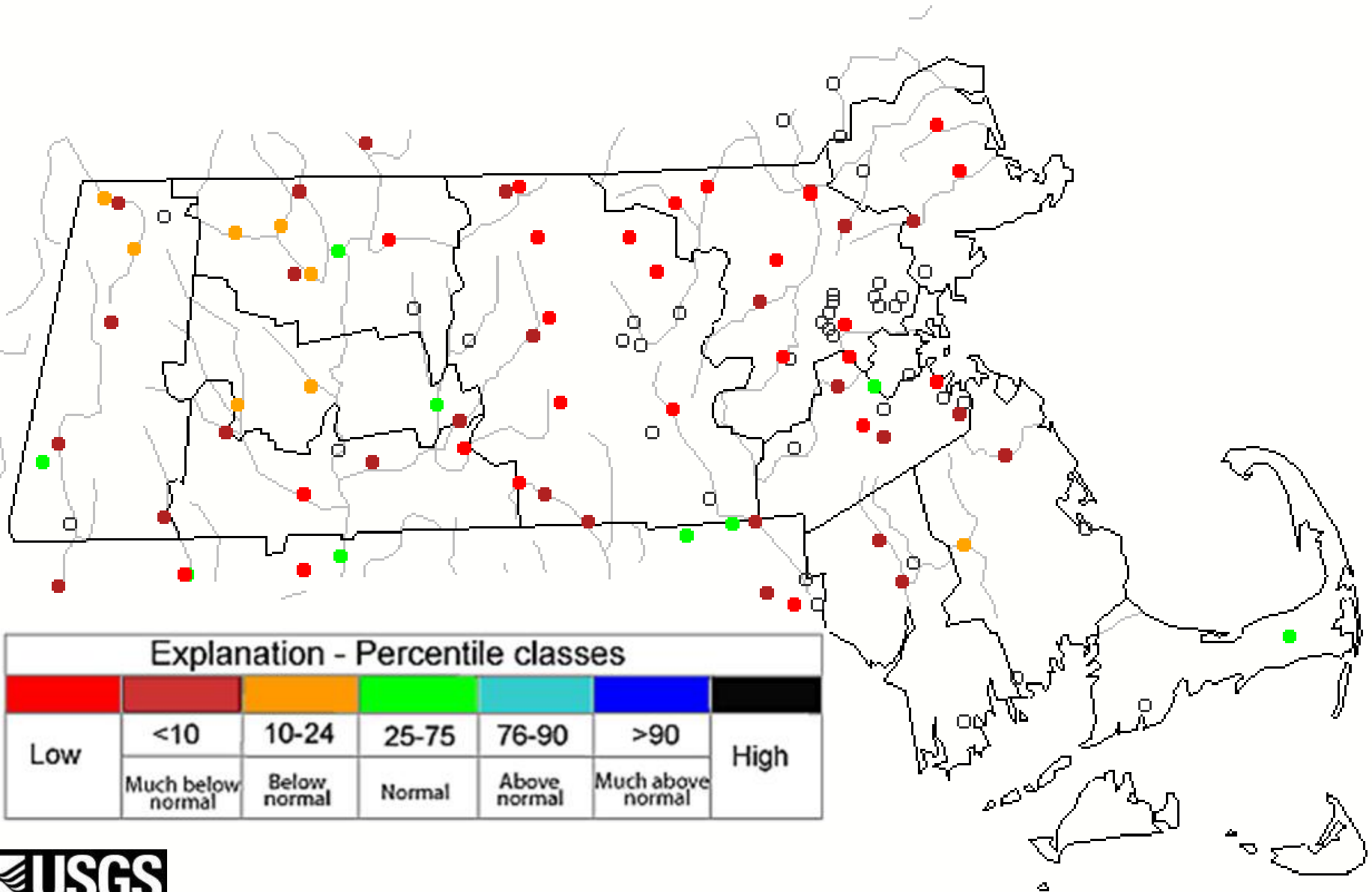

Streamflow and Groundwater Conditions in Massachusetts

Gardner Bent
U.S. Geological Survey
New England Water Science Center
Massachusetts – Rhode Island Office



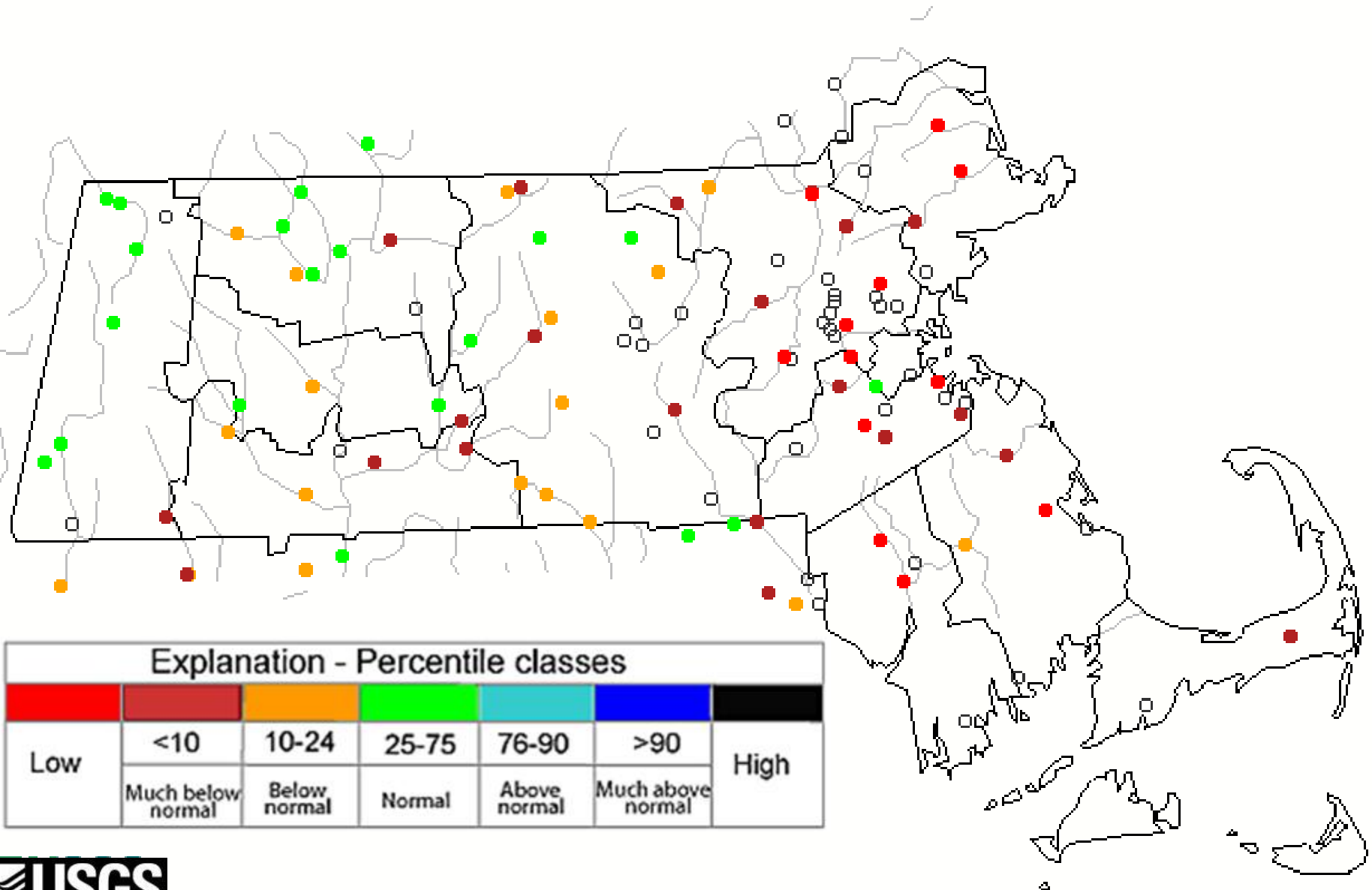
Average Streamflow Conditions - July 2016

July 2016



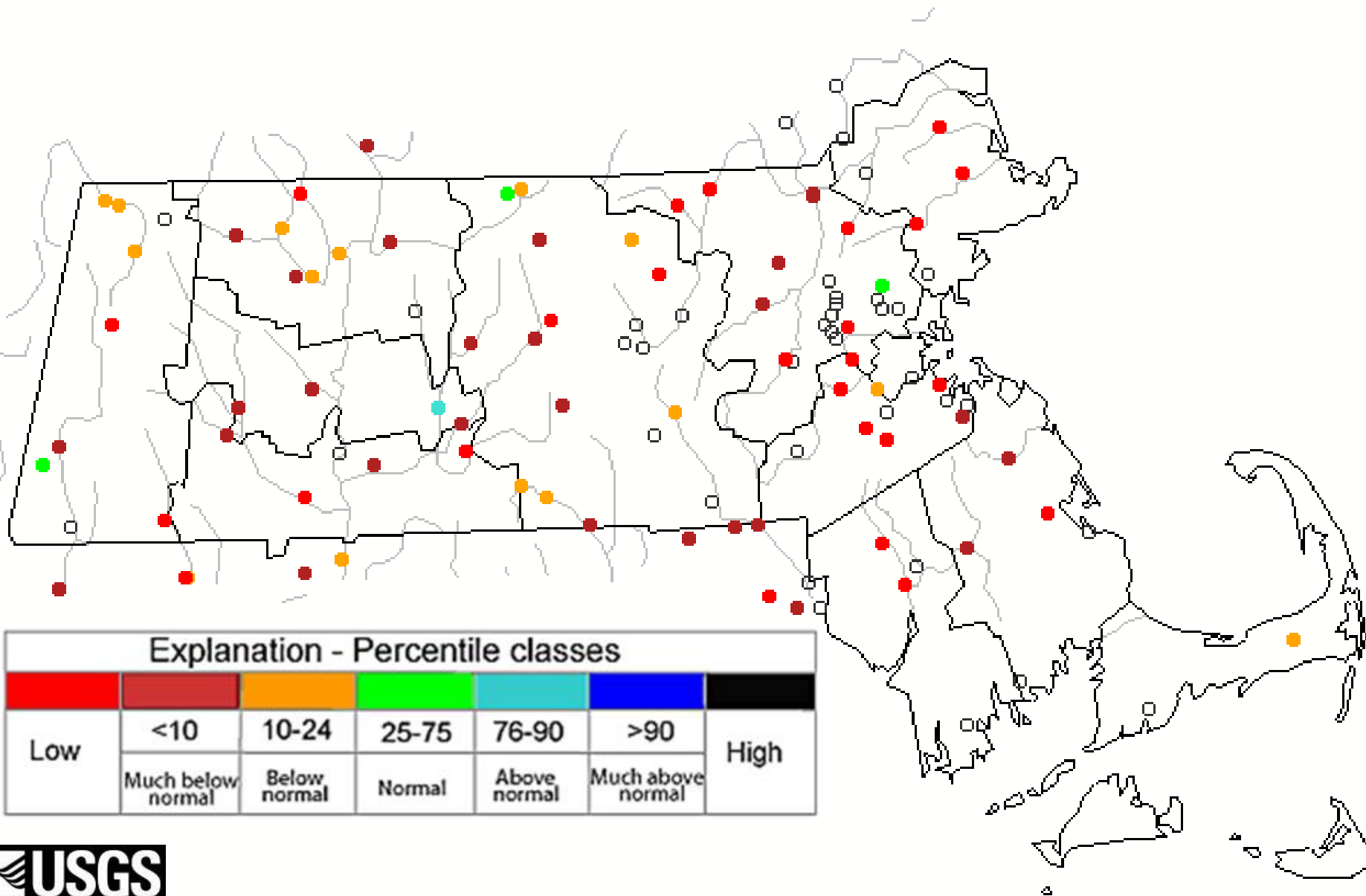
Average Streamflow Conditions - August 2016

August 2016



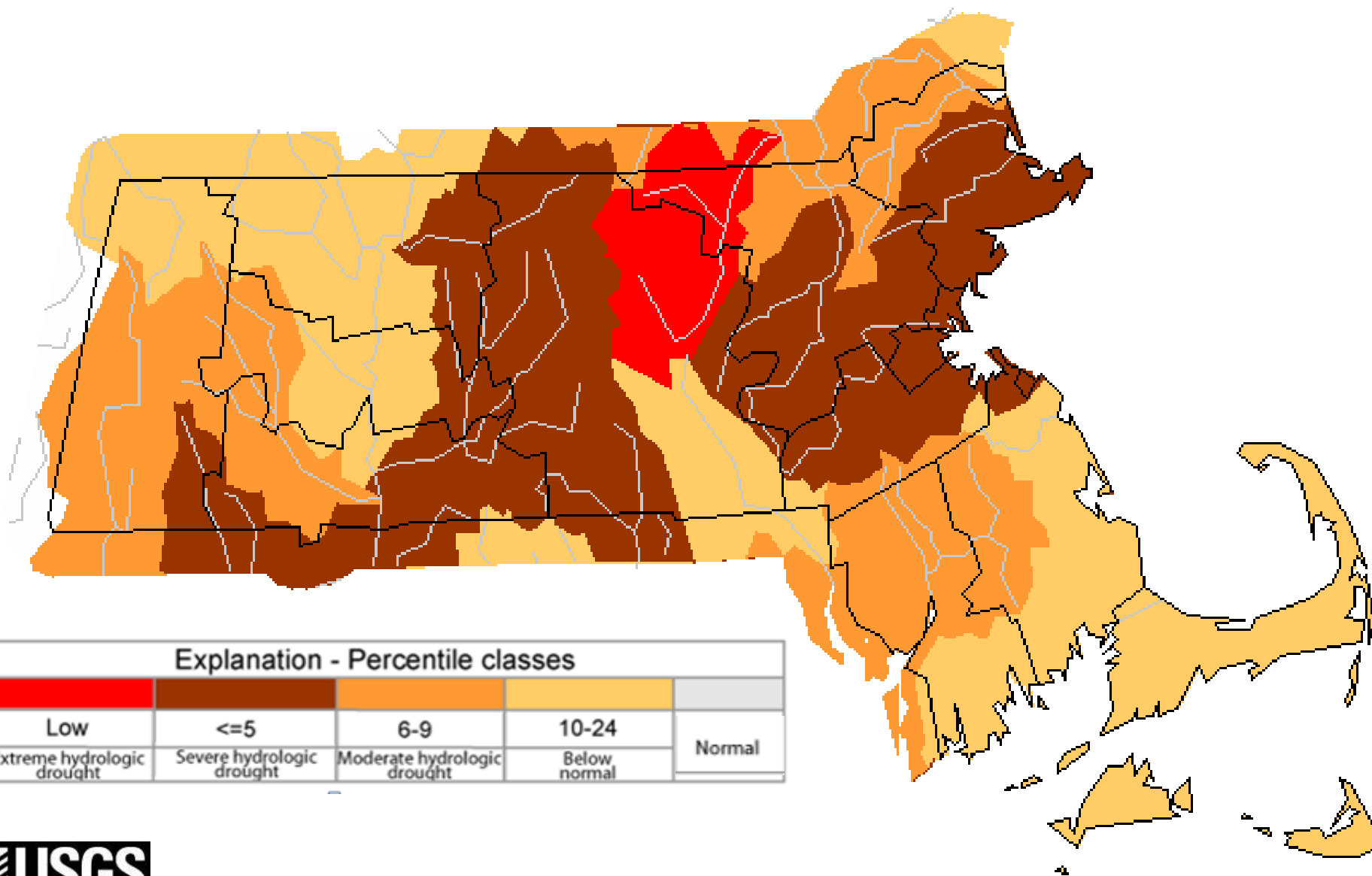
Average Streamflow Conditions - Sept. 2016

September 2016



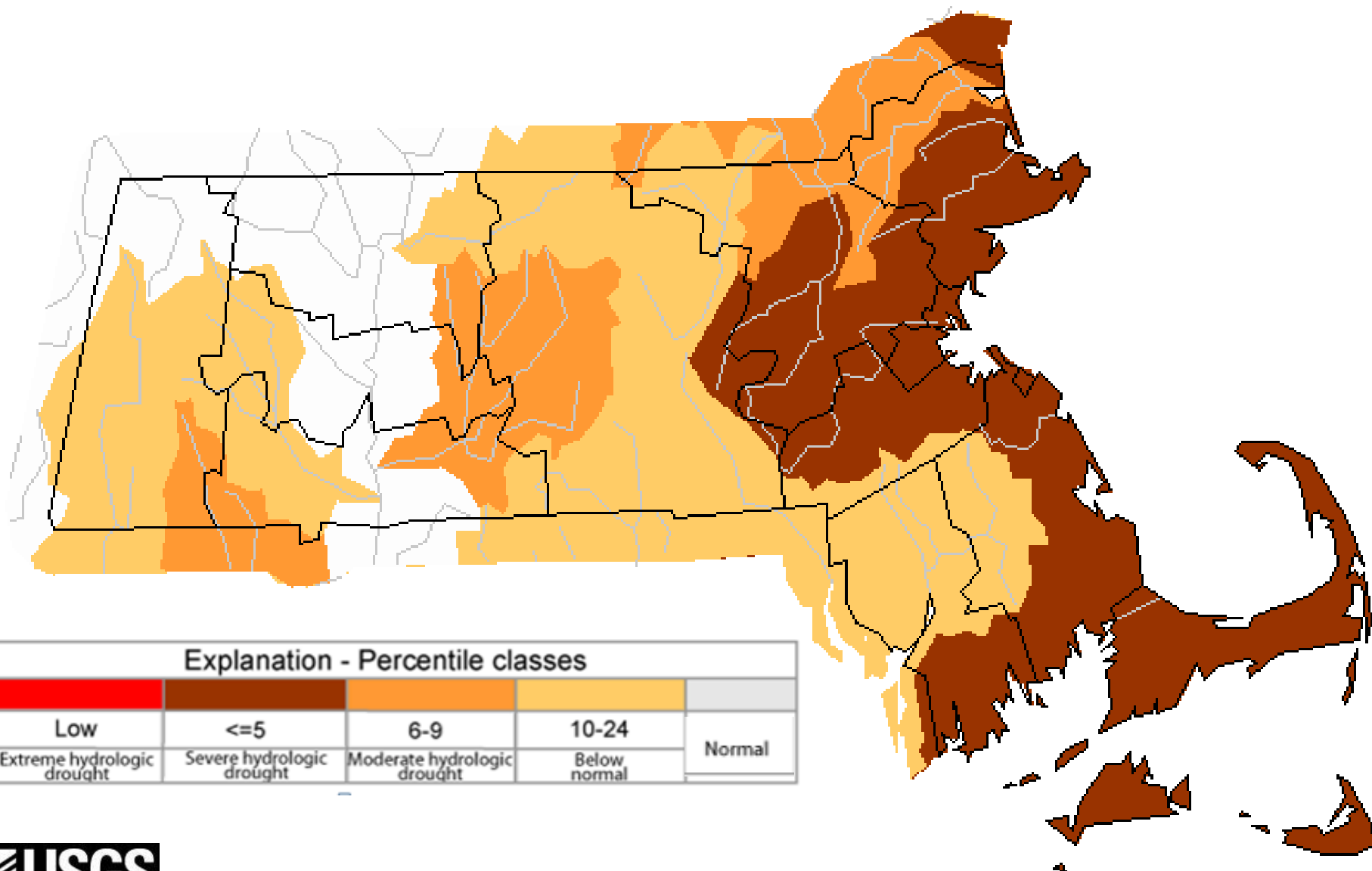
Below normal average monthly streamflow - July 2016

July 2016




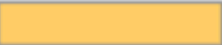
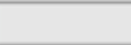


Below normal average monthly streamflow - August 2016

August 2016

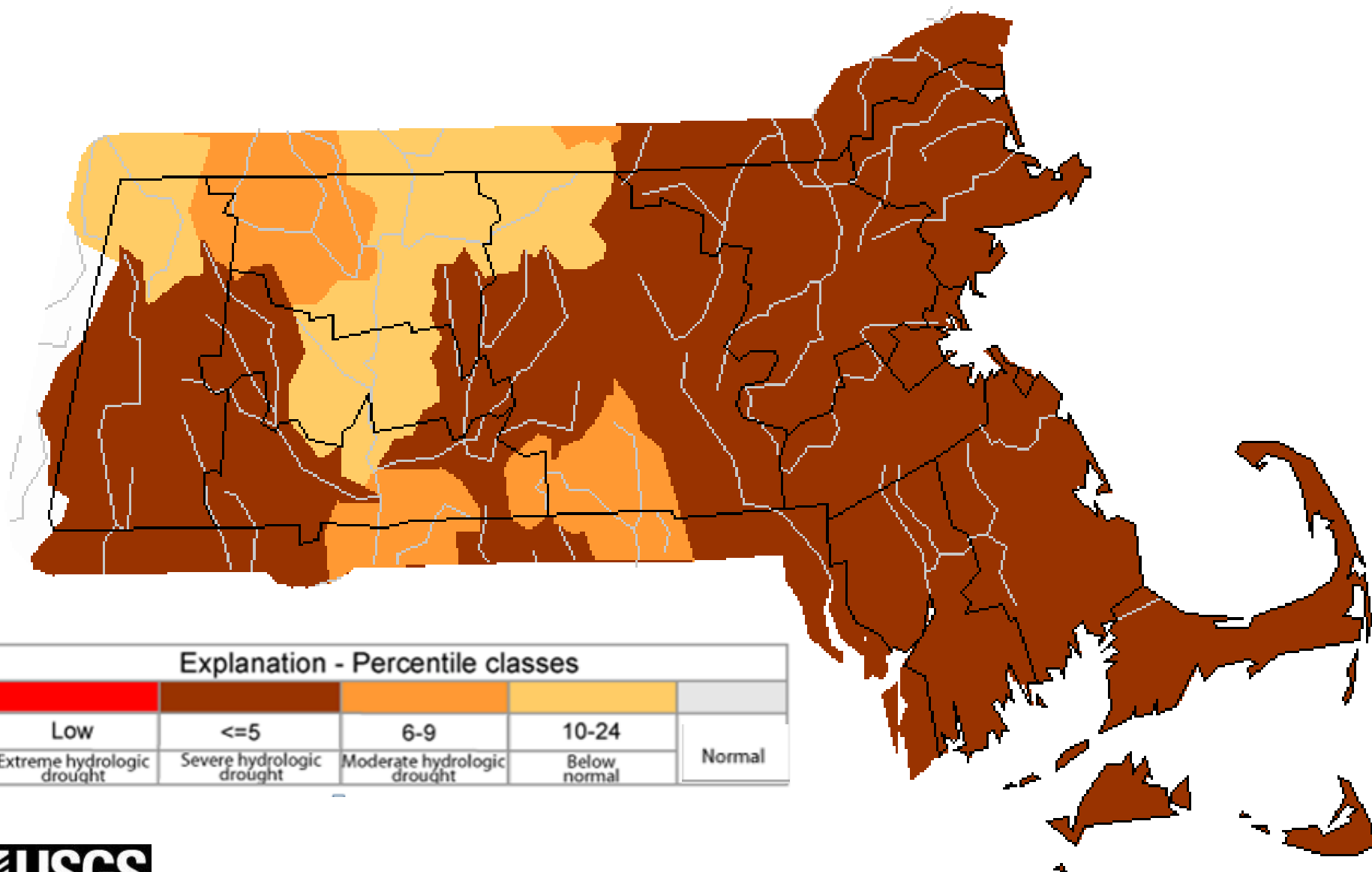


Explanation - Percentile classes

				
Low	<=5	6-9	10-24	Normal
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

Below normal average monthly streamflow - September 2016

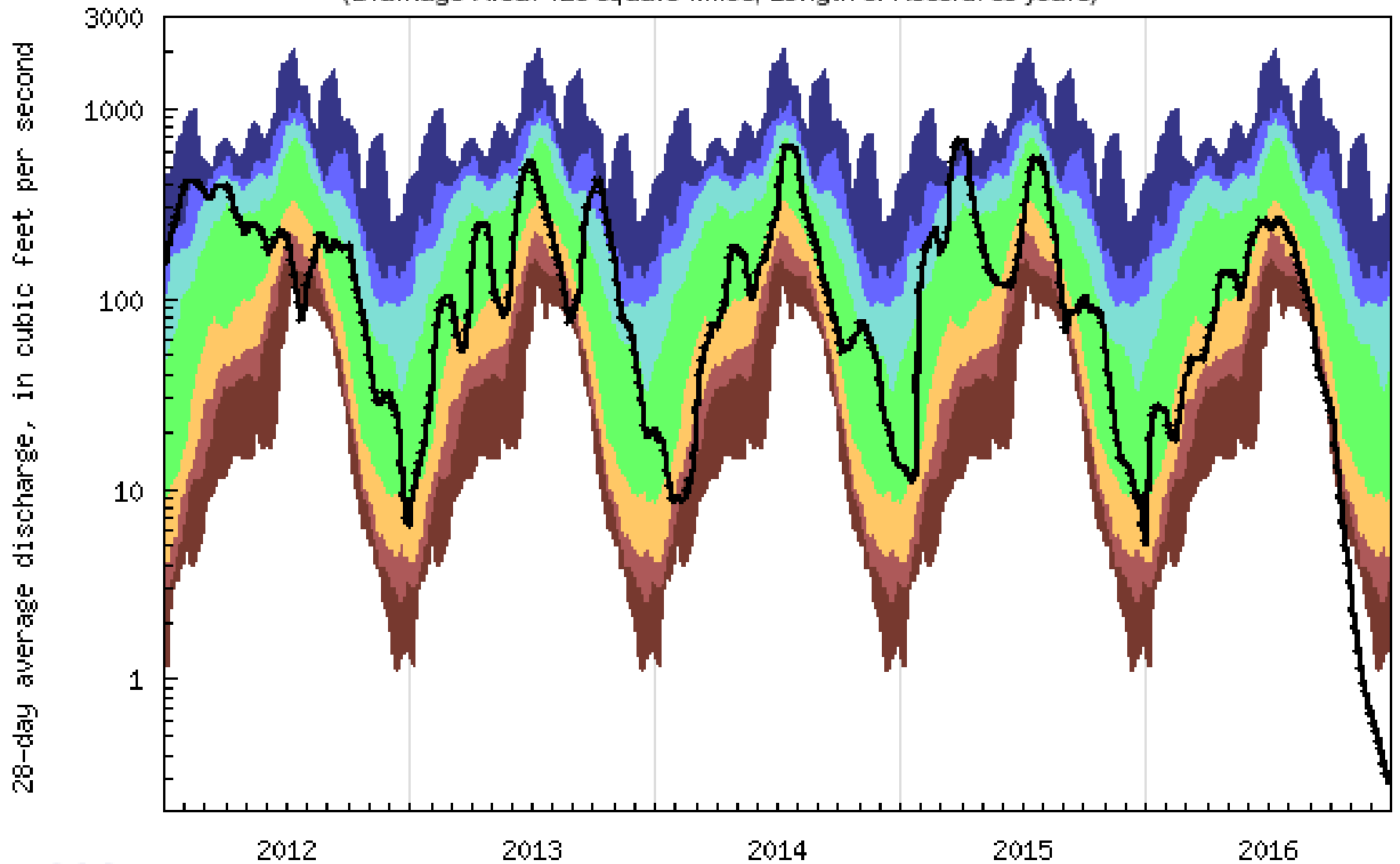
September 2016



Explanation - Percentile classes

Low	<=5	6-9	10-24	Normal
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

USGS 01102000 IPSWICH RIVER NEAR IPSWICH, MA
 (Drainage Area: 125 square miles, Length of Record: 85 years)

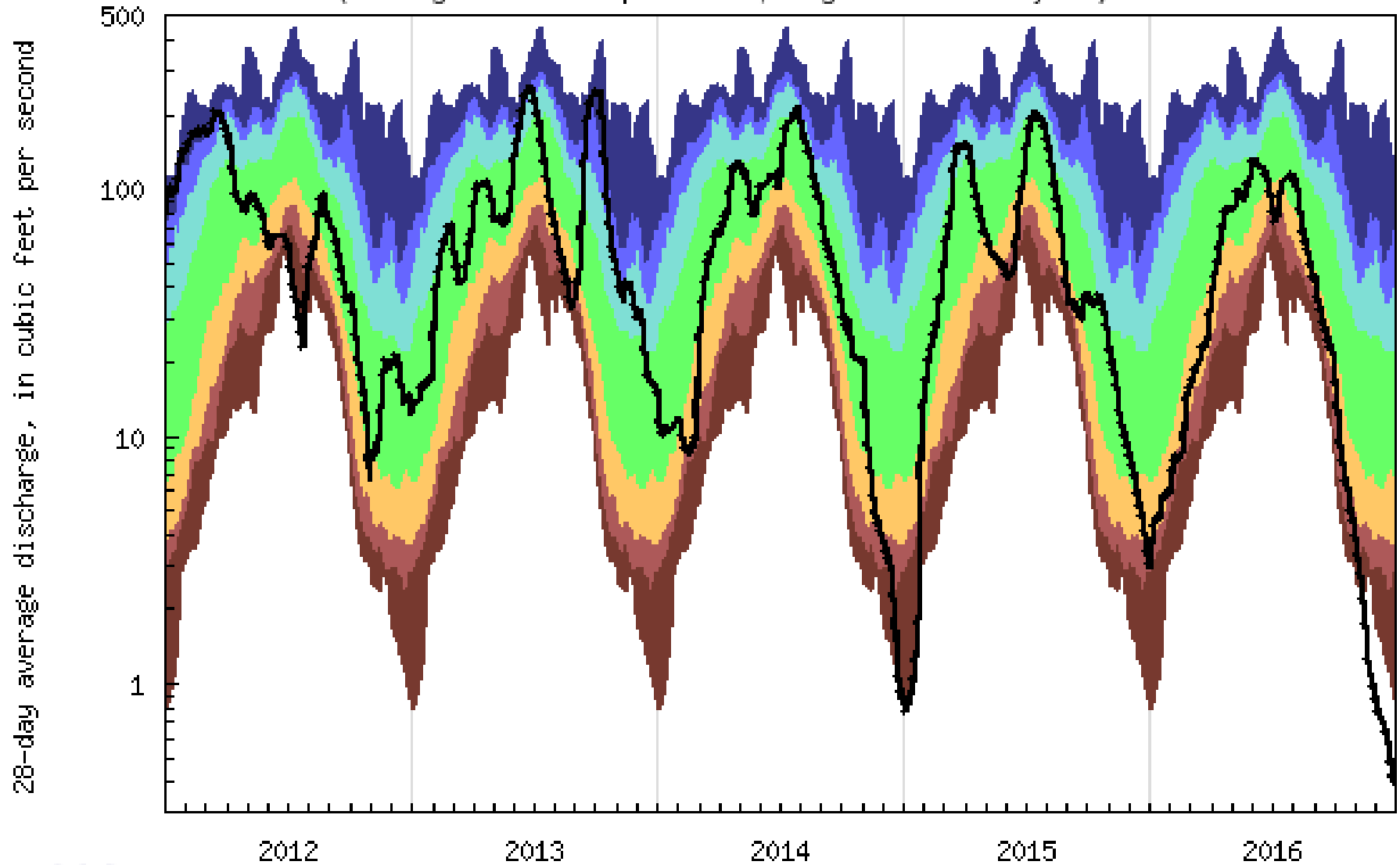


USGS WaterWatch

Explanation - Percentile classes

lowest-5th percentile	6-9	10-24	25-75	76-90	91-94	95th percentile-highest	—
Severe hydrologic drought	Moderate hydrologic drought	Below normal	Normal	Above normal	Much above normal		Flow

USGS 01109000 WADING RIVER NEAR NORTON, MA
 (Drainage Area: 43.3 square miles, Length of Record: 91 years)

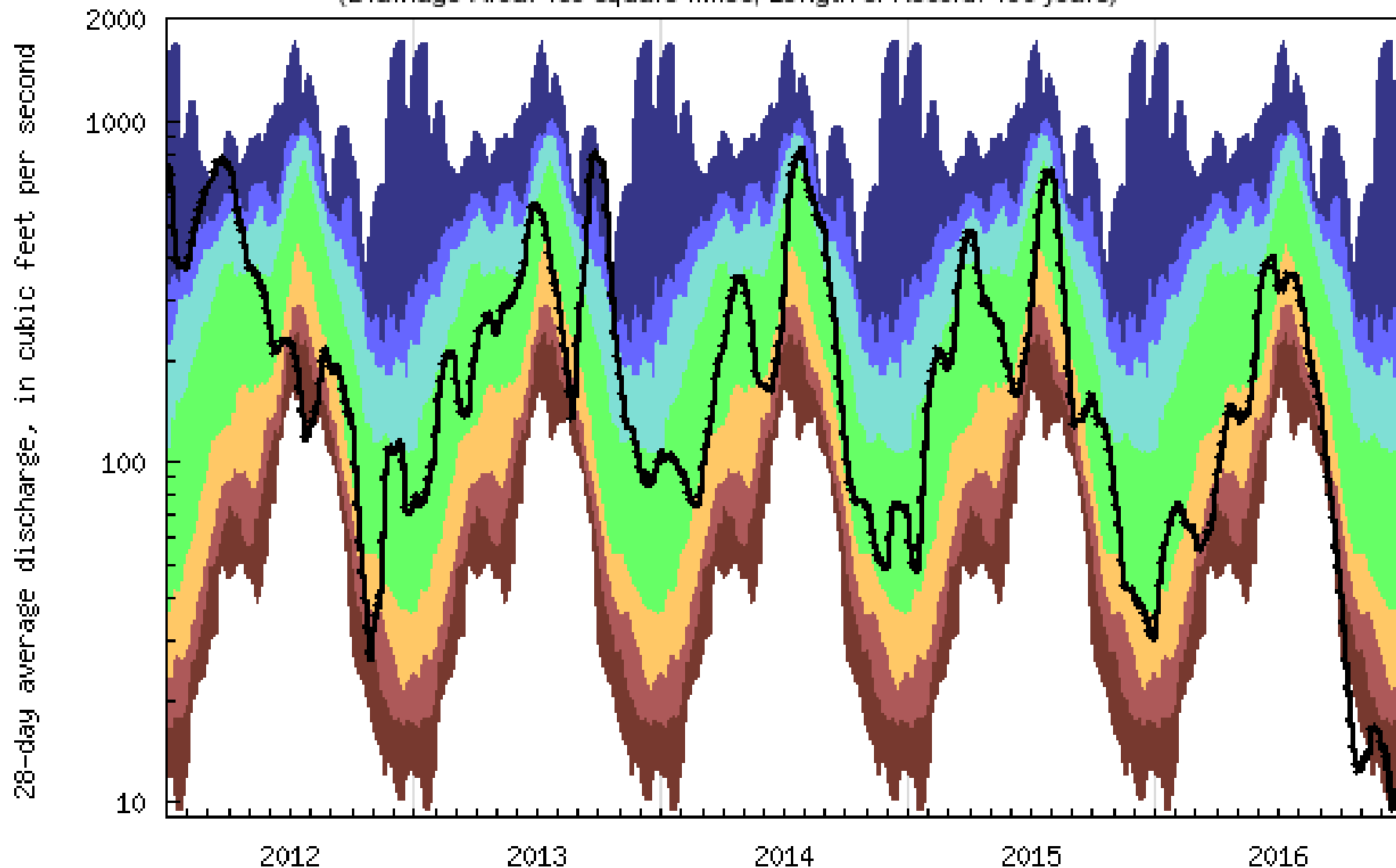


USGS WaterWatch

Explanation - Percentile classes

lowest-5th percentile	6-9	10-24	25-75	76-90	91-94	95th percentile -highest	Flow
Severe hydrologic drought	Moderate hydrologic drought	Below normal	Normal	Above normal	Much above normal		

USGS 01176000 QUABOAG RIVER AT WEST BRIMFIELD, MA
 (Drainage Area: 150 square miles, Length of Record: 103 years)

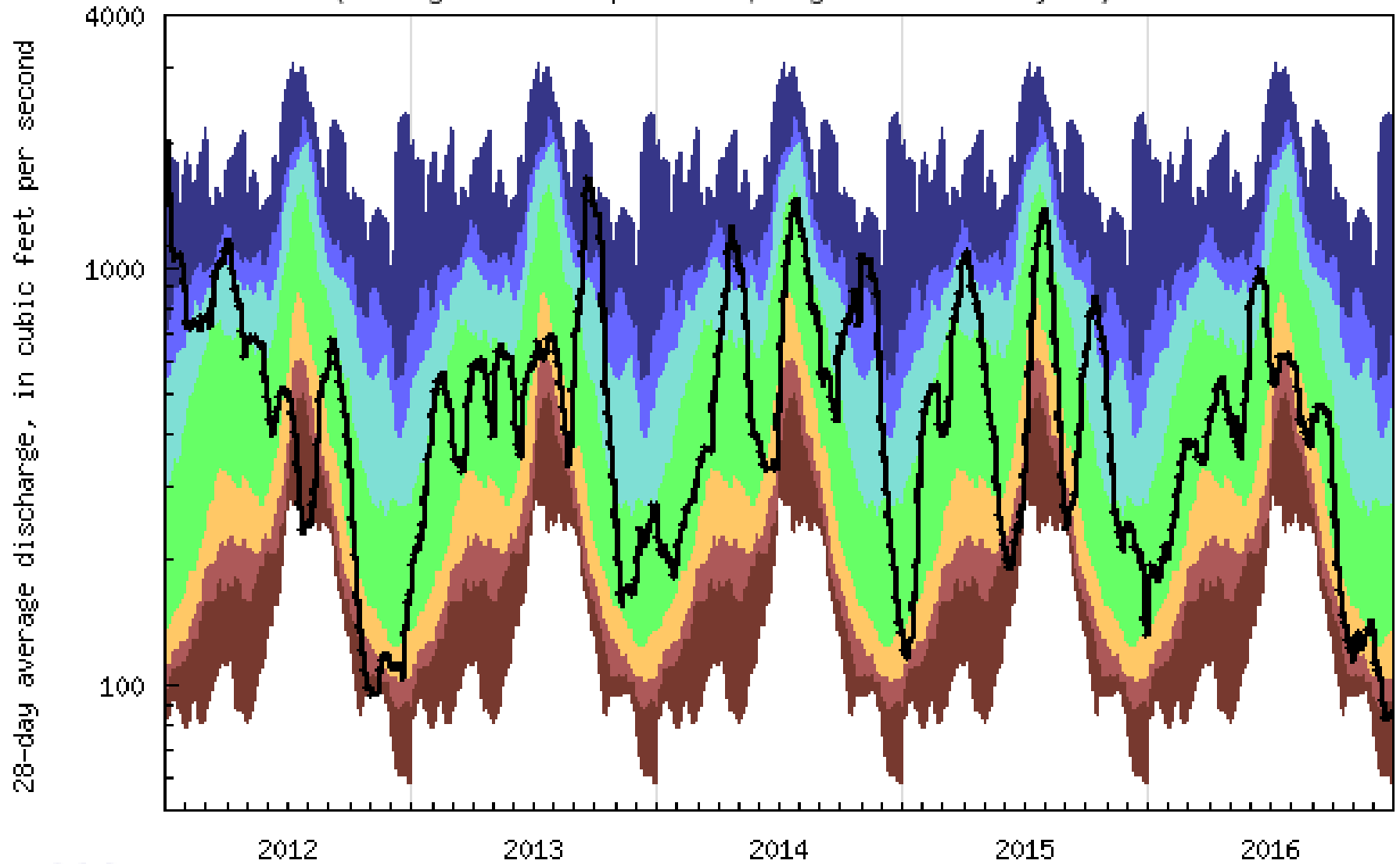


USGS WaterWatch



Explanation - Percentile classes							Flow
lowest-5th percentile	6-9	10-24	25-75	76-90	91-94	95th percentile-highest	
Severe hydrologic drought	Moderate hydrologic drought	Below normal	Normal	Above normal	Much above normal		

USGS 01197500 HOUSATONIC RIVER NEAR GREAT BARRINGTON, MA
 (Drainage Area: 282 square miles, Length of Record: 103 years)

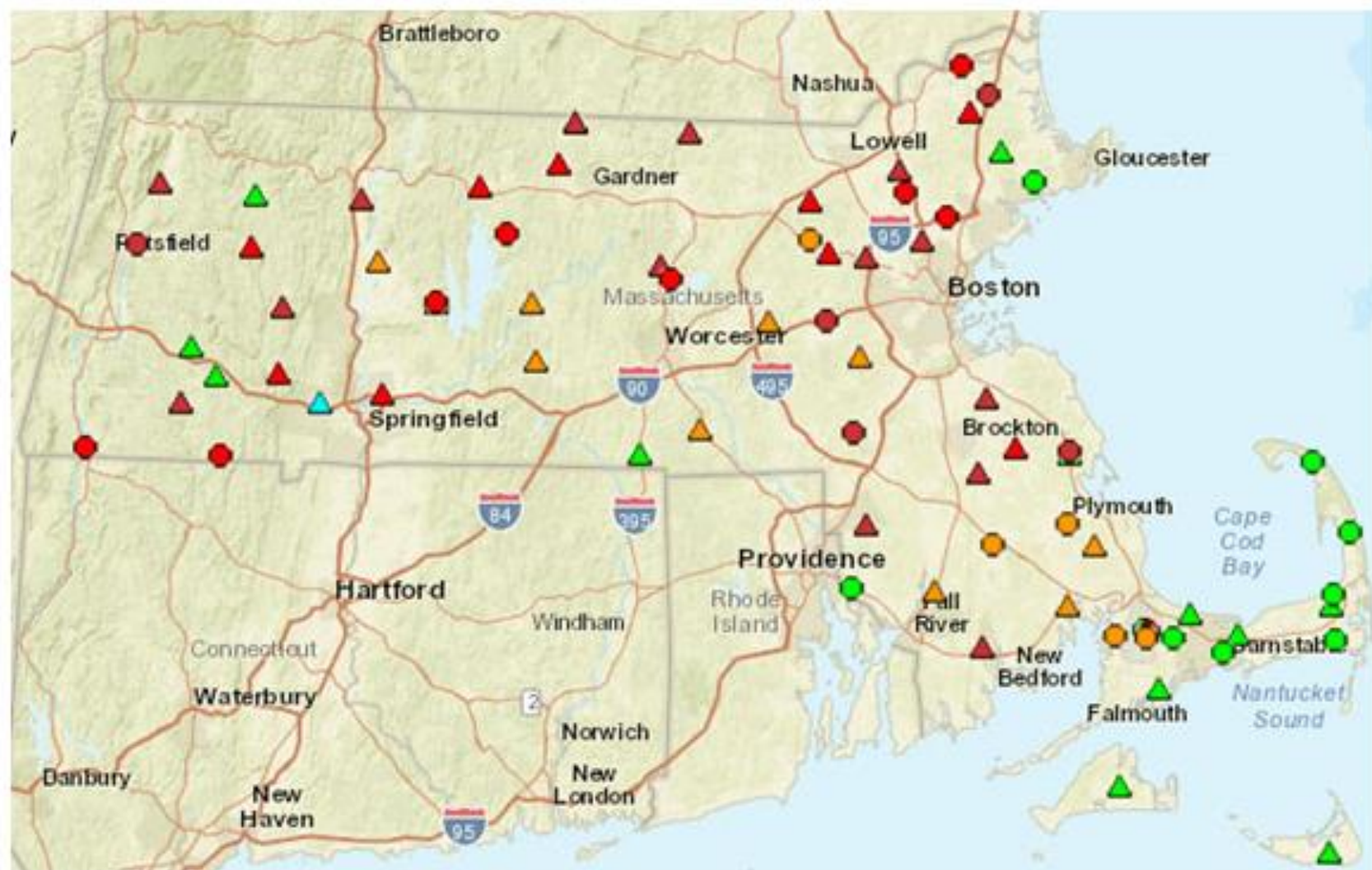


USGS WaterWatch

Explanation - Percentile classes

lowest-5th percentile	6-9	10-24	25-75	76-90	91-94	95th percentile-highest	Flow
Severe hydrologic drought	Moderate hydrologic drought	Below normal	Normal	Above normal	Much above normal		

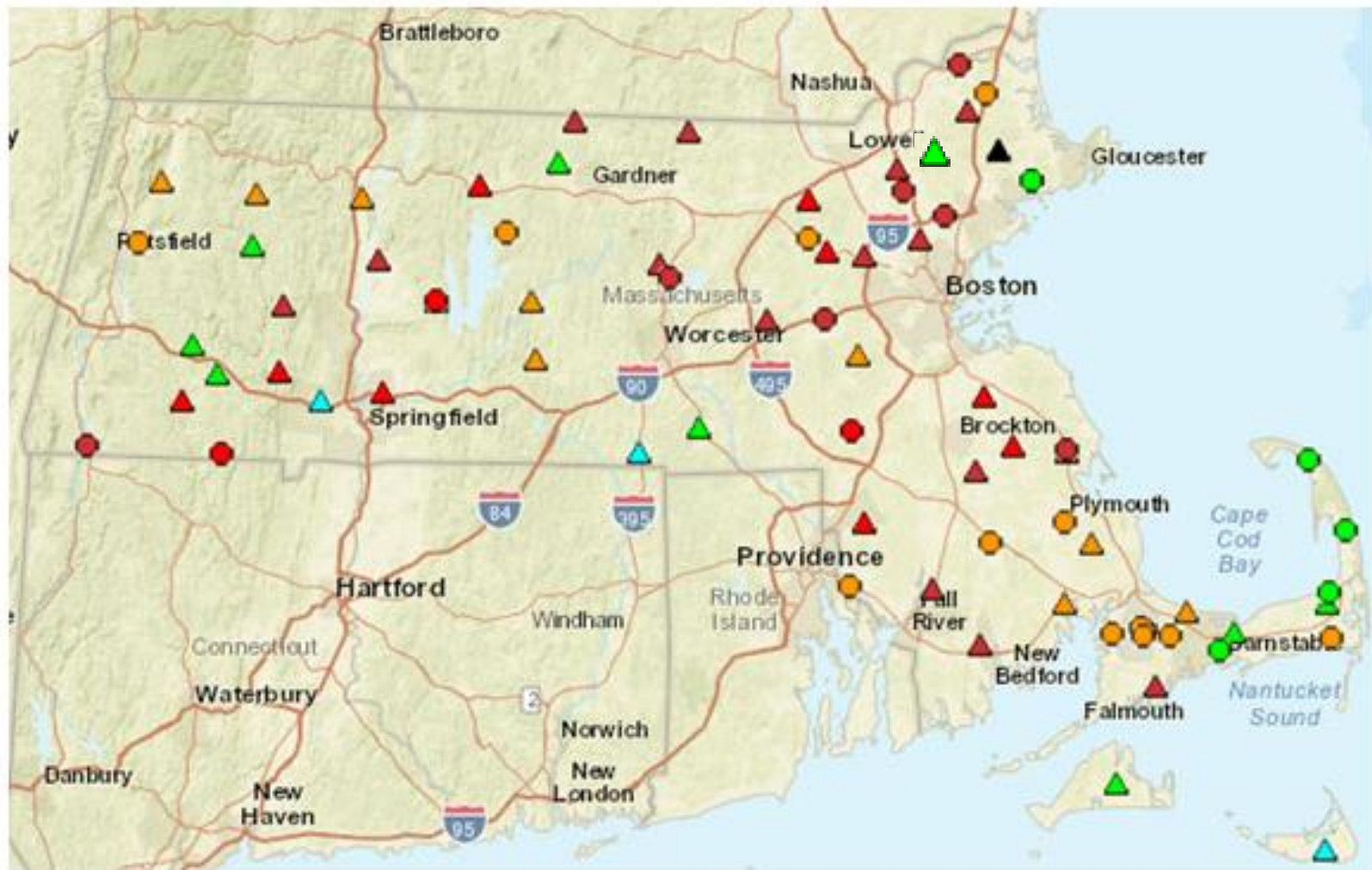
Groundwater Conditions During July 2016



Explanation - Percentile classes

								Real Time Continuous Periodic Measurements
New Low	<10 Much Below Normal	10-24 Below Normal	25-75 Normal	76-90 Above Normal	>90 Much Above Normal	New High	Not Ranked	

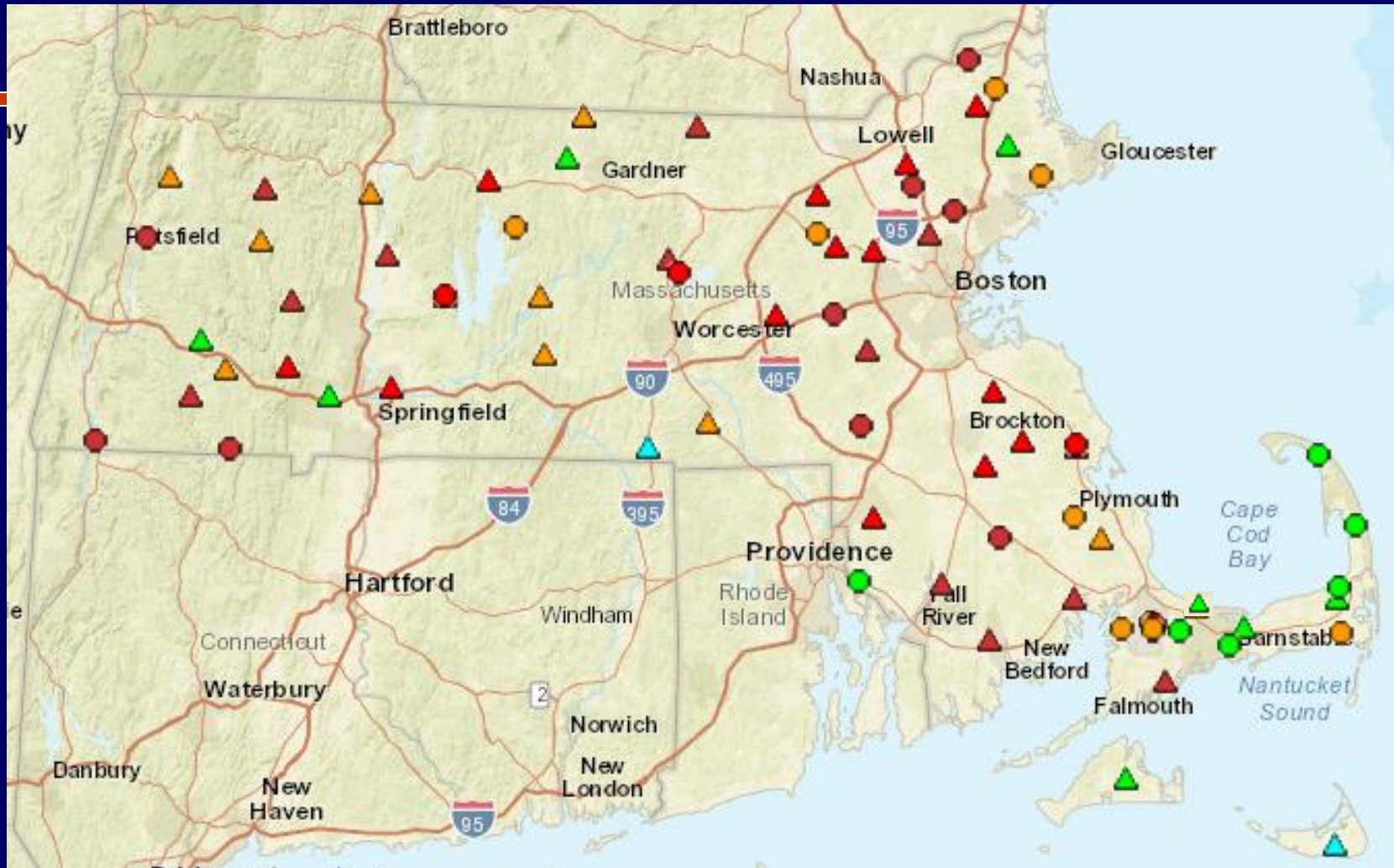
Groundwater Conditions During August 2016



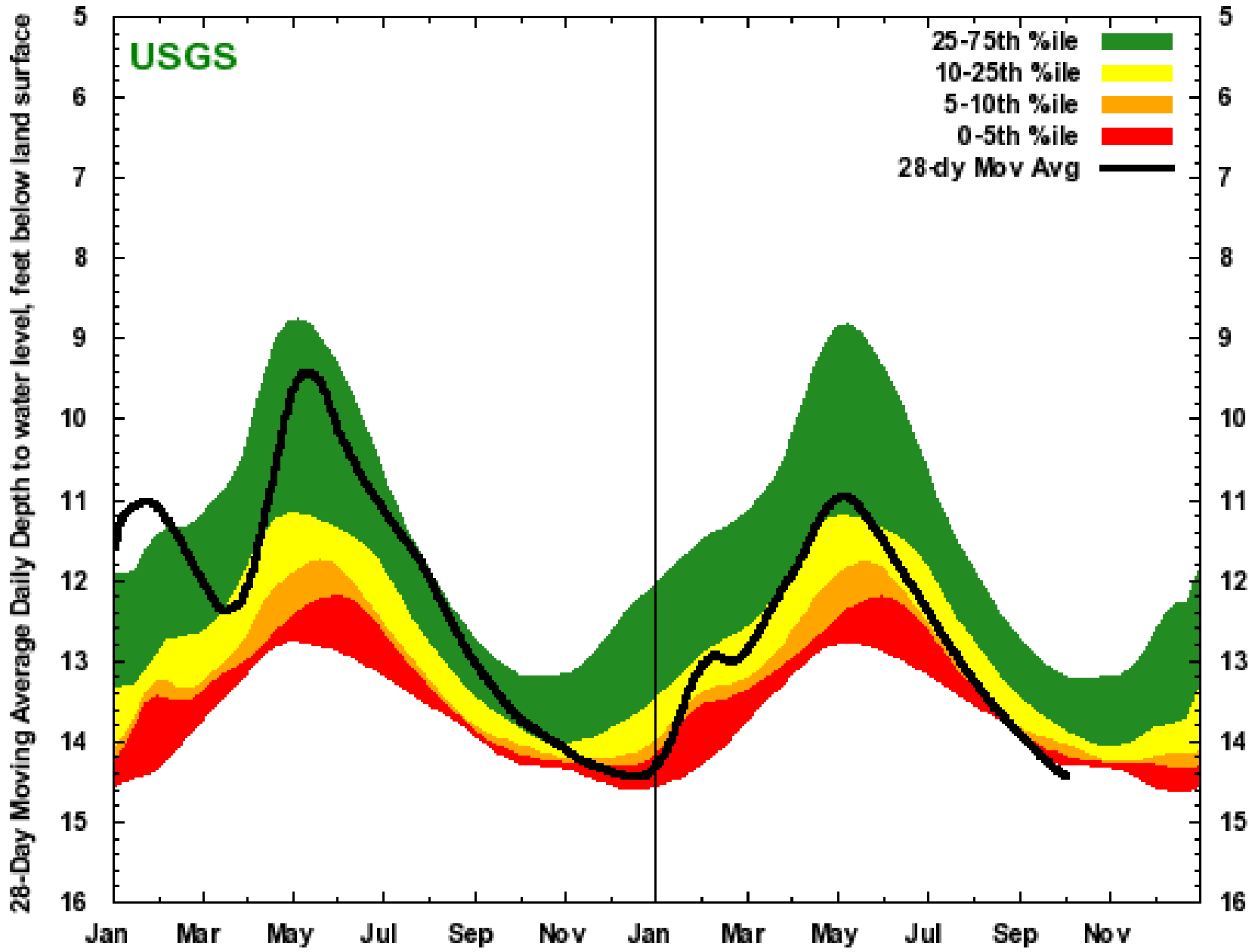
Explanation - Percentile classes

								<ul style="list-style-type: none"> ○ Real Time □ Continuous △ Periodic Measurements
New Low	<10 Much Below Normal	10-24 Below Normal	25-75 Normal	76-90 Above Normal	>90 Much Above Normal	New High	Not Ranked	

Groundwater Conditions During Sept. 2016

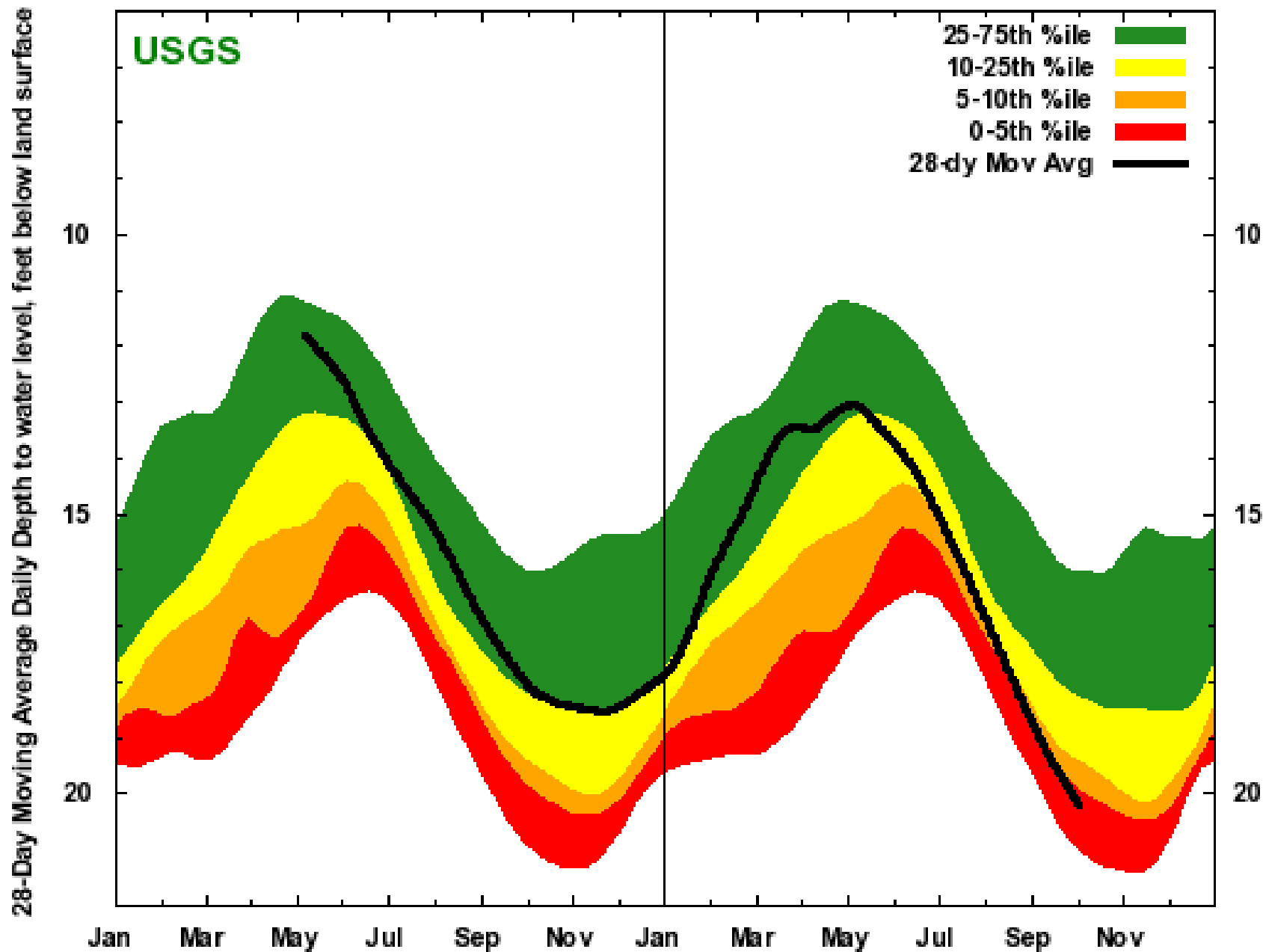


Explanation - Percentile classes								○ Real Time	□ Continuous	△ Periodic Measurements
● New Low	● <10 Much Below Normal	● 10-24 Below Normal	● 25-75 Normal	● 76-90 Above Normal	● >90 Much Above Normal	● New High	● Not Ranked			



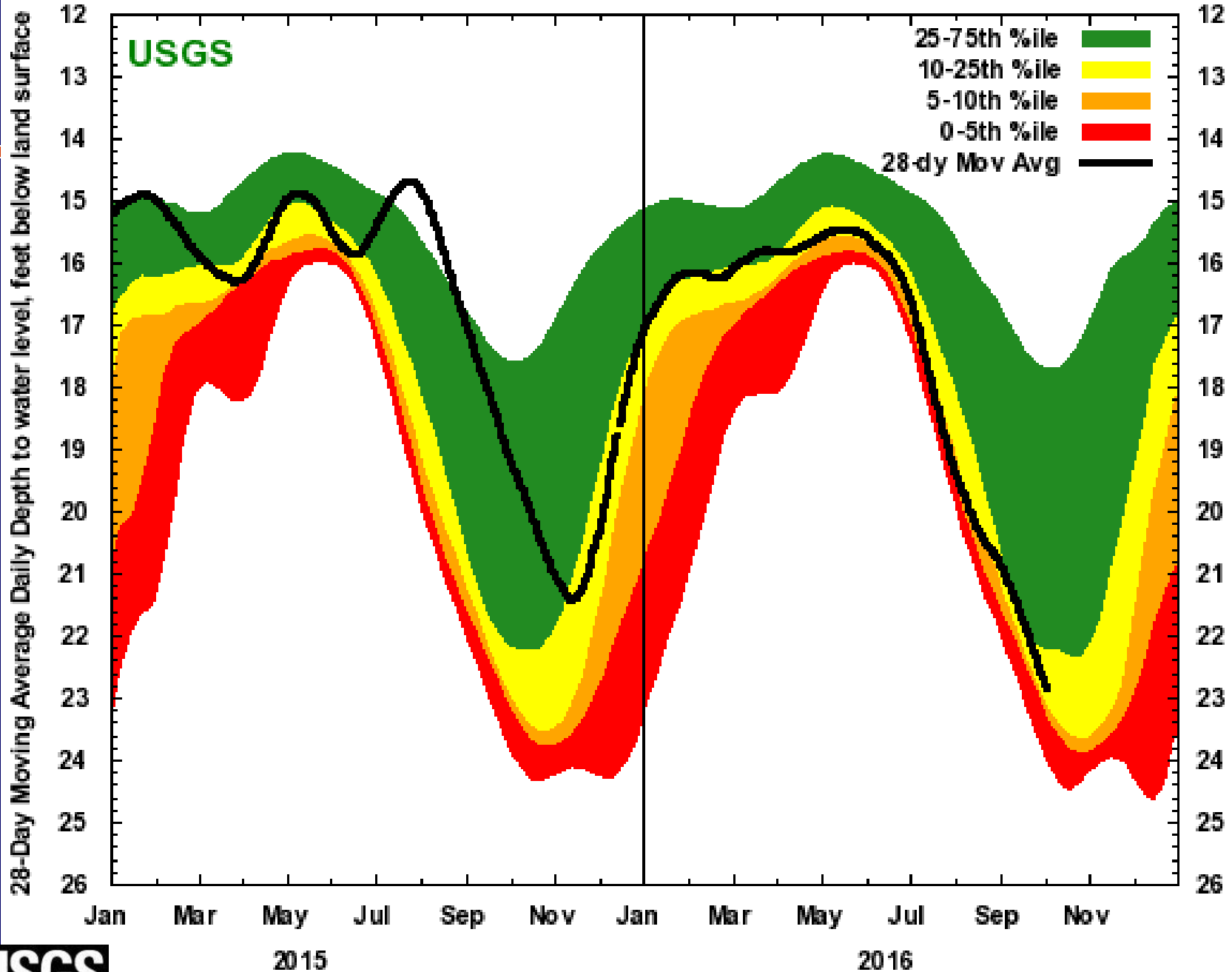
USGS

- 25-75th %ile
- 10-25th %ile
- 5-10th %ile
- 0-5th %ile
- 28-dy Mov Avg



USGS

- 25-75th %ile
- 10-25th %ile
- 5-10th %ile
- 0-5th %ile
- 28-dy Mov Avg



1960's versus 2016

