
Streamflow and Groundwater Conditions in Rhode Island

September 10, 2020

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Table 2, Rhode Island Drought Indices and Phases

Drought Phase	Palmer Drought Index +	Crop Moisture Index	Precipitation +	Ground Water** +	Stream flow +	Reservoirs**
Normal	-1.0 to -1.99	0.0 to -1.0	Slightly Dry	1 month below normal 1 month below normal	2 consecutive months below normal	Reservoir levels at or near normal for the time of year
Advisory	-2.0 to -2.99	-1.0 to -1.9 Abnormally Dry	2 month cumulative below 65% of normal	At least 2 out of 3 months below normal	3 consecutive months below normal	Small index Reservoirs below normal
Watch	-3.0 to -3.99	-2.0 to -2.9 Excessively Dry	1 of the following criteria met: 3 month cum. <65% or 6 month cum. <70% or 12 month cum. <70%	4-5 consecutive months below normal	At least 4 out of 5 consecutive months below normal	Medium index Reservoirs below normal
Warning	-4.0 and below	> -2.9 Severely Dry	2 out of 3 of the above criteria met: 3 month cum. <65% and 6 month cum. <65% or 6 month cum. <65% and 12 month cum. <65% or 3 month cum. <65% and 12 month cum. <65%	6-7 consecutive months below normal observation wells recording monthly record lows	At least 6 out of 7 consecutive months below normal	Large index reservoirs below normal
Emergency	-4.0 and below	> -2.9 Severely dry	Same criteria as Warning and Previous month was Warning or Emergency	>7 months below normal Observation wells recording monthly record lows	>7 months below normal	Continuation of previous month's conditions

+ Major Hydrologic Indicators.

** Local triggers from the water system supply management plans will also be considered in a assessing drought phases on a regional basis. The WRB staff will review local plans and work with suppliers to coordinate regarding drought phases and to collect, review and report surface reservoir and ground water data.

"Normal" is defined as the statistical average of the data for the period of record. Percentages for precipitation are relative to normal.

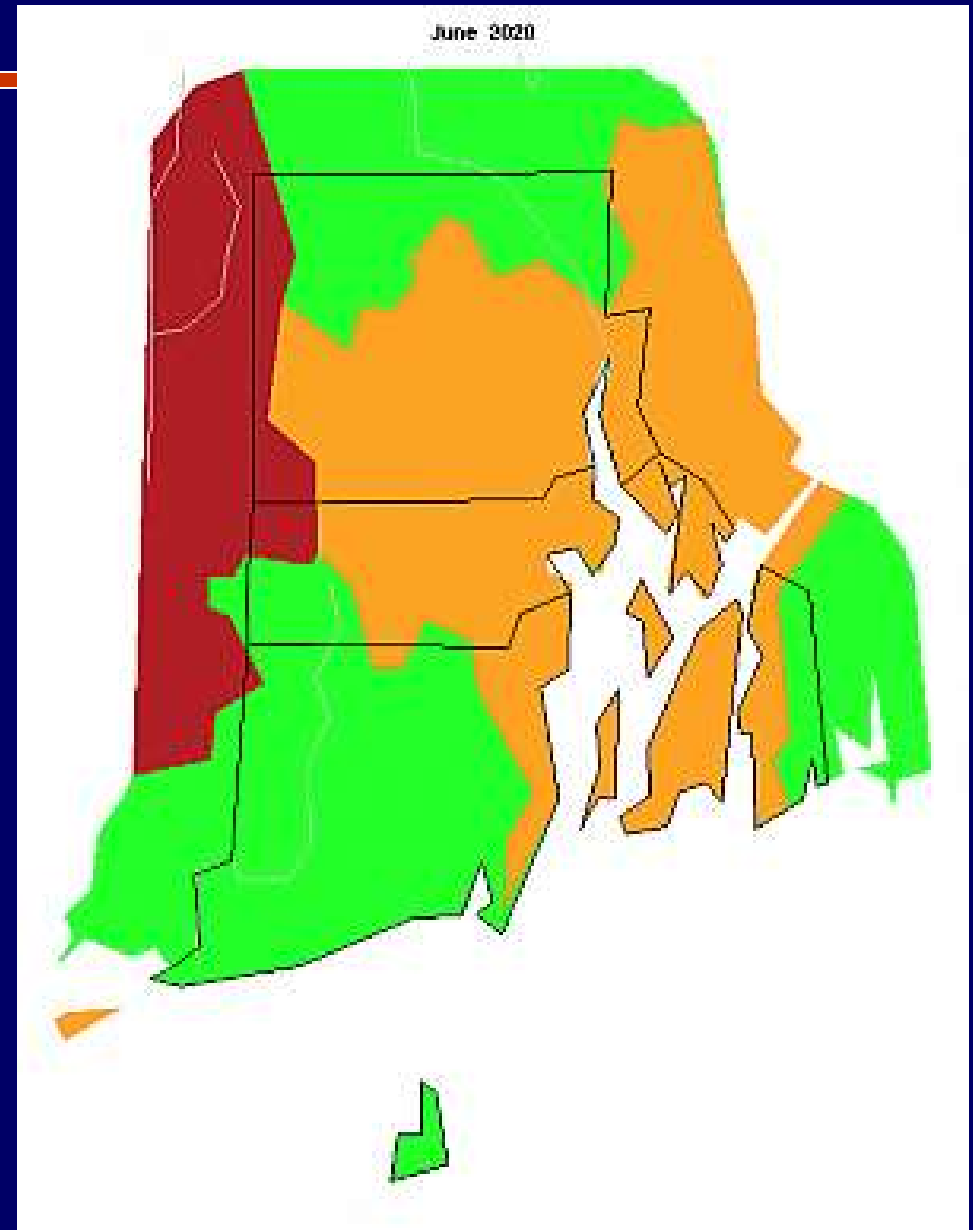
Average Streamflow Conditions – May 2020



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

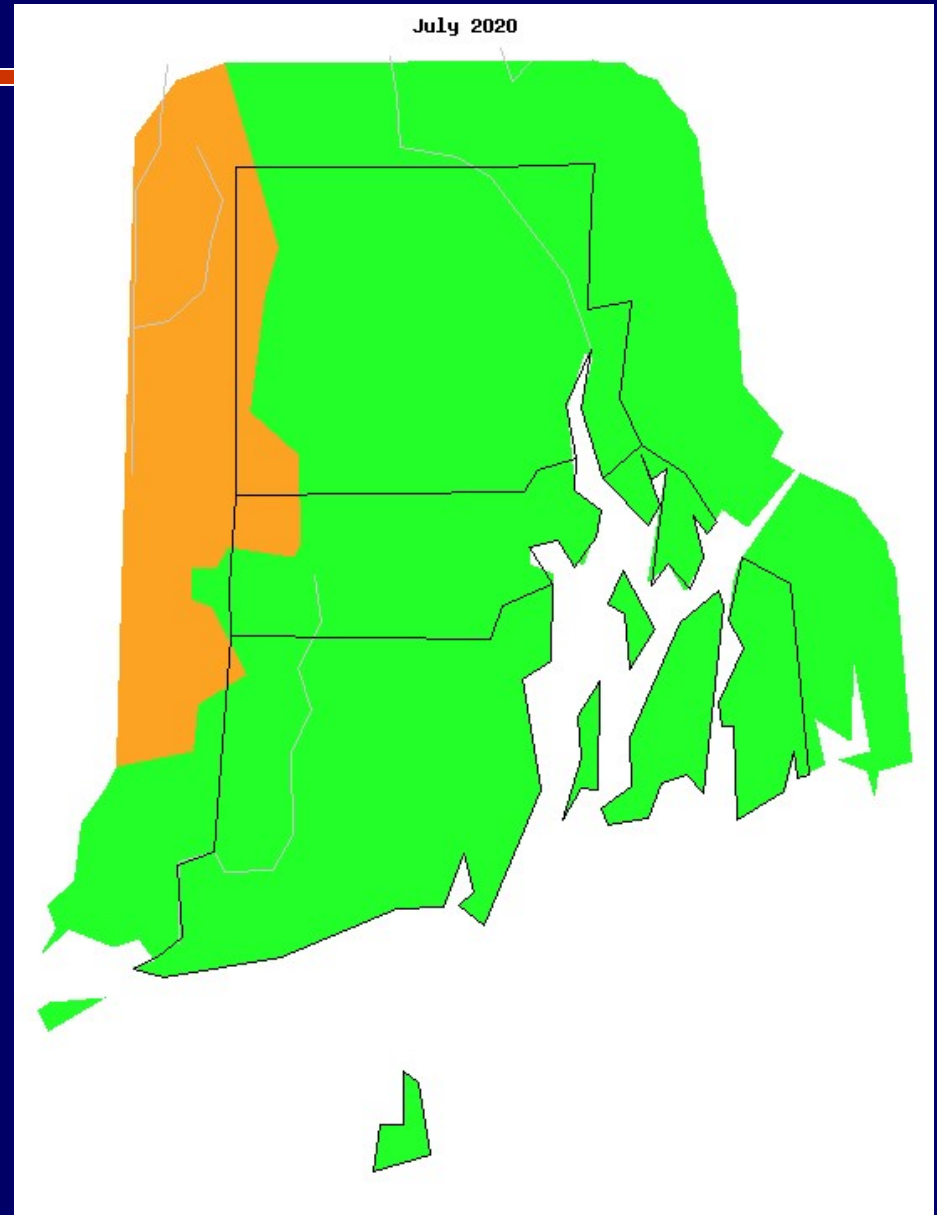


Average Streamflow Conditions – June 2020









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

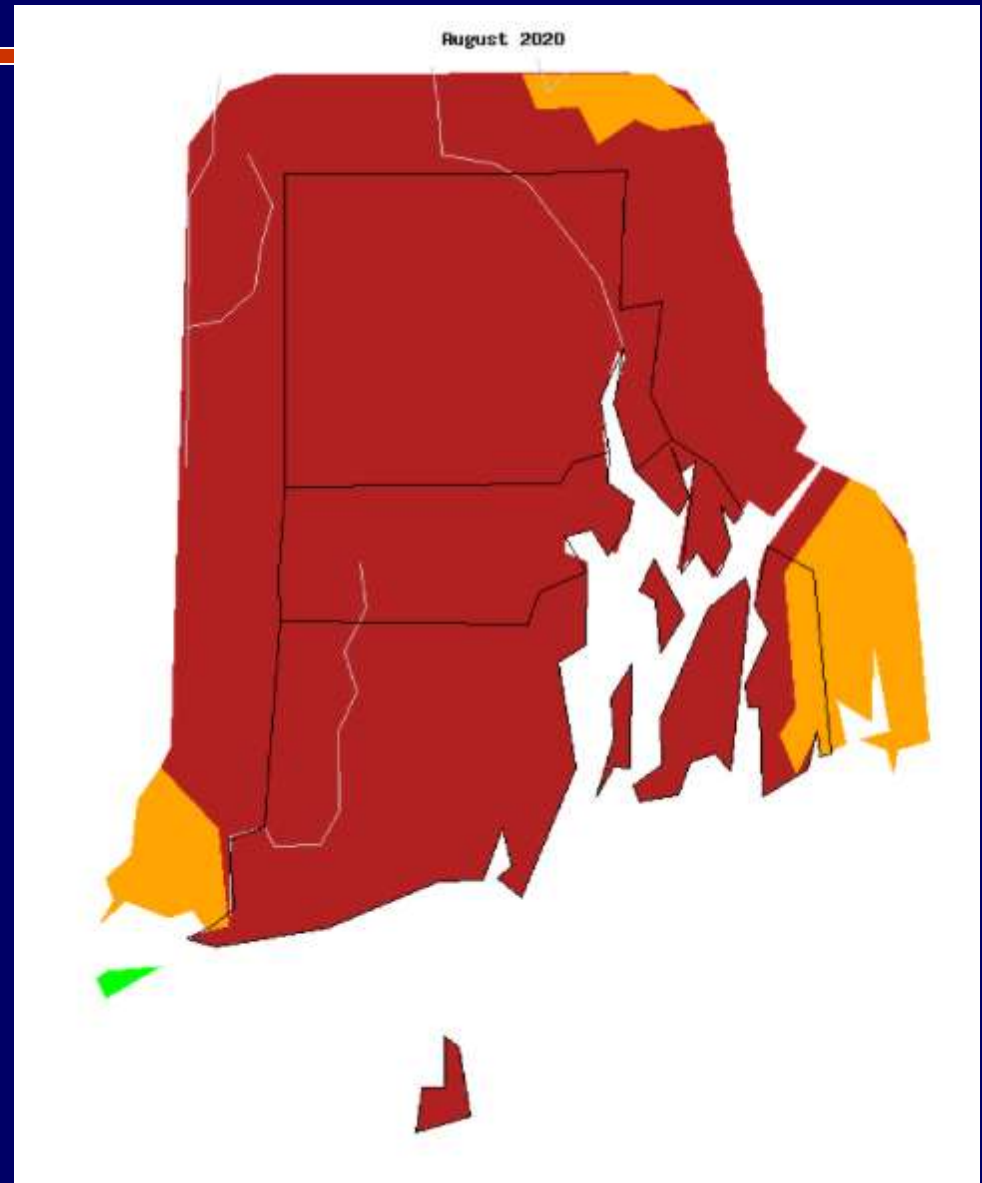
Average Streamflow Conditions – July 2020



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

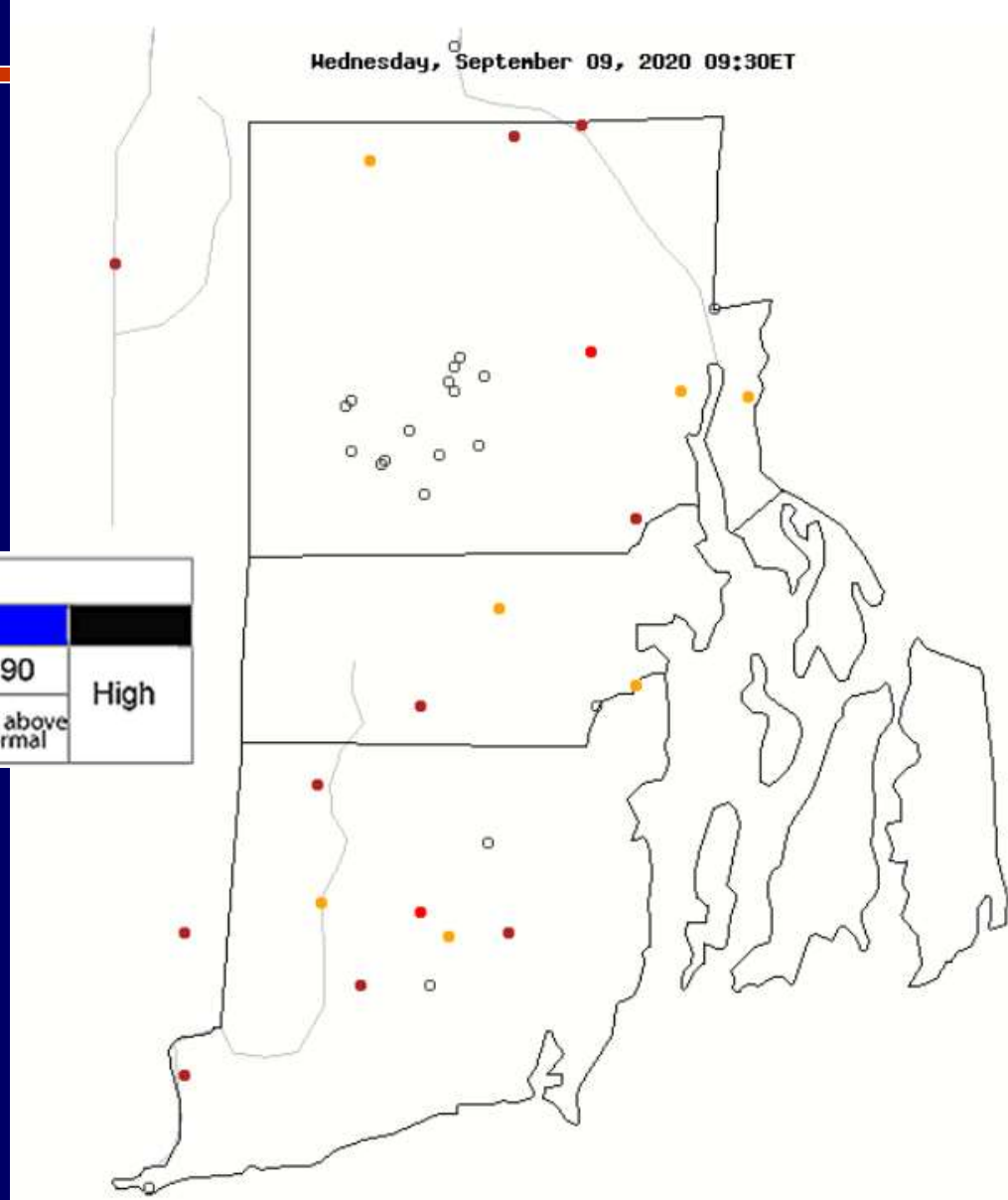
Average Streamflow Conditions – Aug. 2020

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



Current Streamflow Conditions – September 09, 2020

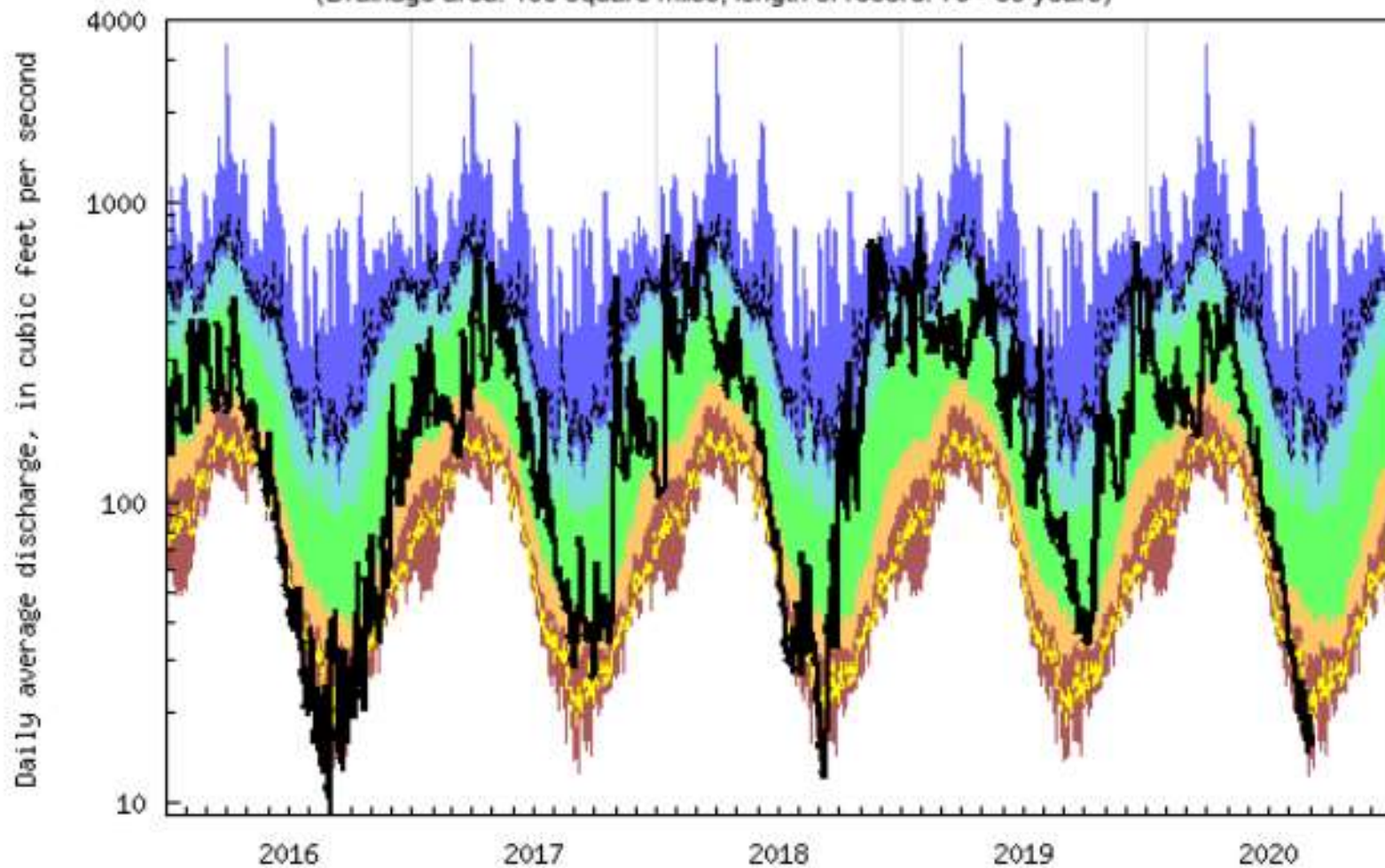
Wednesday, September 09, 2020 09:30ET











Explanation - Percentile classes

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

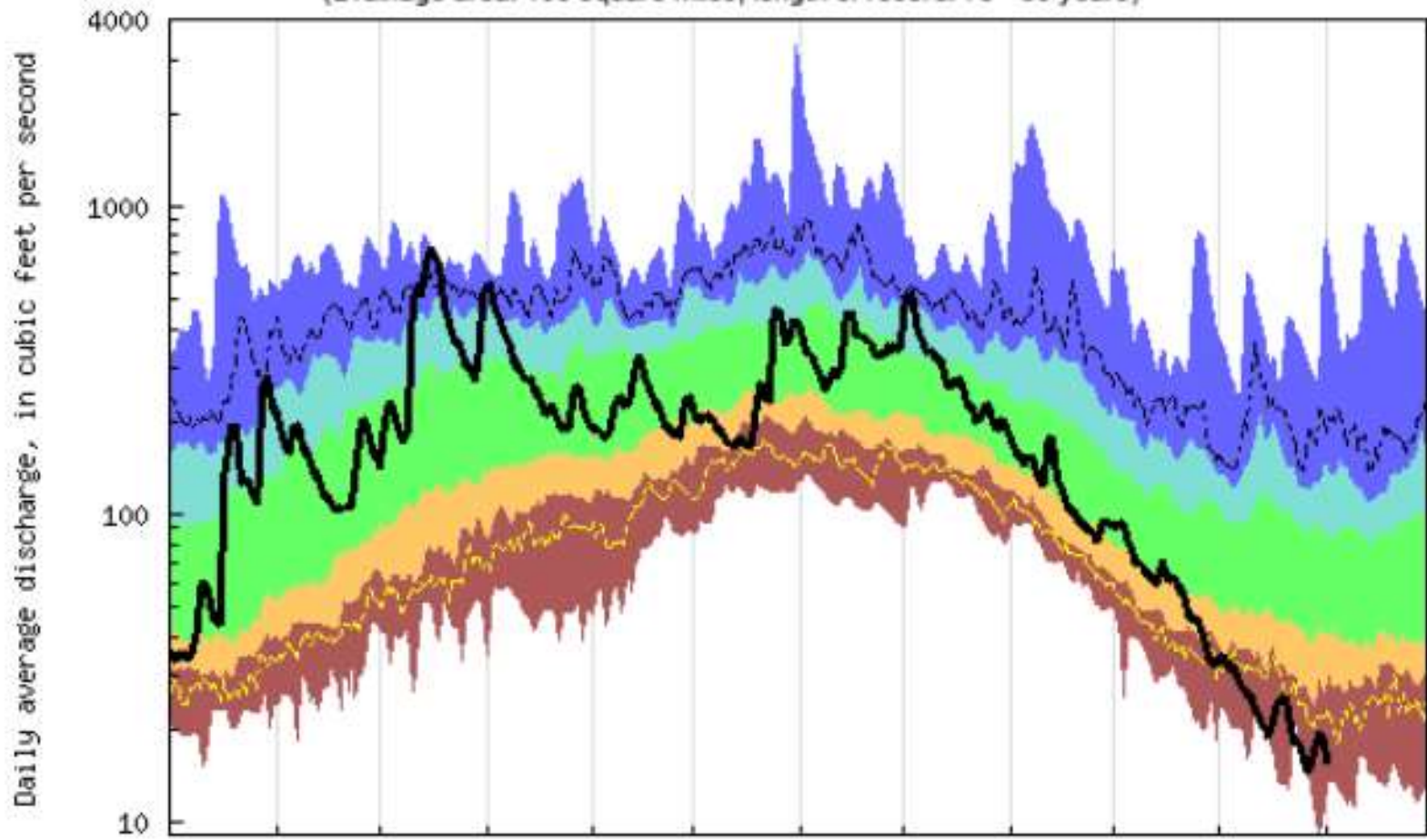
USGS 01117500 PAWCATUCK RIVER AT WOOD RIVER JUNCTION, RI
(Drainage area: 100 square miles, length of record: 79 - 80 years)



- | | | |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|  Much below normal
lowest - 10th percentile |  Below normal
10th - 25th percentile |  Normal
25th - 75th percentile |
|  Above normal
75th - 90th percentile |  Much above normal
90th percentile to highest |  5th percentile |
|  95th percentile |  Discharge (2016 - 2020) | |



USGS 01117500 PAWCATUCK RIVER AT WOOD RIVER JUNCTION, RI
 (Drainage area: 100 square miles, length of record: 79 - 80 years)



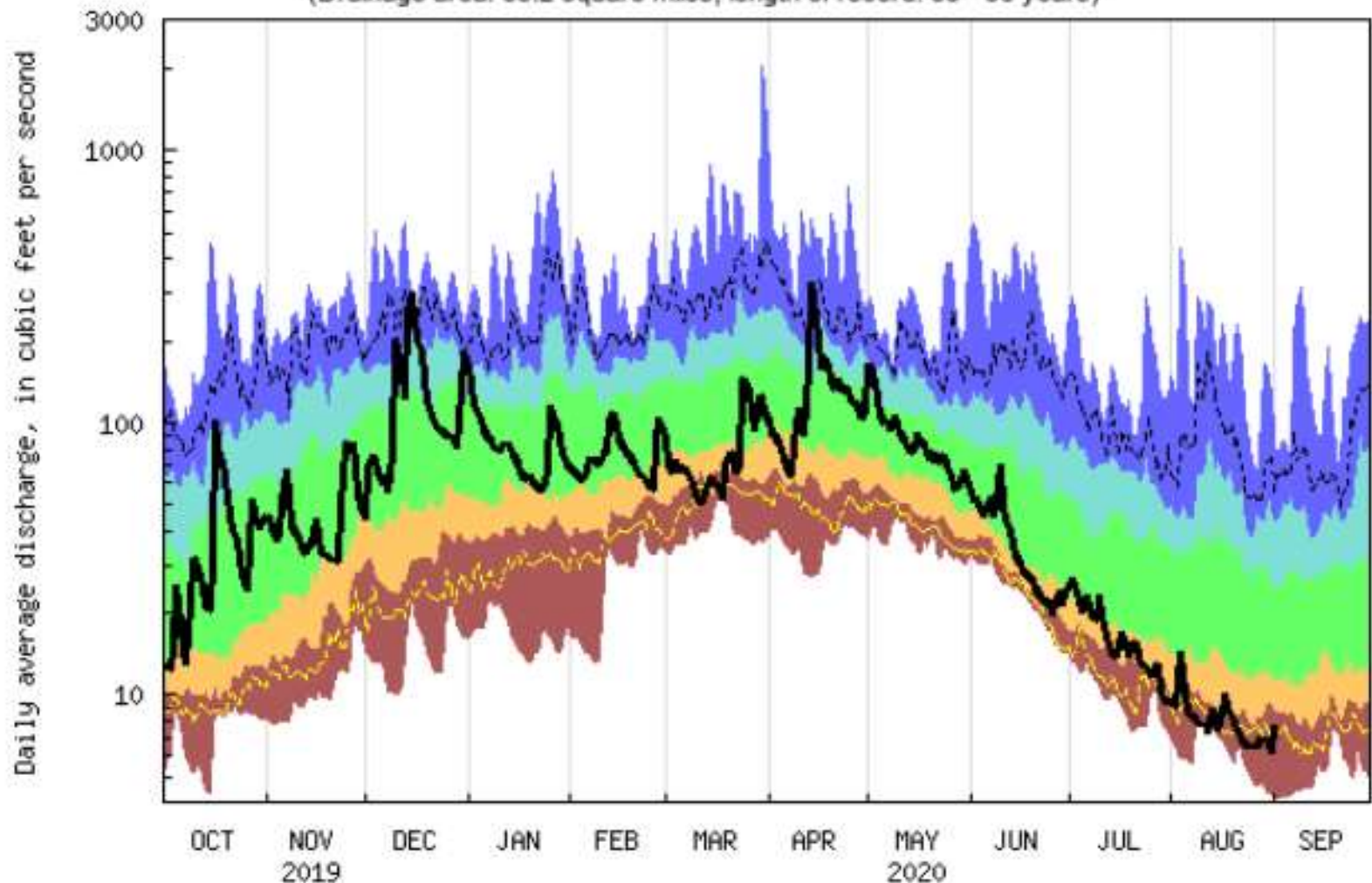
- | | | |
|-----------------------------------------------|-------------------------------------------------|----------------------------------|
| Much below normal
lowest - 10th percentile | Below normal
10th - 25th percentile | Normal
25th - 75th percentile |
| Above normal
75th - 90th percentile | Much above normal
90th percentile to highest | 5th percentile |
| 95th percentile | Discharge (2020) | |



USGS WaterWatch

Last updated: 2020-09-02

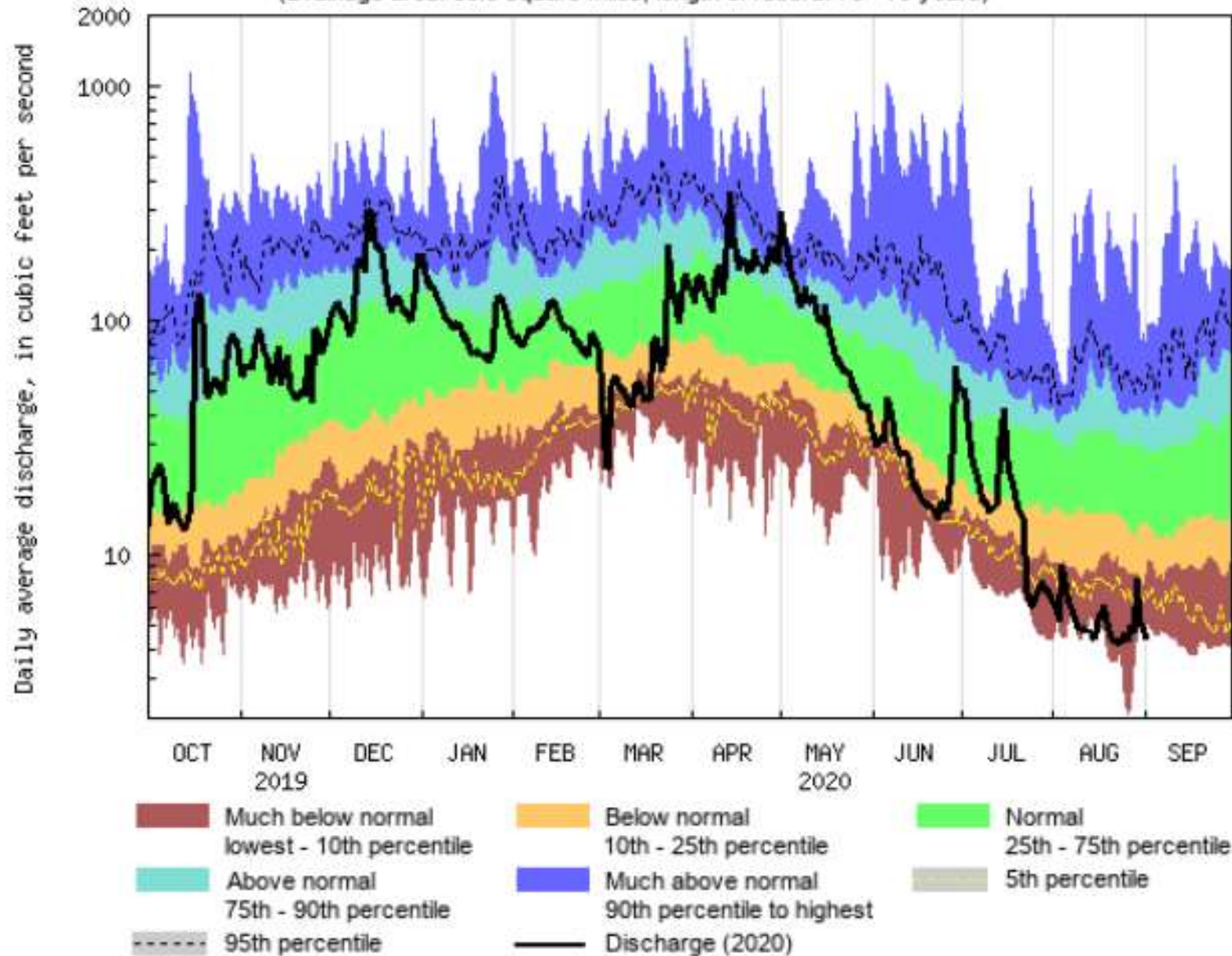
USGS 01117800 WOOD RIVER NEAR ARCADIA, RI
 (Drainage area: 35.2 square miles, length of record: 55 - 56 years)



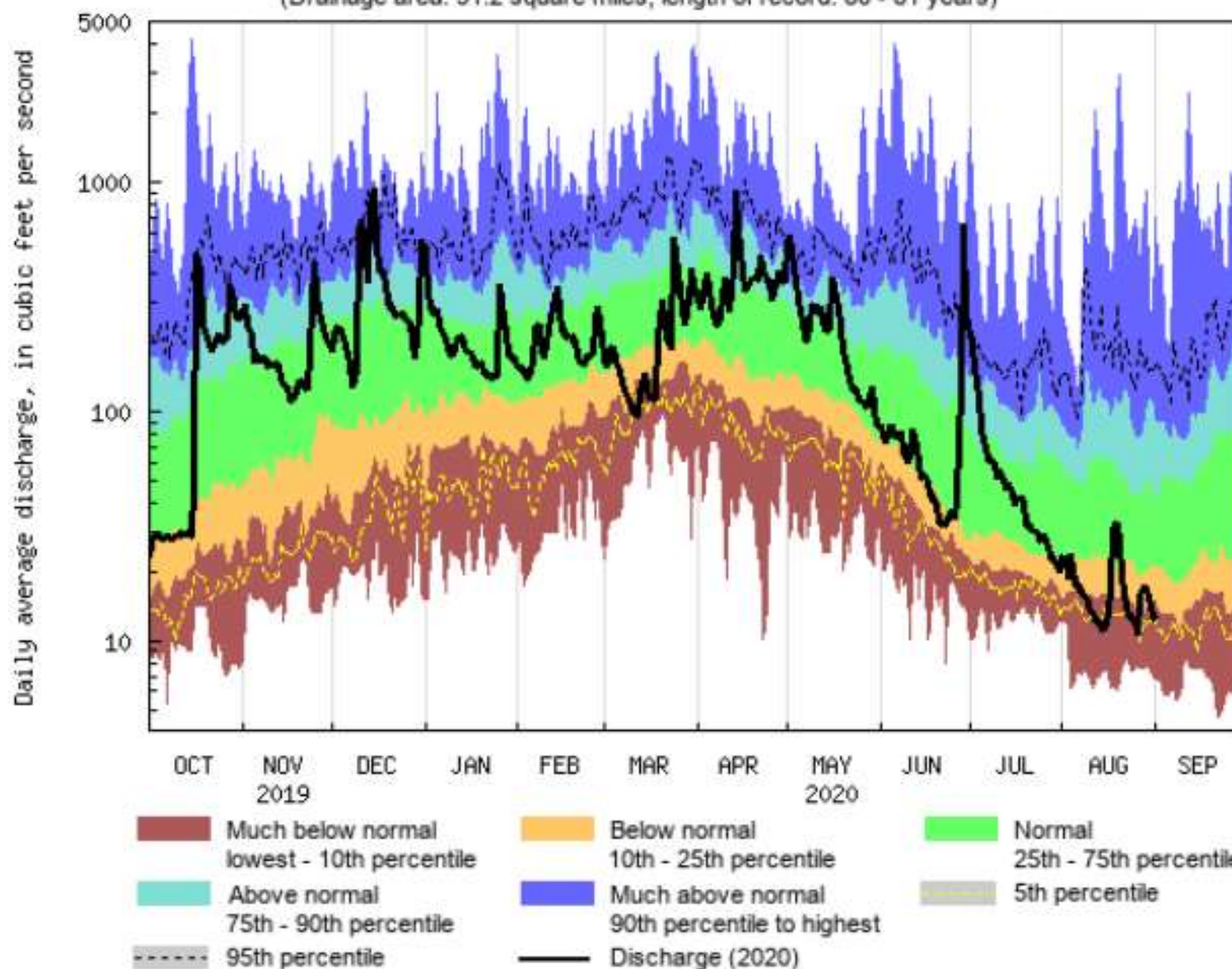
- | | | |
|-----------------------------------------------|-------------------------------------------------|----------------------------------|
| Much below normal
lowest - 10th percentile | Below normal
10th - 25th percentile | Normal
25th - 75th percentile |
| Above normal
75th - 90th percentile | Much above normal
90th percentile to highest | 5th percentile |
| 95th percentile | Discharge (2020) | |



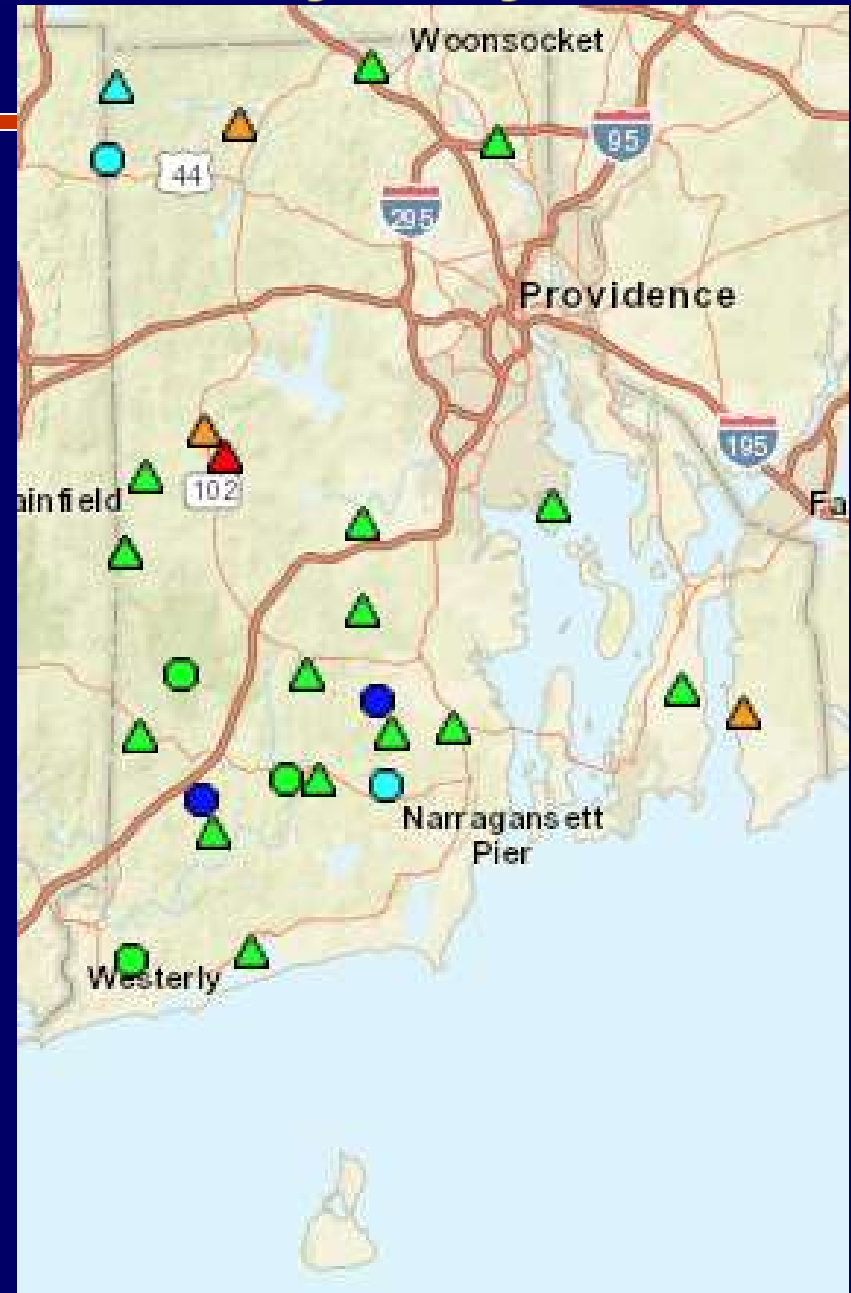
USGS 01114500 WOONASQUATUCKET RIVER AT CENTERDALE, RI
(Drainage area: 38.3 square miles, length of record: 78 - 79 years)



USGS 01111500 BRANCH RIVER AT FORESTDALE, RI
 (Drainage area: 91.2 square miles, length of record: 80 - 81 years)



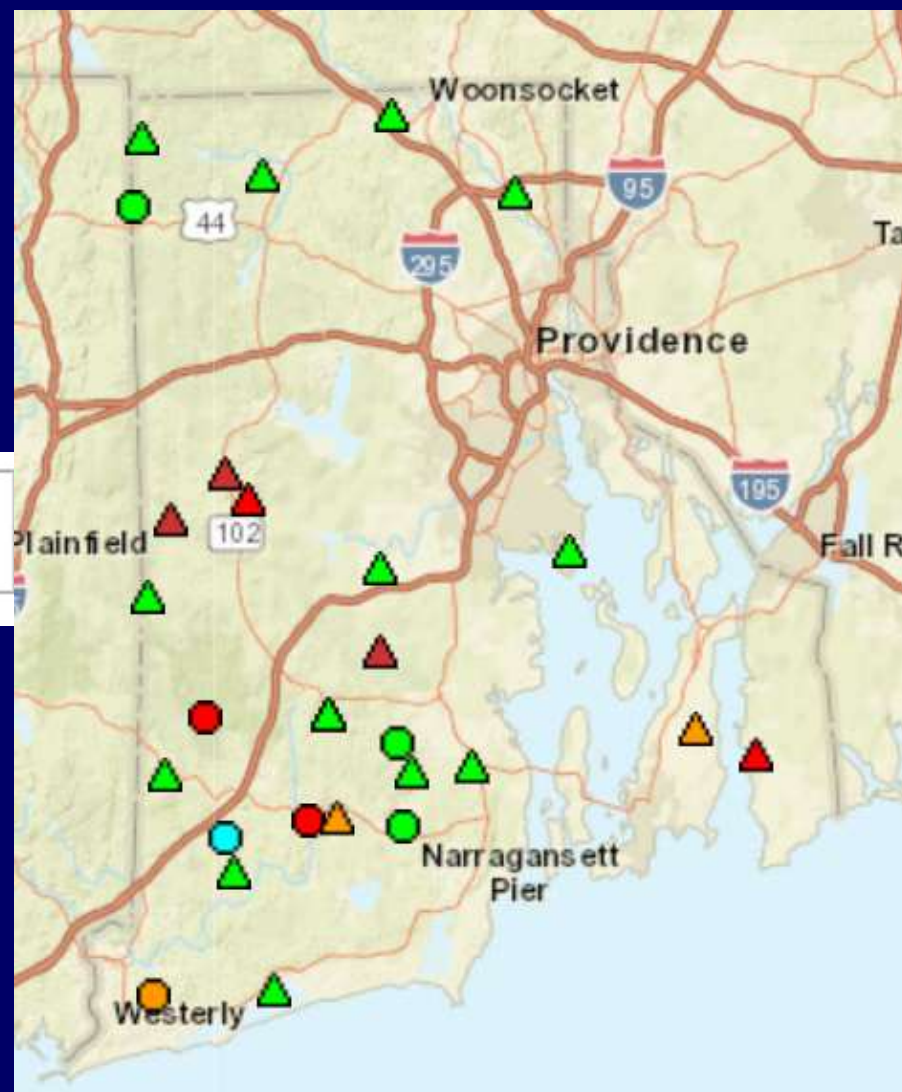
GW Conditions Late June/Early July, 2020



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

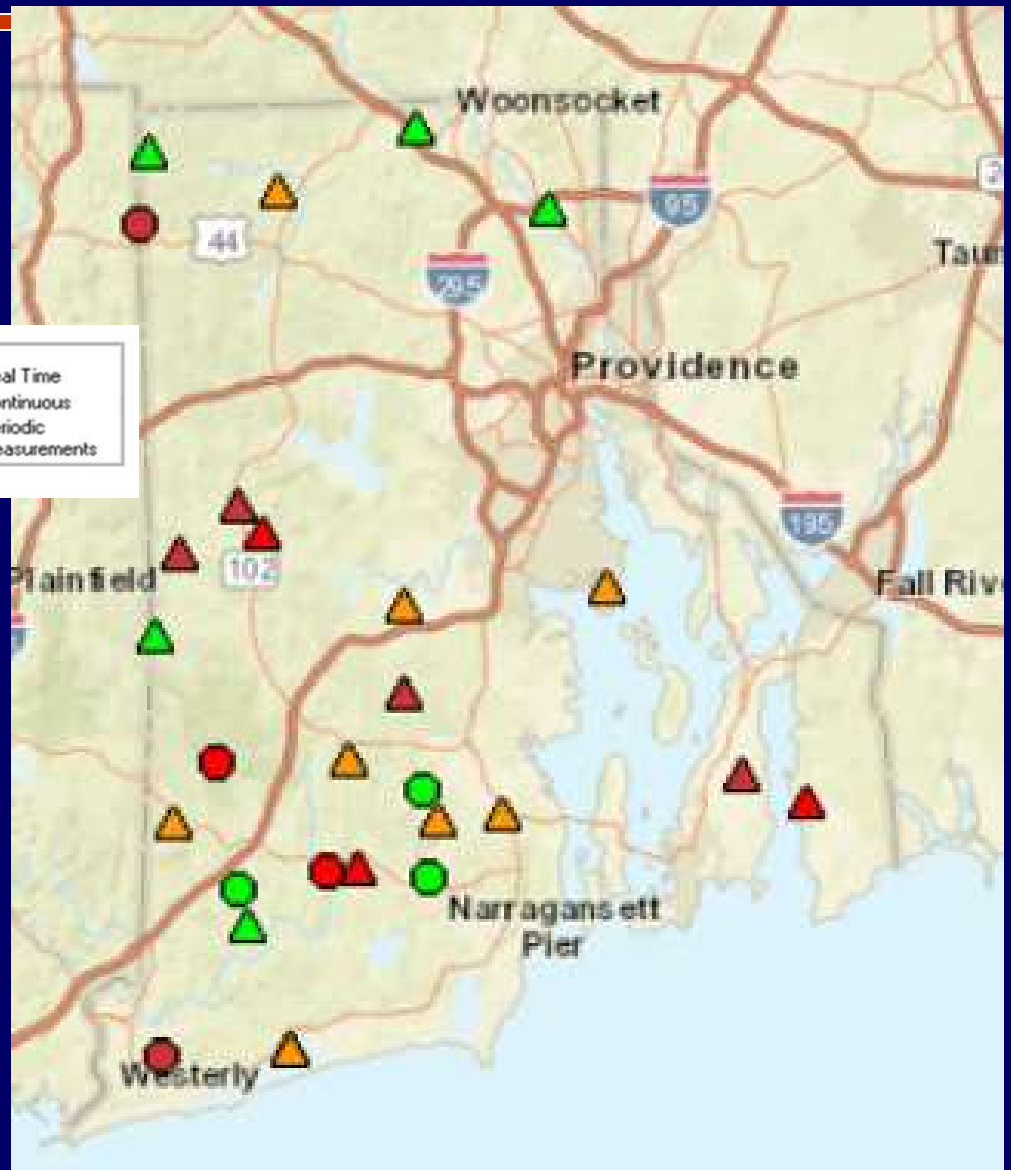
GW Conditions Late July, 2020

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



GW Conditions Late August, 2020

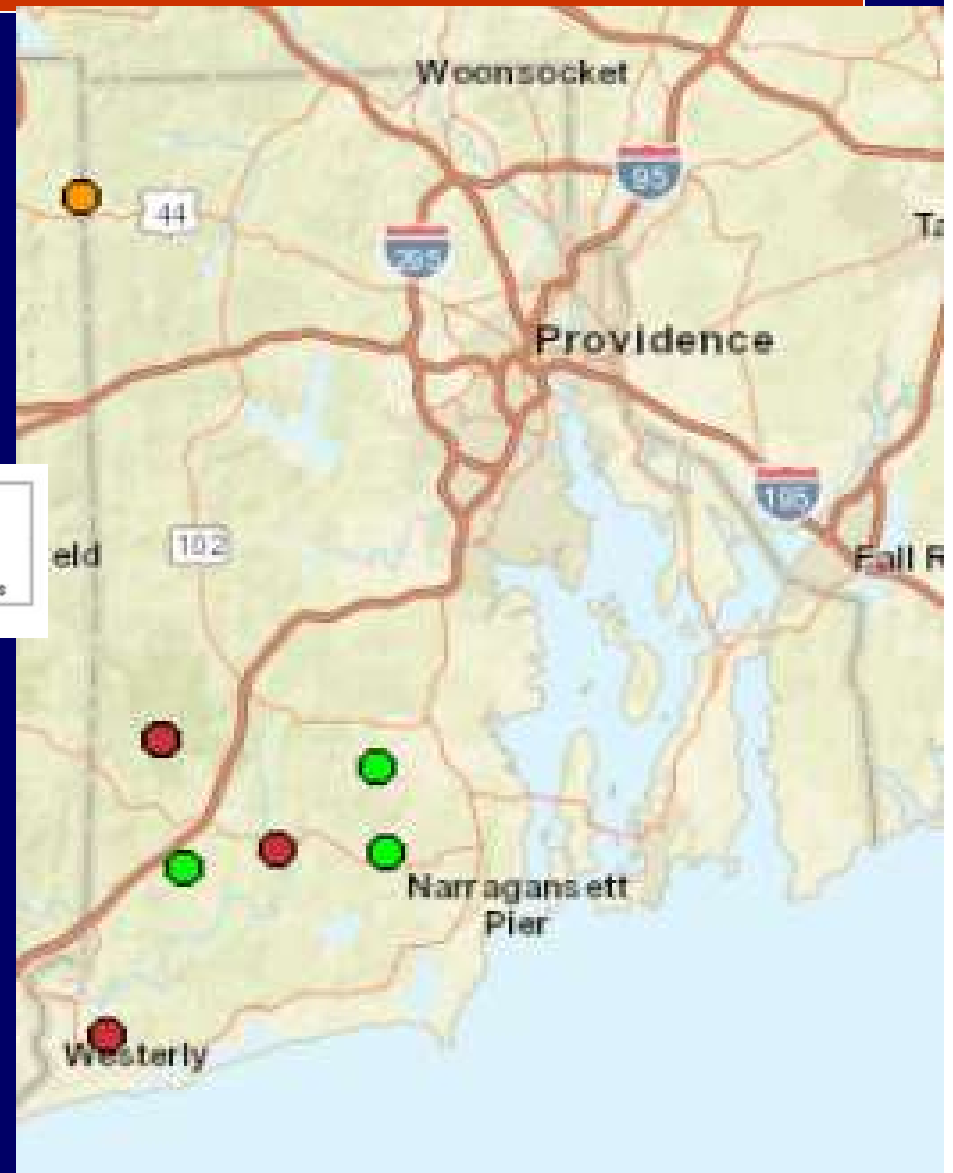
Explanation - Percentile classes							
●	●	●	●	●	●	●	●
New Low	<10 Much Below Normal	10-24 Below Normal	25-75 Normal	76-90 Above Normal	>90 Much Above Normal	New High	Not Ranked



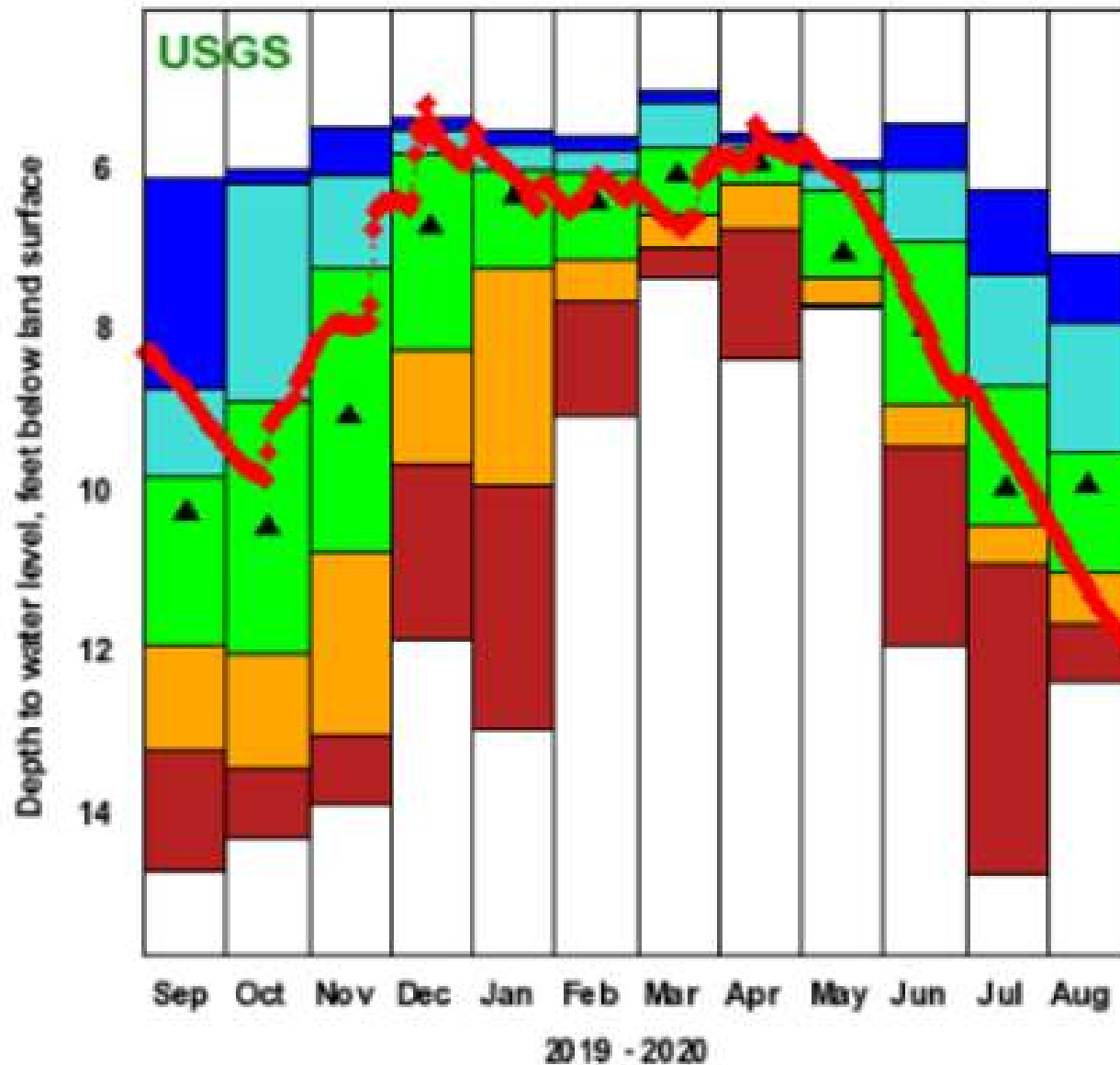
GW Conditions September 09, 2020

Explanation - Percentile classes							
●	●	●	●	●	●	●	●
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

- Real Time
- Continuous
- △ Periodic Measurements



41554607 1474701 - RI-BUW 395 BURRILLVILLE, RI



Plot created 08/31/20 20:10

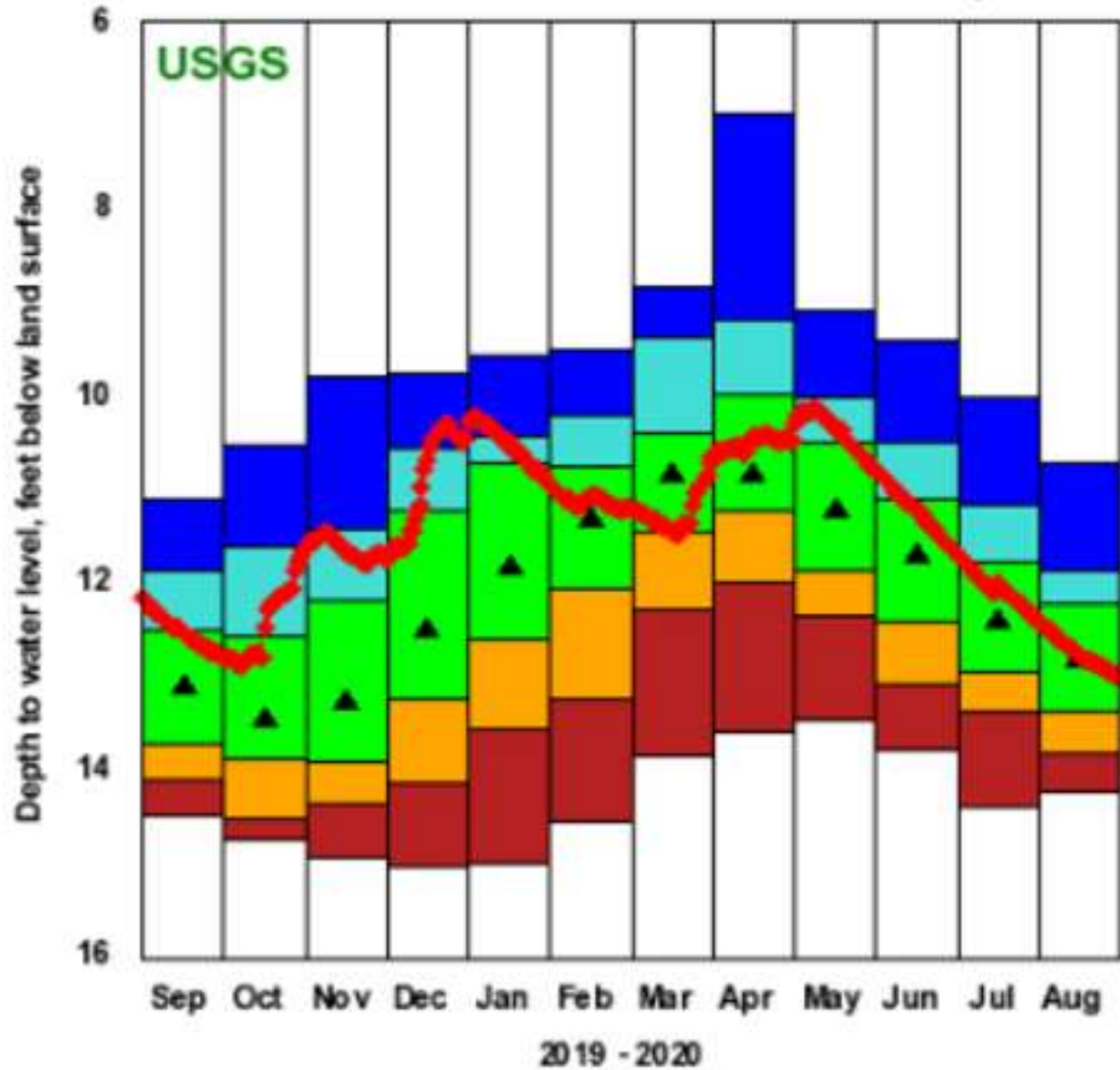
Explanation - Percentile Classes

- 
 Data Point
 - 




 - 
 Monthly Median
- < 10
10 - 24
25 - 73
75 - 90
> 90

412918071321001 - RI-SNW 6 SOUTH KINGSTOWN, RI

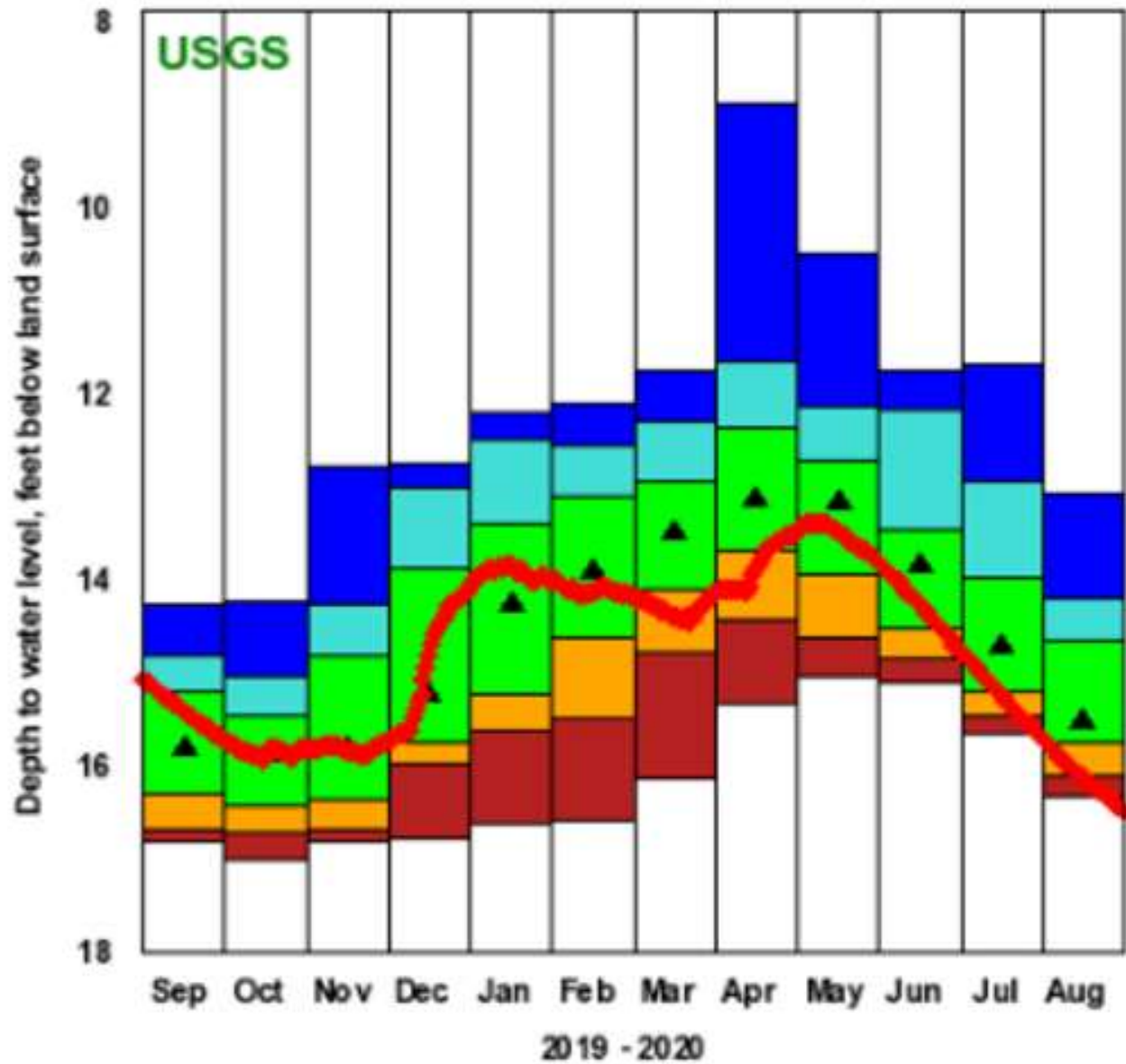


Plot created 08/31/20 20:10

Explanation - Percentile Classes

- ◆ Data Point
- <10
- 10-24
- 25-75
- 76-90
- >90
- ▲ Monthly Median

413358071433801 - RI-EXW 475 EXETER, RI

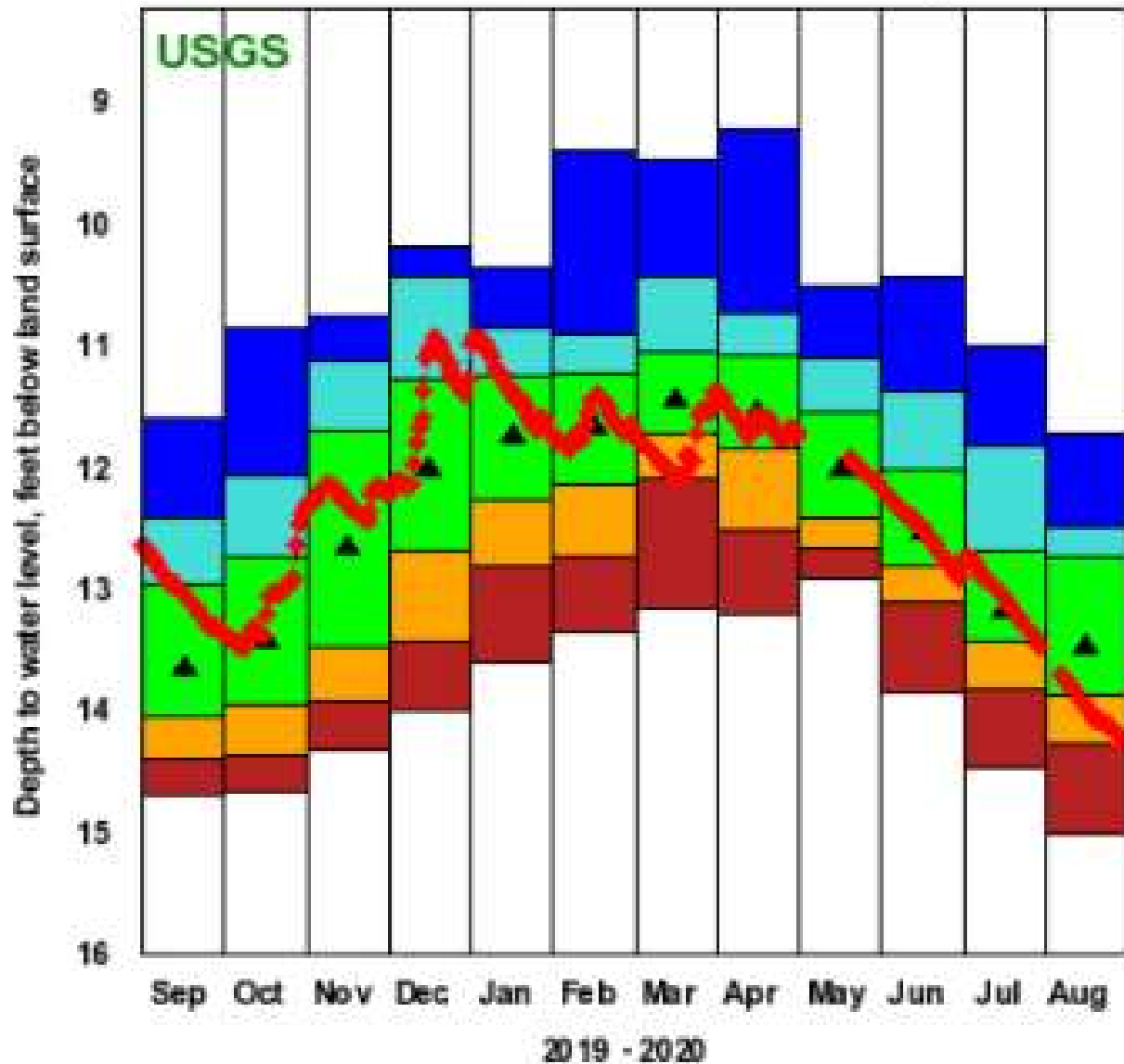


Pbt created 08/31/20 20:10

Explanation - Percentile Classes



41215407 1462901 - RI-WEW 522 WESTERLY, RI

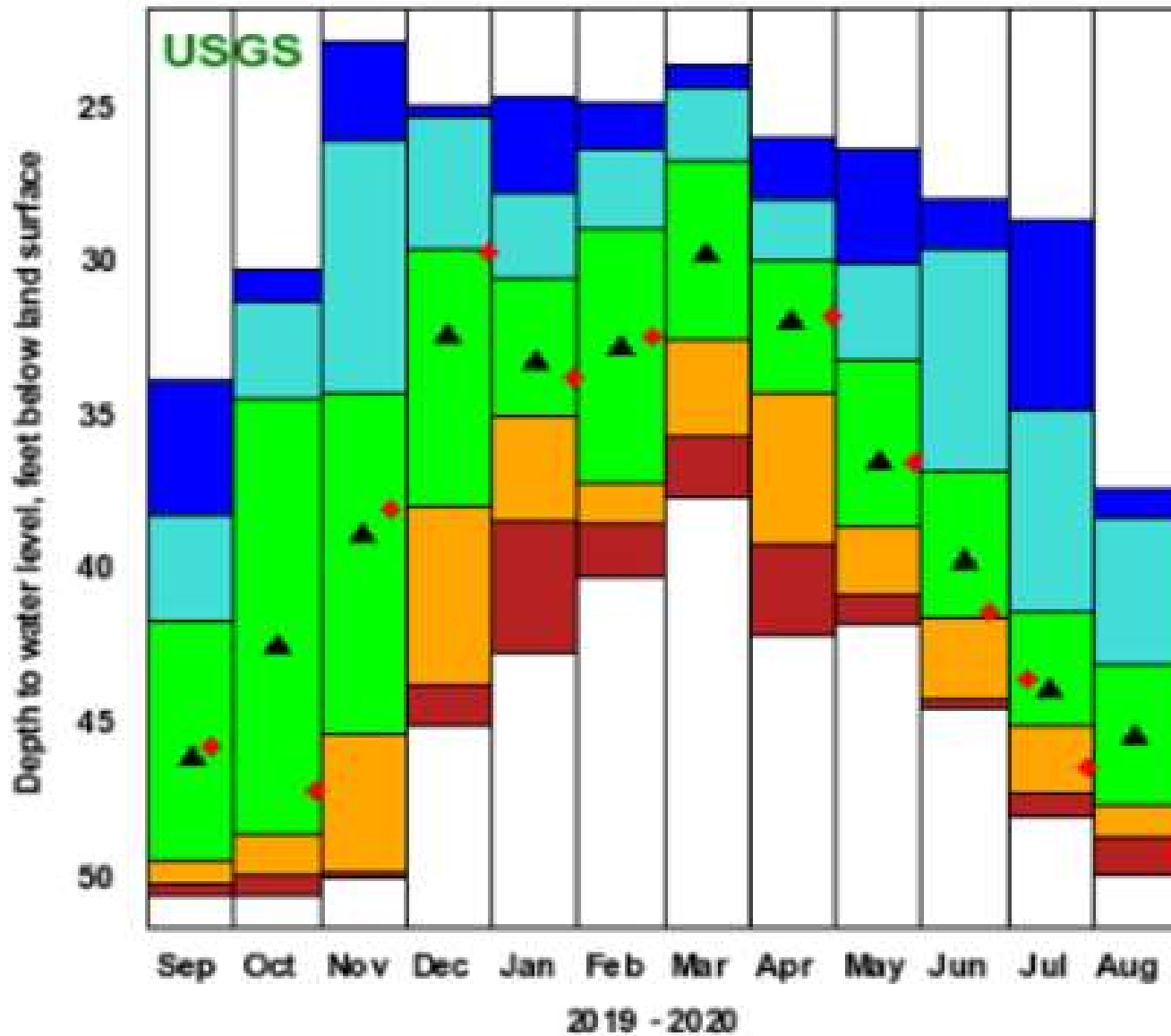


Plot created 08/31/20 20:10

Explanation - Percentile Classes

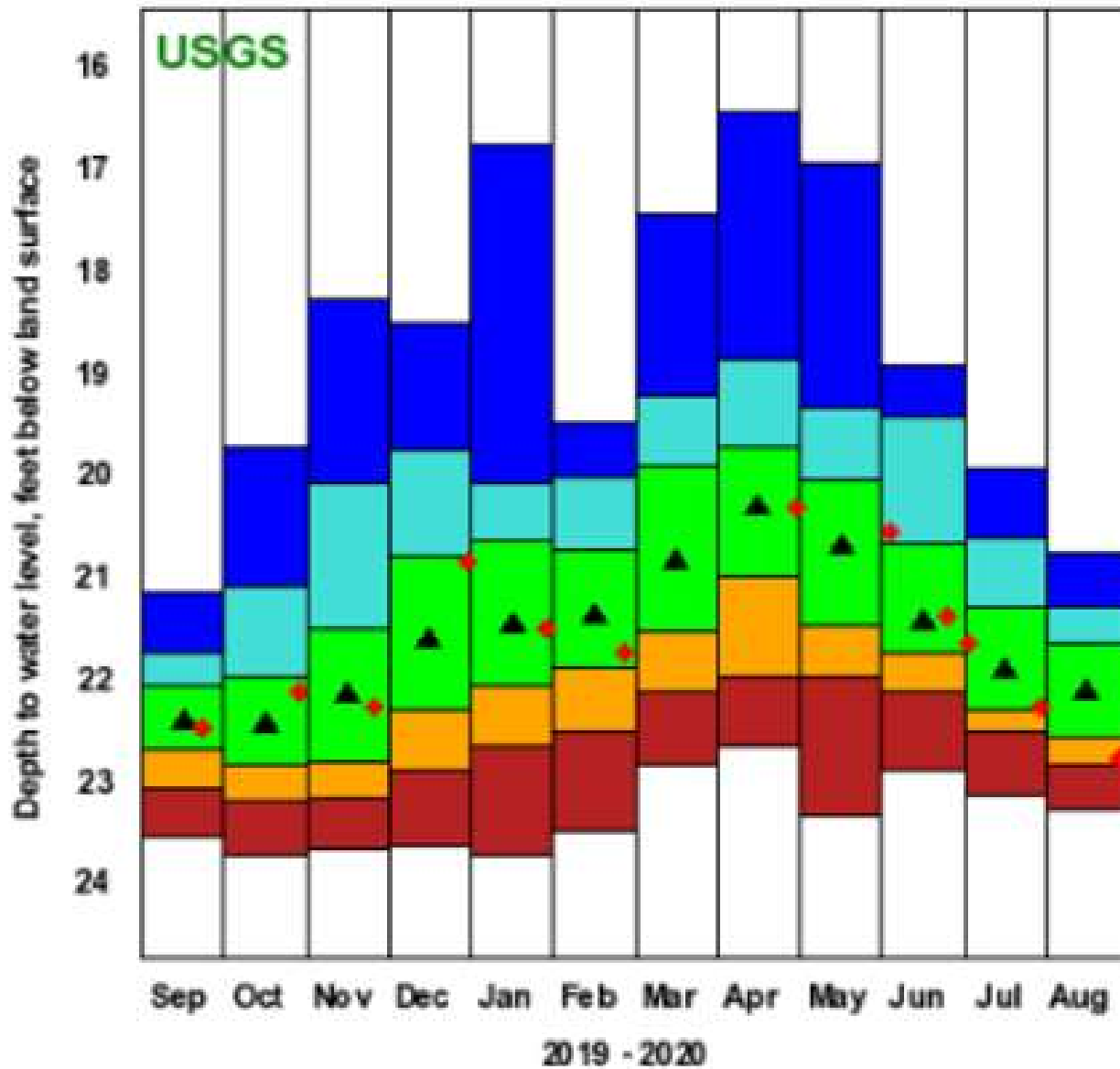


41332507 1152401 - RI-POW 551



Plot created 08/31/20 20:10

414022071332801 - RI-COW 411

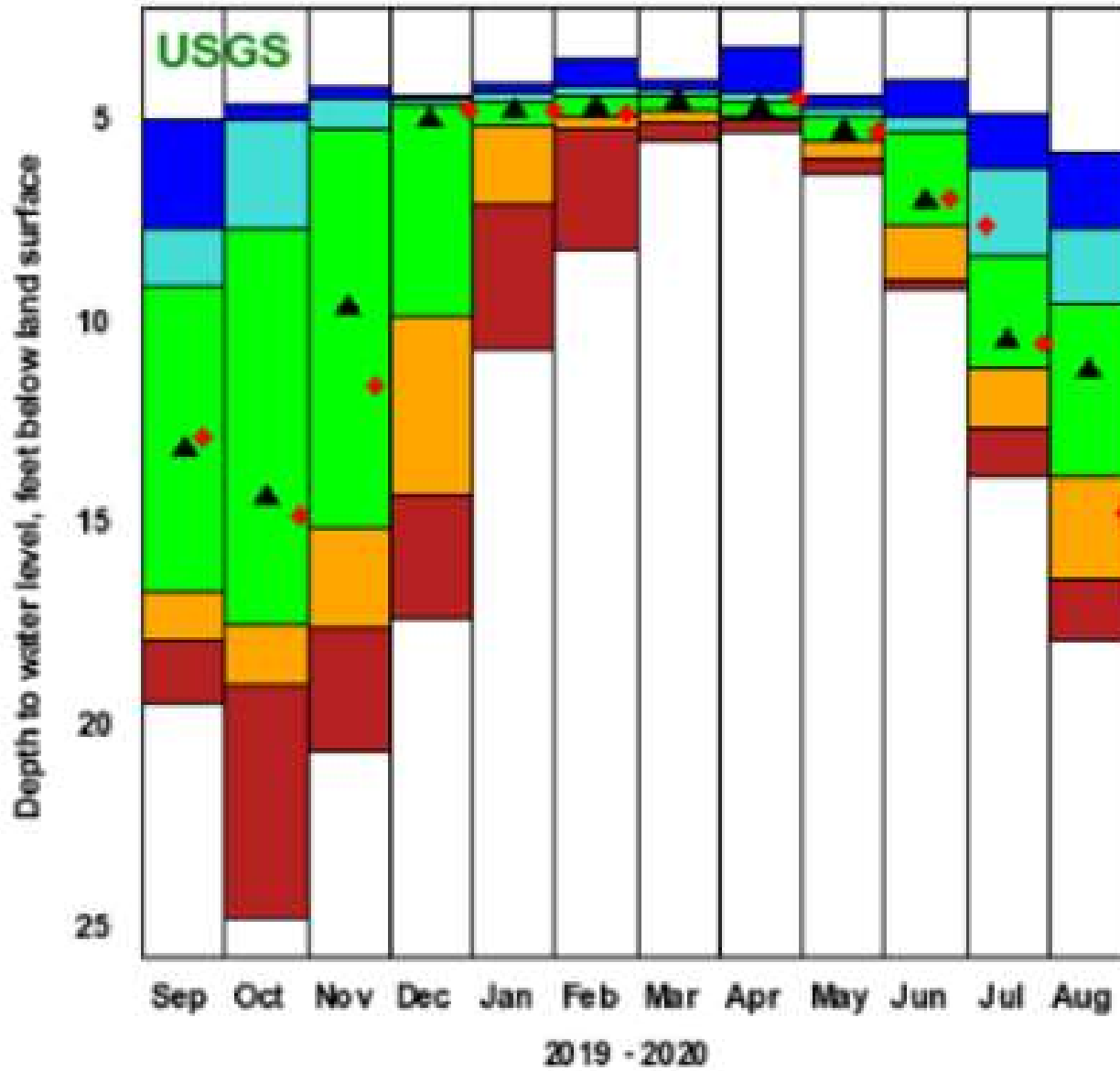


Plot created 08/31/20 20:10

Explanation - Percentile Classes



41410607 1223901 - RI-WC W 59



Plot created 08/31/20 20:10

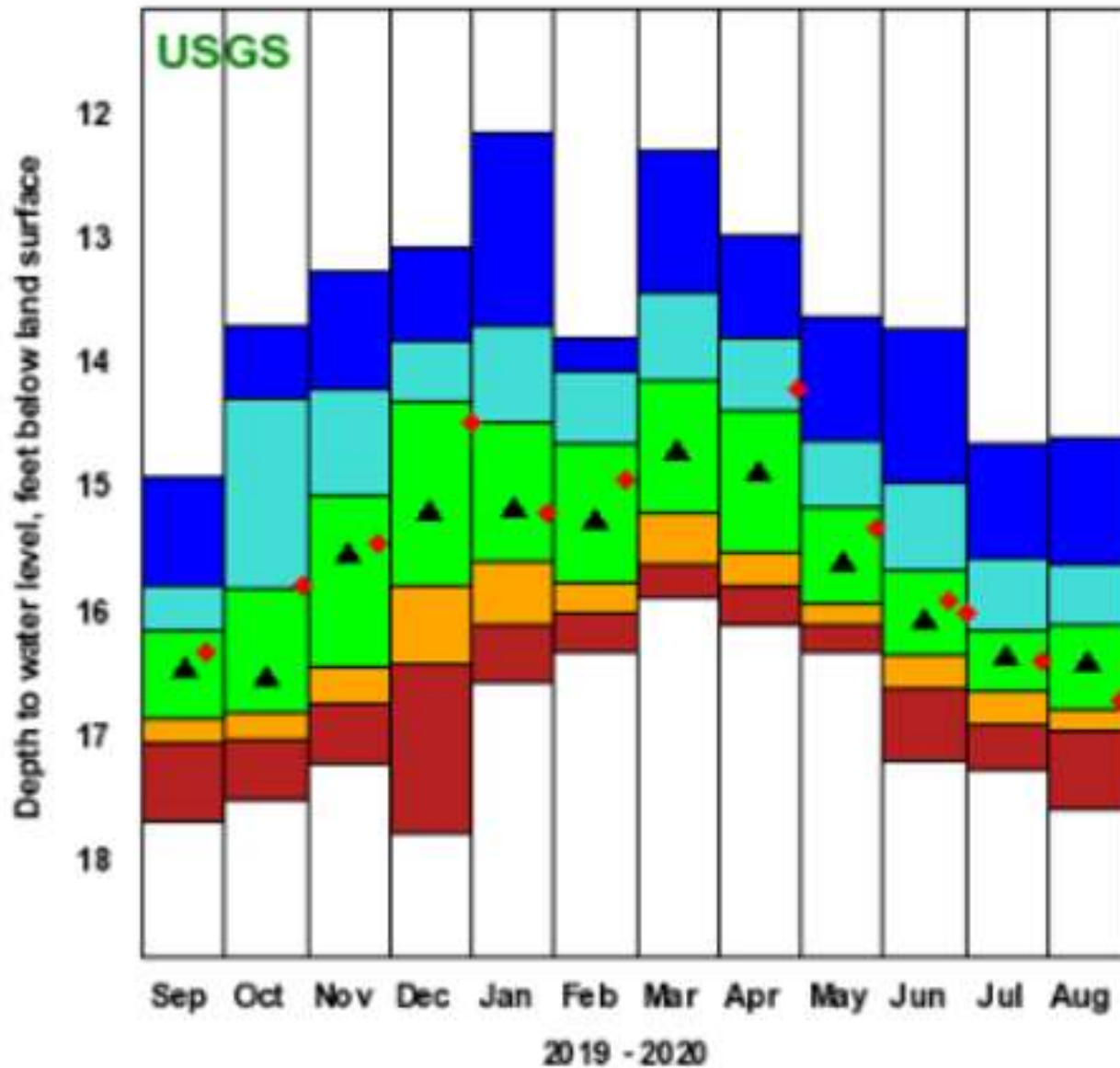
Explanation - Percentile Classes

◆ Data Point

● <10 ● 10-34 ● 35-65 ● 76-90 ● >90

▲ Monthly Median

413907071465001 - RI-WGW 181



Plot created 08/31/20 20:10

Explanation - Percentile Classes

◆ Data Point

● <10
● 10-24
● 25-75
● 76-90
● >90

▲ Monthly Median

Table 2, Rhode Island Drought Indices and Phases

Drought Phase	Palmer Drought Index +	Crop Moisture Index	Precipitation +	Ground Water** +	Stream flow +	Reservoirs**
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Summary: Streamflow –

- Based on the State Guide Plan 721
 - Drought advisory calls for three consecutive months of below normal streamflow
 - Statewide the trigger **has not been met.**
 - In general everything is trending down
 - June was normal
 - July had a mix 12 normal, 9 below normal streamgages.
 - Overall state average 30%.
 - August was well below normal statewide

Summary: Ground Water –update for 09/01/2020

- Based on the State Guide Plan 721
 - Drought advisory calls for two out of three months of below normal water levels
 - The entire state, as a whole, does not meet the trigger for a drought advisory.
 - The only region in Rhode Island that meets the trigger is Central West
 - In general conditions are currently trending down.

Questions?



Percentile of SW - July

Site	Station	Percent
01109403	TEN MILE R., PAWTUCKET AVE. AT E. PROVIDENCE, RI	47.06
01113895	BLACKSTONE R AT ROOSEVELT ST AT PAWTUCKET RI	31.25
01114000	MOSHASSUCK RIVER AT PROVIDENCE, RI	36.21
01117000	HUNT RIVER NEAR EAST GREENWICH, RI	51.25
01116500	PAWTUXET RIVER AT CRANSTON, RI	3.7
01116905	HUNT R 250 FT DS FRY BRK AT FRENCHTOWN, RI	50
01114500	WOONASQUATUCKET RIVER AT CENTERDALE, RI	20
01112500	BLACKSTONE RIVER AT WOONSOCKET, RI	31.52
01117350	CHIPUXET RIVER AT WEST KINGSTON, RI	16.33
01111500	BRANCH RIVER AT FORESTDALE, RI	60.49
01116000	SOUTH BRANCH PAWTUXET RIVER AT WASHINGTON, RI	16.25
01117370	QUEEN R AT LIBERTY RD AT LIBERTY RI	50
01117420	USQUEPAUG RIVER NEAR USQUEPAUG, RI	20.83
01117430	PAWCATUCK RIVER AT KENYON, RI	33.33
01117468	BEAVER RIVER NEAR USQUEPAUG, RI	4.35
01115630	NOOSENECK RIVER AT NOOSENECK, RI	37.5
01117500	PAWCATUCK RIVER AT WOOD RIVER JUNCTION, RI	18.75
01111300	NIPMUC RIVER NEAR HARRISVILLE, RI	63.64
01118000	WOOD RIVER AT HOPE VALLEY, RI	26.25
01117800	WOOD RIVER NEAR ARCADIA, RI	10.71
01118500	PAWCATUCK RIVER AT WESTERLY, RI	16.25
	State Overall	30.74619