



Northeast U.S. Streamflow and Groundwater Levels

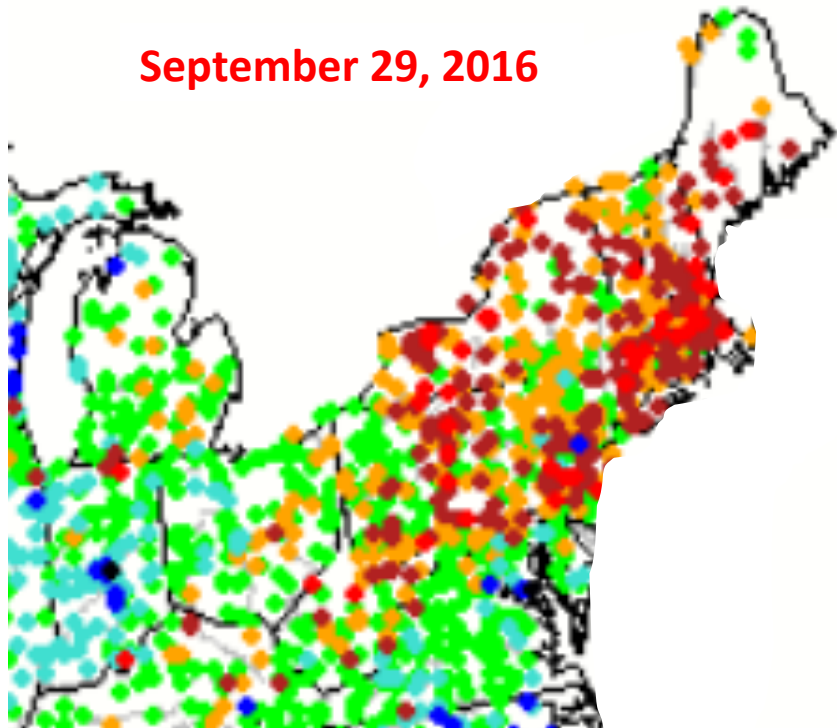
**A Drought Update
February 28, 2017**

William Coon, Hydrologist

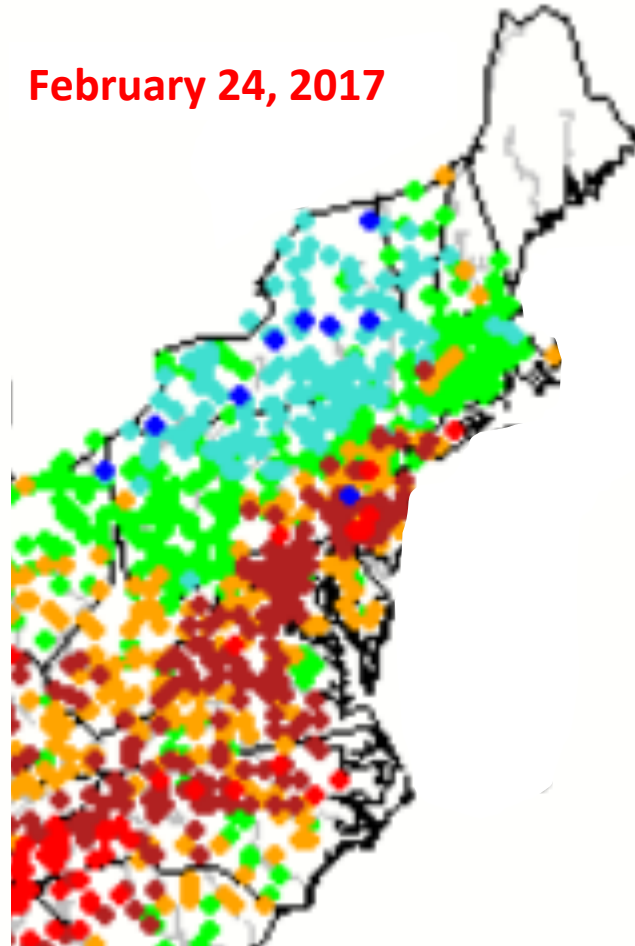


Daily Streamflow – Compared to Historical Streamflow

September 29, 2016



February 24, 2017

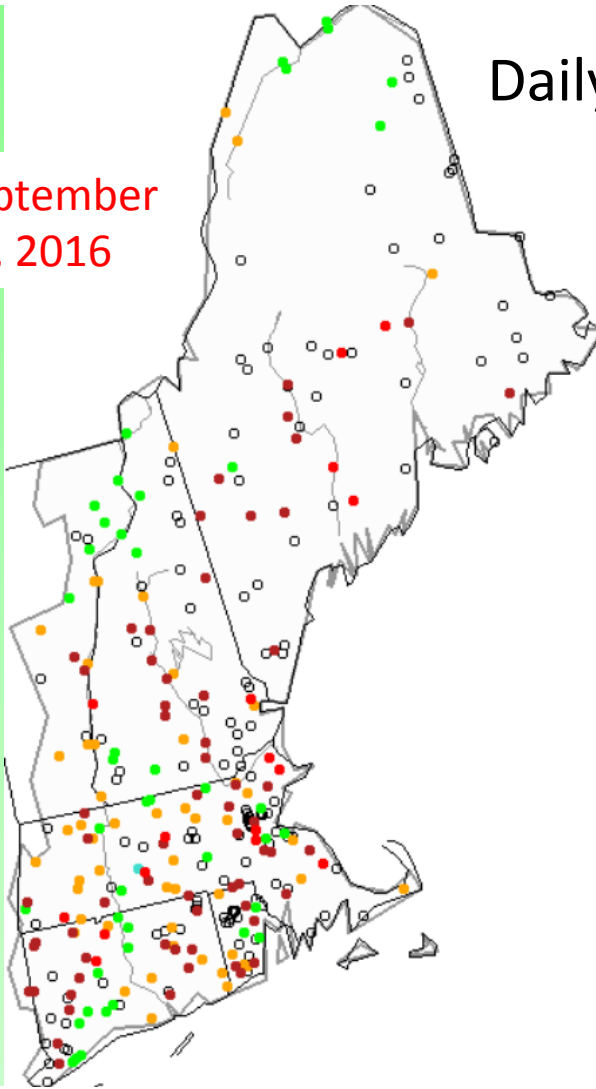


Explanation - Percentile classes

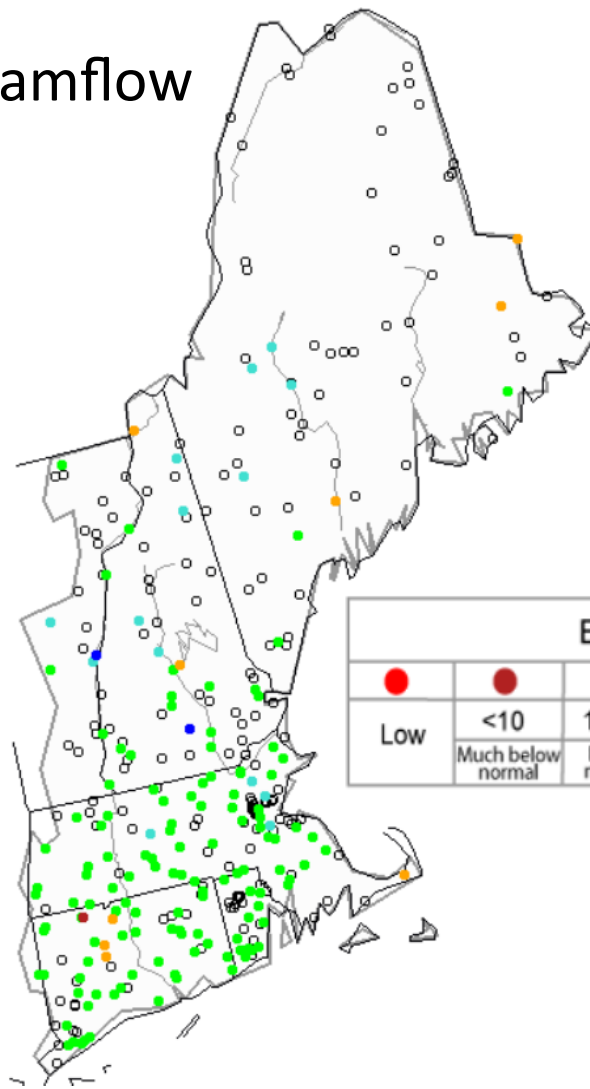
●	●	●	●	●	●	●	○
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Daily Streamflow

September 29, 2016



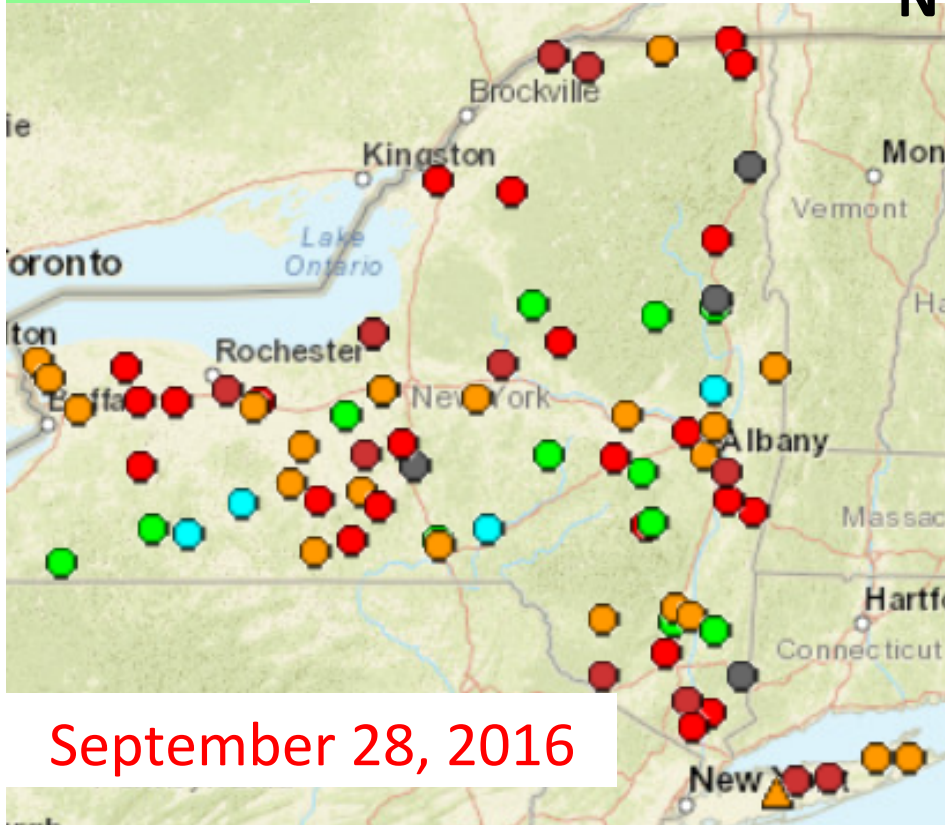
February 24, 2017



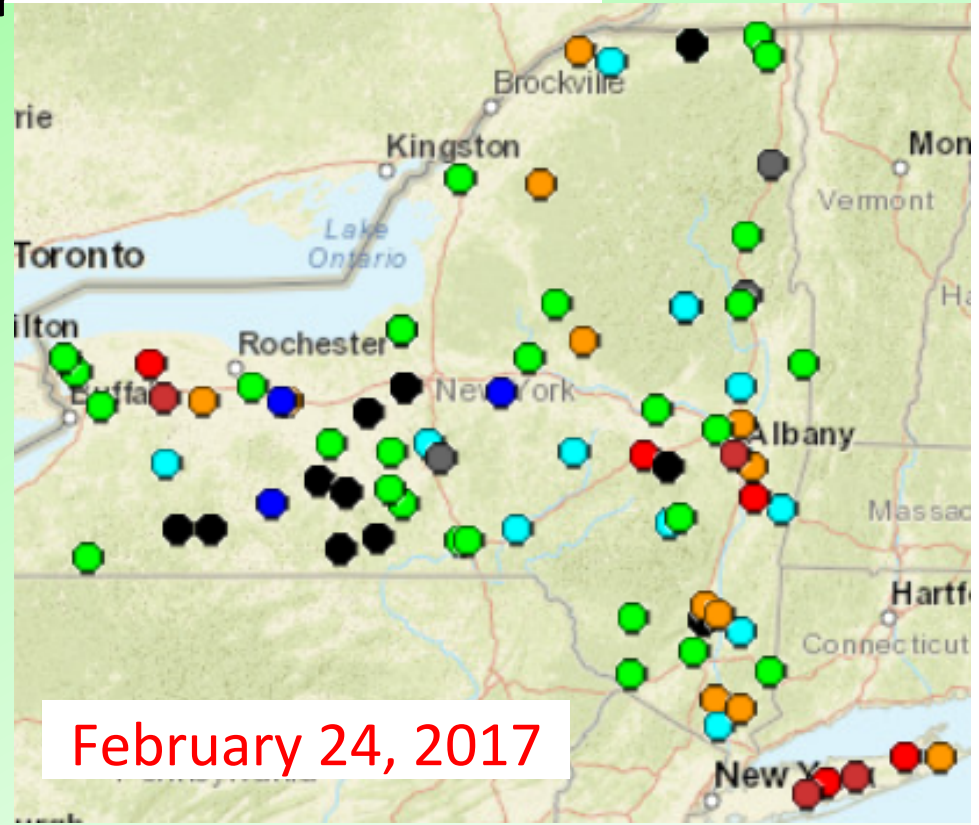
Explanation - Percentile classes

Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

Groundwater Climate Response Network - NY



September 28, 2016



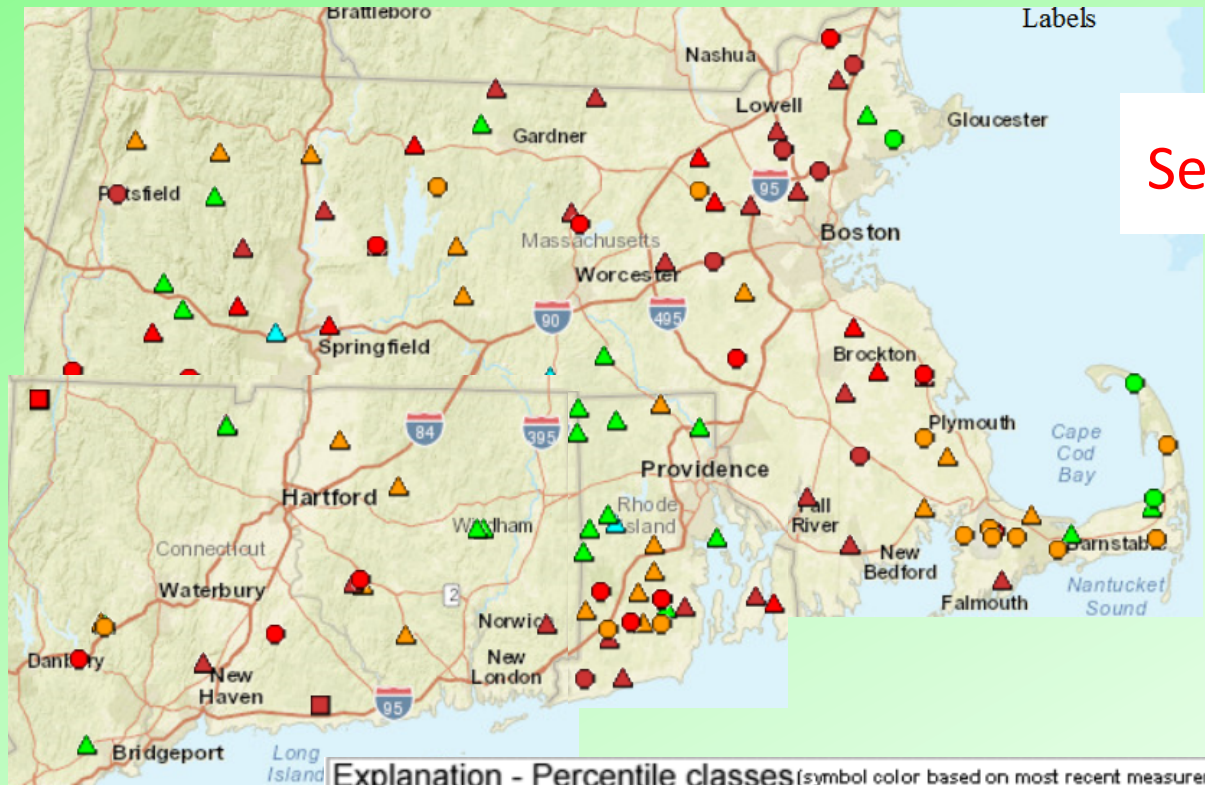
February 24, 2017

Explanation - Percentile classes (symbol color based on most recent measurement)							Wells		Springs	
●	●	●	●	●	●	●	○	□	■	■
Low	<10	10-24	25-75	76-90	>90	High	Continuous	Periodic	Measurements	
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal					



Groundwater Climate Response Network – MA, CT, RI

September 28, 2016

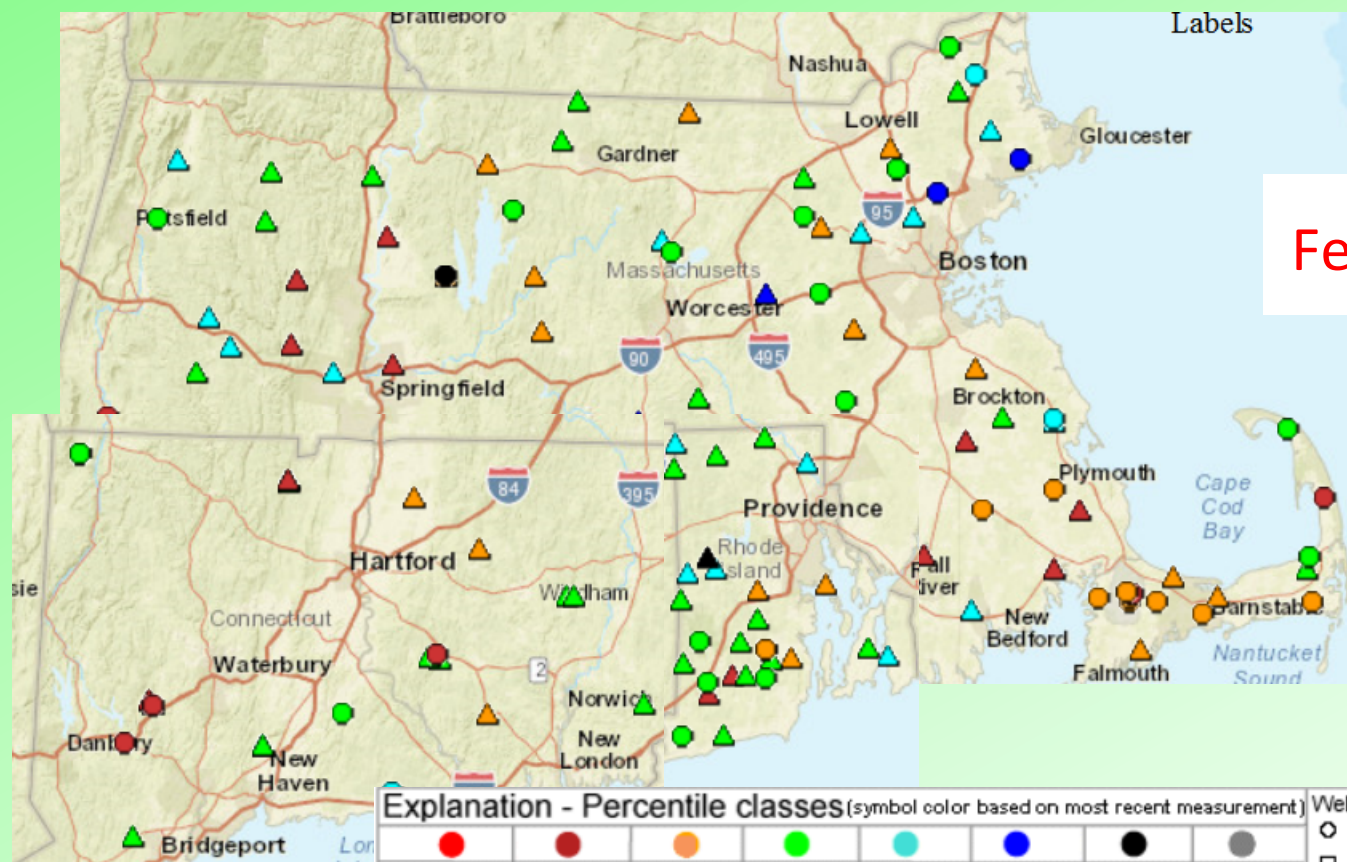


Explanation - Percentile classes (symbol color based on most recent measurement)								Wells		Springs	
● (Red)	● (Dark Red)	● (Orange)	● (Green)	● (Cyan)	● (Blue)	● (Black)	● (Grey)	○ (Open Circle)	■ (Solid Square)	△ (Open Triangle)	■ (Solid Square)
Low	<10 Much Below Normal	10-24 Below Normal	25-75 Normal	76-90 Above Normal	>90 Much Above Normal	High	Not Ranked	□ (Open Square)	■ (Solid Square)	△ (Open Triangle)	■ (Solid Square)
								△ (Open Triangle)		■ (Solid Square)	
								□ (Open Square)		■ (Solid Square)	
								△ (Open Triangle)		■ (Solid Square)	



Groundwater Climate Response Network – MA, CT, RI

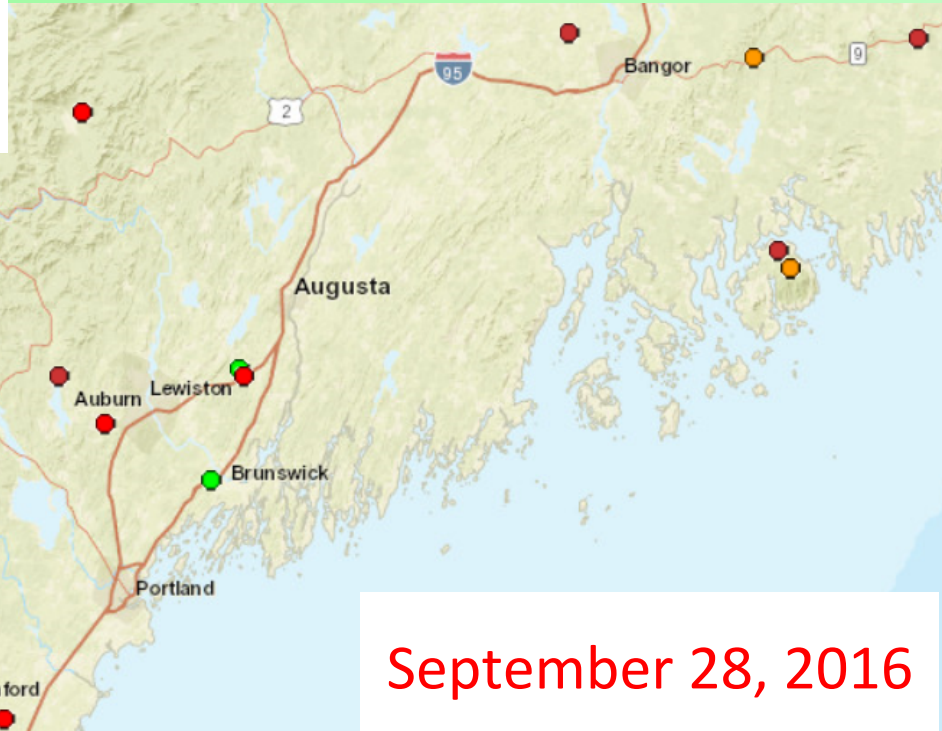
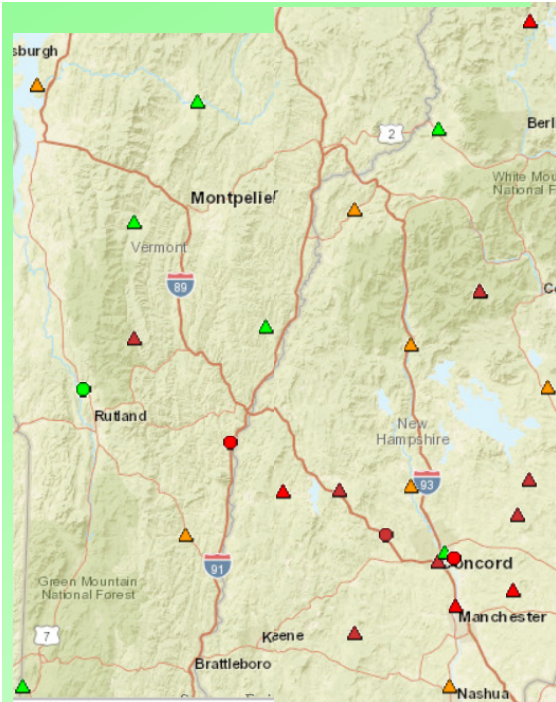
February 24, 2017



Explanation - Percentile classes (symbol color based on most recent measurement)							Wells		Springs	
●	●	●	●	●	●	●	○	□	△	■
Low	<10	10-24	25-75	76-90	>90	High	Not Ranked	Real-Time	Continuous	Periodic Measurements
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal					



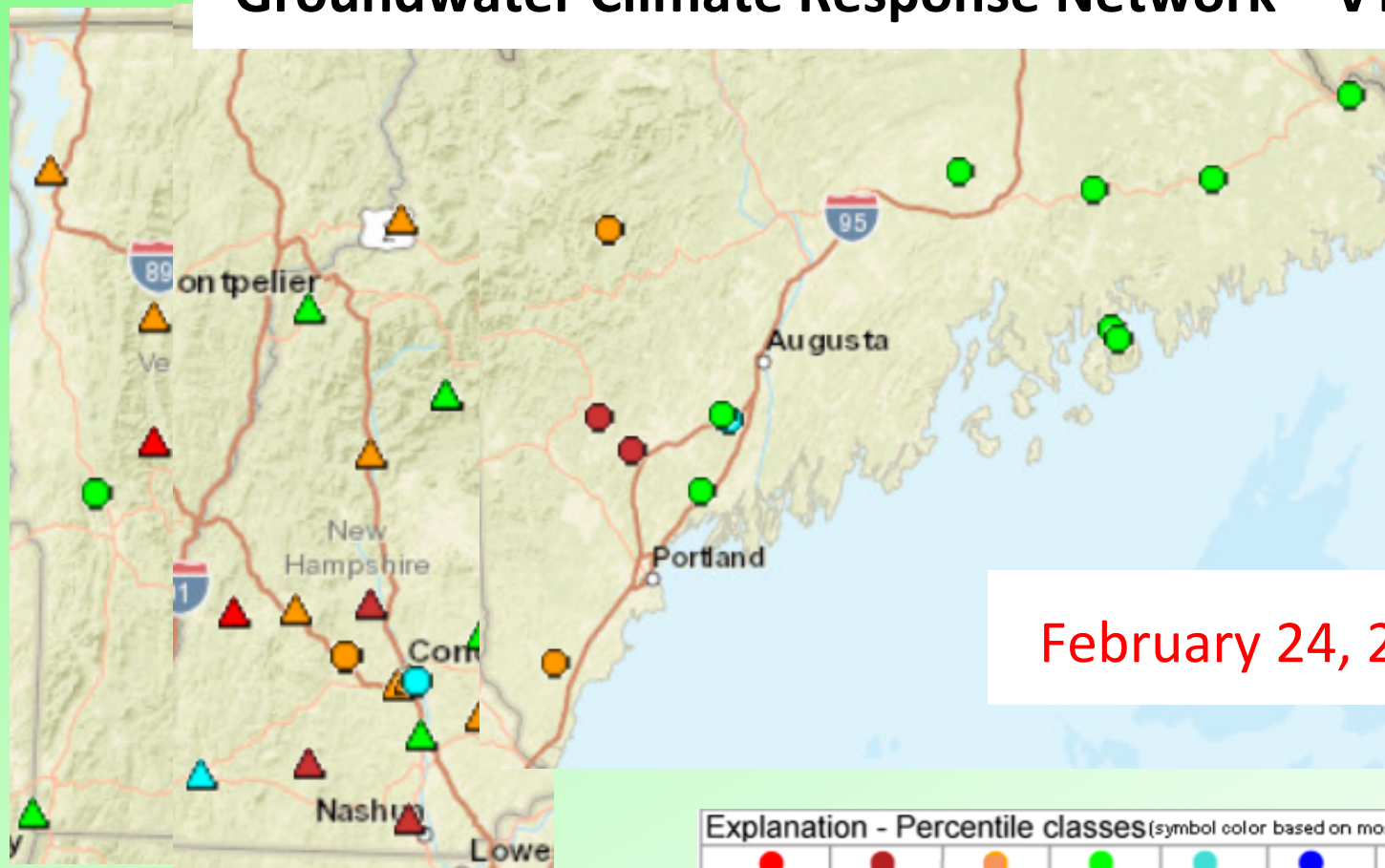
Groundwater Climate Response Network – VT, NH, ME



September 28, 2016

Explanation - Percentile classes (symbol color based on most recent measurement)								Wells		Springs	
Low	●	●	●	●	●	●	●	○	■	△	■
	<10	10-24	25-75	76-90	>90	High	Not Ranked	□	■	△	■
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal						

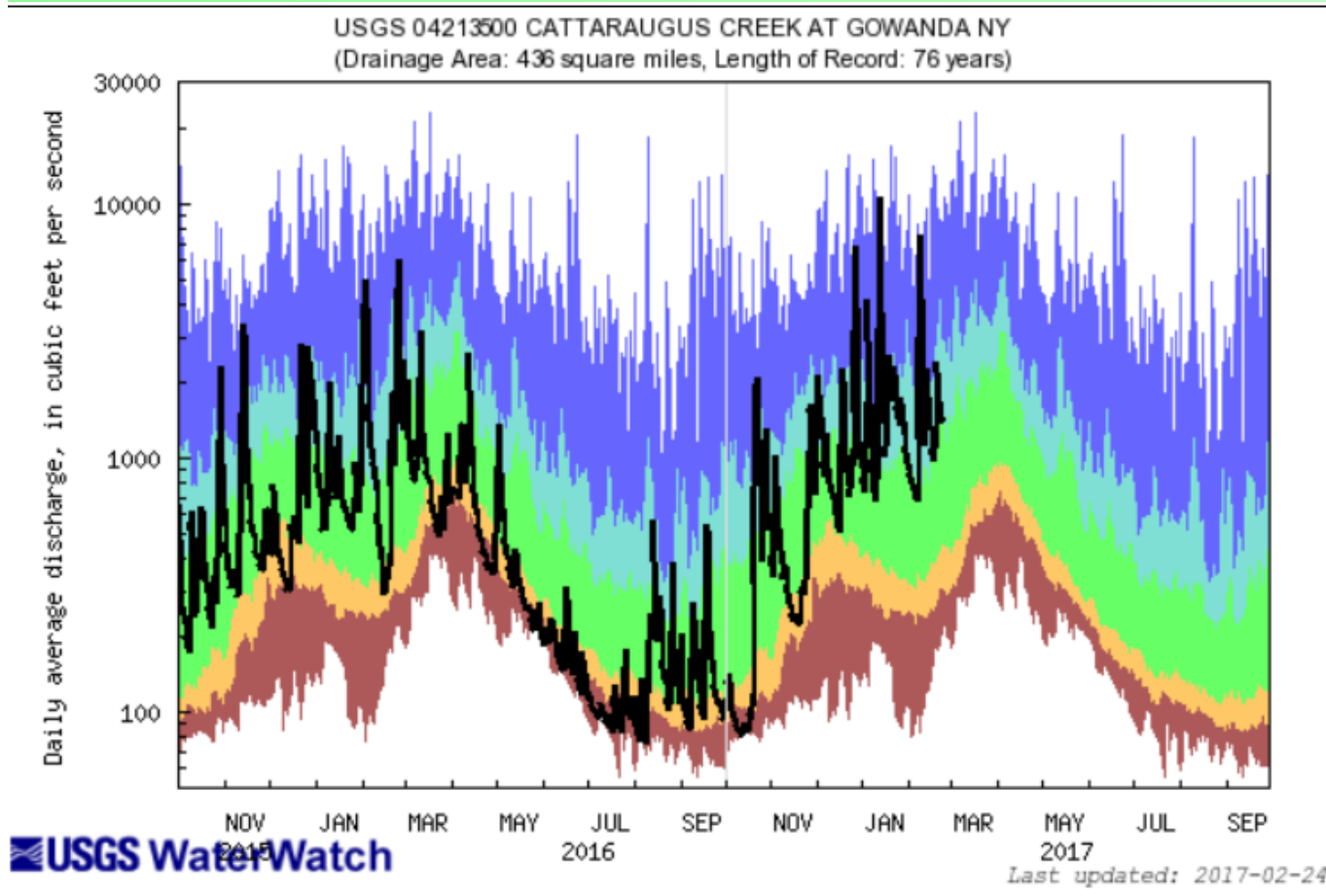
Groundwater Climate Response Network – VT, NH, ME



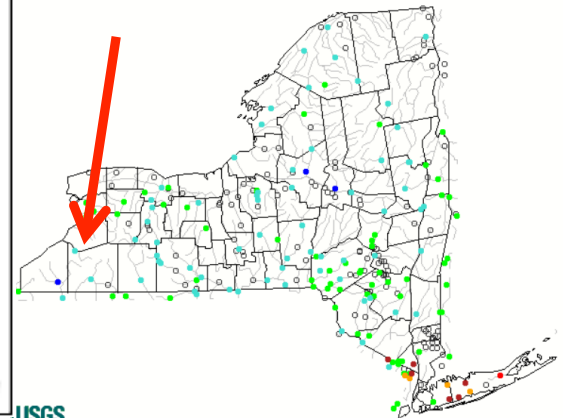
February 24, 2017

Explanation - Percentile classes (symbol color based on most recent measurement)								Wells		Springs	
●	●	●	●	●	●	●	●	○	Real-Time	■	
	<10	10-24	25-75	76-90	>90			□	Continuous	▣	
Low	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal	High	Not Ranked	△	Periodic Measurements	▣	

Cattaraugus Creek at Gowanda, NY – 76 years of record



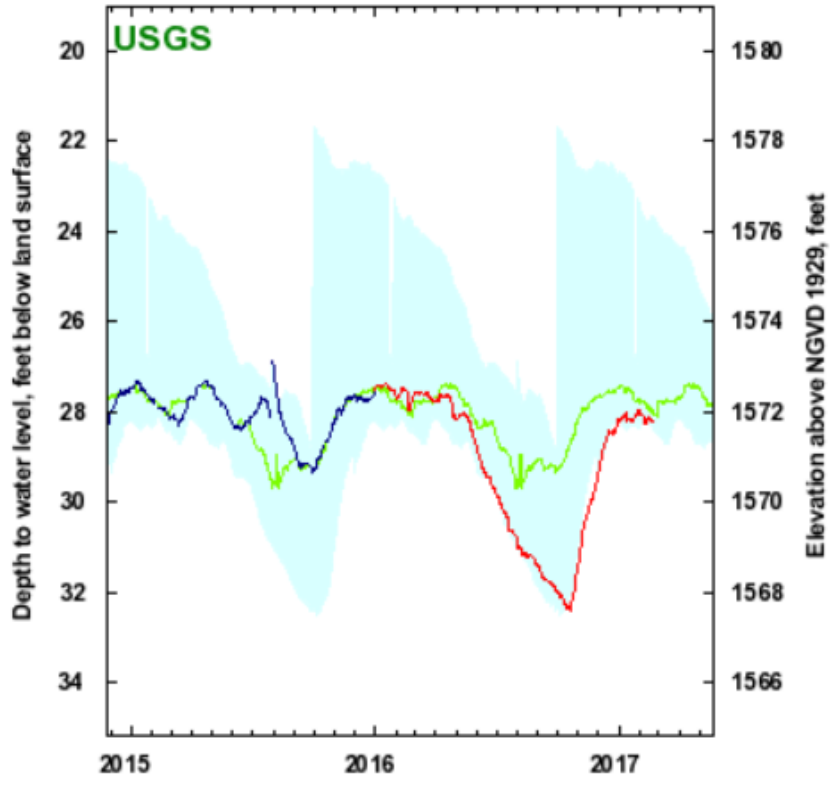
Explanation - Percentile classes					
lowest-5th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	



USGS

Cattaraugus County, NY Bedrock aquifer, 8 years

422702079005101 - Local number, Ct-2498, near Perrysburg N



Approved
Daily Data

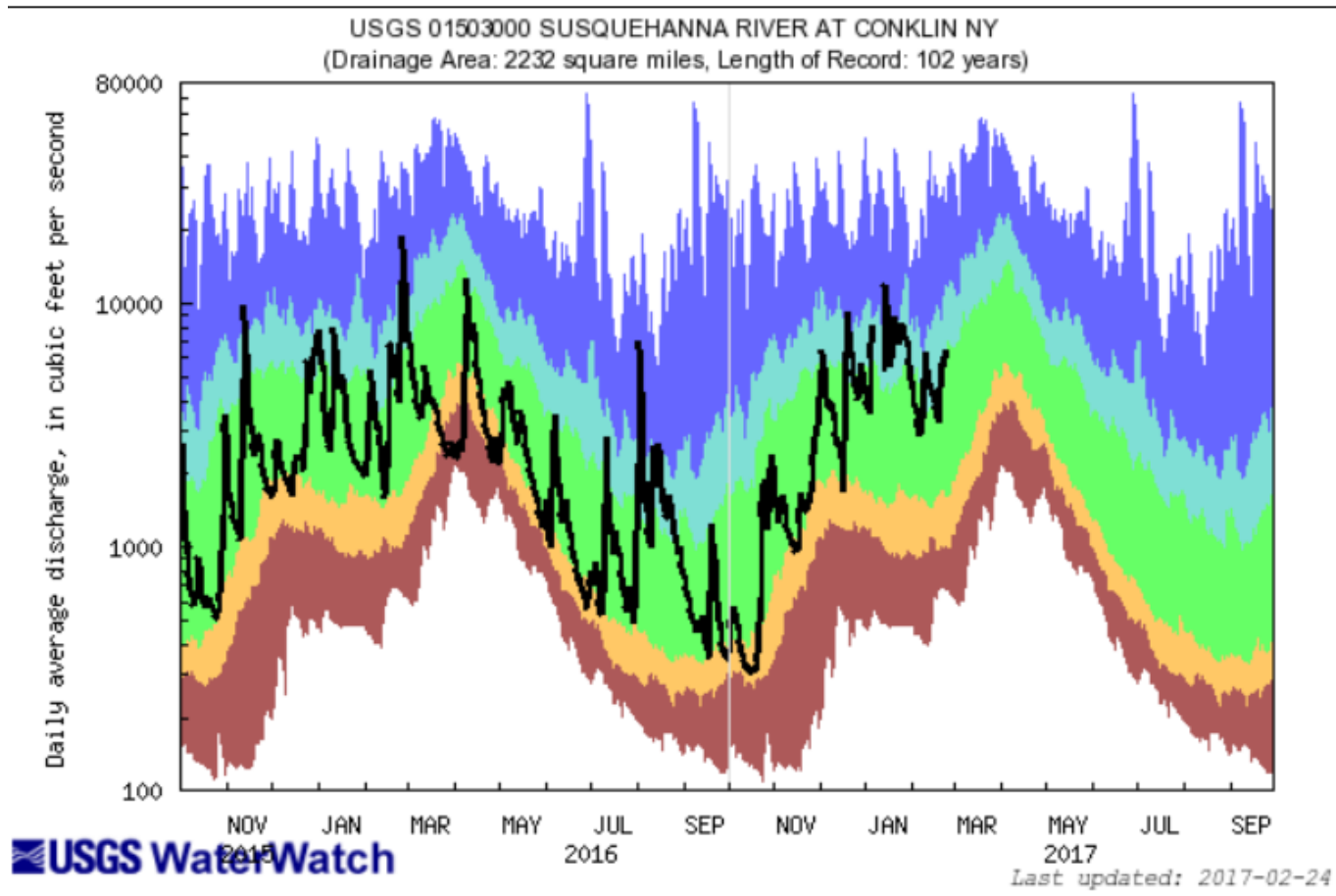
Provisional
Daily Data

Historical
Daily Median

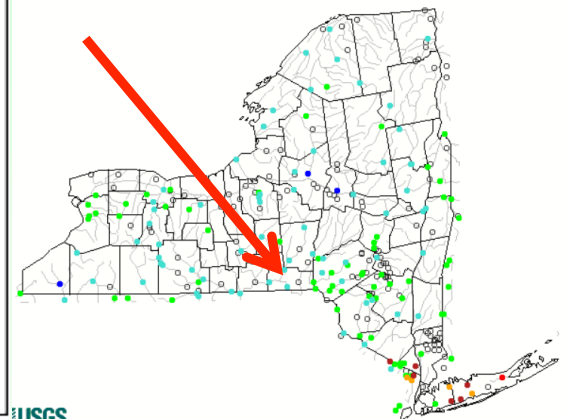
Range of
Approved Daily
Min & Max



Susquehanna River at Conklin, NY – 102 years of record



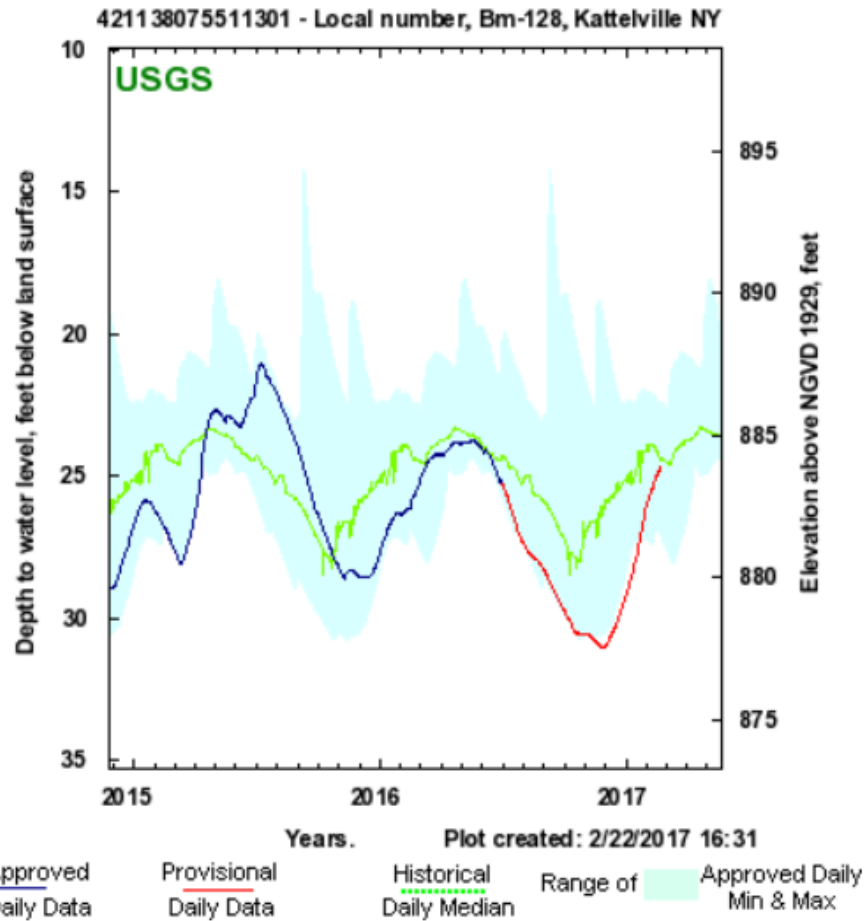
Explanation - Percentile classes					
lowest-0th percentile	10-24	25-75	76-90	90th percentile - highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	



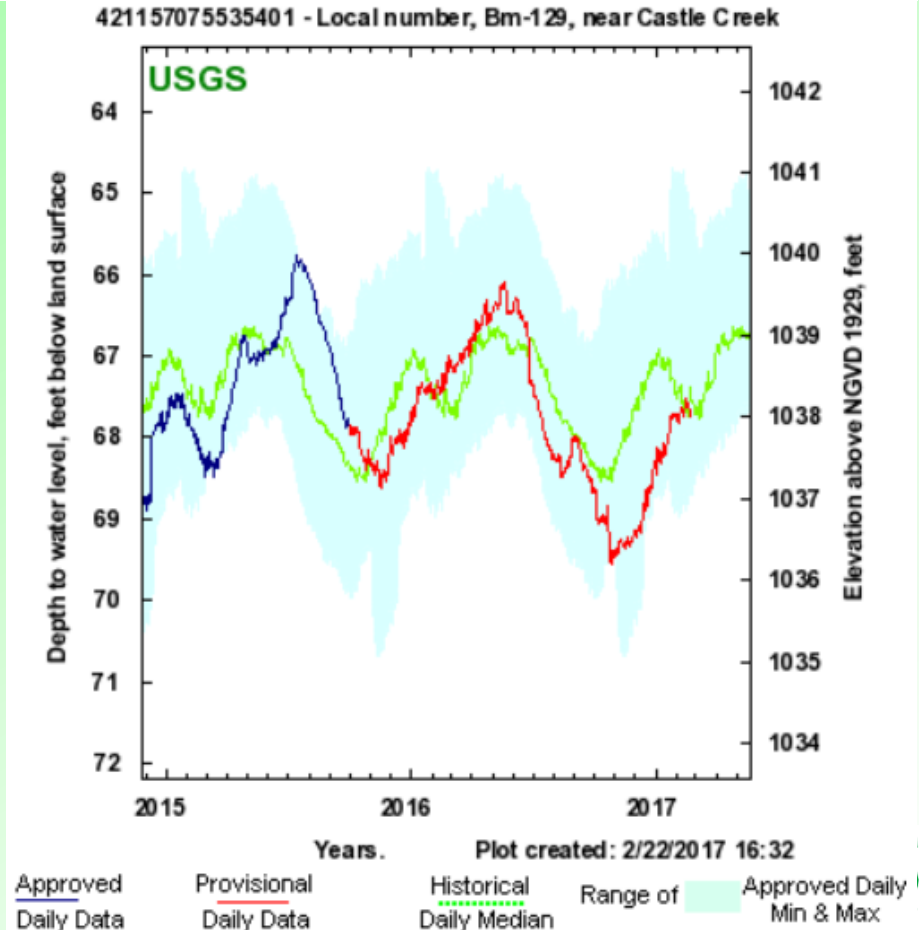
USGS

Broome County, NY

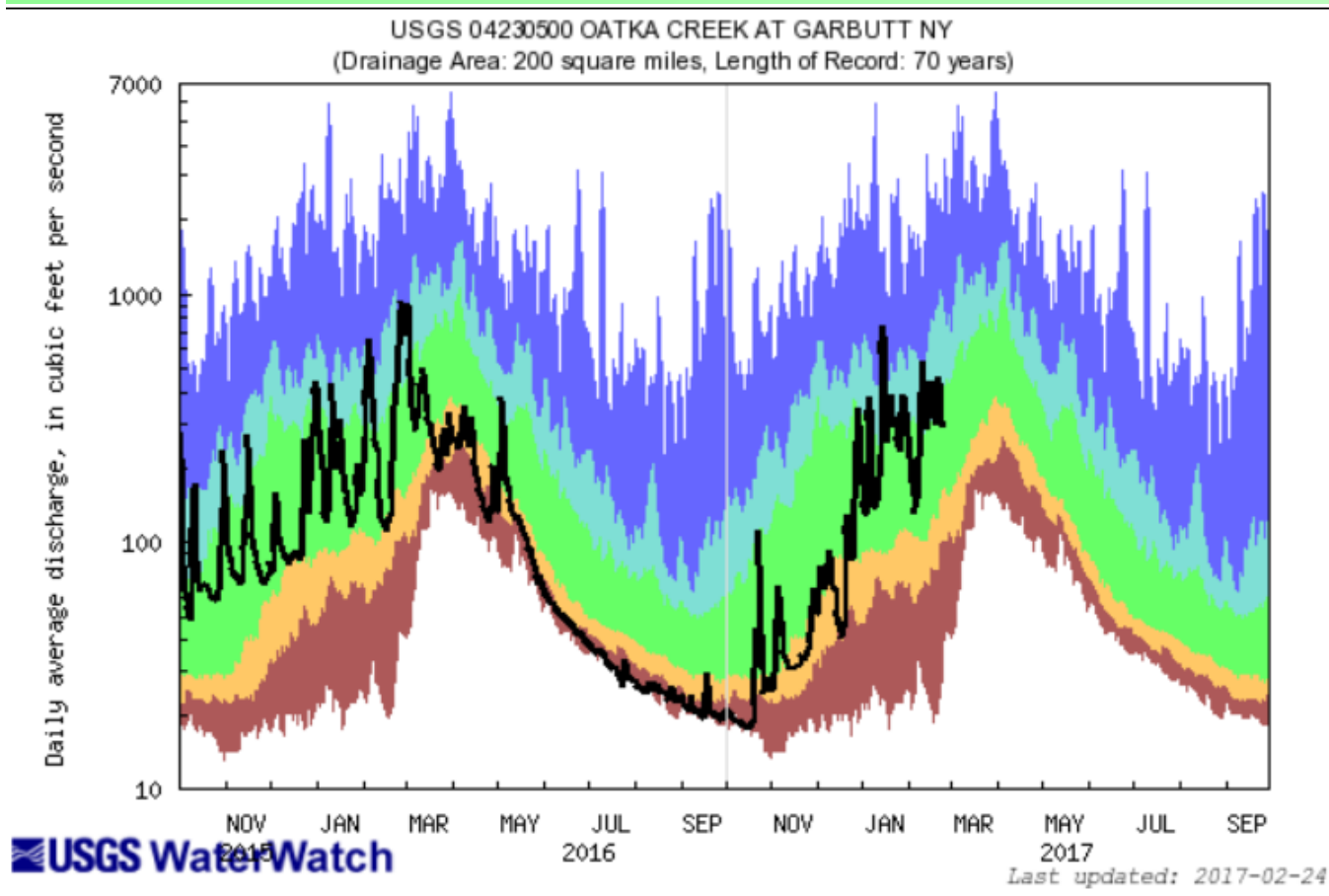
Sand-gravel aquifer, 36 yrs



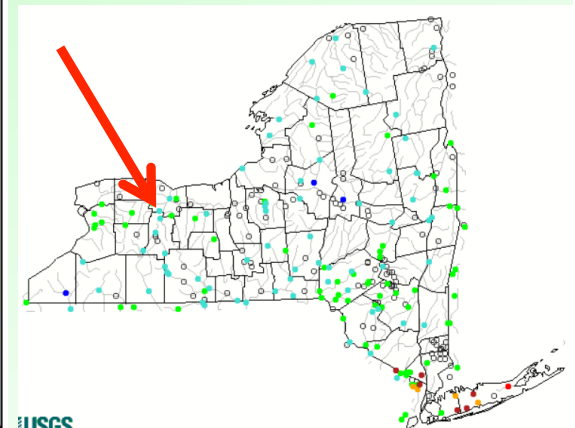
Bedrock aquifer, 31 yrs



Oatka Creek at Garbutt, NY – 70 years of record



Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile - highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

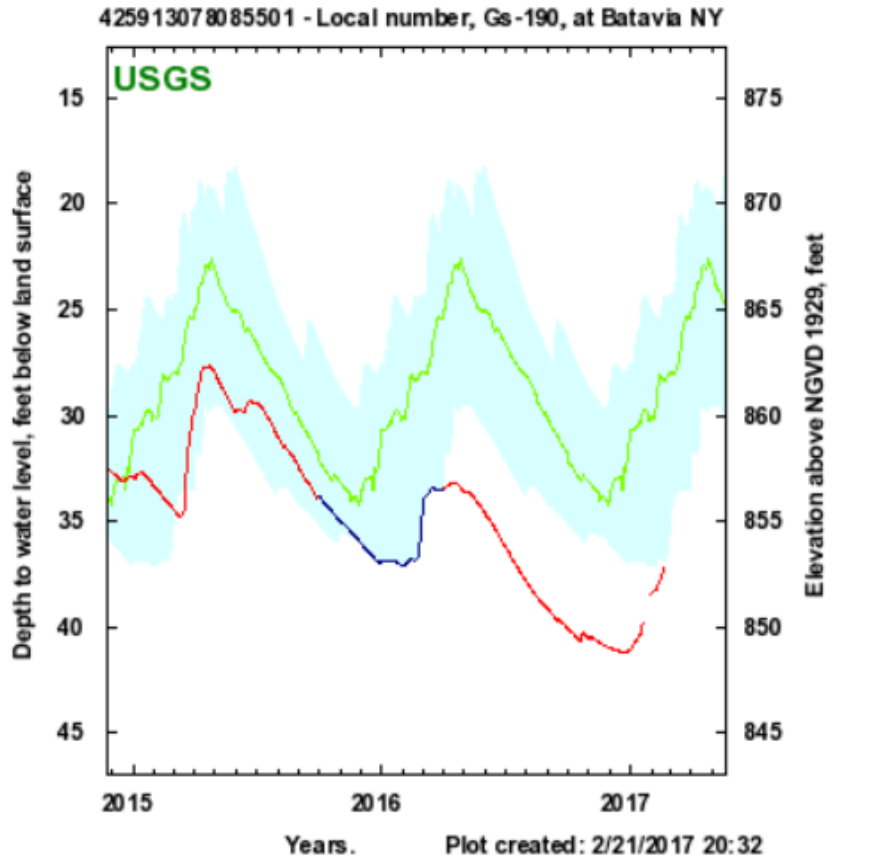


USGS

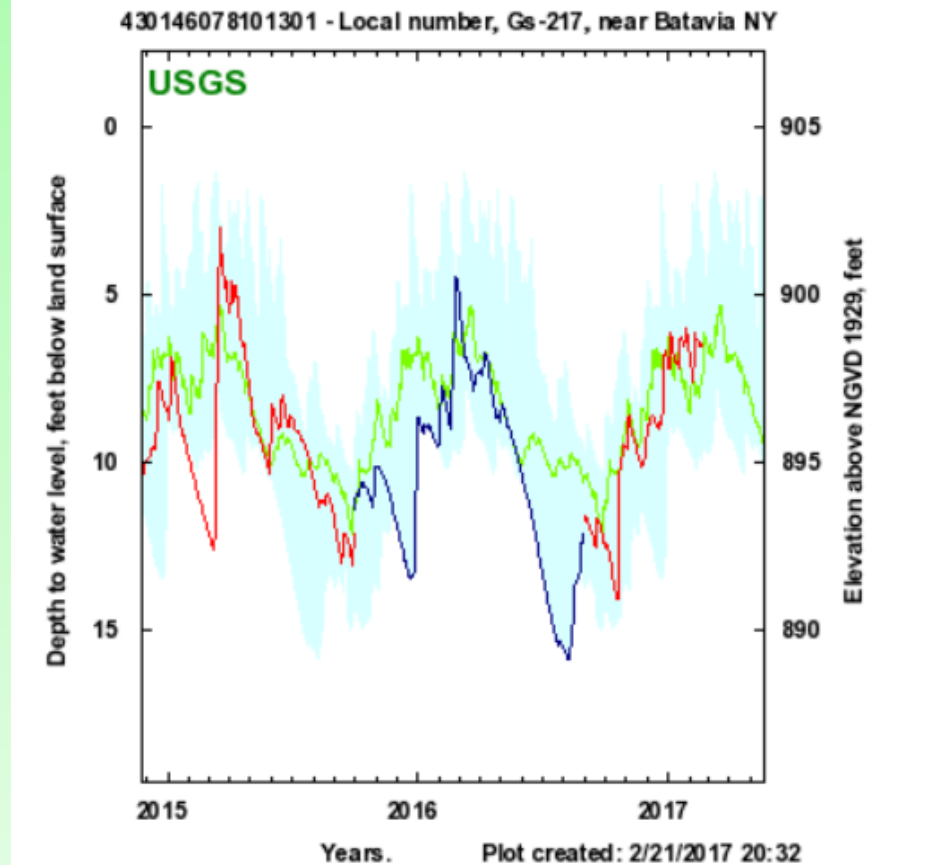
Genesee County, NY

Sand-gravel aquifer, 18 yrs

Bedrock aquifer, 18 yrs

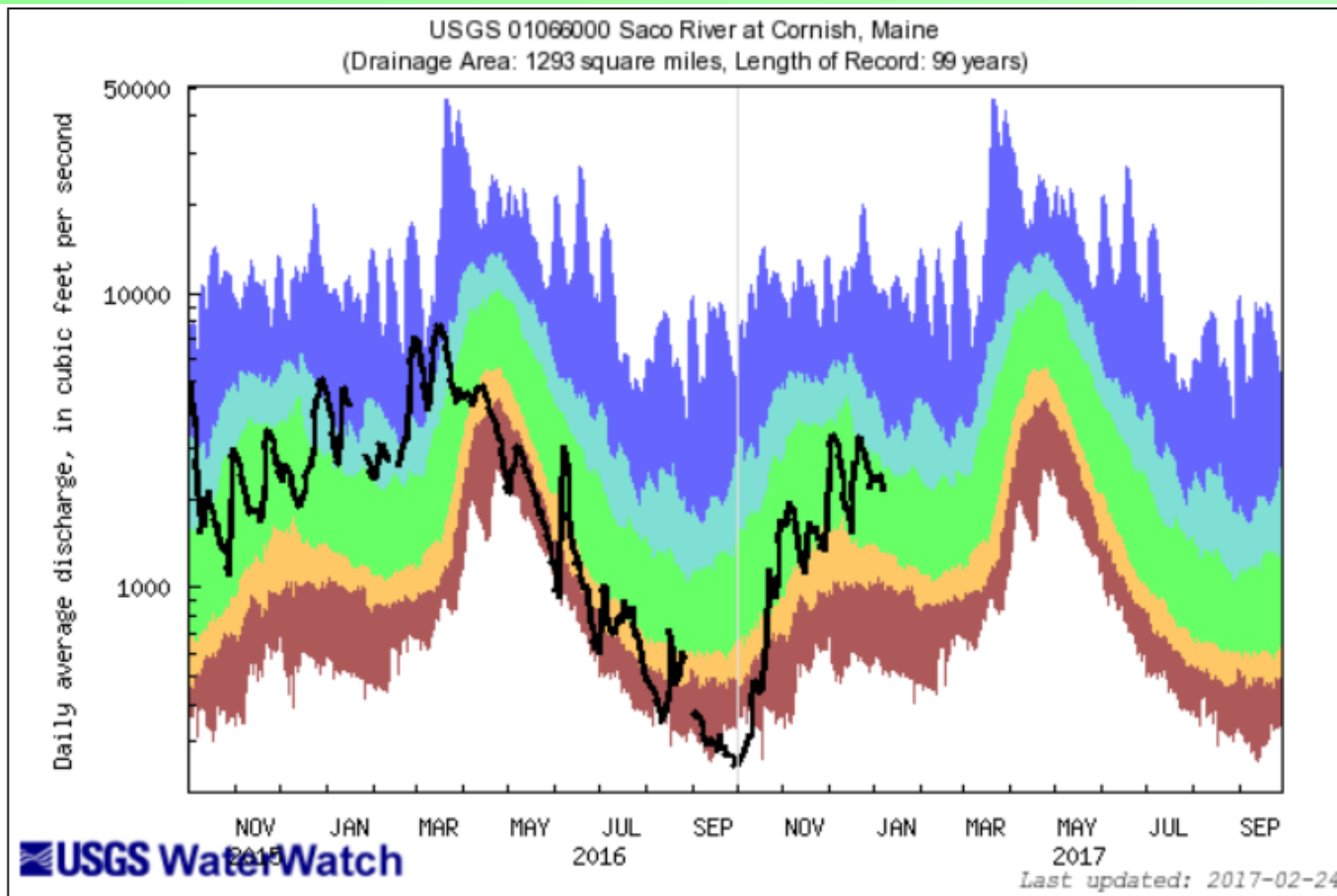


Approved Daily Data
 Provisional Daily Data
 Historical Daily Median
 Range of Approved Daily Min & Max

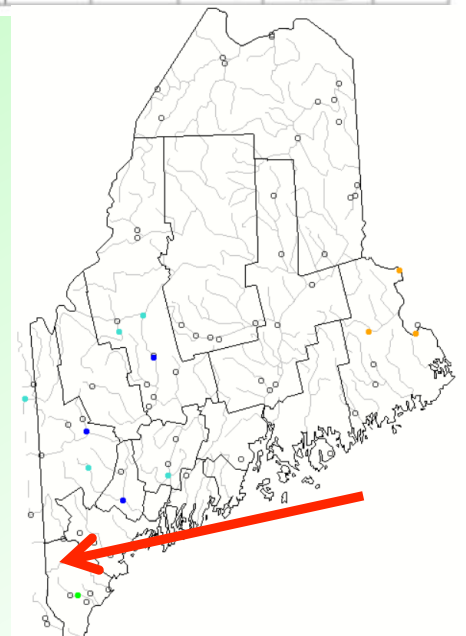


Approved Daily Data
 Provisional Daily Data
 Historical Daily Median
 Range of Approved Daily Min & Max

Saco River at Cornish, ME – 99 years of record

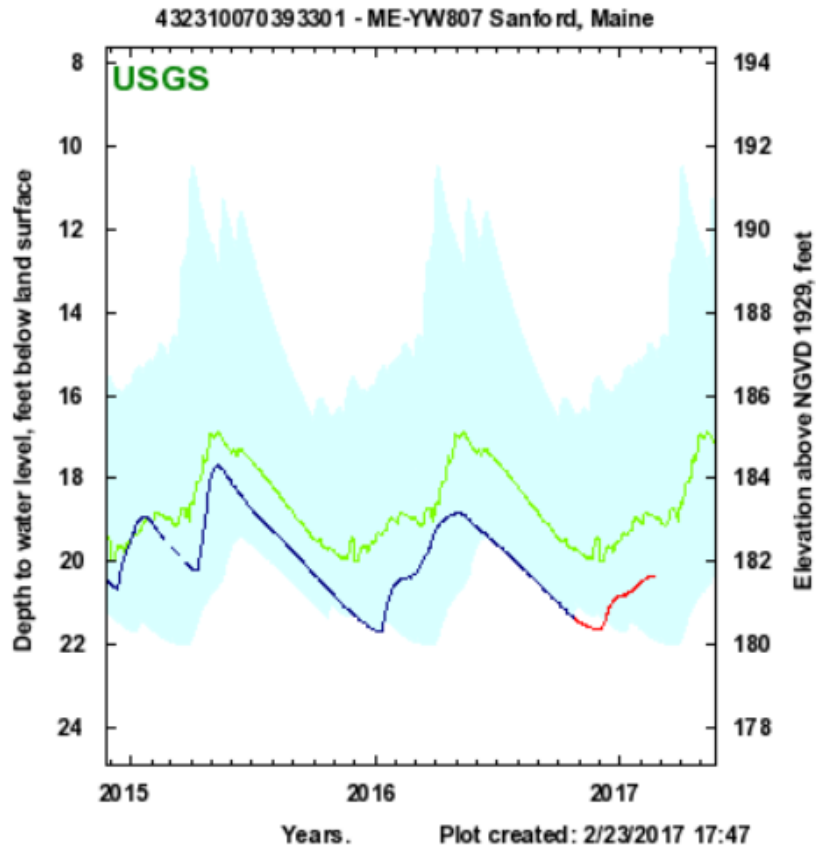


Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	



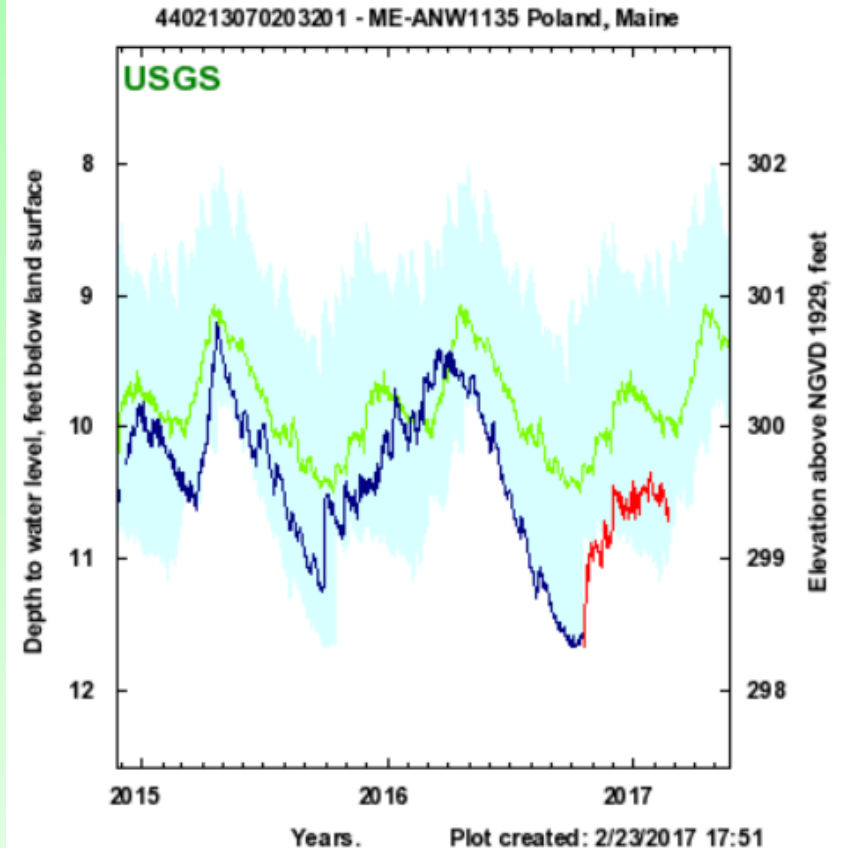
York and Androscoggin Counties, ME

Sand-gravel aquifer, 27 yrs



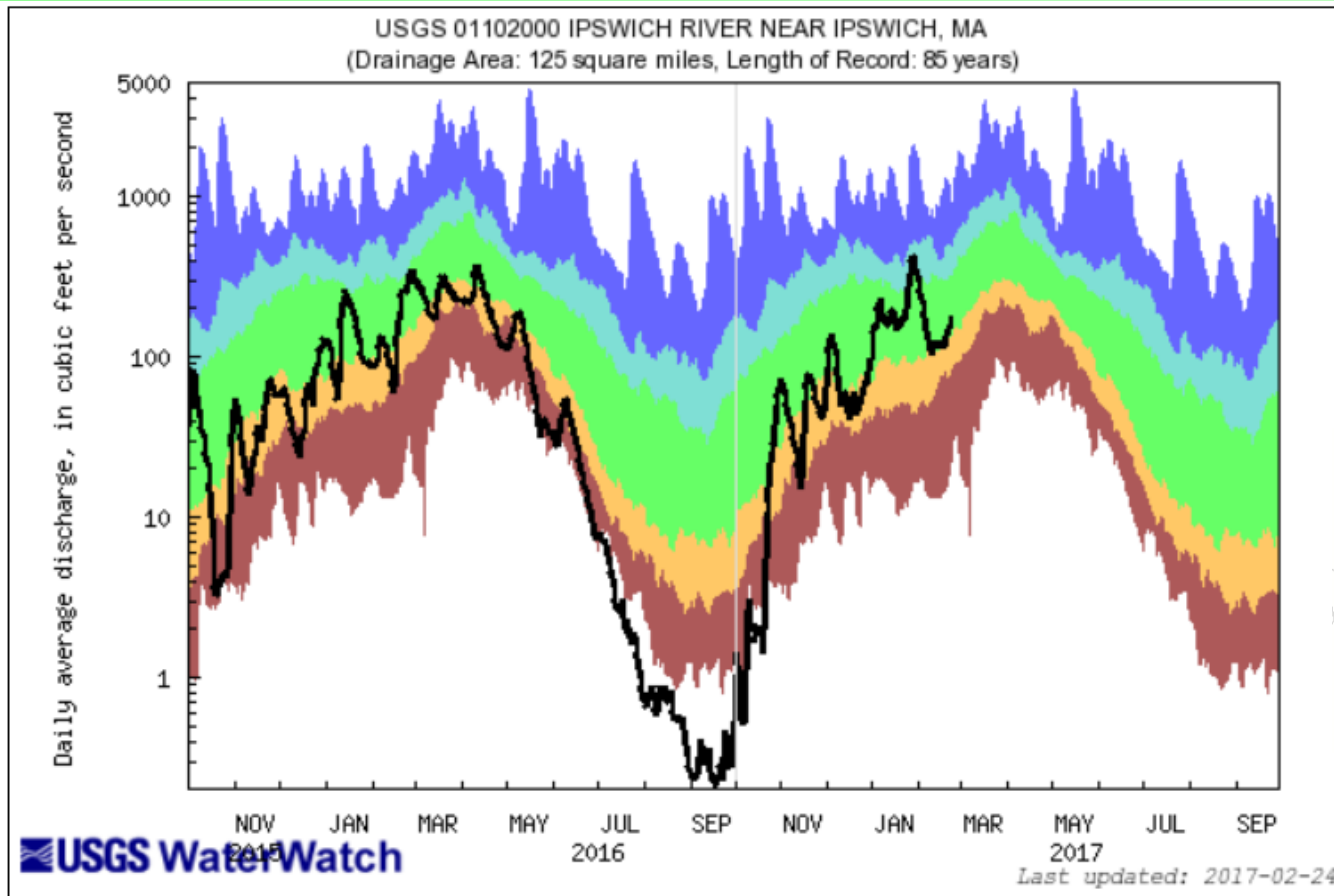
Approved Daily Data Provisional Daily Data Historical Daily Median Range of Min & Max Approved Daily Data

Bedrock aquifer, 16 yrs

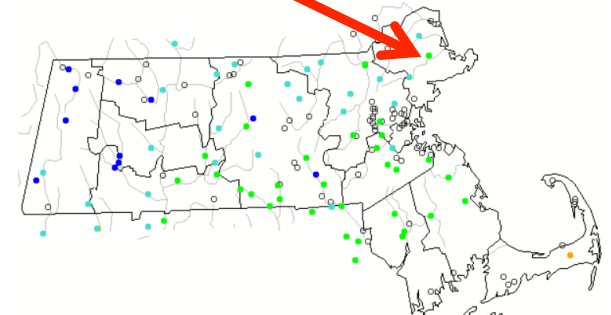


Approved Daily Data Provisional Daily Data Historical Daily Median Range of Min & Max Approved Daily Data

Ipswich River near Ipswich, MA – 85 years of record (affected by withdrawals and regulation)

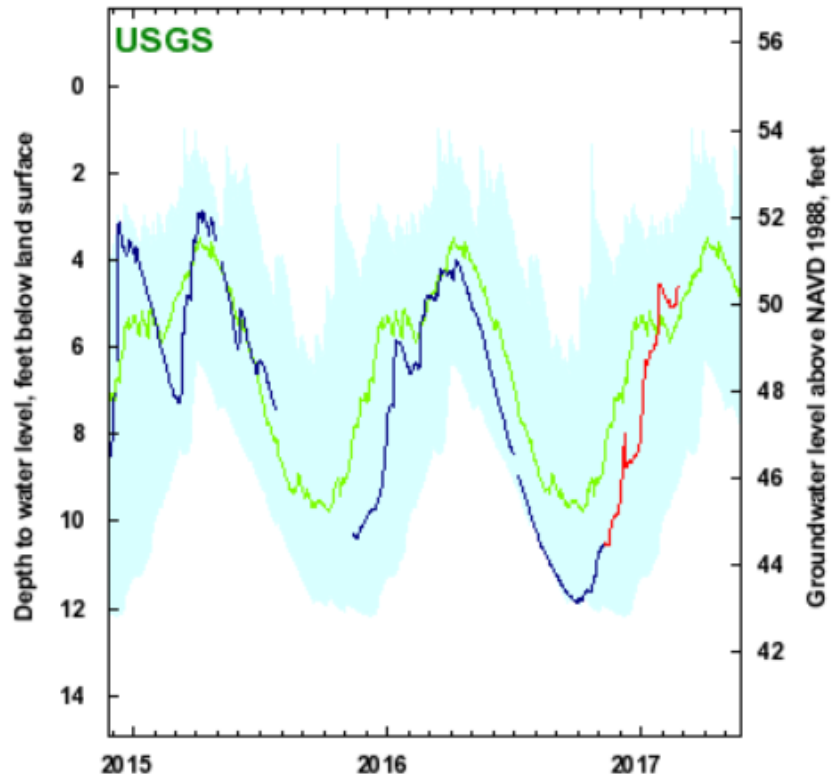


Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	



Essex County, MA Sand-gravel aquifer, 52 yrs

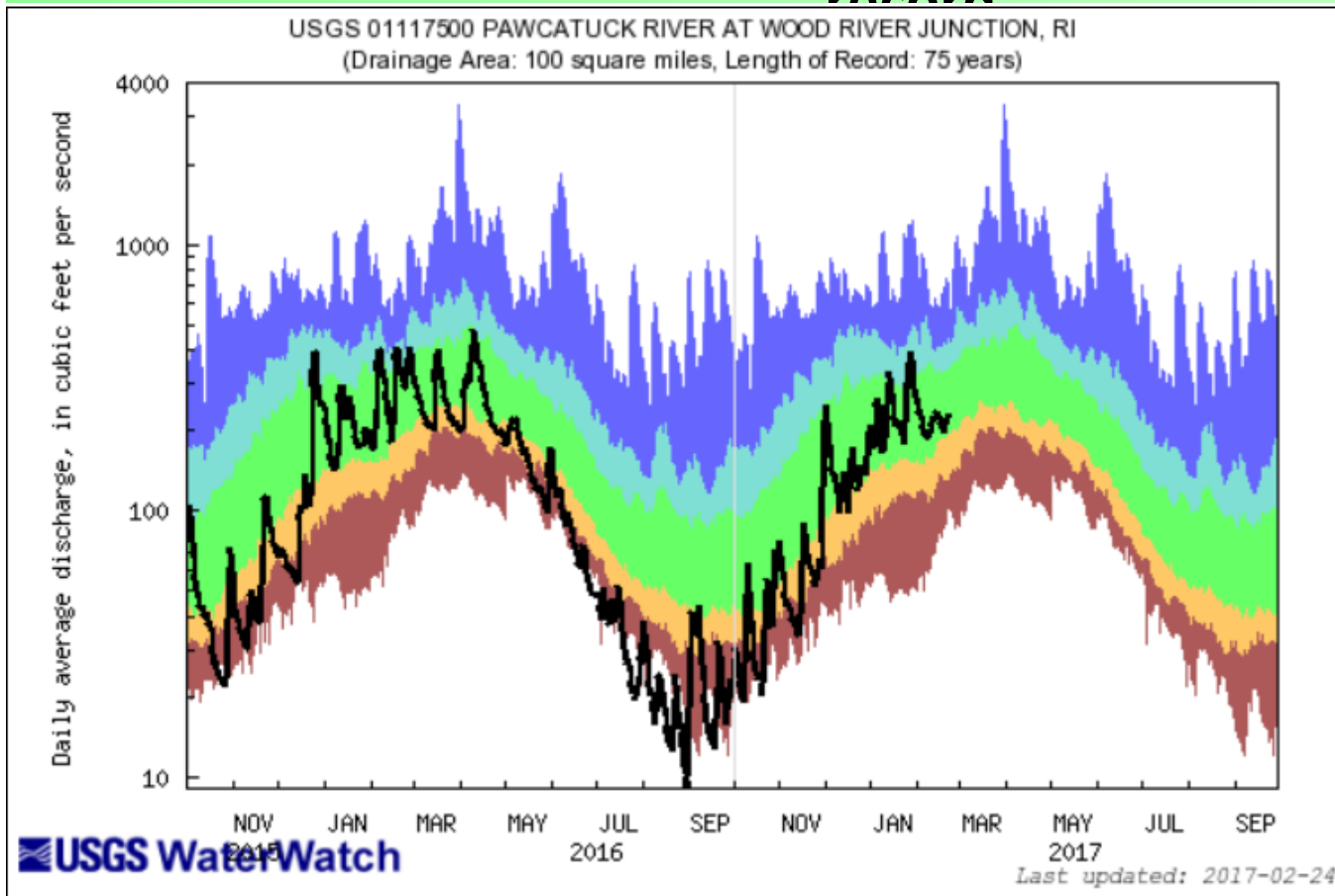
4245 20070562401 - MA-NIW 27 NEWBURY, MA



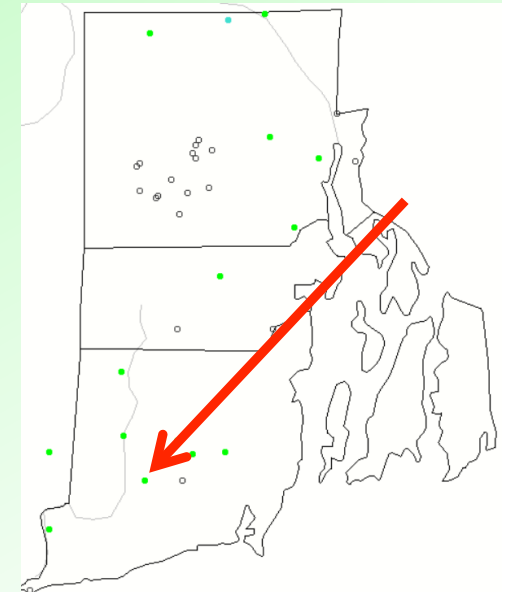
Approved Daily Data Provisional Daily Data Historical Daily Median Range of Approved Daily Min & Max



Pawcatuck River at Wood River Junction, RI – 75 years of record



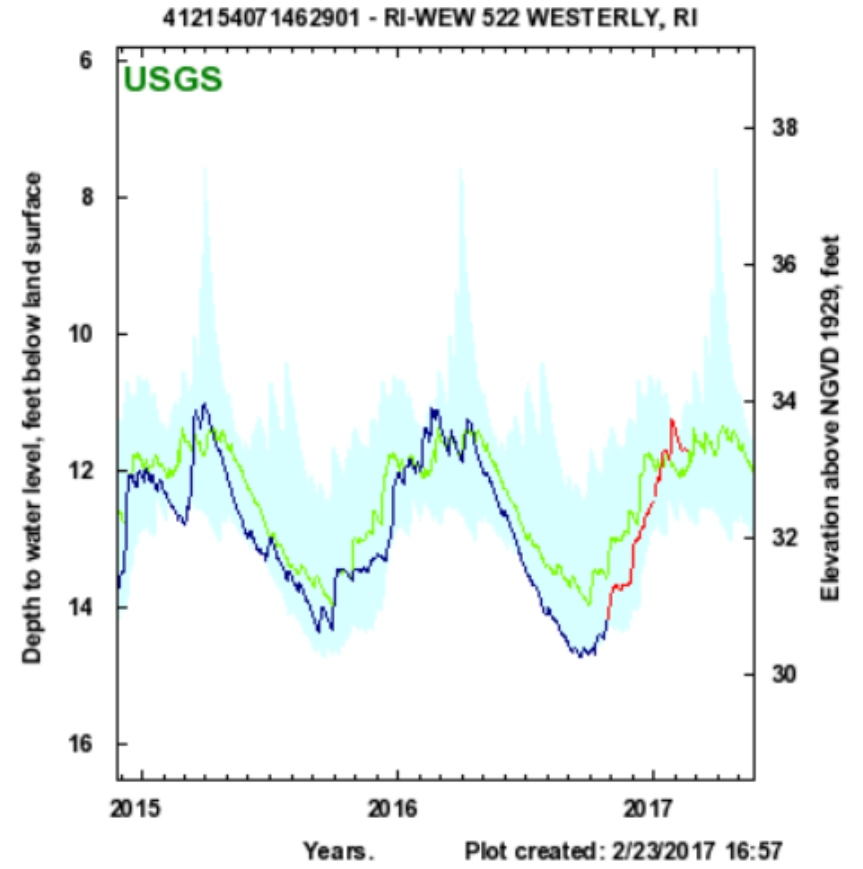
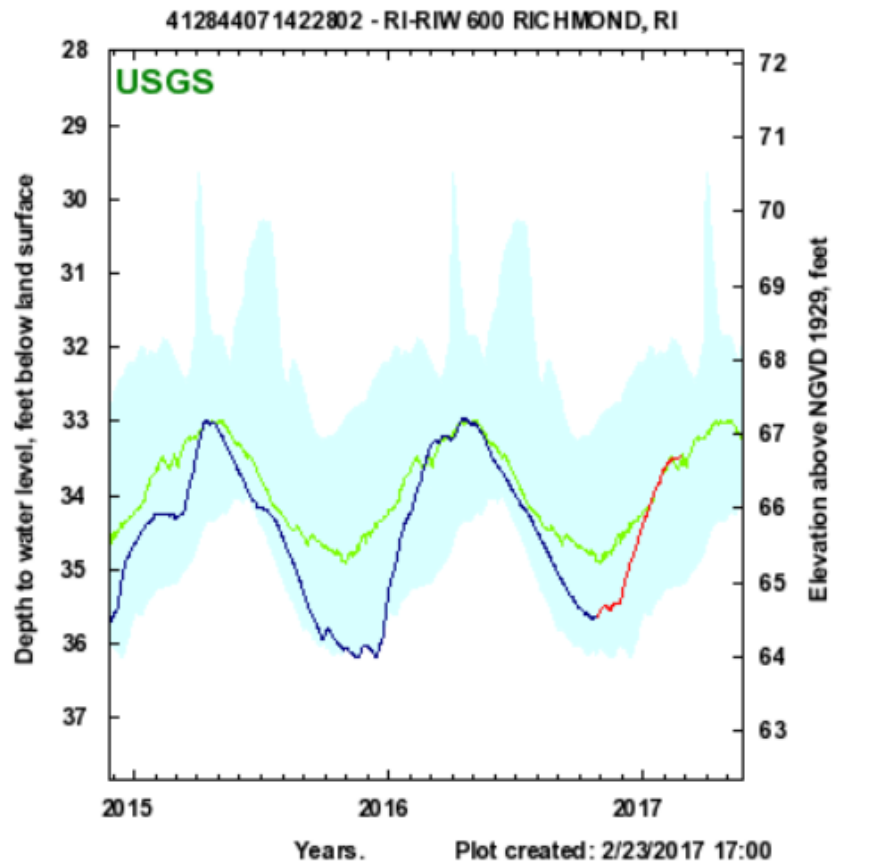
Explanation - Percentile classes					
lowest-0th percentile	10-24	25-75	76-90	90th percentile-highest	FLOW
Much below normal	Below normal	Normal	Above normal	Much above normal	



Washington County, RI

Sand-gravel aquifer, 39 yrs

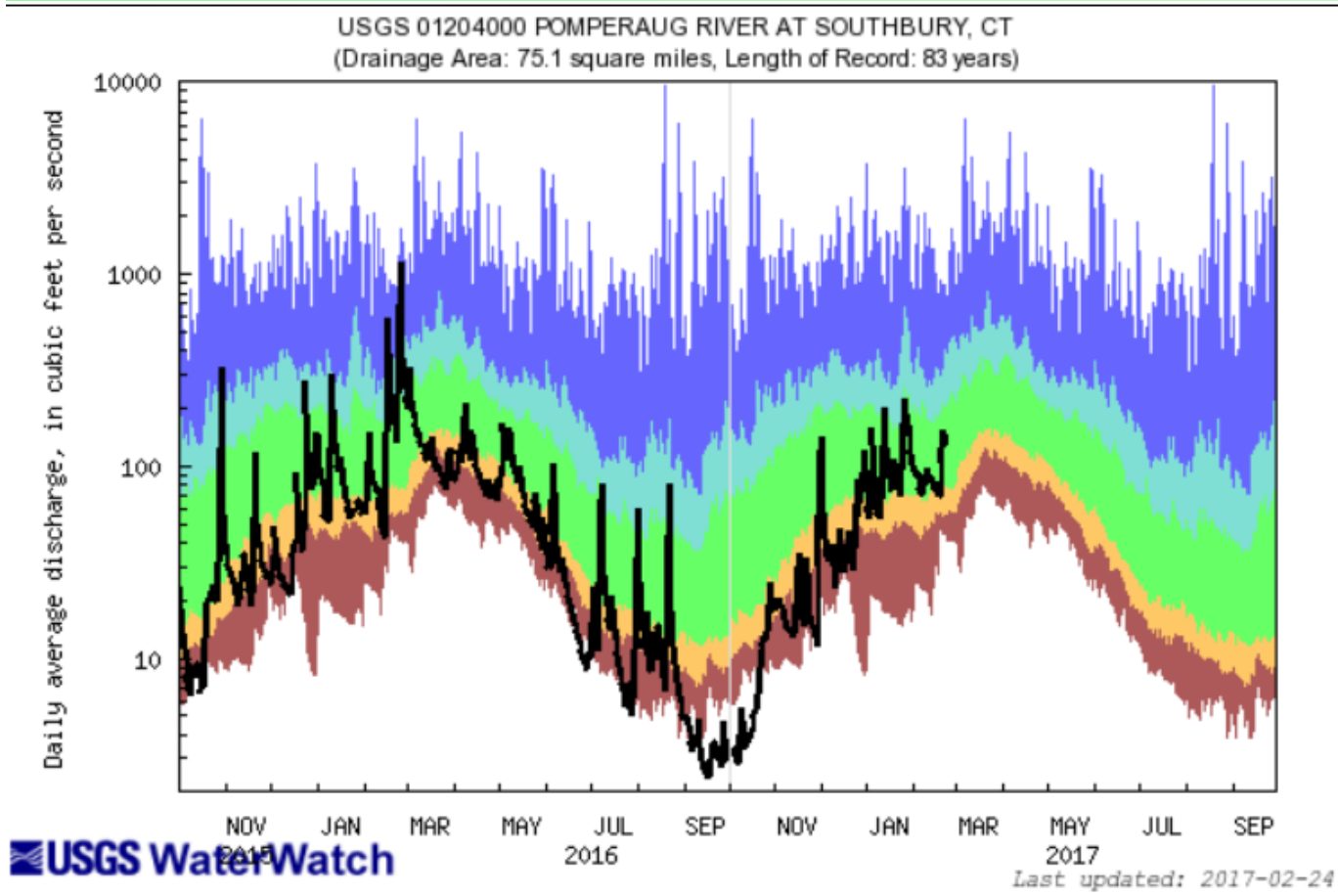
Sand-gravel aquifer, 50 yrs



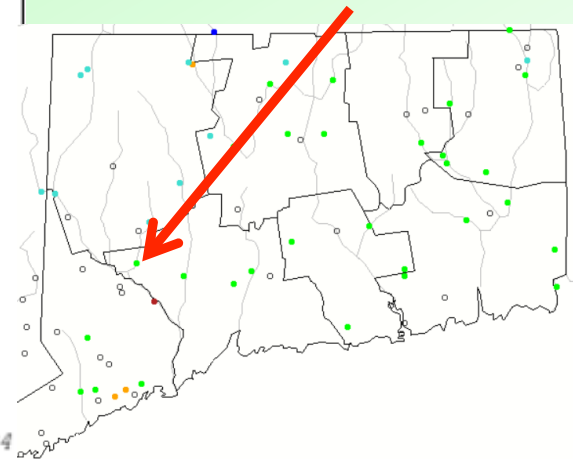
Approved Provisional Historical Range of Approved Daily
 Daily Data Daily Data Daily Median Min & Max

Approved Provisional Historical Range of Approved Daily
 Daily Data Daily Data Daily Median Min & Max

Pomperaug River at Southbury, CT – 83 years of record



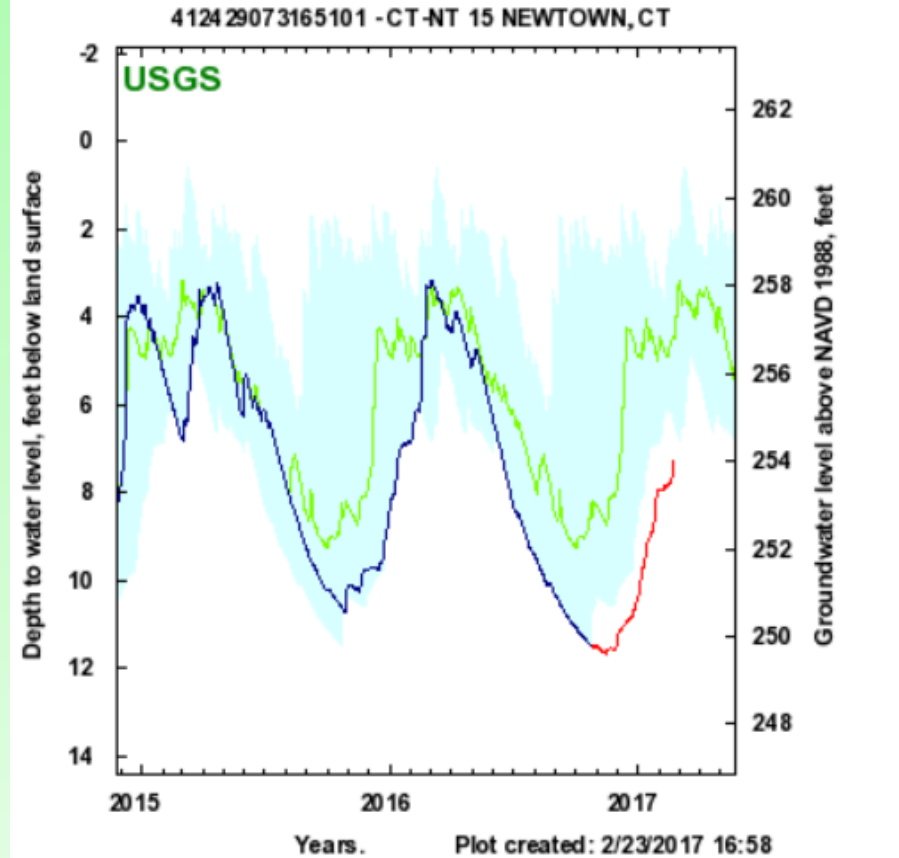
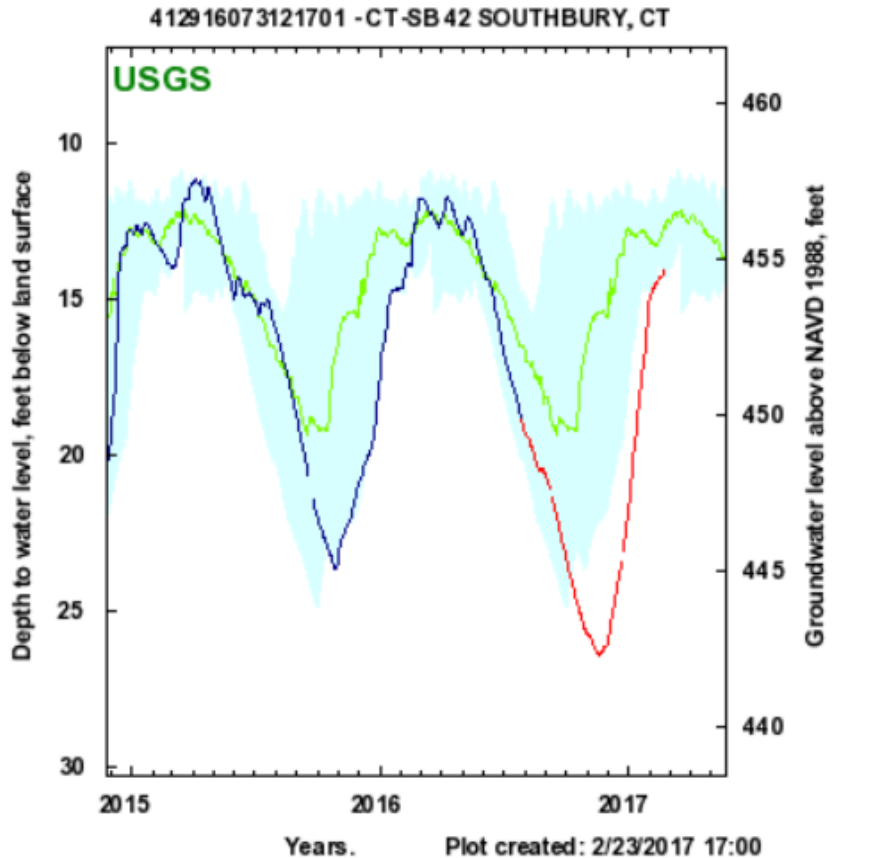
Explanation - Percentile classes					
lowest- th percentile	10-24	25-75	76-90	90th percentile -highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	



New Haven and Fairfield Counties, CT

“Till” aquifer, 24 yrs

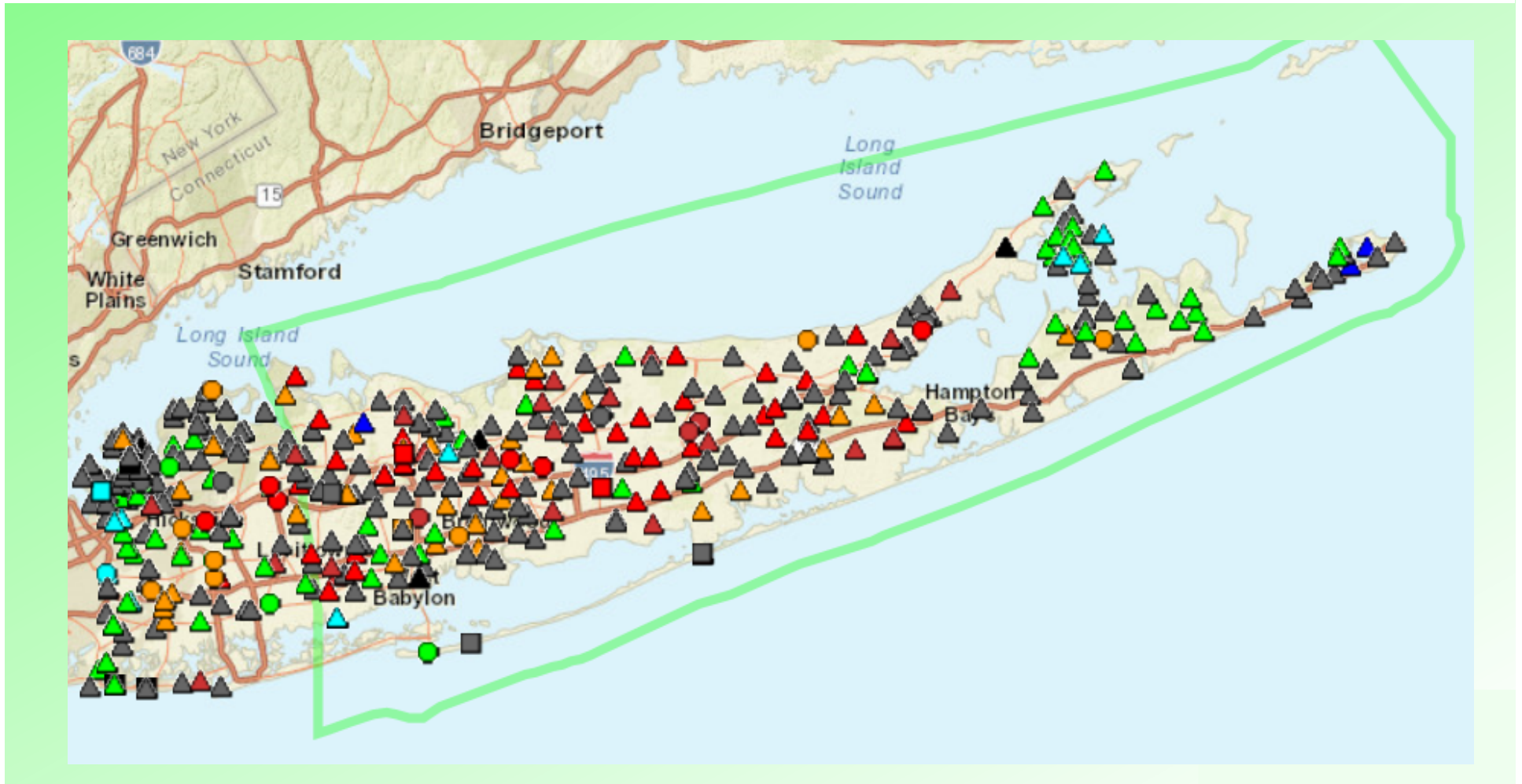
Sand-gravel aquifer, 50 yrs



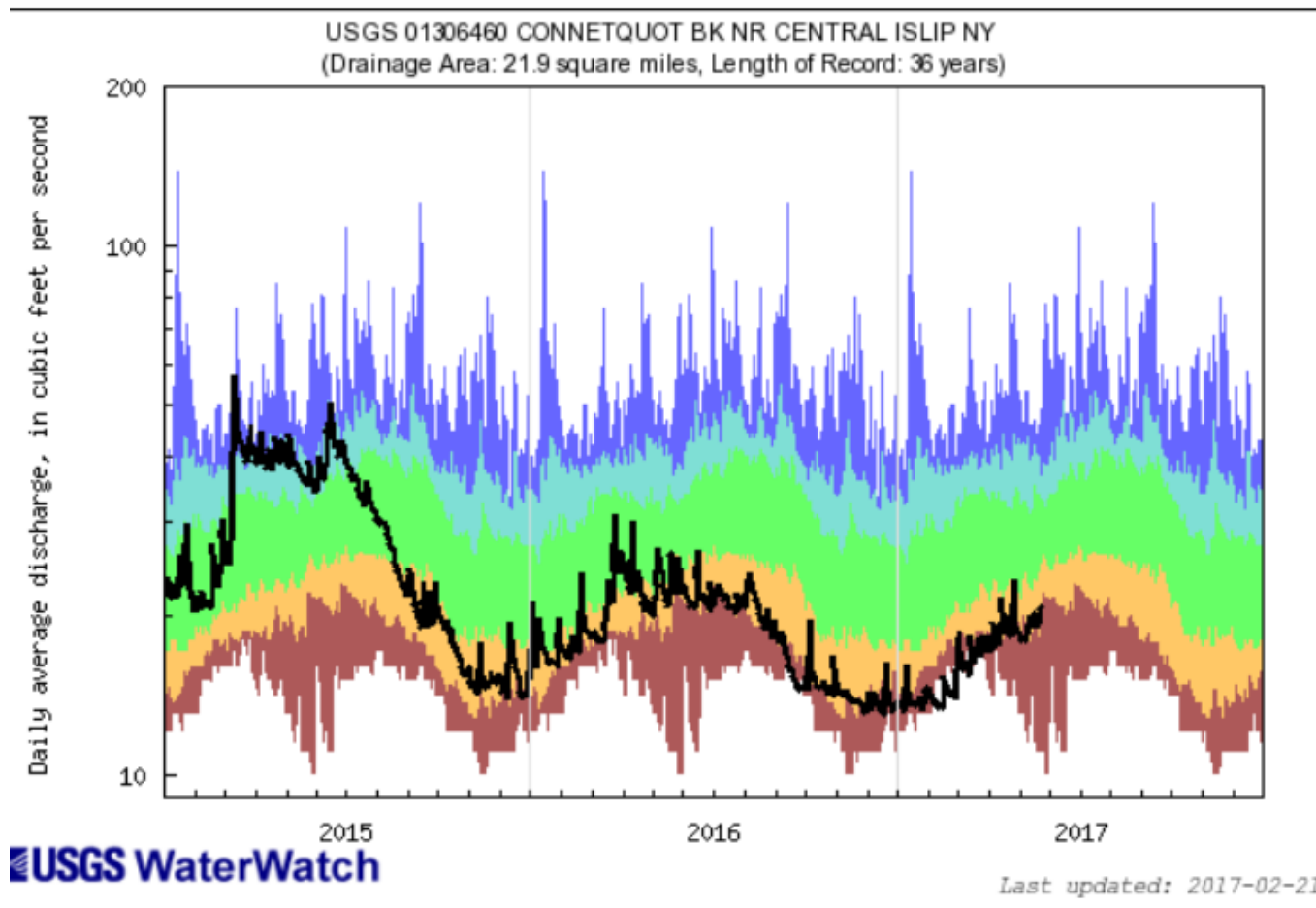
Approved Provisional Historical Range of Approved Daily
Daily Data Daily Data Daily Median Min & Max

Approved Provisional Historical Range of Approved Daily
Daily Data Daily Data Daily Median Min & Max

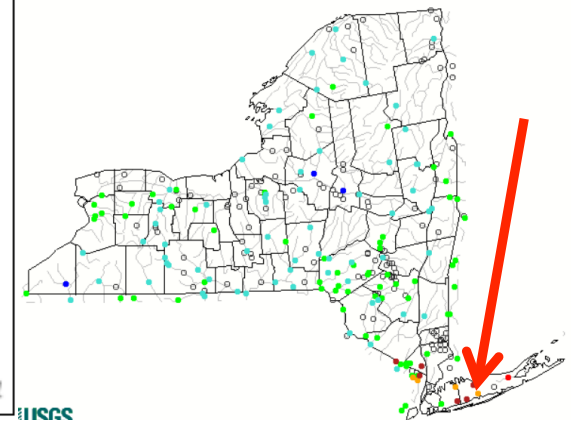
Groundwater Conditions, Suffolk County, February 2017



Connetquot Brook near Central Islip, NY – 36 years of record



Explanation - Percentile classes					
lowest-3th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	



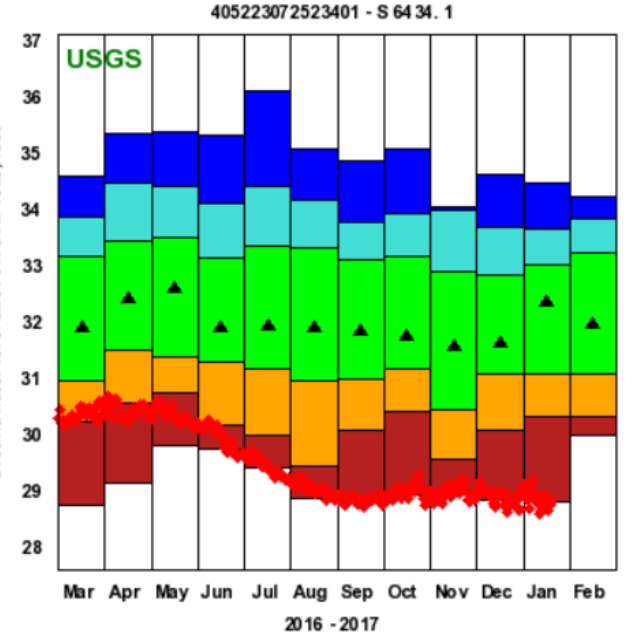
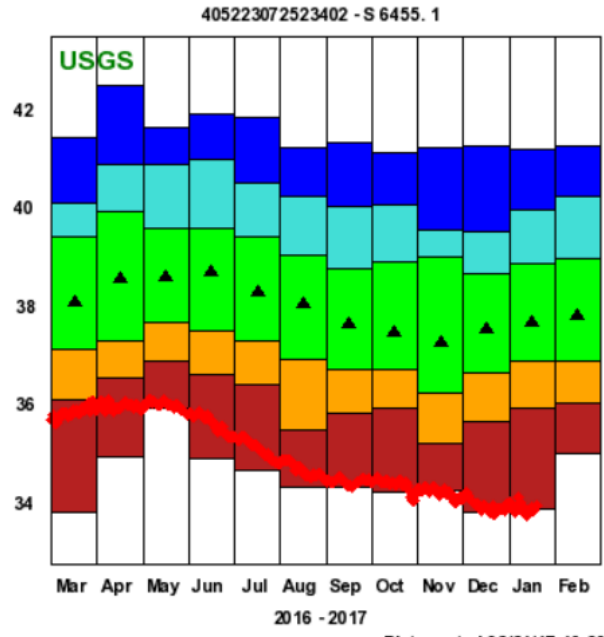
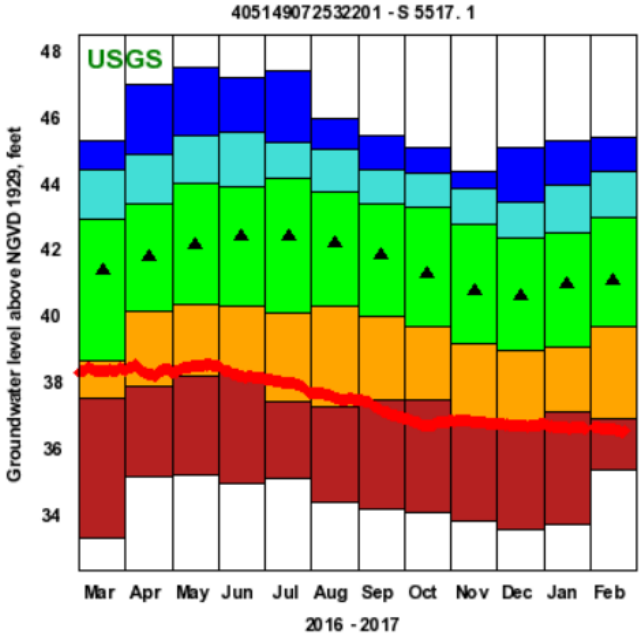
USGS

Suffolk County, NY

Depth: 91 ft
 Aquifer: Upper Glacial
 Record: 68 yr

962 ft
 Magothy
 66 yr

1395 ft
 Lloyd
 66 yr



◆ Data Point

● Explanation - Percentile Classes

● <10 ● 10-34 ● 35-75 ● 76-90 ● >90

▲ Monthly Median

◆ Data Point

● Explanation - Percentile Classes

● <10 ● 10-34 ● 35-75 ● 76-90 ● >90

▲ Monthly Median

◆ Data Point

● Explanation - Percentile Classes

● <10 ● 10-34 ● 35-75 ● 76-90 ● >90

▲ Monthly Median

Massachusetts Reservoirs



<http://geology.com/state-map/maps/massachusetts-rivers-map.gif>

Quabbin Reservoir

Sept. 1, 2016 – 85.1% of capacity

Feb. 1, 2017 – 79.9% of capacity

Wachusett Reservoir

Sept. 1, 2016 – 91.0 % of capacity

Feb. 1, 2017 – 91.3% of capacity

Overall Status “Below Normal”

Source: Massachusetts Water Resources Authority



New York City Reservoirs



<http://www.dos.ny.gov/watershed/images/lgmap.jpg>

Percent of Capacity

Sept. 28, 2016 – 70.7%
(Normal – 76.0%)

Feb. 27, 2017 – 87.1%
(Normal – 87.2%)

Source: New York City Environmental Protection

Summary

Streamflows in the Northeast are generally in normal or above-normal flow ranges, except for parts of CT and southeastern NY (Long Island), where they are below normal.

GW levels in New York are generally in normal or above-normal ranges, however, below-normal water levels can be found scattered across the State, especially on Long Island.

GW levels in New England States are a “mix” with many wells still reporting below-normal levels throughout the six-State area.



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607-266-0217

