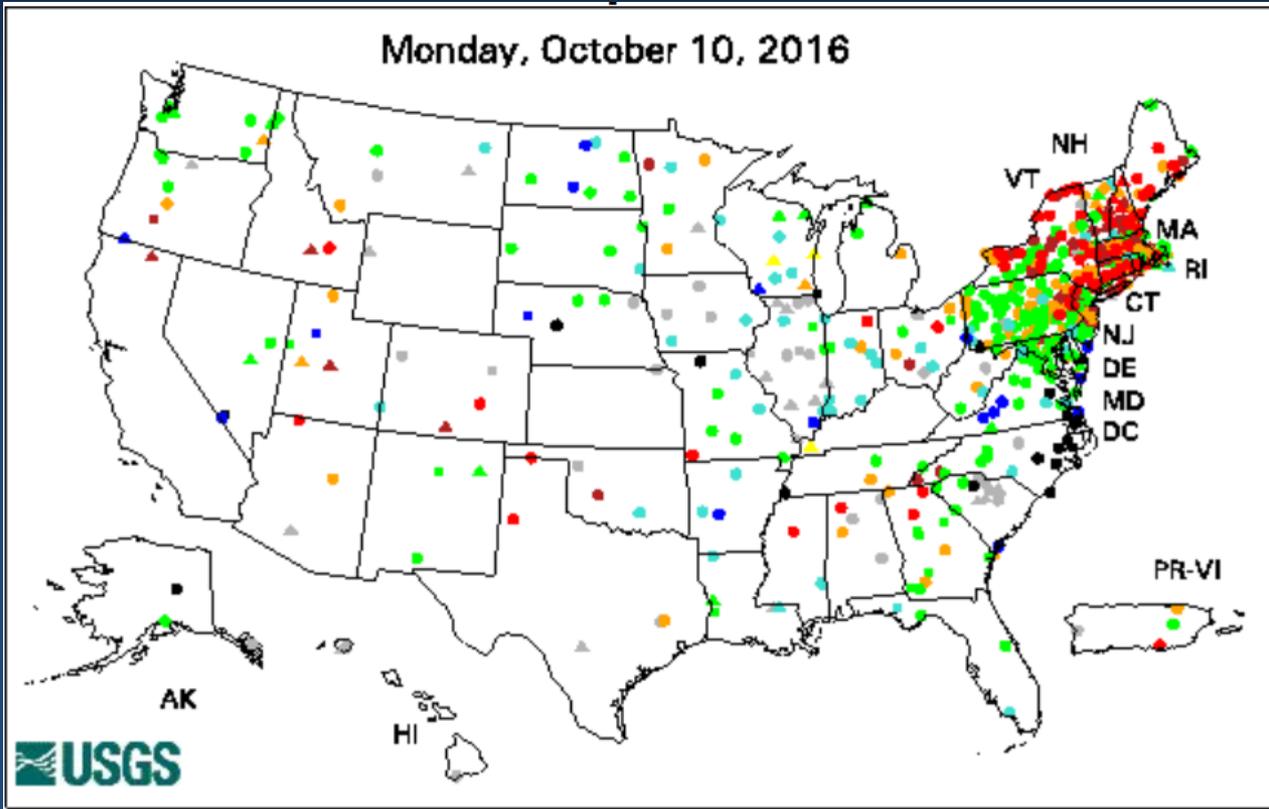


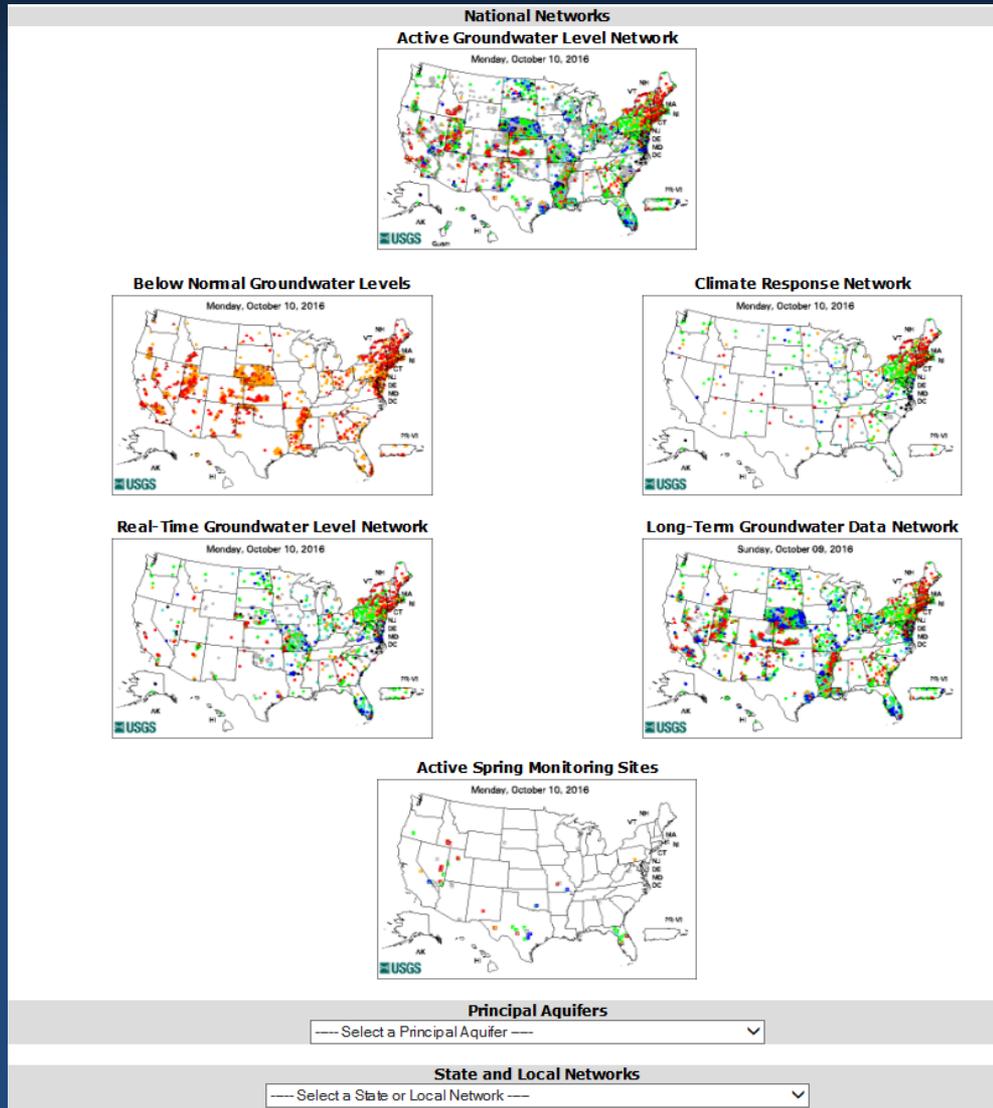
# Northeast Groundwater Conditions



<http://groundwaterwatch.usgs.gov/>

Tom Mack, U.S. Geological Survey  
New England Water Science Center  
tjmack@usgs.gov

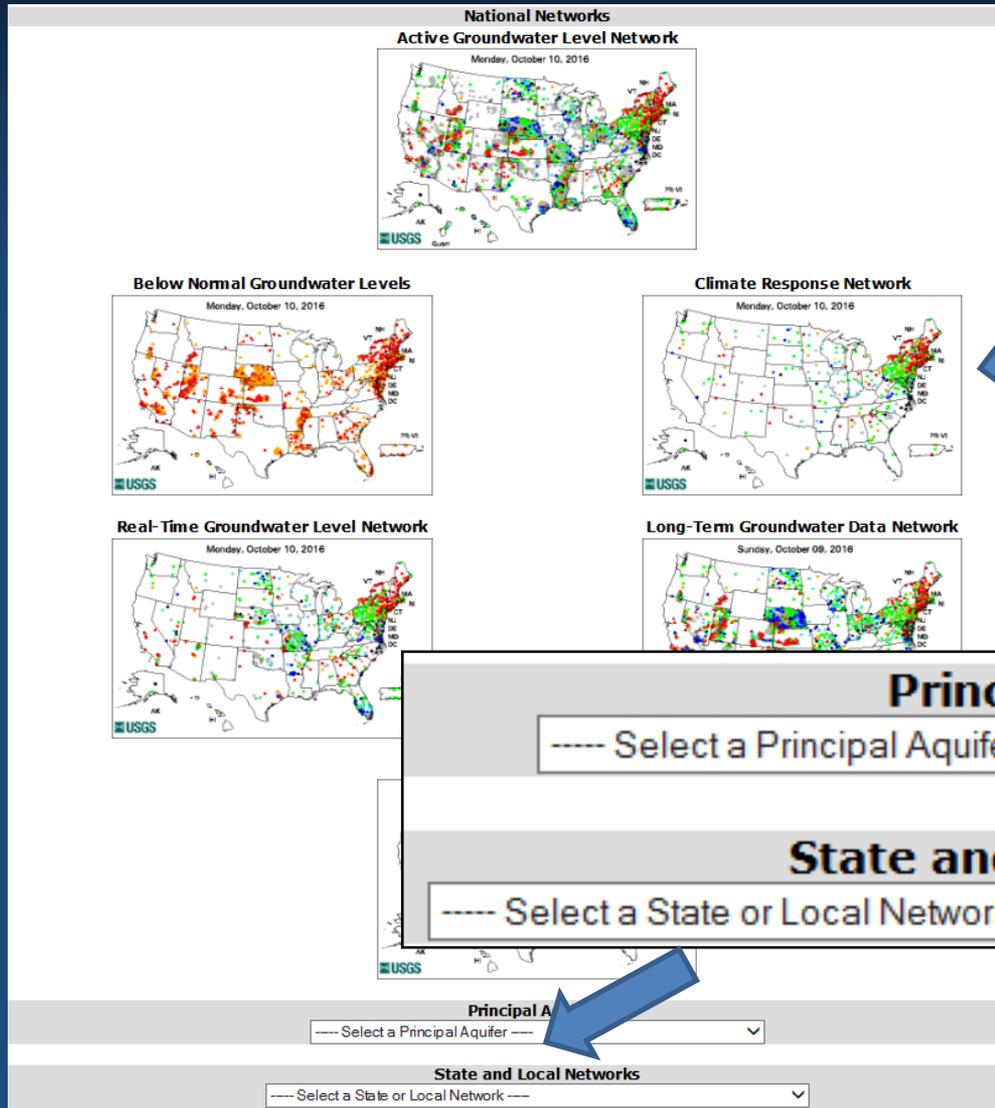
# USGS Groundwater Watch



*Clockwise from top*

- Active  
Past 13 months
- Climate Response  
Only climate
- Long-Term  
>20 years
- Active Spring
- Real-Time  
Updated 1-4 hours
- Below Normal  
24<sup>th</sup> percentile

# USGS Groundwater Watch



Climate Response Network

Principal Aquifers

---- Select a Principal Aquifer ----

State and Local Networks

---- Select a State or Local Network ----

Principal A

---- Select a Principal Aquifer ----

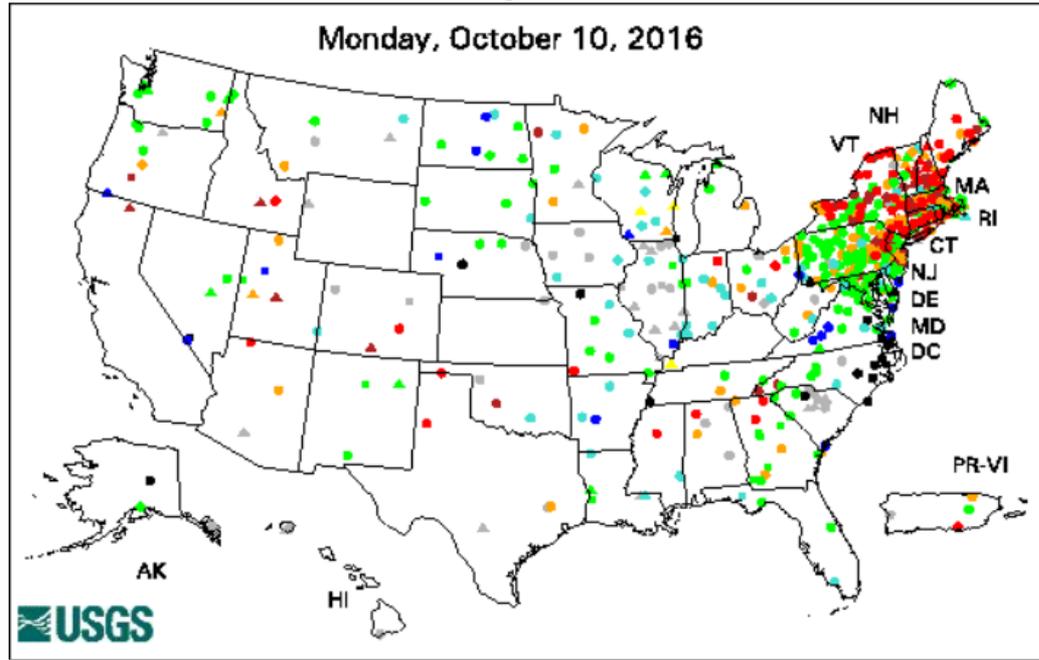
State and Local Networks

---- Select a State or Local Network ----

# USGS Groundwater Watch Climate Response Network

## Climate Response Network

Monday, October 10, 2016



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

Climate Response Network Well Count: 608

Map generated 10/10/2016 9:20:10 AM



[Groundwater Watch  
Help Page](#)



[Download Google  
Earth Version](#)

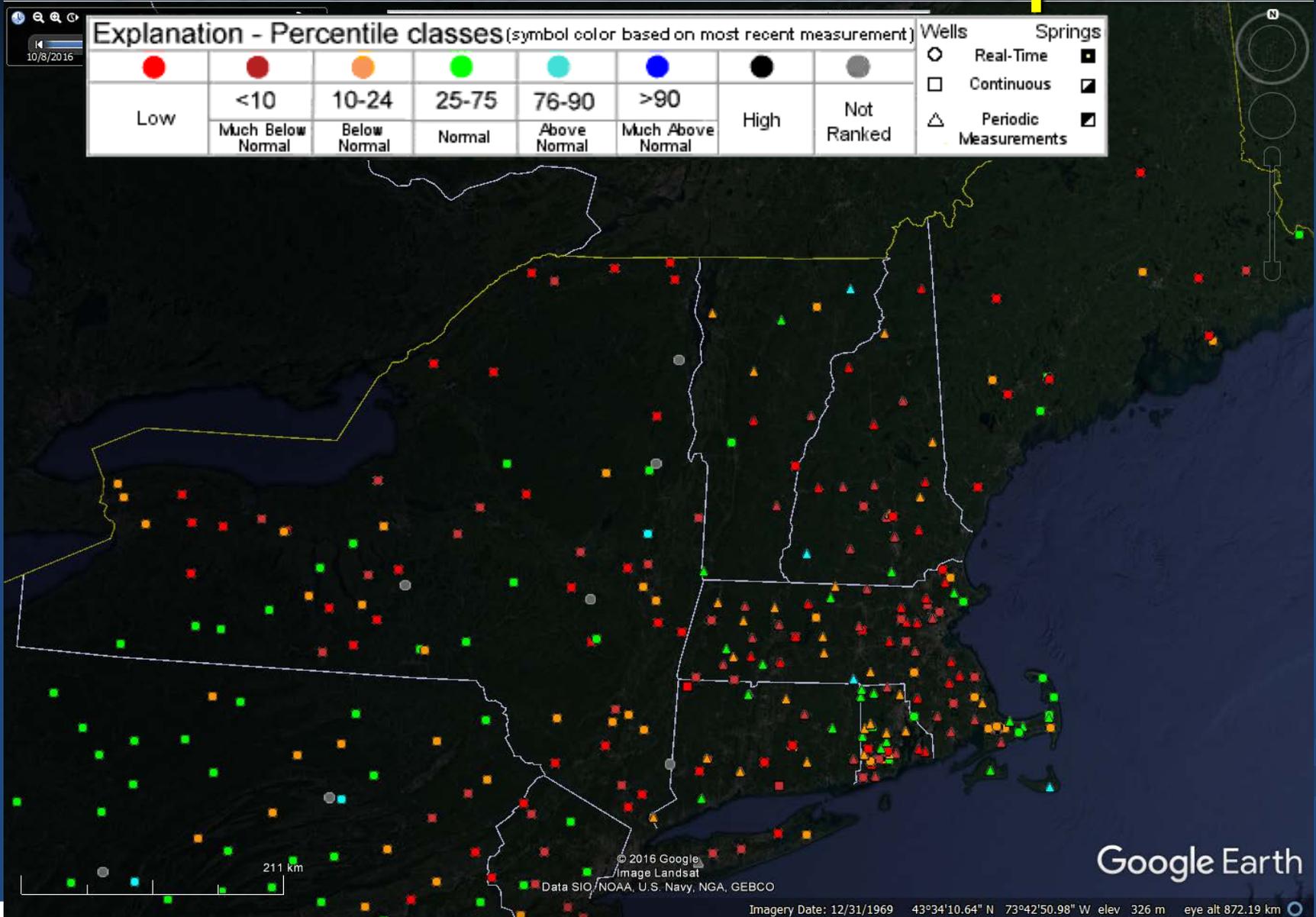


[National Map  
Animation](#)

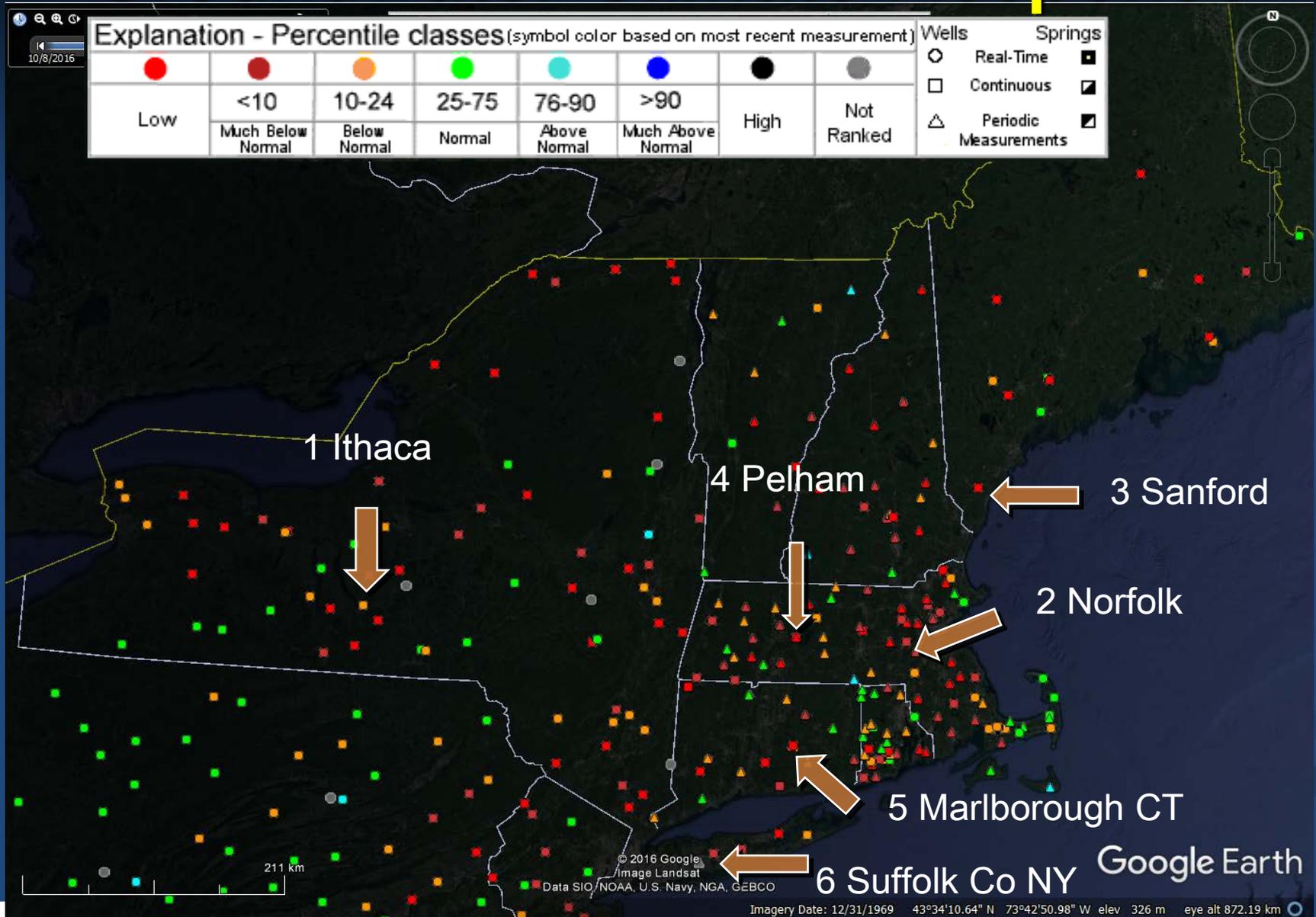


[Download GIS  
Shape File](#)

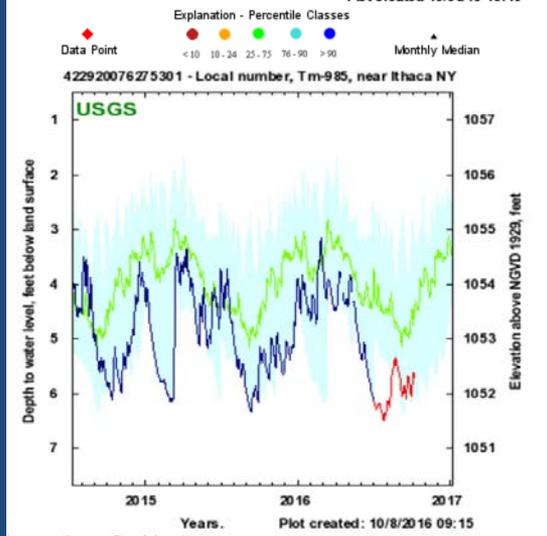
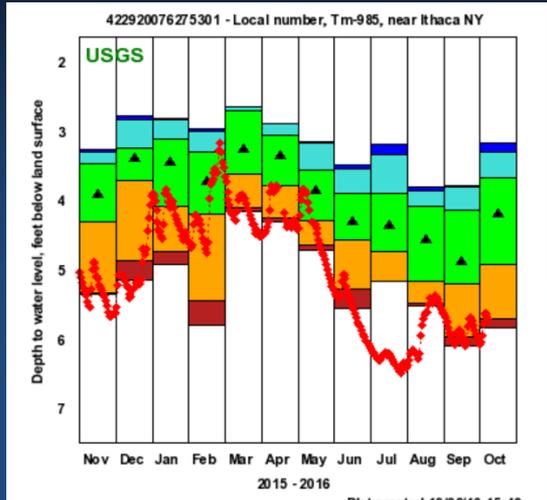
# Groundwater Climate Response



# Groundwater Climate Response

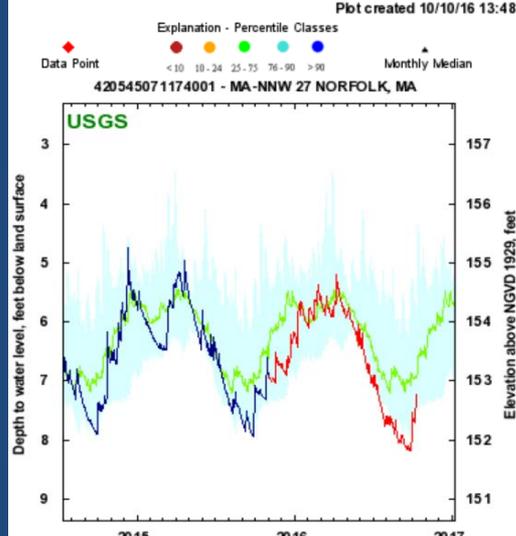
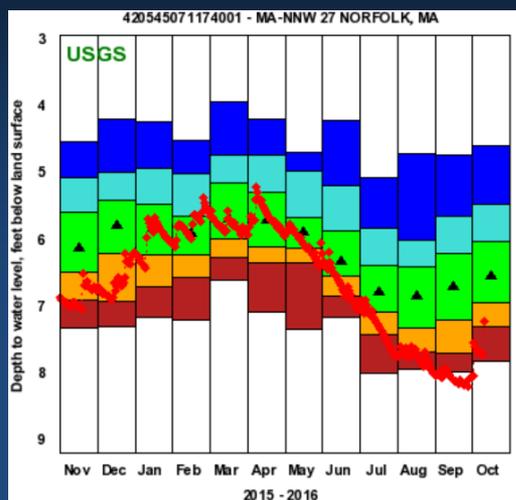


# Ithaca NY Shale 71ft



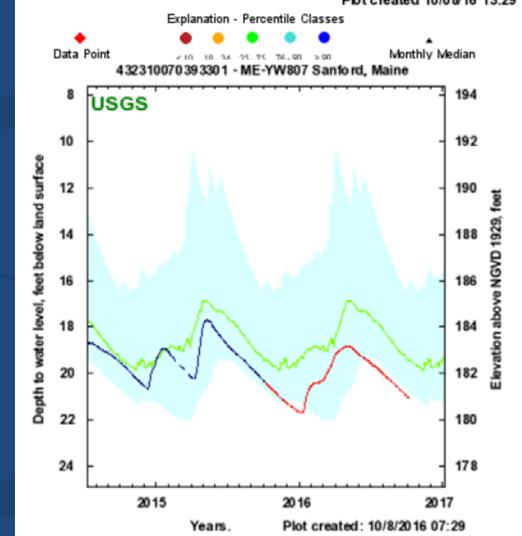
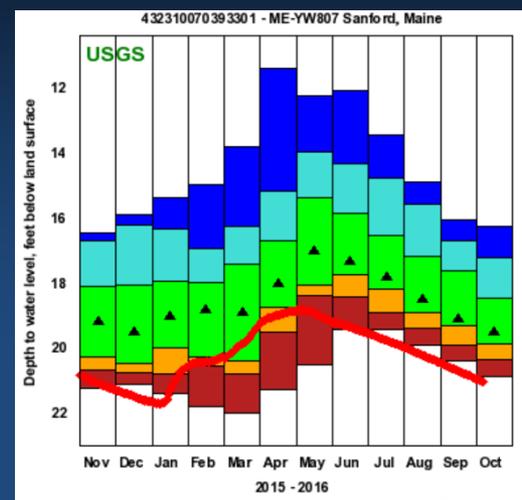
Approved Daily Data    Provisional Daily Data    Historical Daily Median    Range of Min & Max    Approved Daily Min & Max

# Norfolk MA Thin sand & gravel



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

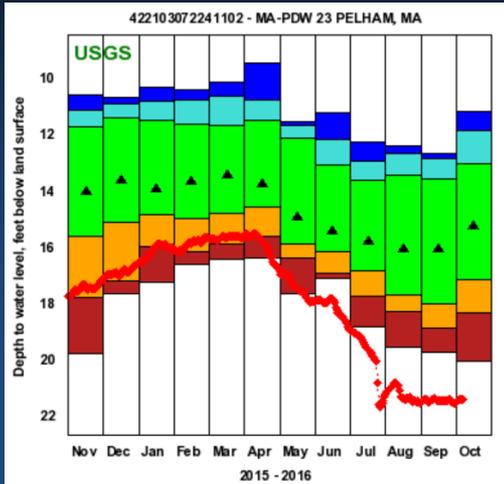
# Sanford ME Thick sand & gravel



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

# Pelham MA

Crystalline bedrock 700ft

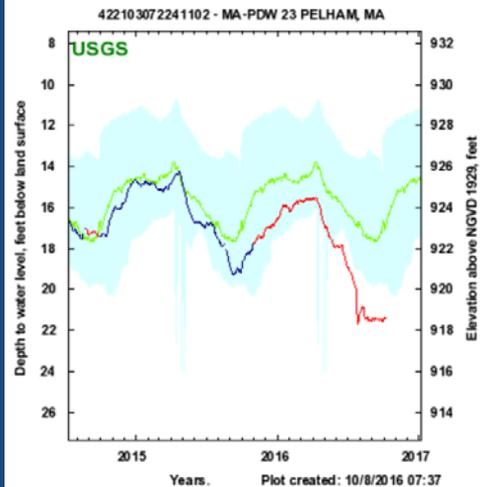


Explanation - Percentile Classes

◆ Data Point

● <10 ● 10-24 ● 25-75 ● 76-90 ● >90

▲ Monthly Median



Approved Daily Data

Provisional Daily Data

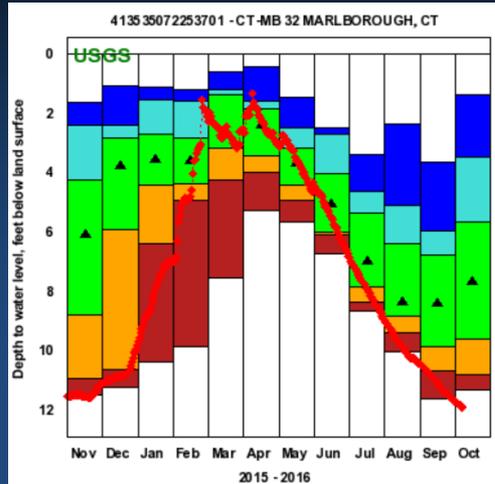
Historical Daily Median

Range of

Approved Daily Min & Max

# Marlborough CT

Till 16ft

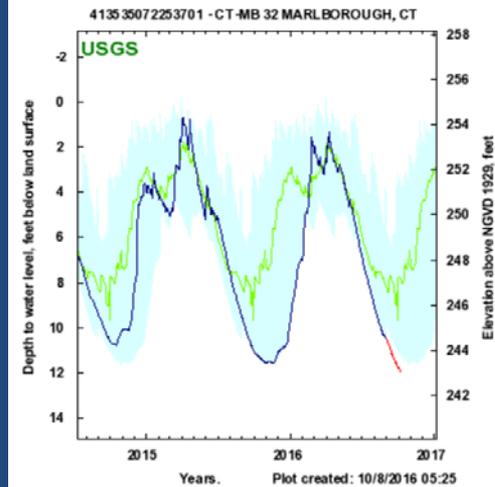


Explanation - Percentile Classes

◆ Data Point

● <10 ● 10-24 ● 25-75 ● 76-90 ● >90

▲ Monthly Median



Approved Daily Data

Provisional Daily Data

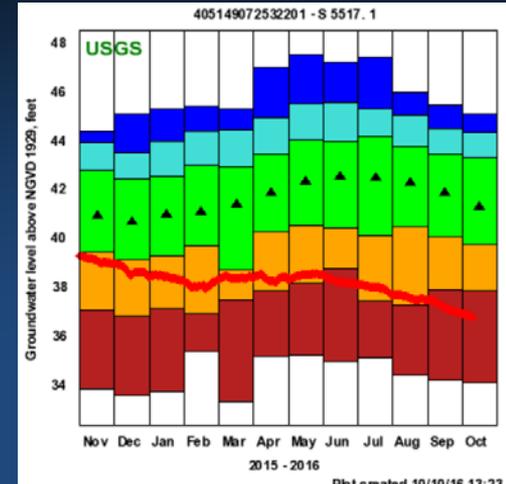
Historical Daily Median

Range of

Approved Daily Min & Max

# Suffolk Co. NY

Thick Sand & gravel

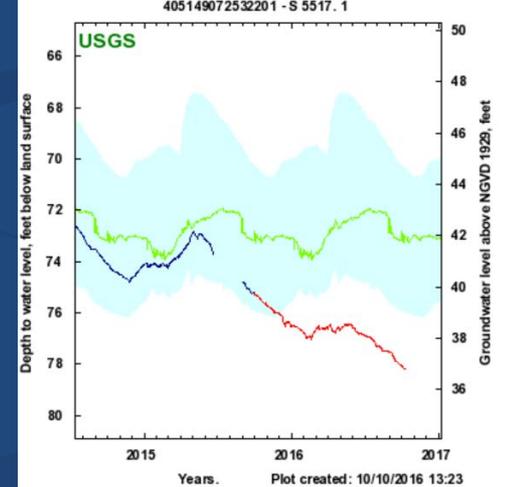


Explanation - Percentile Classes

◆ Data Point

● <10 ● 10-24 ● 25-75 ● 76-90 ● >90

▲ Monthly Median



Approved Daily Data

Provisional Daily Data

Historical Daily Median

Range of

Approved Daily Min & Max

# Drought Summary

## Groundwater Conditions

- Below normal (10-24%), Much Below Normal (<10%), some new Lows
  - Cape and southwestern NY show fewer effects

Drought effects on groundwater conditions vary, influenced by

- Aquifer porosity
  - sand & gravel - slower response
  - till & bedrock – faster decline and recovery
- Aquifer thickness and thickness of overlying sediments
  - Thick overburden sediments can provide storage for underlying low porosity aquifers