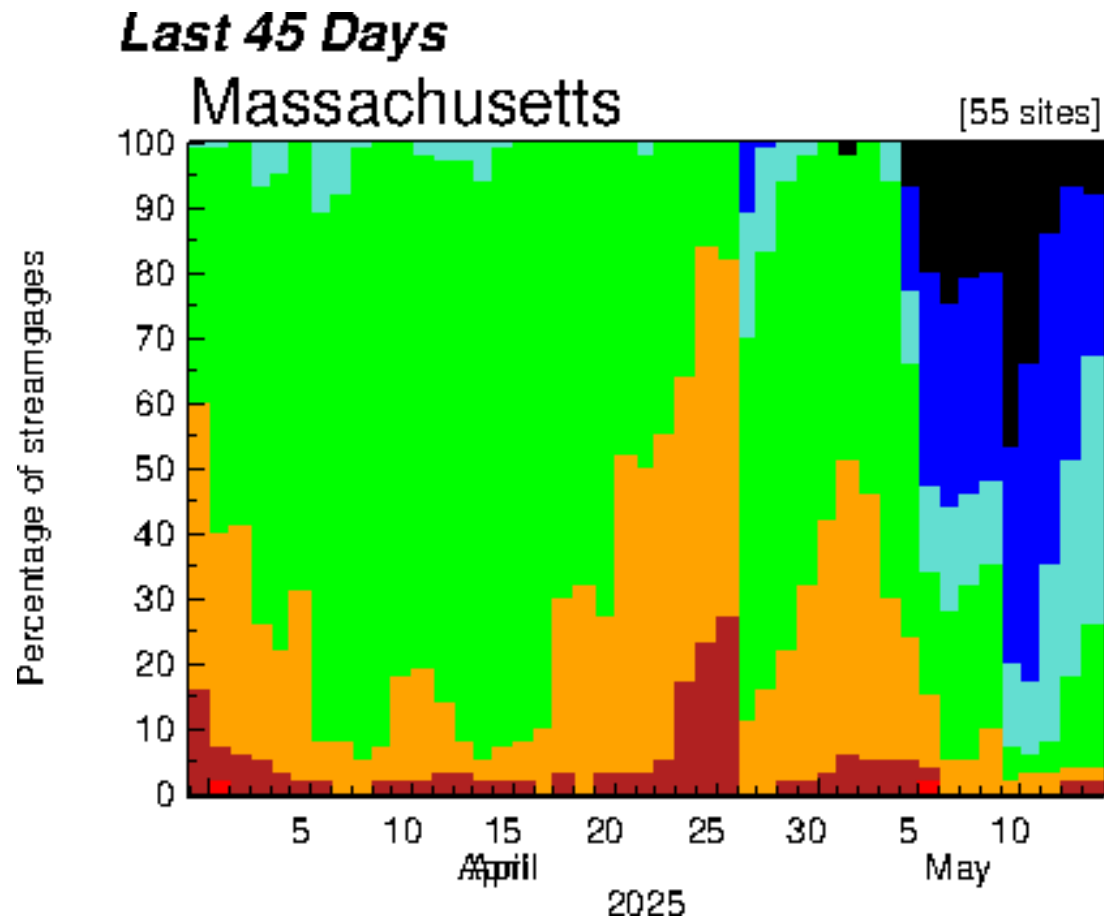
Percentiles



Index Severity Levels



Percent of Gages at Various Percentiles



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

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	8	0	0	0	0	0	56
CTRV	15	0	0	0	0	0	59
CENTRAL	12	0	0	0	0	0	65
NORTHEAST	13	0	0	0	4	0	42
SOUTHEAST	12	0	1	0	4	0	31
CAPE COD	2	0	0	2	0	0	14

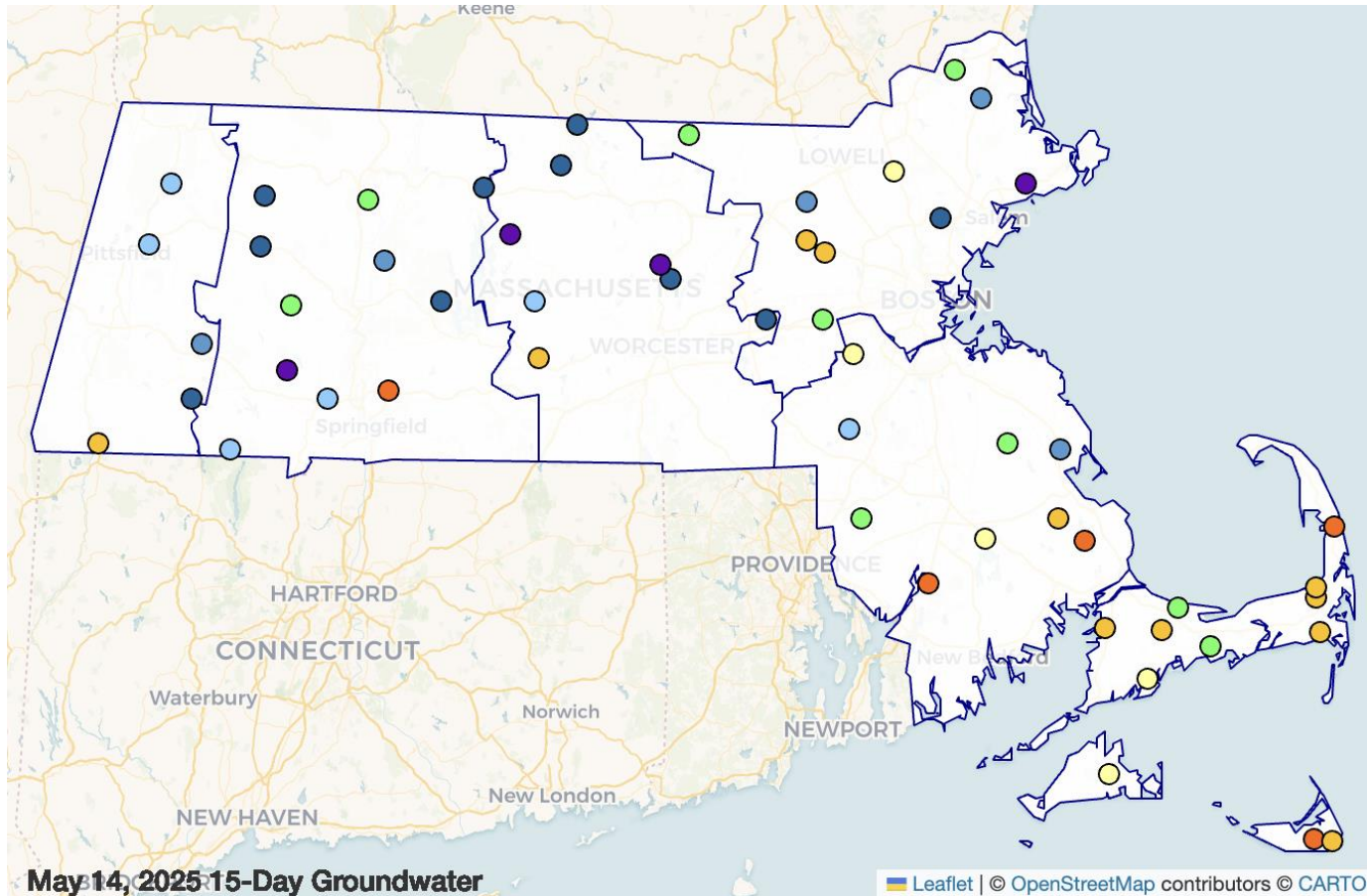
REGION	NUMBER OF GAGES IN NETWORK
WESTERN	8
CTRV	15
CENTRAL	13
NORTHEAST	13
SOUTHEAST	12
CAPE COD	2

Index Severity Levels

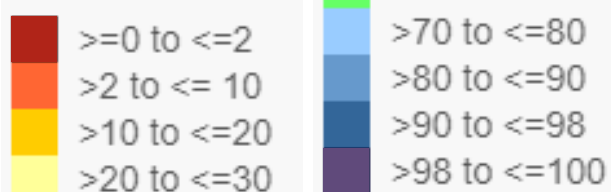
Level 0	Level 1	Level 2	Level 3	Level 4
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Notes: Not all gages report in all months due to ice, beaver dams, or other conditions. The Islands Region does not have any streamflow gages.

Groundwater Percentiles



Percentiles



Index Severity Levels



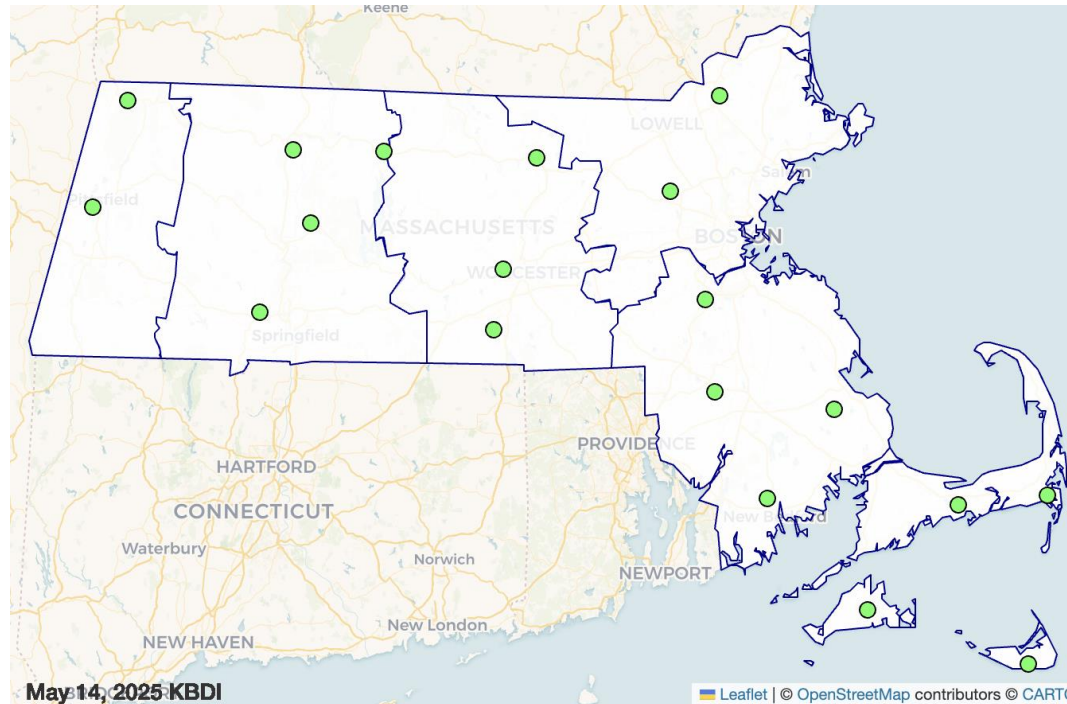
Groundwater Index

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	5	0	0	1	0	1	75
CTRV	11	0	1	0	0	5	89
CENTRAL	8	0	0	1	0	6	95
NORTHEAST	10	0	0	2	1	2	43
SOUTHEAST	10	0	2	1	2	0	29
CAPE COD	9	0	1	5	1	0	18
ISLANDS	3	0	1	1	1	0	13

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	30
CTRV	4	39
CENTRAL	3	32
NORTHEAST	2	48
SOUTHEAST	4	36
CAPE COD	2	126
ISLANDS	2	25

Index Severity Levels

Level 0	Level 1	Level 2	Level 3	Level 4
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Drought Indices by Region

April 2025

Drought Index	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
Precipitation (6-mos)	45	29	36	33	37	20	38
Precipitation (9-mos)	22	9	8	17	12	14	22
Streamflow	29	30	42	35	36	14	N/A
Groundwater	31	24	39	28	20	20	18
Lakes/ Impoundments	100%	19	23	10	34	23	N/A
ET*	7	7	2	2	2	23	24
KBDI**	<200	<200	<200	<200	<200	<200	<200

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

Mid-May 2025

Drought Index	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
Precipitation (6-mos)	81	75	74	59	57	58	33
Precipitation (9-mos)	10	14	14	15	15	37	18
Streamflow	56	59	65	42	31	14	N/A
Groundwater	75	89	95	43	29	18	13
Lakes/ Impoundments	ND	ND	ND	ND	ND	ND	N/A
ET*	9	7	2	9	7	31	28
KBDI**	<200	<200	<200	<200	<200	<200	<200

Month	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
Mid-May Recommendation	Level 0	Level 0	Level 0	Level 0	Level 1	Level 2	Level 1
April Declaration	Level 1	Level 1	Level 0	Level 1	Level 1	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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Level 0	Level 1	Level 2	Level 3	Level 4
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