



Streamflow conditions across North Carolina

*Assessment of hydrologic
conditions observed through April 2015...*



USGS South Atlantic Water Science Center (Raleigh)
<http://nc.water.usgs.gov>

Online drought pages for USGS in North Carolina
<http://nc.water.usgs.gov/drought/>

U.S. Department of the Interior
U.S. Geological Survey

Presented to:
North Carolina Drought Management Advisory Council
Gov. James G. Martin Building, NC State Fairgrounds, Raleigh, NC
April 30, 2015



South Atlantic W
South Atlantic WSC H

<http://nc.water.usgs.gov/>



DATA CENTER

Real-time data

- ◆ Streamflow
- ◆ Groundwater
- ◆ Water quality
- ◆ Precipitation

Subscribe to hydrologic alerts
USGS WaterAlert

Monthly Conditions Report

WaterWatch

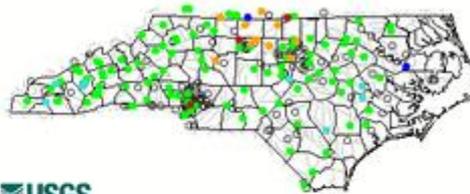
- ◆ Current conditions
- ◆ Flood Watch
- ◆ Drought Watch
- ◆ Water Quality Watch

Water Resources of North Carolina

Current Data

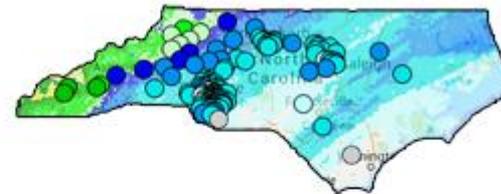
Current Streamflow

Thursday, April 30, 2015 08:30ET



Current Rainfall

1-, 2-, 3-, 6-, 12-, and 24-hour and 2- and 7-day rainfall data



Real-time Tables

Select a Data Table ▼

Current Drought Conditions

Current Flood Conditions

Specialty Network Maps

Groundwater Networks

Select a Groundwater Network ▼

Water-Quality Networks

Select a Water-Quality Network ▼

USGS WaterAlert

USGS WaterNow

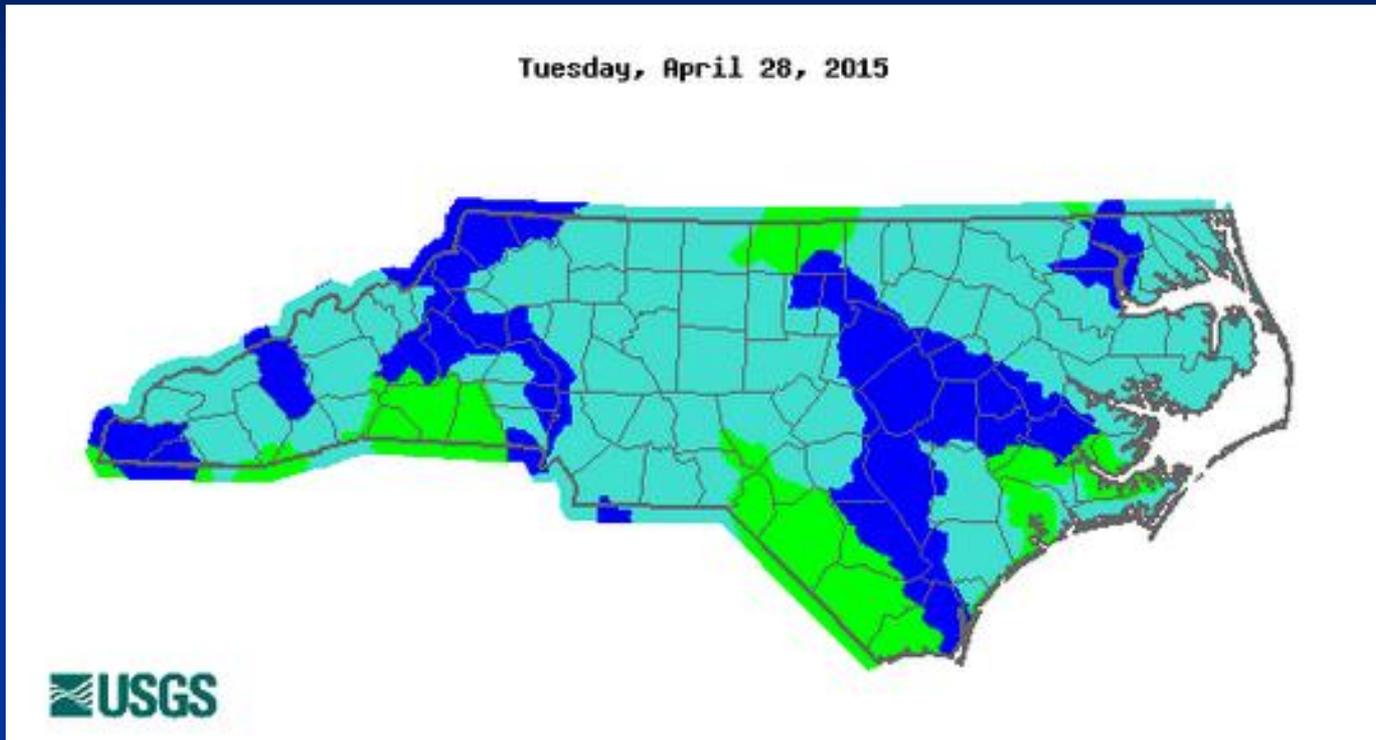
New method for accessing approved and published hydrologic records for water year

- Annual data report no longer published
- Continuous processing for records
- Access to records via the options available at the real-time page
- Example – Flat River at Bahama
http://waterdata.usgs.gov/nc/nwis/wys_rpt/?site_no=02085500&agency_cd=USGS

Water year 2014 continuous records approved and published for:

- Surface water:
 - 221 discharge sites
 - 40 stage-only sites
- Groundwater: 47 wells
- Water quality monitor: 8 sites
- Water temperature: 10 sites
- Precipitation: 138 sites

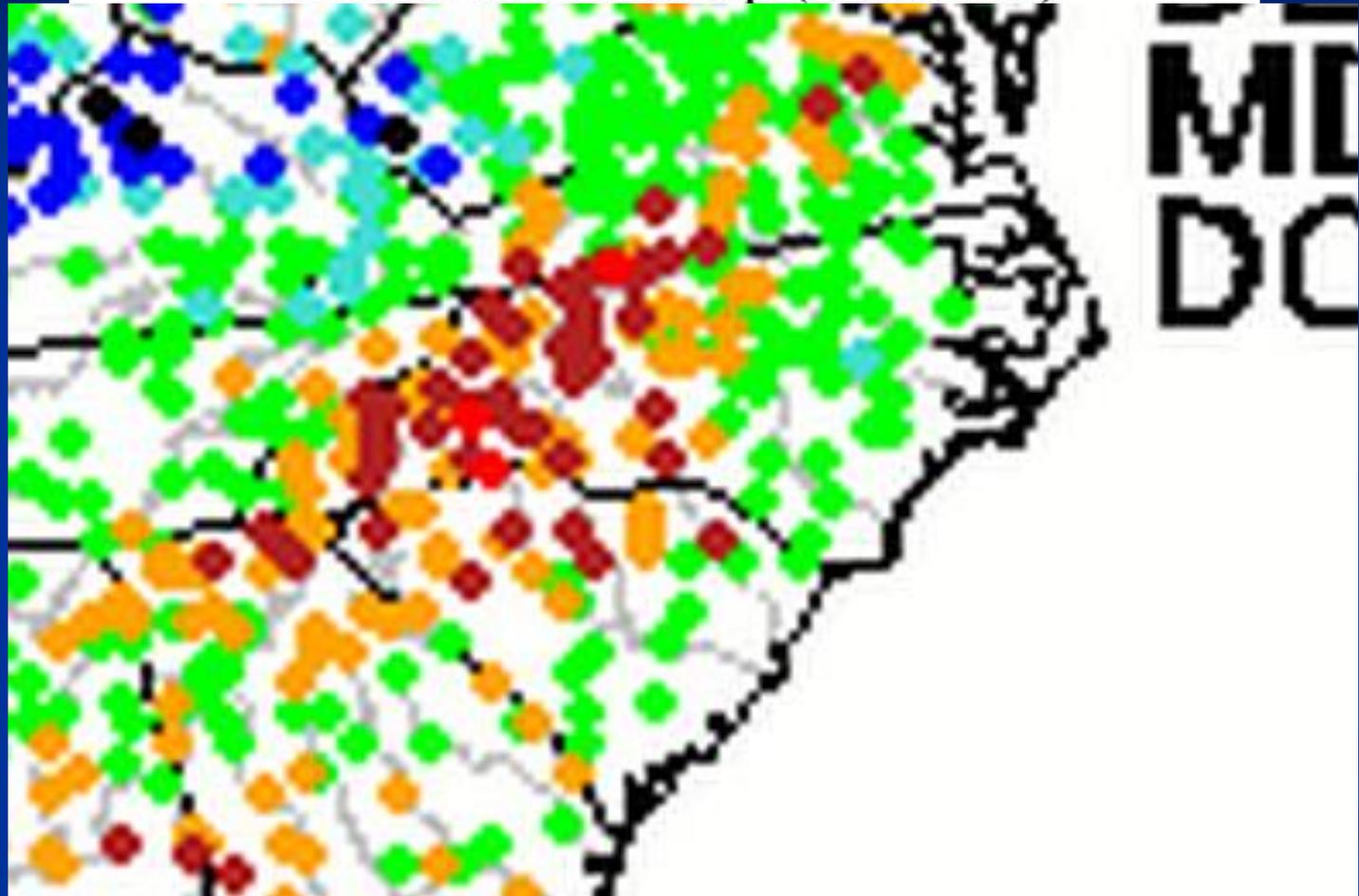
Overall 7-day average flows as of April 28



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

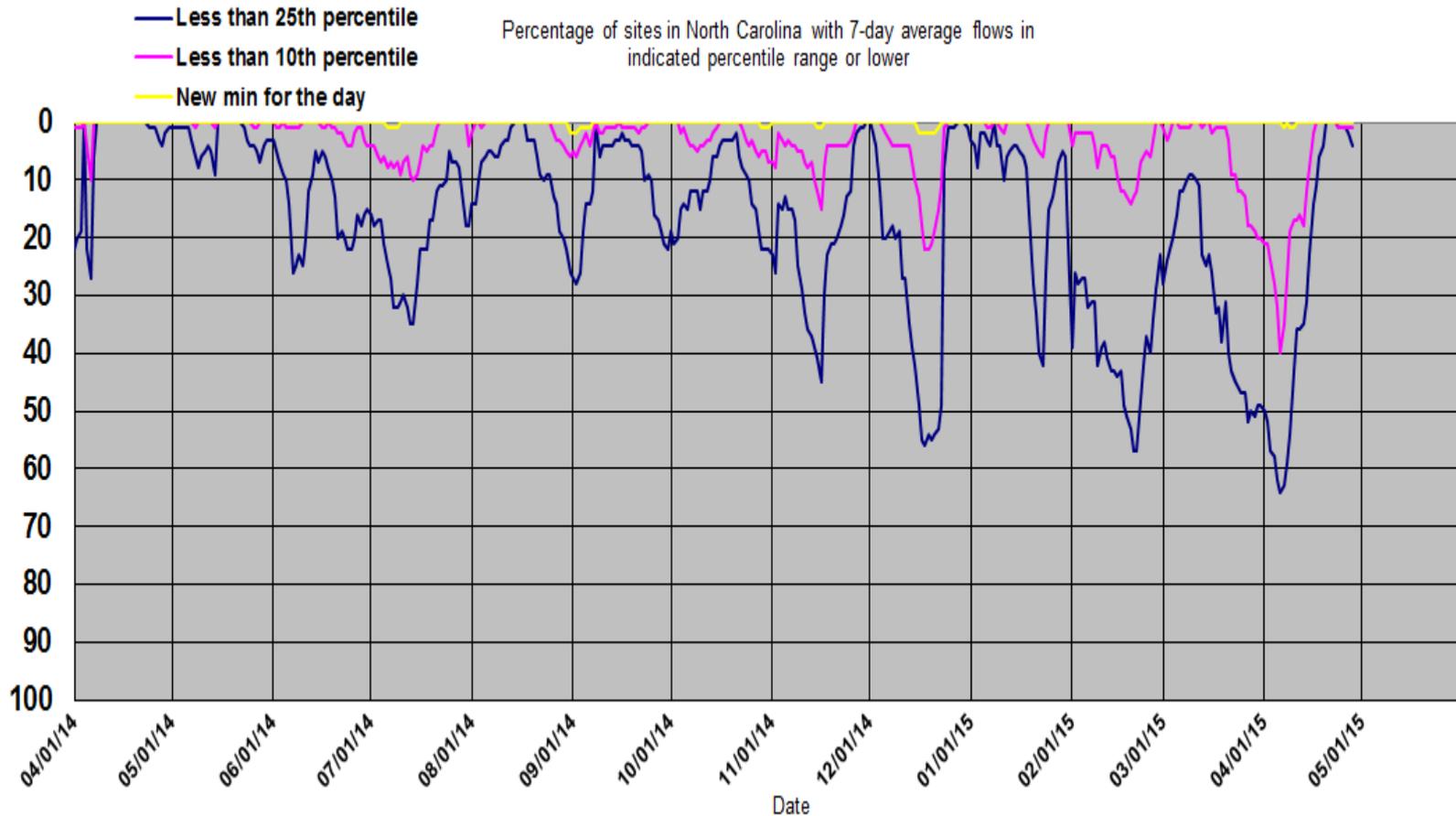
“But hey, just a few short weeks ago...”

Archive of streamflow maps (United States)

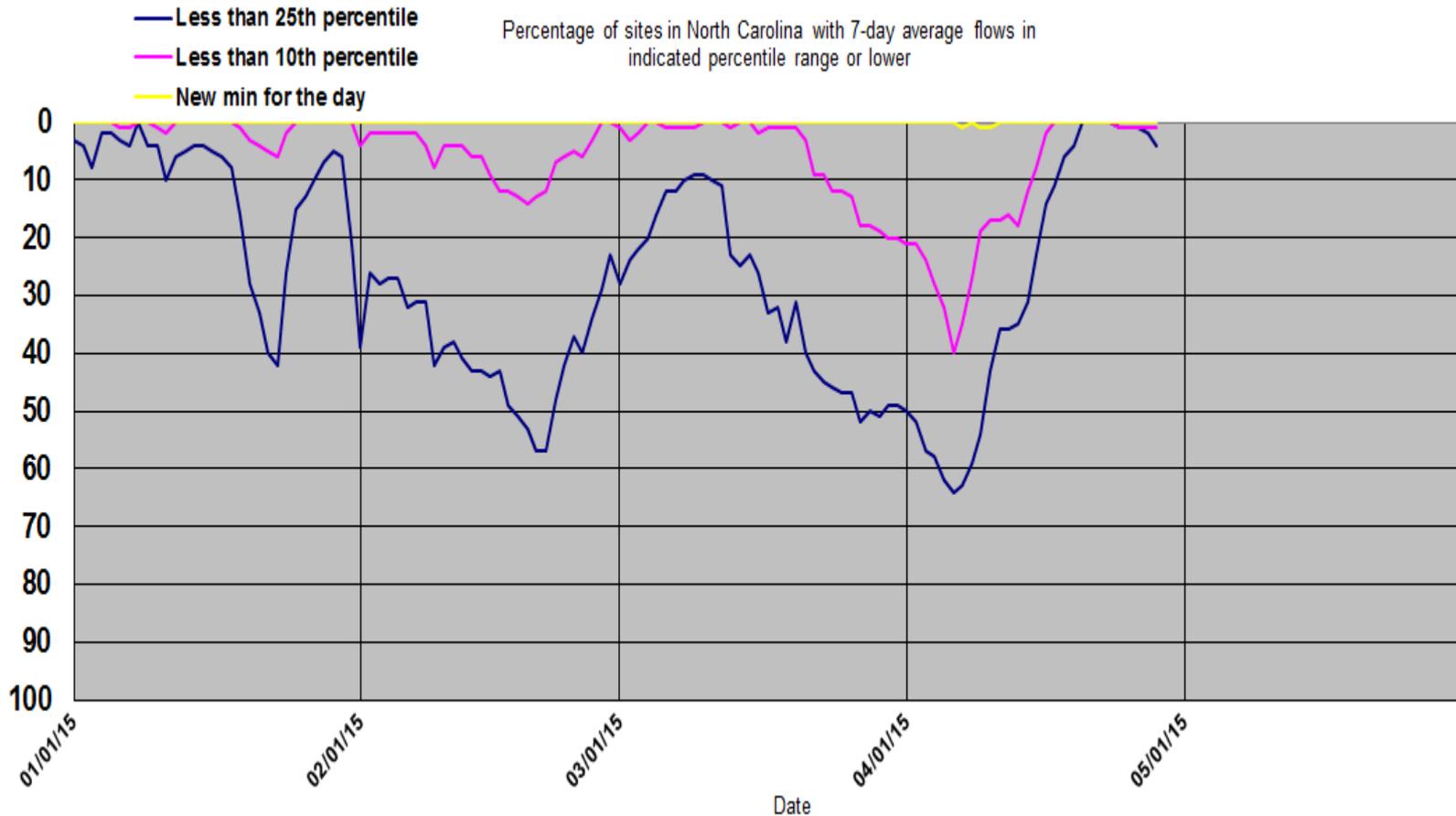


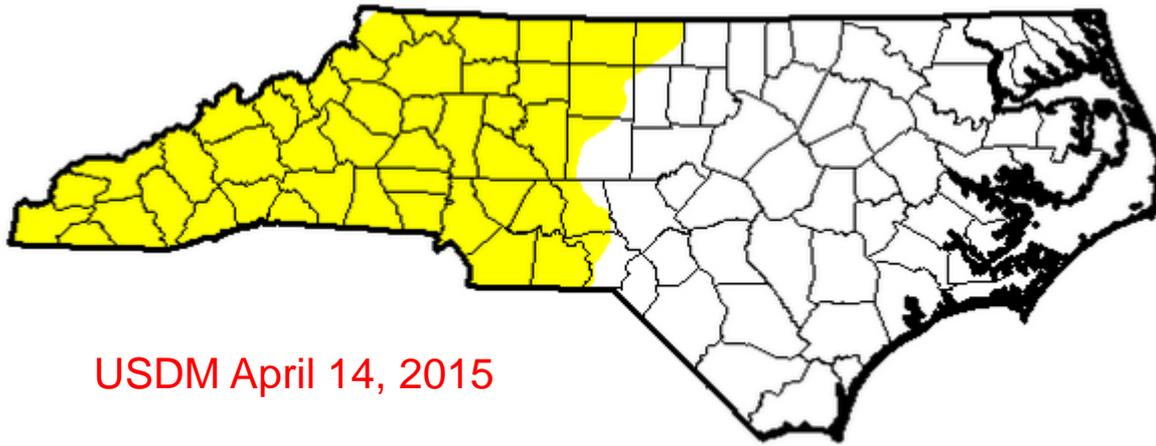
Low	<10	10-24	25-75	76-90	>90	High	
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Percentage of sites with 7-day average flows below normal (< 25th percentile)



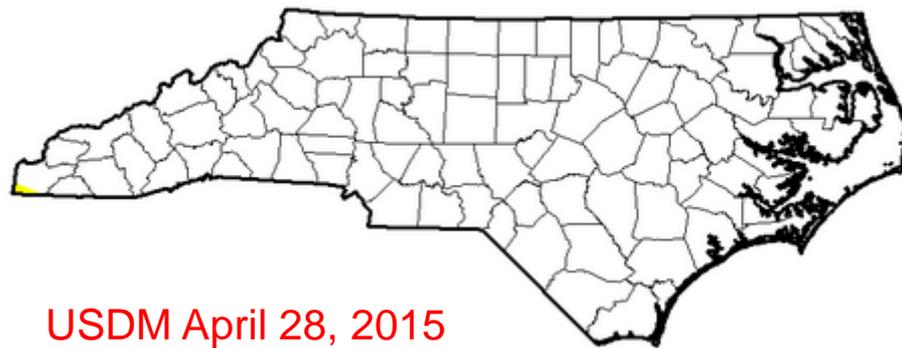
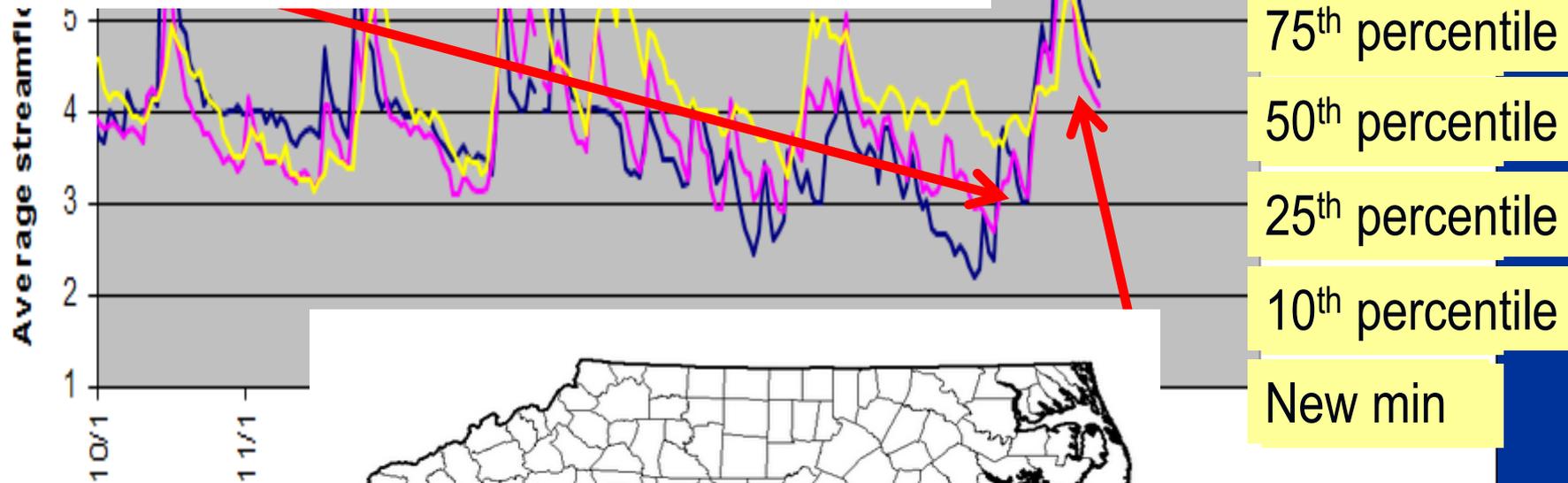
Percentage of sites with 7-day average flows below normal (< 25th percentile)





USDM April 14, 2015

Province)



USDM April 28, 2015

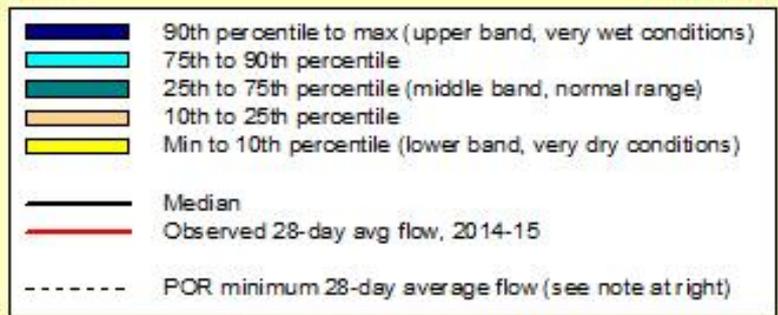
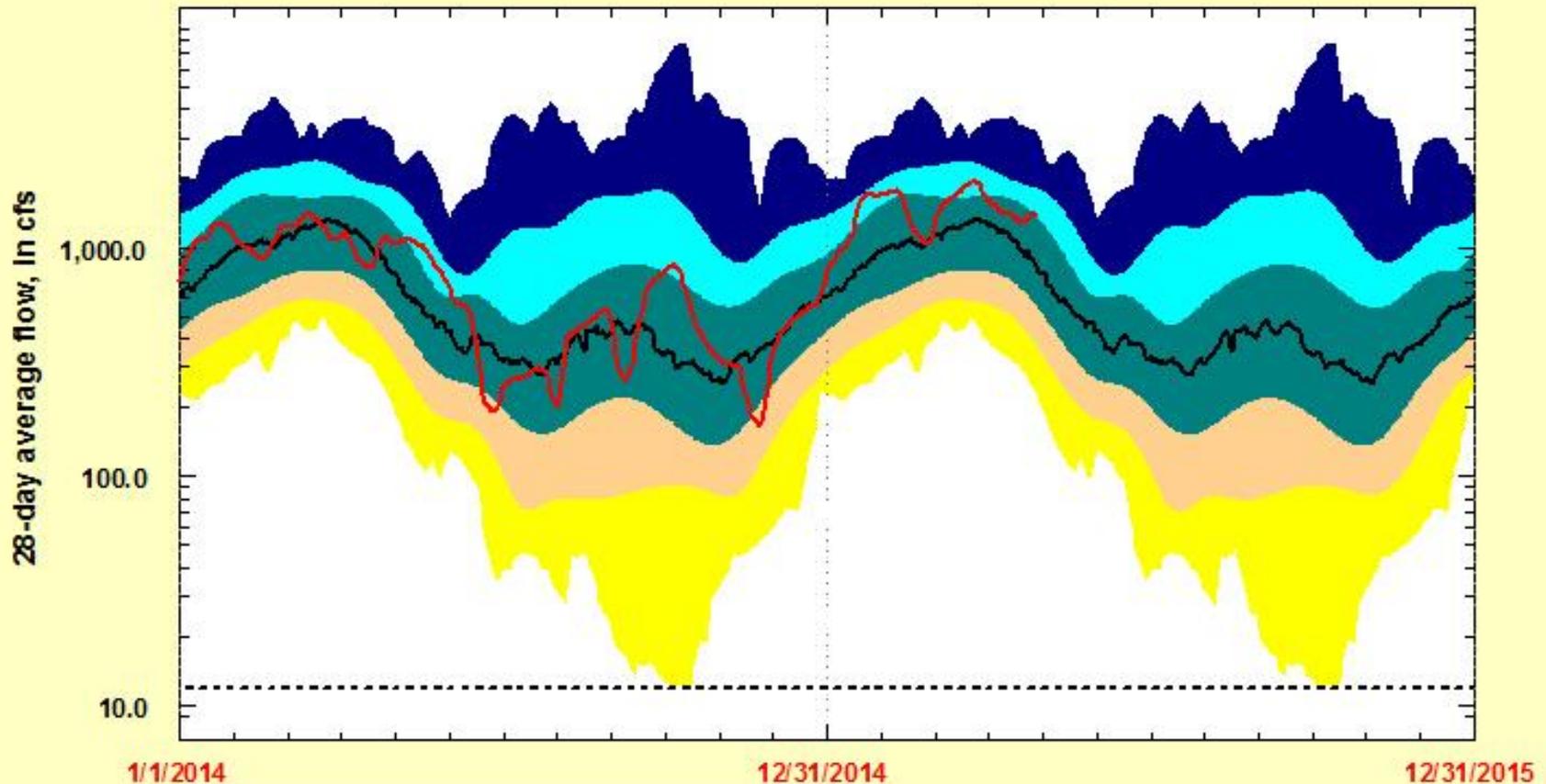
- New max
- 90th percentile
- 75th percentile
- 50th percentile
- 25th percentile
- 10th percentile
- New min

Coastal Plain

Sta. 02106500, BLACK RIVER NEAR TOMAHAWK, NC (Sampson County), DA = 676 sqmi

Period of record (POR): 0/0/ through 0/0/

Approx. 64 total years record available to date (Site info from <http://waterdata.usgs.gov/nwis/inventory>)



POR minimum 28-day average flow:
11.92 cfs, ending on 10/15/1954

Observed data through 04/28/2015
Statistics based on 10/01/1951 through 09/30/2014

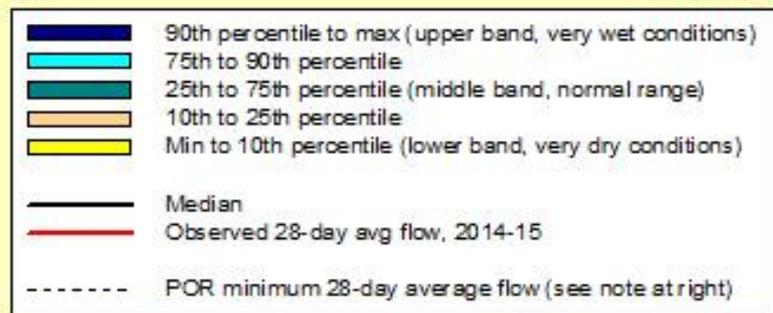
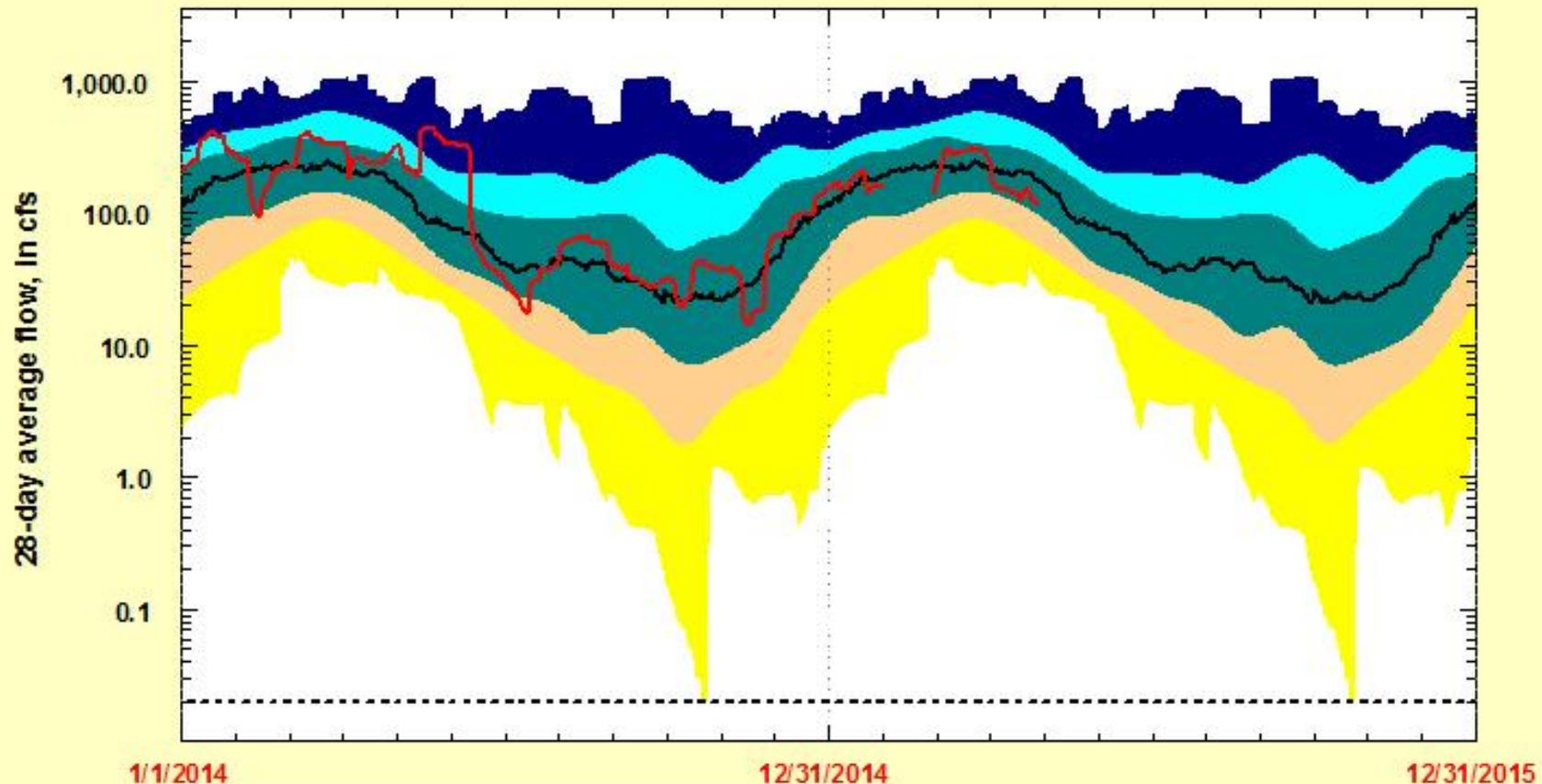
Note: Data and statistics since 09/30/2014 considered provisional and subject to revision.
Plot created: Apr. 29, 2015 4:42:17 PM



Sta. 02085500, FLAT RIVER AT BAHAMA, NC (Durham County), DA = 149 sqmi

Period of record (POR): 0/0/ through 0/0/

Approx. 90 total years record available to date (Site info from <http://waterdata.usgs.gov/nwis/inventory>)



POR minimum 28-day average flow:
0.02 cfs, ending on 10/24/2007

Observed data through 04/28/2015
Statistics based on 08/01/1925 through 09/30/2014

Note: Data and statistics since 09/30/2014
considered provisional and subject to revision.

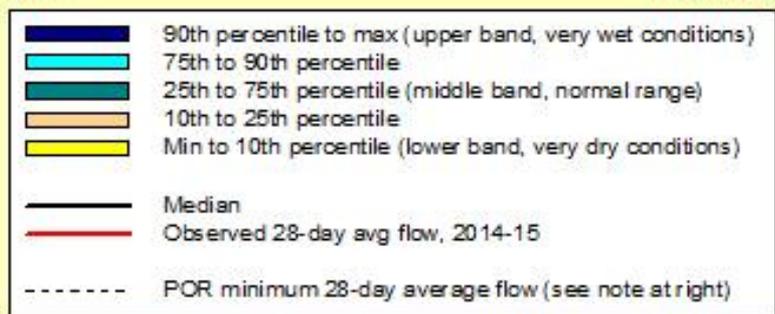
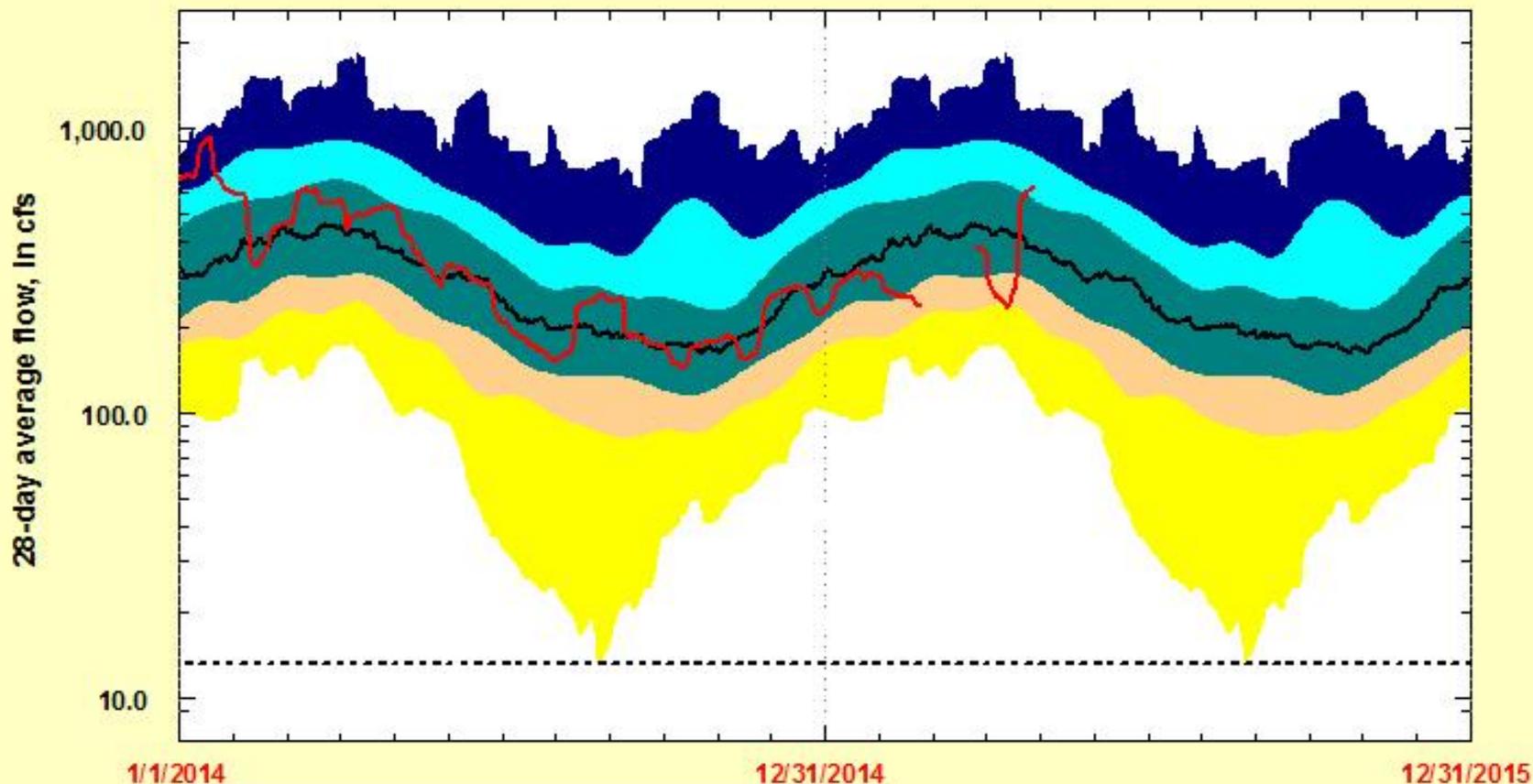
Plot created: Apr. 29, 2015 4:29:36 PM



Sta. 02118000, SOUTH YADKIN RIVER NEAR MOCKSVILLE, NC (Rowan County), DA = 306 sqmi

Period of record (POR): 0/0/ through 0/0/

Approx. 77 total years record available to date (Site info from <http://waterdata.usgs.gov/nwis/inventory>)



POR minimum 28-day average flow:
13.24 cfs, ending on 08/26/2002

Observed data through 04/28/2015
Statistics based on 10/01/1938 through 09/30/2014

Note: Data and statistics since 09/30/2014
considered provisional and subject to revision.

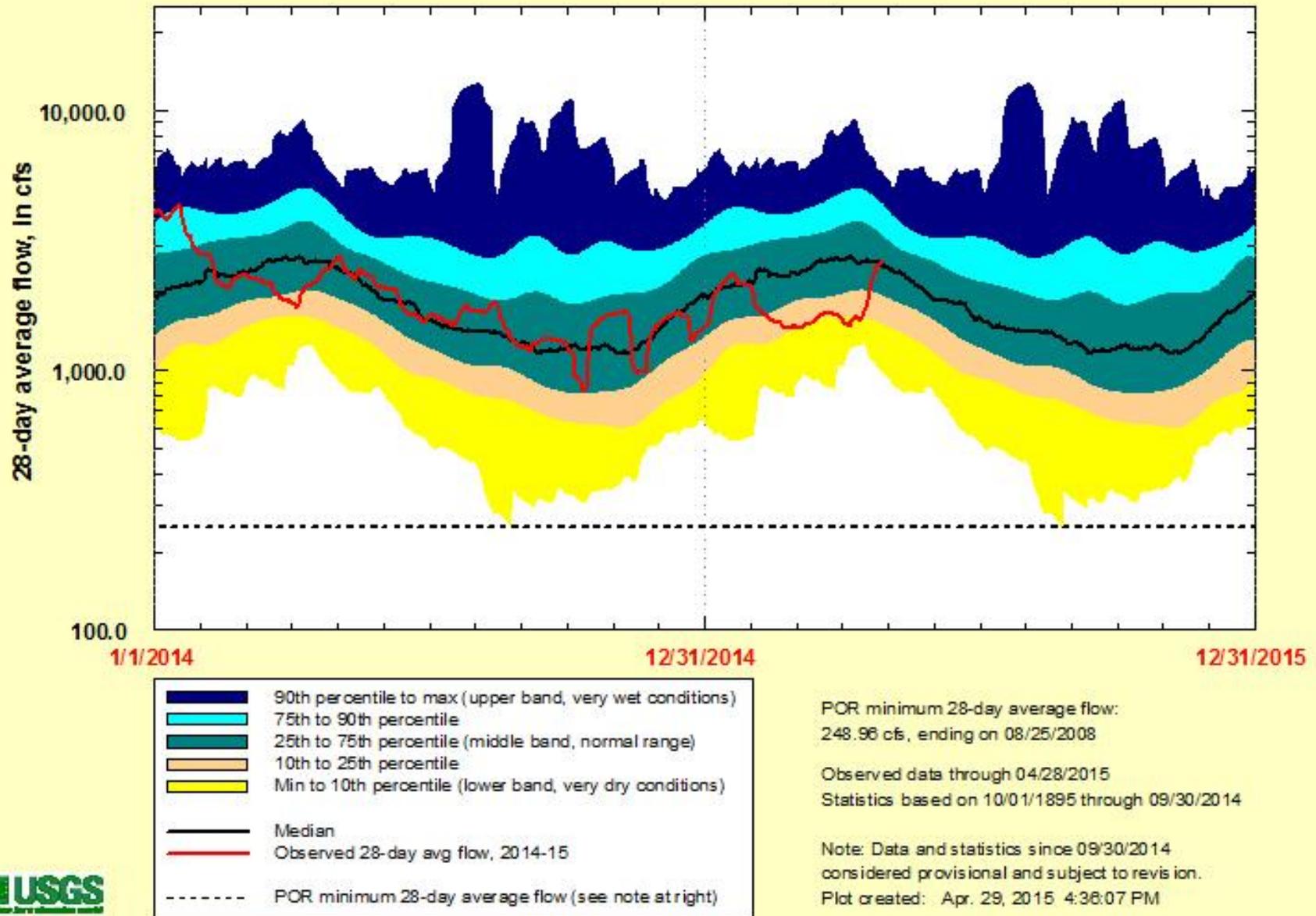
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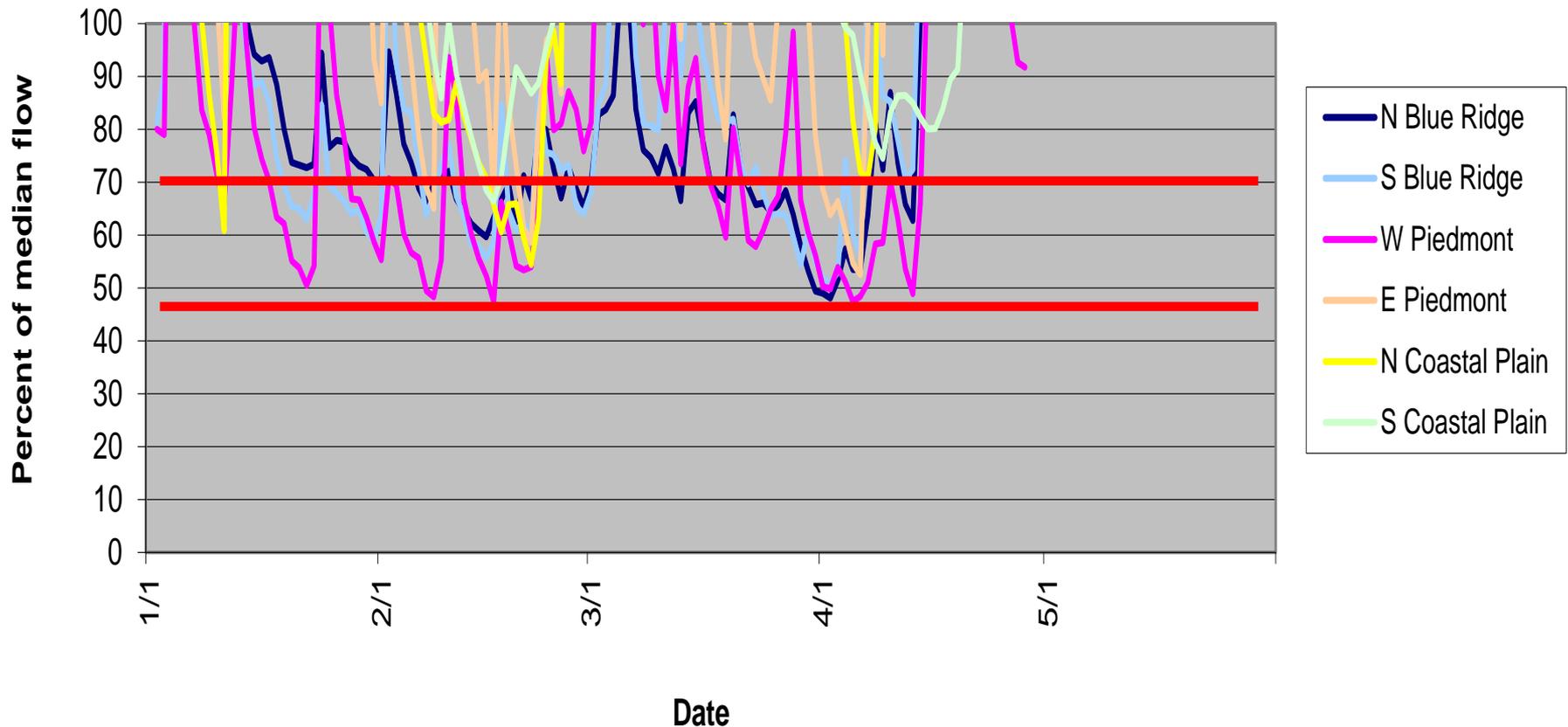
Sta. 03451500, FRENCH BROAD RIVER AT ASHEVILLE, NC (Buncombe County), DA = 945 sqmi

Period of record (POR): 0/0/ through 0/0/

Approx. 120 total years record available to date (Site info from <http://waterdata.usgs.gov/nwis/inventory>)



“infamous spaghetti plot...” Percent of median (by region)



Typical ranges in **percentage of median flow** since **March 1**...(by region)

N Blue Ridge
50 to 100 %

E Piedmont
50 to 230 %

N Coastal Plain
70 to 310 %

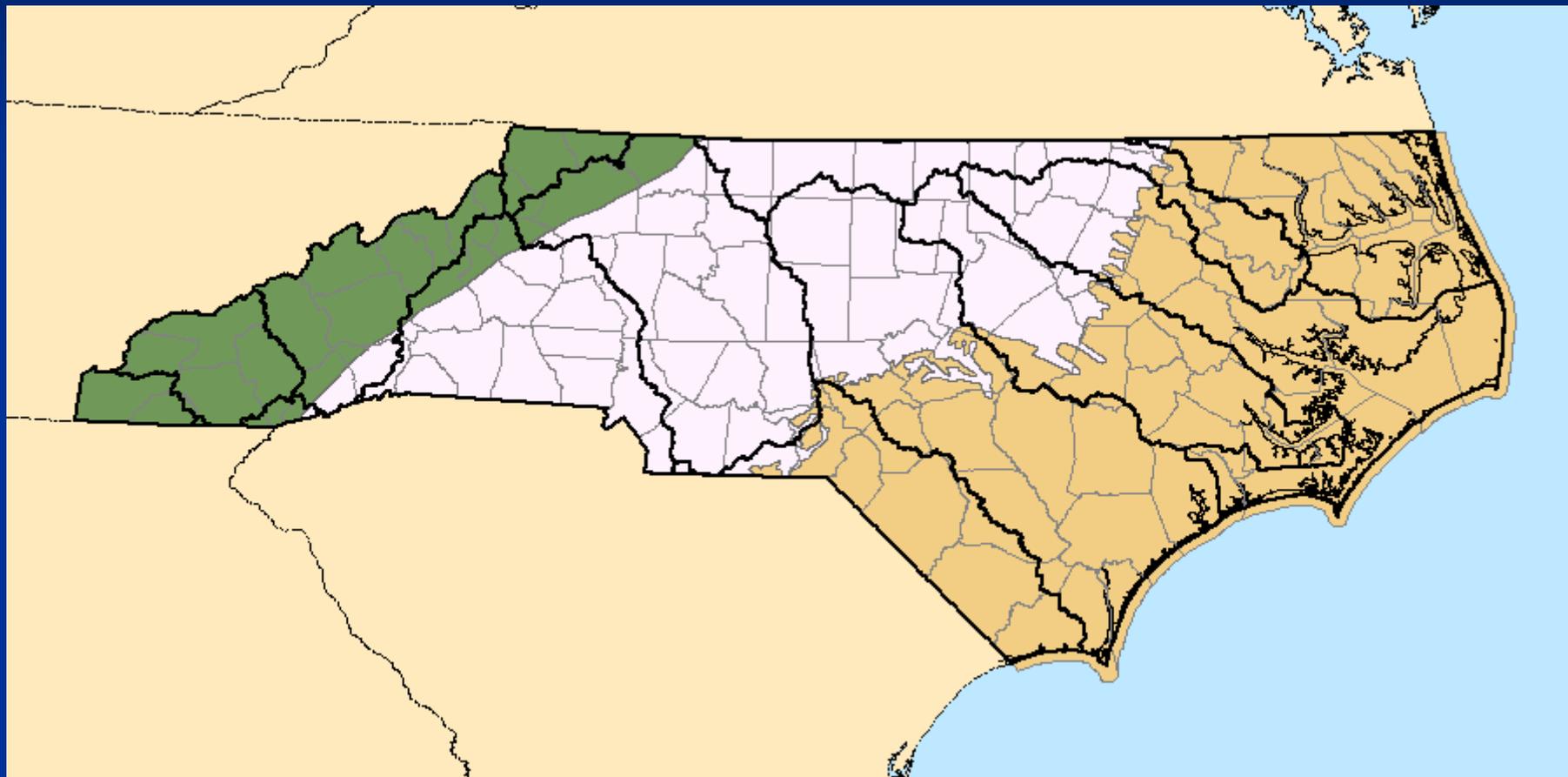
W Piedmont
50 to 115 %

S Blue Ridge
50 to 120 %

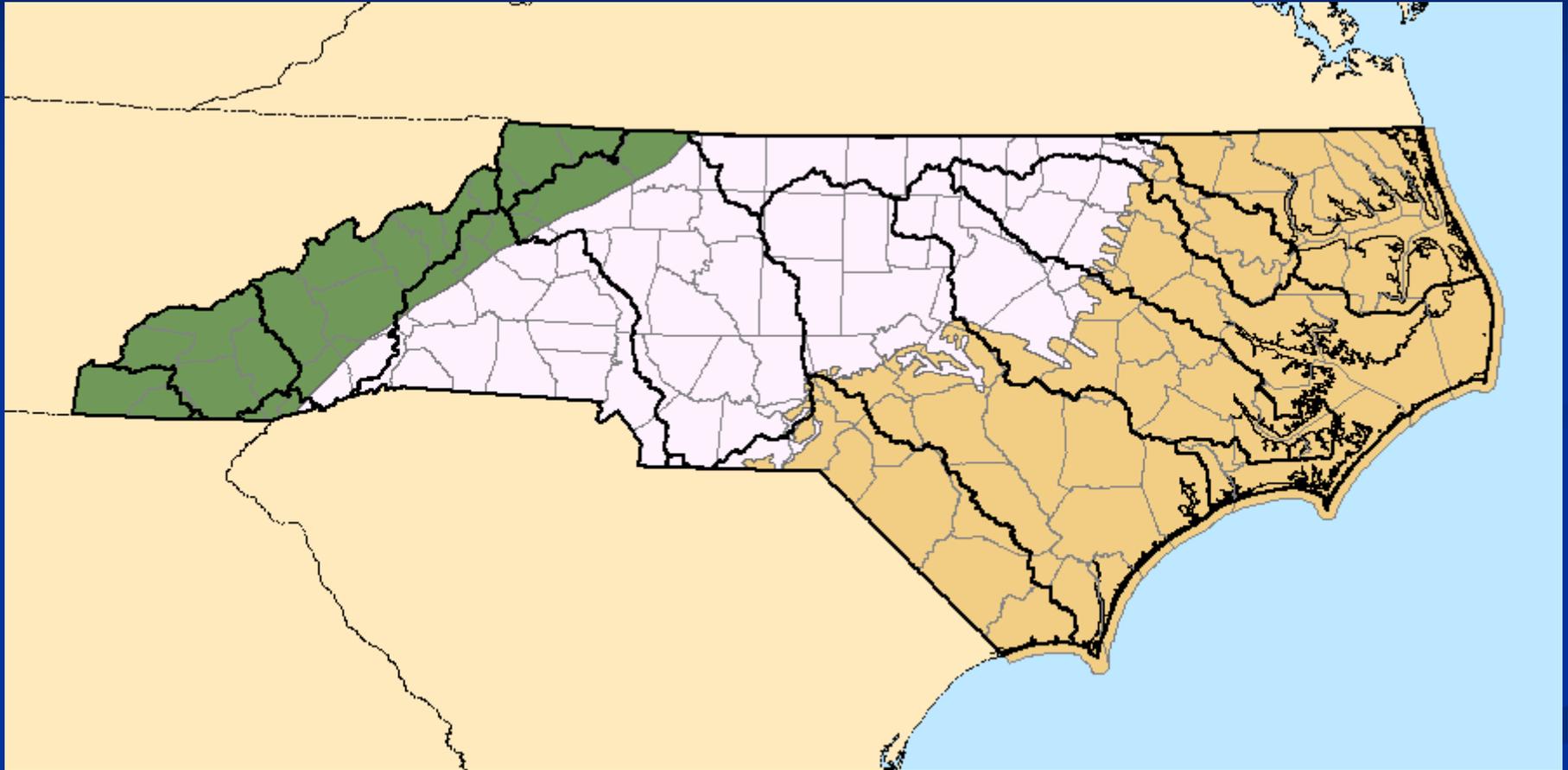
S Coastal Plain
75 to 135 %

...as of April 28

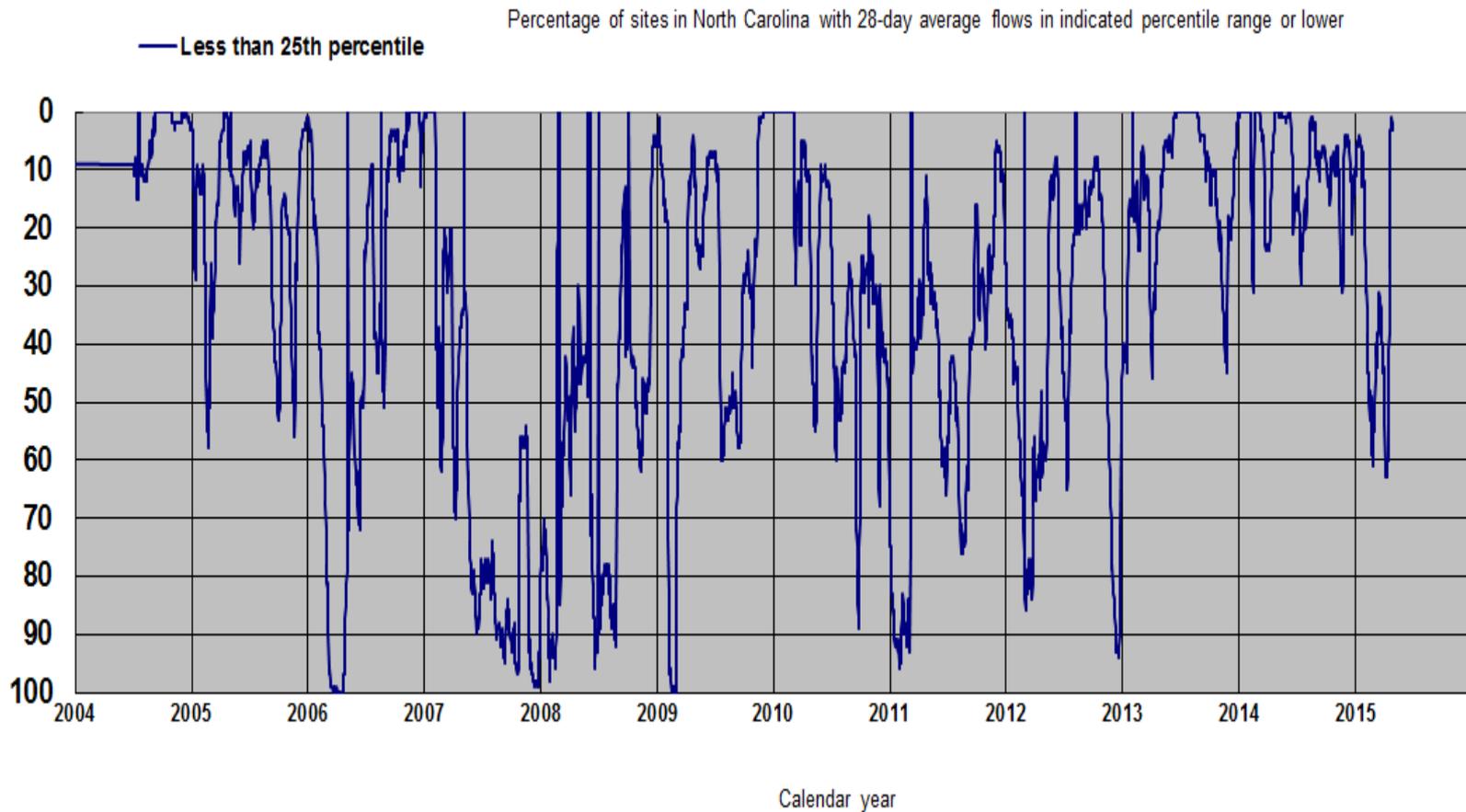
New record monthly minimum average during 2015 water year



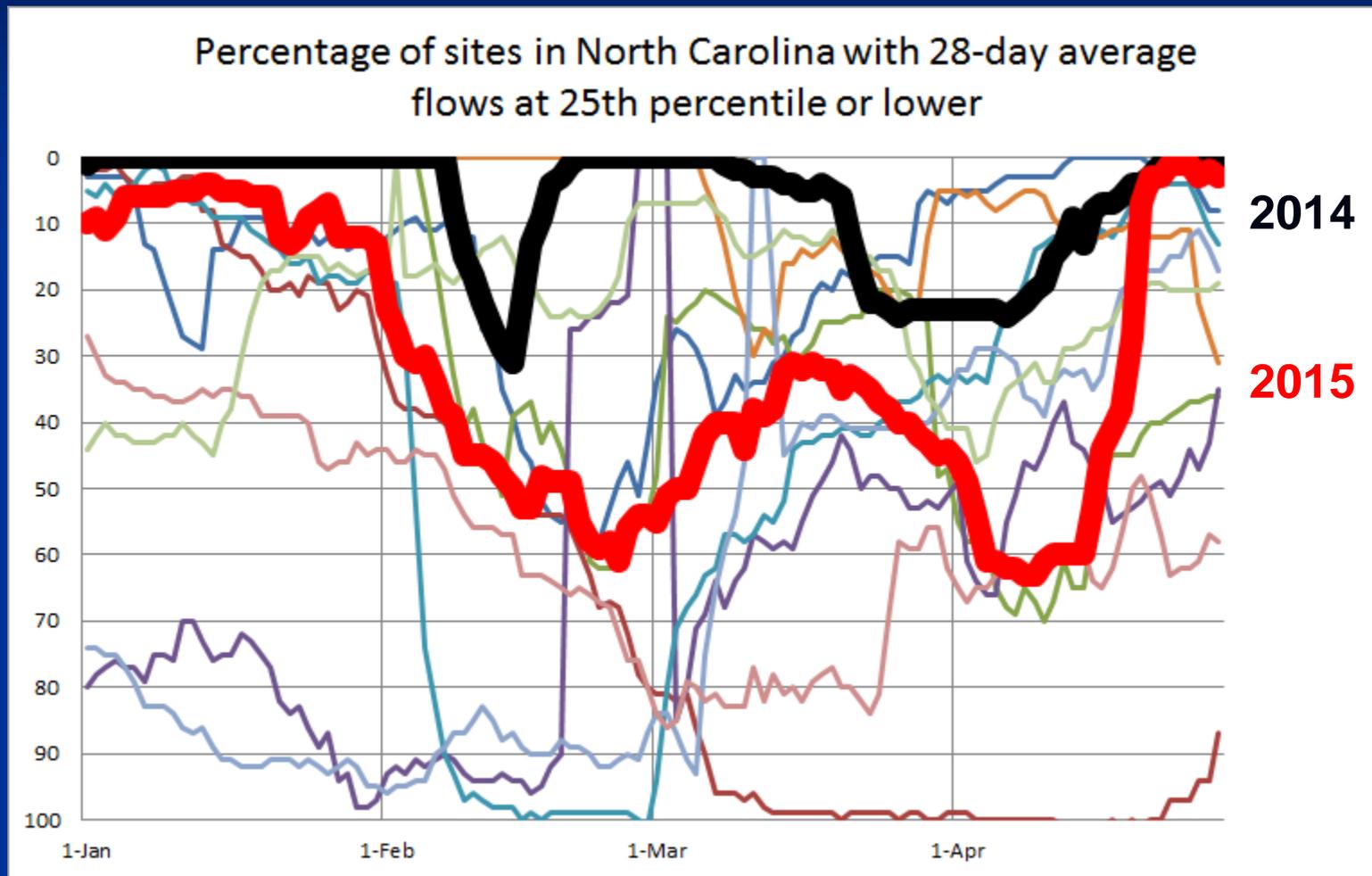
New period of record minimum daily mean discharge during 2015 water year



Below-normal 28-day average flows *July 2004 to current*



Below-normal 28-day average flows *January through April 08 for years 2005 to 2015*



“Take home” message...

- No sites with record minimum monthly average flows for water year 2015 to date
- No POR minimum daily discharges to date for 2015 water year to date
- As of early 2015, 28-day average flows have fallen in the mid range of observed 28-day flows for late winter/early spring during 2005-2014
- Continue to monitor conditions in western and central Piedmont as well as the Blue Ridge

In closing...

- Questions
- Concerns

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Flat River at Bahama
Durham County