

# *Ground Water Report*

Drought Management Advisory Council

Raleigh, NC

April 12, 2018

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Ground Water Management Branch  
Water Planning Section



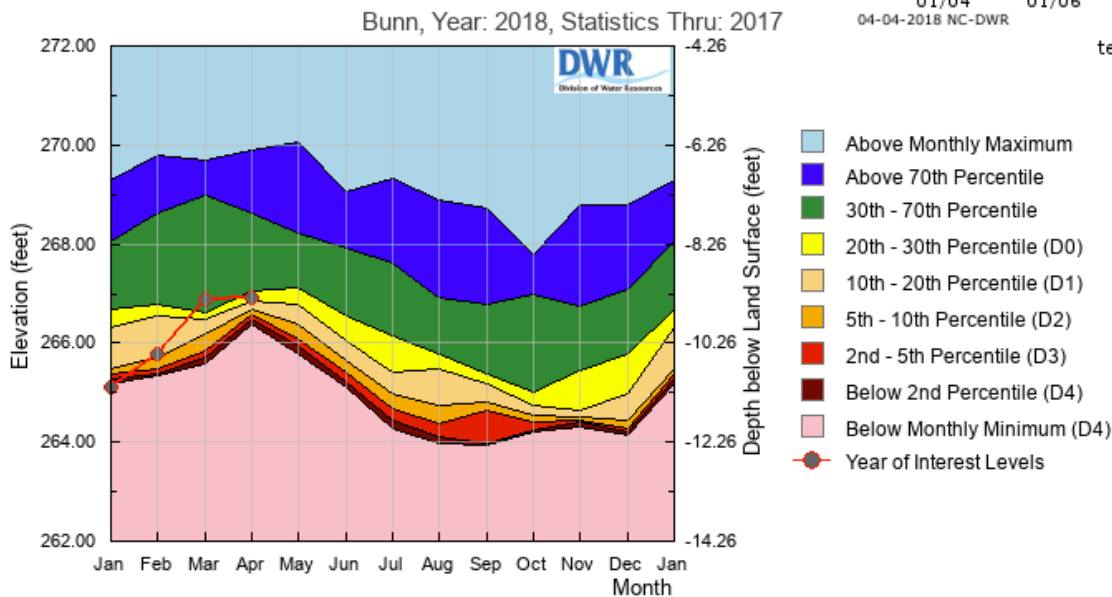
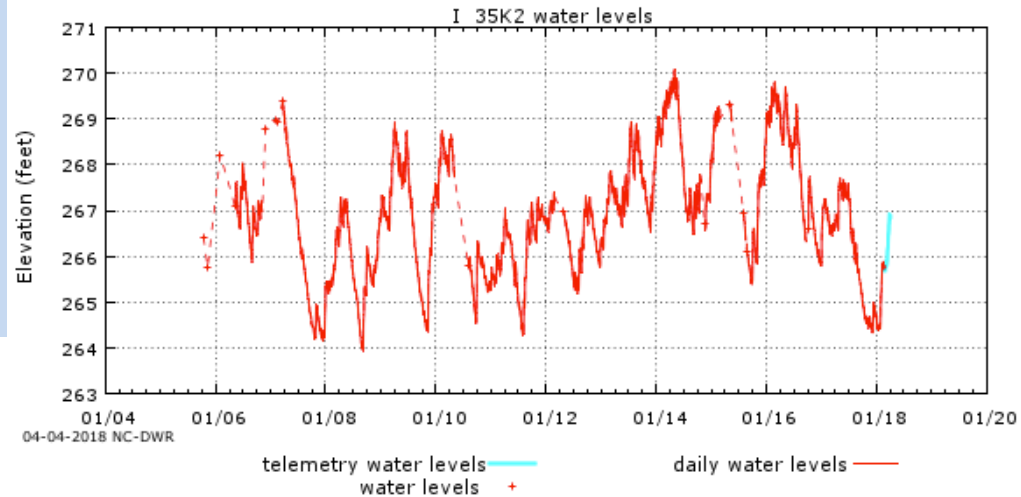
# *Drought Indicator Wells*

- 57 wells with a 36 year average record
- 16 wells monitored by USGS
  - Automatic recorders, hourly data
  - satellite telemetry
- 41 wells monitored by DWR
  - Automatic recorders, hourly data, downloaded quarterly (Feb, May, Aug & Nov)
  - Cell phone telemetry on 16 wells
- **25 wells updated quarterly**



# Example DIW

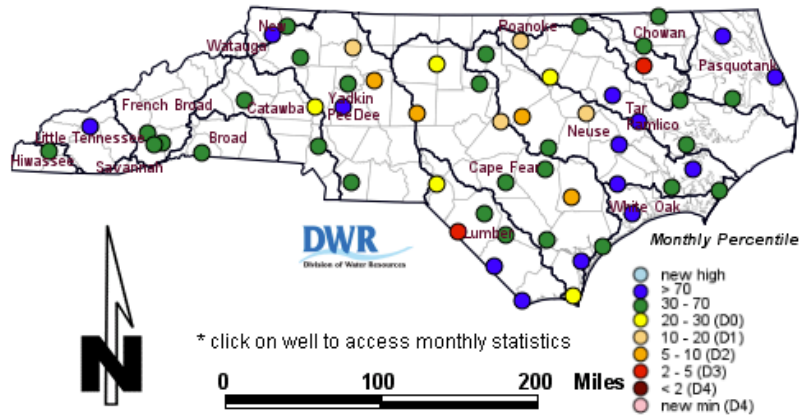
- Water levels collected over time at various times of year can be seen in the time-series plot.
- Collapse that plot into a year's time and represent the distribution of historical data as colored percentile ranges.



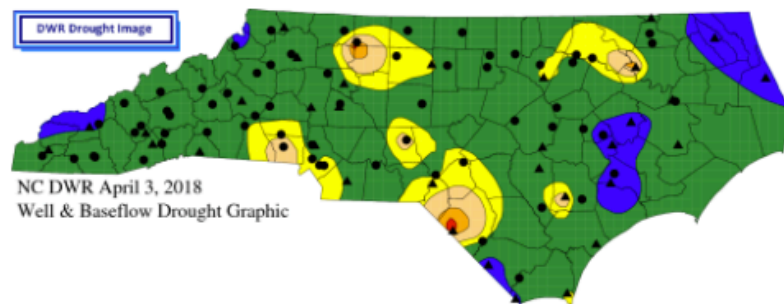
Now it's much easier to see how the latest water level compares to its history of water levels.



# Drought Indicator Wells



Water level in status table ranked against historical data for the matching month through 2017.



Contoured baseflow (circles) and well (triangles) percentile data. Current or selected month ranked against data from same month in previous years (1965 - 2017). Graphic is re-drawn each Tuesday.

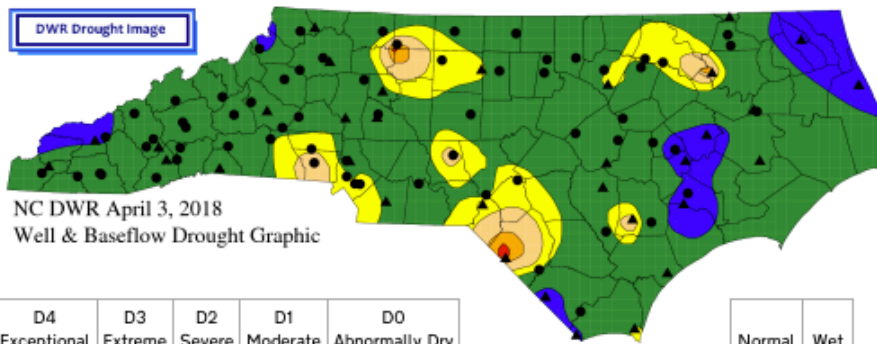
Today: April 4, 2018

#	WELL NAME	STATUS	COUNTY	RIVER BASIN	YEARS	%-DAILY
1	<a href="#">Columbus</a>	Apr 2, 2018	Polk	Broad	43	38
2	<a href="#">Kelly</a>	Jan 30, 2018	Bladen	Cape Fear	37	33
3	<a href="#">Southport (BR-083)</a>	Apr 1, 2018	Brunswick	Cape Fear	48	44
4	<a href="#">Seabrook School</a>	Jan 30, 2018	Cumberland	Cape Fear	36	35
5	<a href="#">Rose Hill (NC-222R)</a>	Apr 1, 2018	Duplin	Cape Fear	36	47
6	<a href="#">Gibsonville</a>	Apr 2, 2018	Guilford	Cape Fear	50	35
7	<a href="#">NH Correctional Institute **</a>	Jan 31, 2018	New Hanover	Cape Fear	5	89
8	<a href="#">Camp Lejeune</a>	Feb 8, 2018	Onslow	Cape Fear	31	89
9	<a href="#">UNC Campus</a>	Feb 1, 2018	Orange	Cape Fear	65	29
10	<a href="#">Topsail Beach</a>	Apr 2, 2018	Pender	Cape Fear	35	40
11	<a href="#">NC Zoo</a>	Feb 13, 2018	Randolph	Cape Fear	48	33
12	<a href="#">Halls</a>	Mar 29, 2018	Sampson	Cape Fear	37	33
13	<a href="#">Fuquay Varina</a>	Feb 1, 2018	Wake	Cape Fear	36	39
14	<a href="#">Glen Alpine (BK-126)</a>	Apr 1, 2018	Burke	Catawba	48	37
15	<a href="#">Troutman</a>	Apr 2, 2018	Iredell	Catawba	49	52
16	<a href="#">Hornets Nest Park</a>	Apr 2, 2018	Mecklenburg	Catawba	25	100
17	<a href="#">Roxobel</a>	Jan 30, 2018	Bertie	Chowan	19	100
18	<a href="#">Sunbury **</a>	Jun 18, 2015	Gates	Chowan	48	20
19	<a href="#">Como</a>	Apr 2, 2018	Hertford	Chowan	37	39
20	<a href="#">Champion (HW-047)</a>	Apr 1, 2018	Haywood	French Broad	62	97
21	<a href="#">Blantyre (NC-144)</a>	Apr 1, 2018	Transylvania	French Broad	37	99
22	<a href="#">Pisgah Forest (NC-147)</a>	Apr 1, 2018	Transylvania	French Broad	33	98
23	<a href="#">American Thread (NC-192)</a>	Apr 1, 2018	Cherokee	Hiwassee	29	100
24	<a href="#">Bryson City</a>	Mar 23, 2018	Swain	Little Tennessee	53	38
25	<a href="#">Bladenboro</a>	Feb 20, 2018	Bladen	Lumber	43	34
26	<a href="#">Calabash (BR-381) **</a>	Apr 1, 2018	Brunswick	Lumber	4	100
27	<a href="#">Clarendon</a>	Apr 2, 2018	Columbus	Lumber	42	21
28	<a href="#">Magnolia School</a>	Jan 30, 2018	Robeson	Lumber	40	32
29	<a href="#">Rowland</a>	Apr 2, 2018	Robeson	Lumber	47	13
30	<a href="#">Jordan Creek (NC-194)</a>	Apr 1, 2018	Scotland	Lumber	24	86
31	<a href="#">Cherry Point</a>	Feb 20, 2018	Craven	Neuse	28	47
32	<a href="#">Cleveland</a>	Feb 8, 2018	Johnston	Neuse	13	91
33	<a href="#">Comfort (NC-173)</a>	Apr 1, 2018	Jones	Neuse	32	66
34	<a href="#">Graingers</a>	Mar 15, 2018	Lenoir	Neuse	24	71
35	<a href="#">Caldwell</a>	Feb 1, 2018	Orange	Neuse	49	23
36	<a href="#">Whortonsville</a>	Jan 31, 2018	Pamlico	Neuse	40	23
37	<a href="#">Grantham (NC-148)</a>	Apr 1, 2018	Wayne	Neuse	38	54
38	<a href="#">Stantonsburg</a>	Jan 25, 2018	Wilson	Neuse	16	83
39	<a href="#">Laurel Springs</a>	Apr 2, 2018	Alleghany	New	47	37
40	<a href="#">Beaver Creek</a>	Feb 5, 2018	Ashe	New	48	49

Current conditions tab on [www.ncdrought.org](http://www.ncdrought.org)



# DWR Drought Image

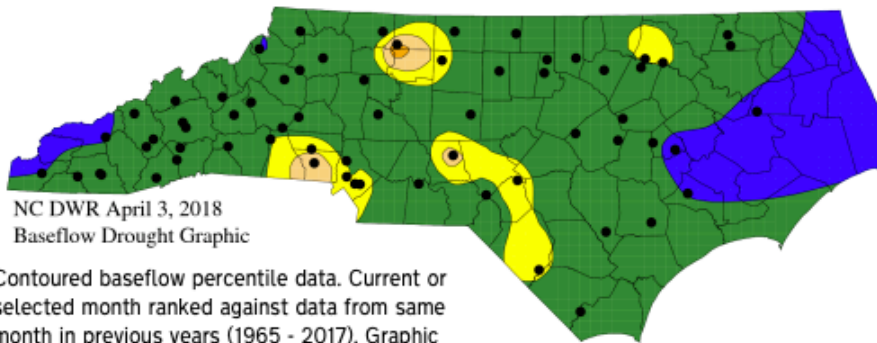


NC DWR April 3, 2018  
Well & Baseflow Drought Graphic

D4	D3	D2	D1	D0
Exceptional	Extreme	Severe	Moderate	Abnormally Dry
< 2	2 - 5	5 - 10	10 - 20	20 - 30

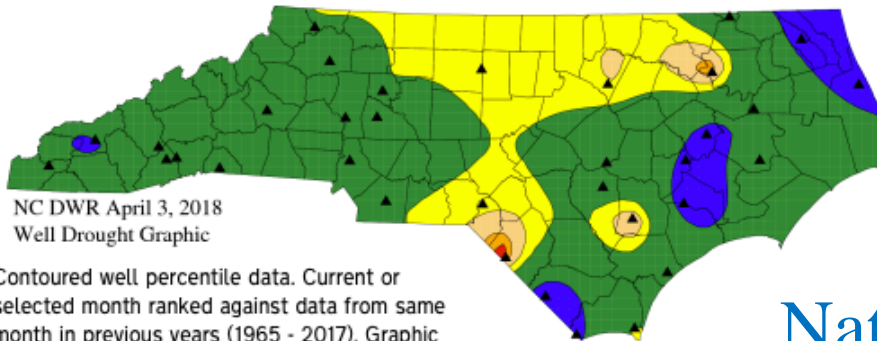
Normal	Wet
30 - 70	> 70

Contoured baseflow (circles) and well (triangles) percentile data. Current or selected month ranked against data from same month in previous years (1965 - 2017). Graphic re-drawn each Tuesday.



NC DWR April 3, 2018  
Baseflow Drought Graphic

Contoured baseflow percentile data. Current or selected month ranked against data from same month in previous years (1965 - 2017). Graphic re-drawn each Tuesday.



NC DWR April 3, 2018  
Well Drought Graphic

Contoured well percentile data. Current or selected month ranked against data from same month in previous years (1965 - 2017). Graphic re-drawn each Tuesday.

- Surface water gage data is filtered using the Lyne and Hollick algorithm to create daily baseflow data
- Latest values are ranked against historical baseflow data
- The resulting percentiles are contoured
- Similarly, latest ground water levels are ranked against historical level data and the resulting percentiles are contoured
- The combined set of percentiles are contoured in the DWR Drought Image (top map)

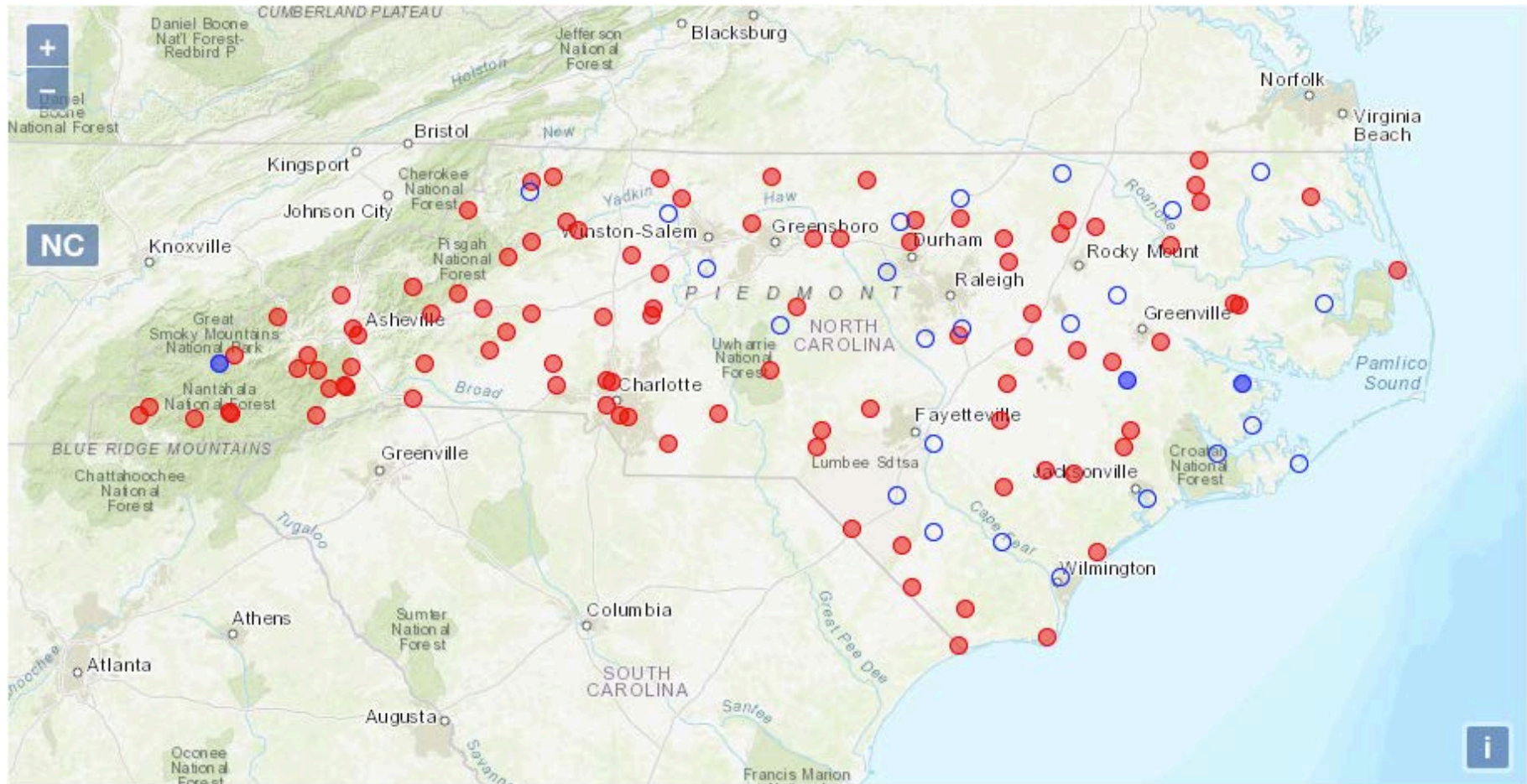
## Natural Water Storage Status



# Age of Well and Baseflow Percentiles

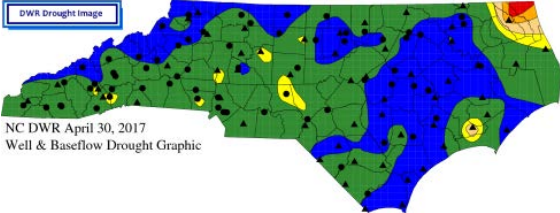
*red*  $\leq 7$  days old

*8*  $\leq$  *blue*  $\leq 30$  days old / open blue  $> 30$  days old



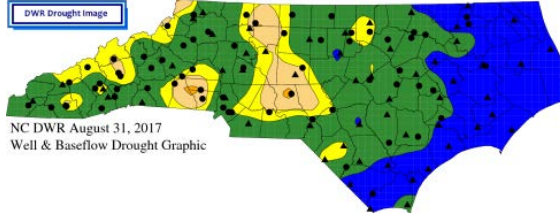
# Year in Review

April 2017



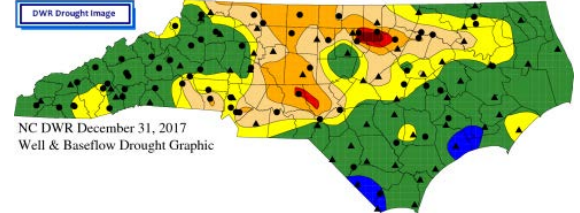
NC DWR April 30, 2017  
Well & Baseflow Drought Graphic

August 2017

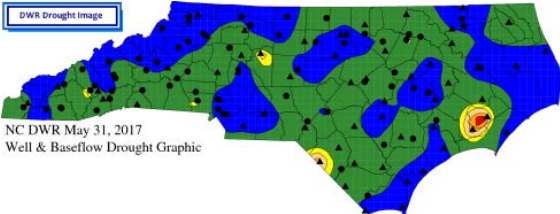


NC DWR August 31, 2017  
Well & Baseflow Drought Graphic

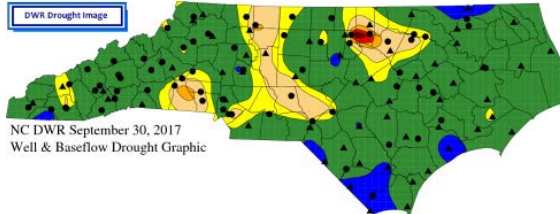
December 2017



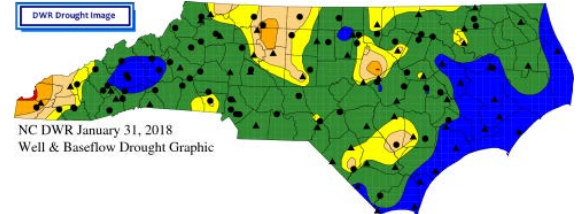
NC DWR December 31, 2017  
Well & Baseflow Drought Graphic



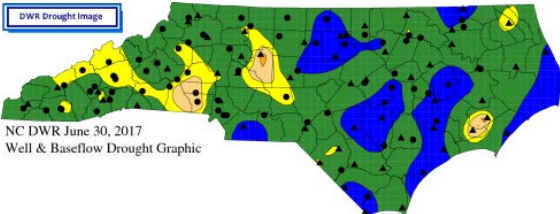
NC DWR May 31, 2017  
Well & Baseflow Drought Graphic



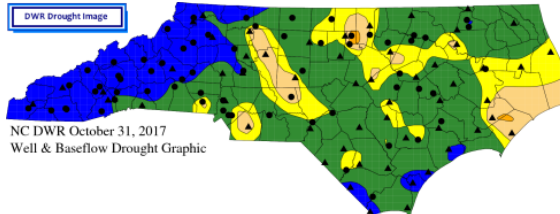
NC DWR September 30, 2017  
Well & Baseflow Drought Graphic



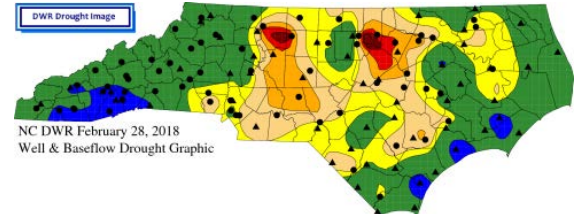
NC DWR January 31, 2018  
Well & Baseflow Drought Graphic



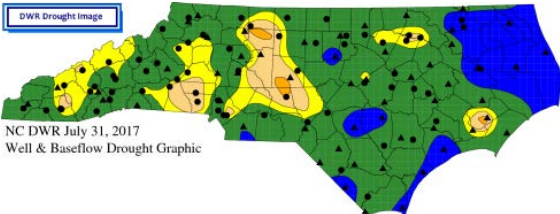
NC DWR June 30, 2017  
Well & Baseflow Drought Graphic



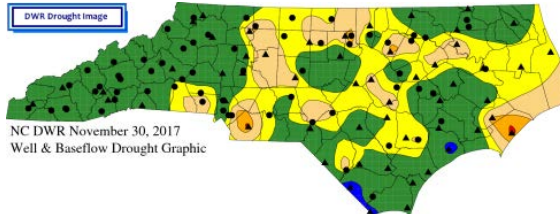
NC DWR October 31, 2017  
Well & Baseflow Drought Graphic



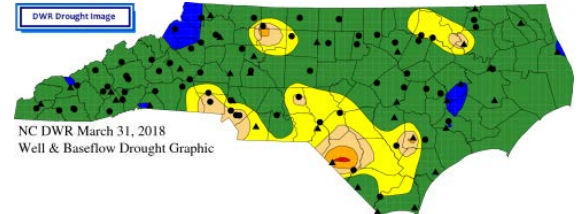
NC DWR February 28, 2018  
Well & Baseflow Drought Graphic



NC DWR July 31, 2017  
Well & Baseflow Drought Graphic



NC DWR November 30, 2017  
Well & Baseflow Drought Graphic



NC DWR March 31, 2018  
Well & Baseflow Drought Graphic

July 2017

November 2017

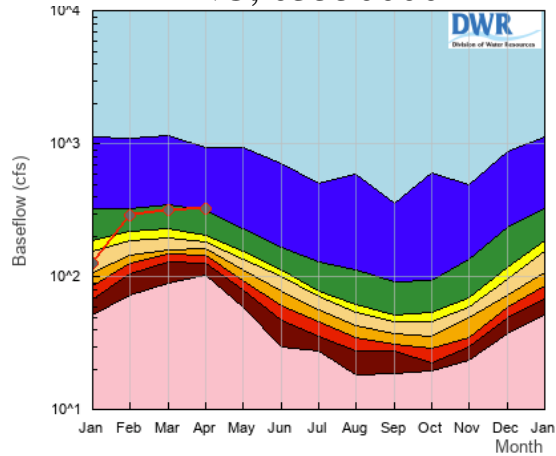
March 2018



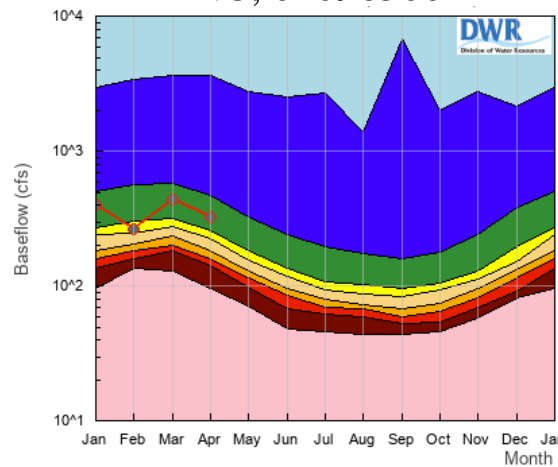
# Comparison Between Baseflow and Well Sites

(18 pairs between 0.4 and 11 miles of each other)

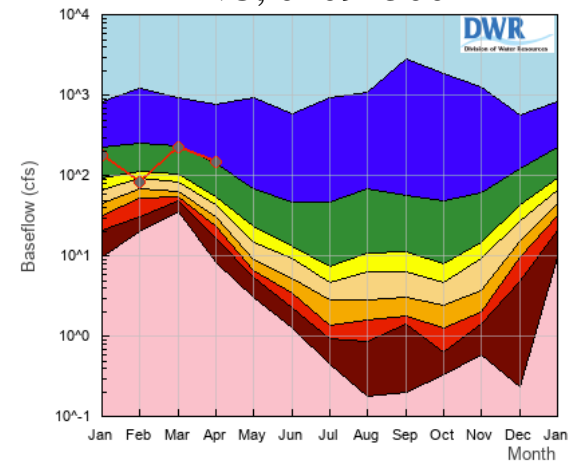
Valley River at Tomotla,  
NC, 03550000



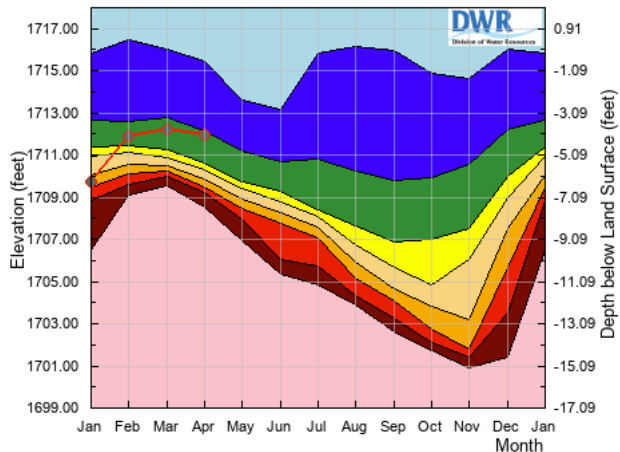
Haw River at Haw River,  
NC, 02096500



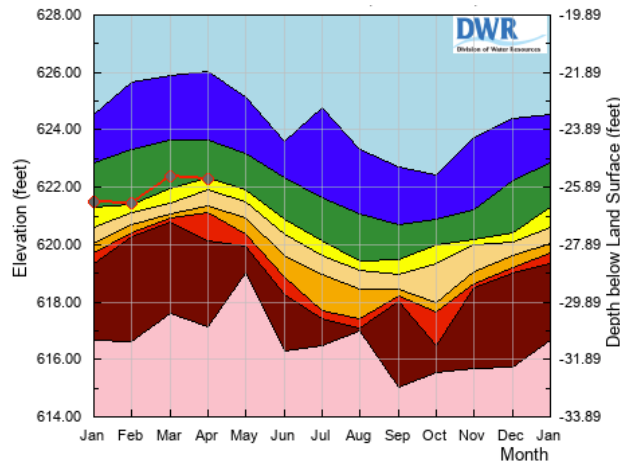
Trent River near Trenton,  
NC, 02092500



5 miles away  
American Thread (NC-192)



10 miles away  
Gibsonville



7 miles away  
Comfort (NC-173)

