



Streamflow conditions across North Carolina

*Assessment of hydrologic
conditions observed through latter April 2012...*



C

USGS North Carolina Water Science

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

Online drought pages for USGS North Carolina WSC

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

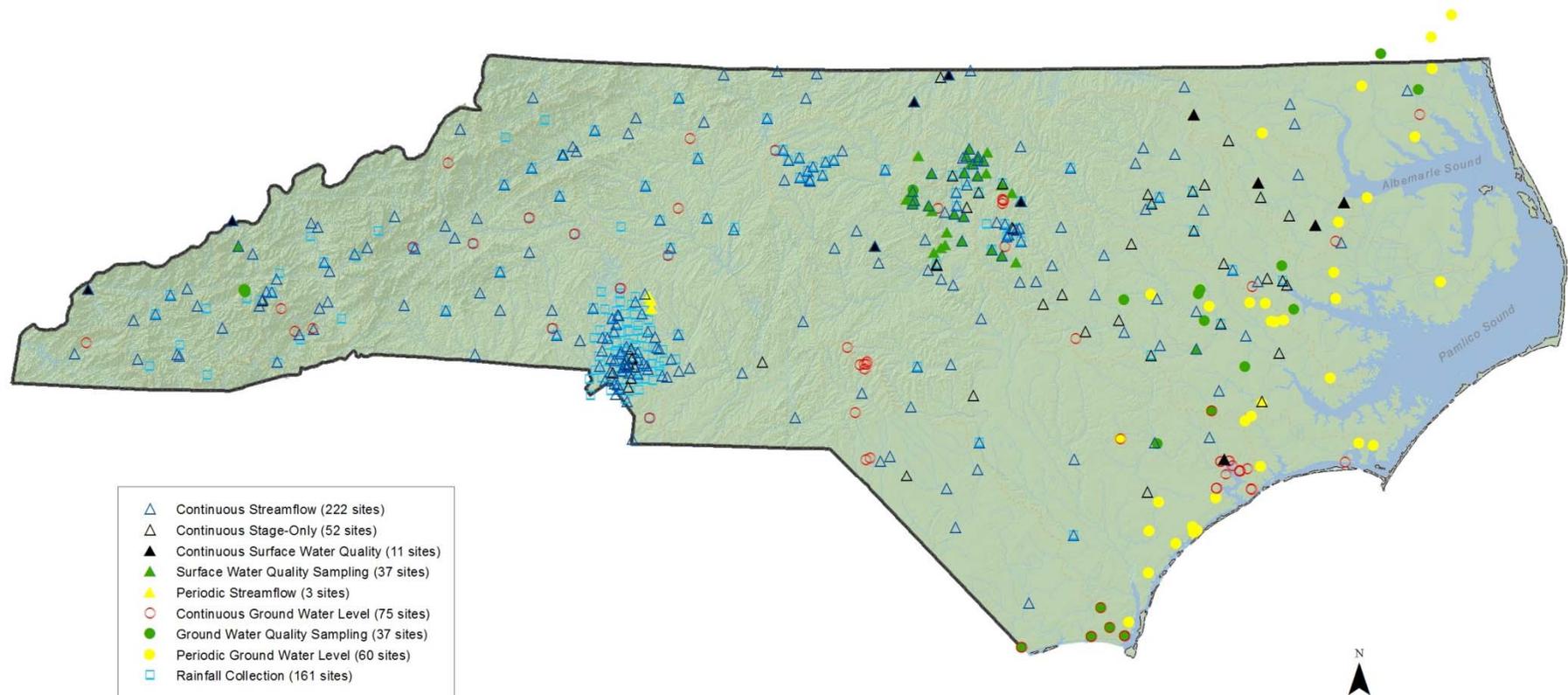
U.S. Department of the Interior
U.S. Geological Survey

*Presented to:
North Carolina Drought Management Advisory Council
Gov. James G. Martin Building, NC State Fairgrounds, Raleigh, NC
April 26, 2012*

USGS WY 2011 inventory map for NC

North Carolina - Water Year 2011

Annual Water Data Report Site Inventory Map



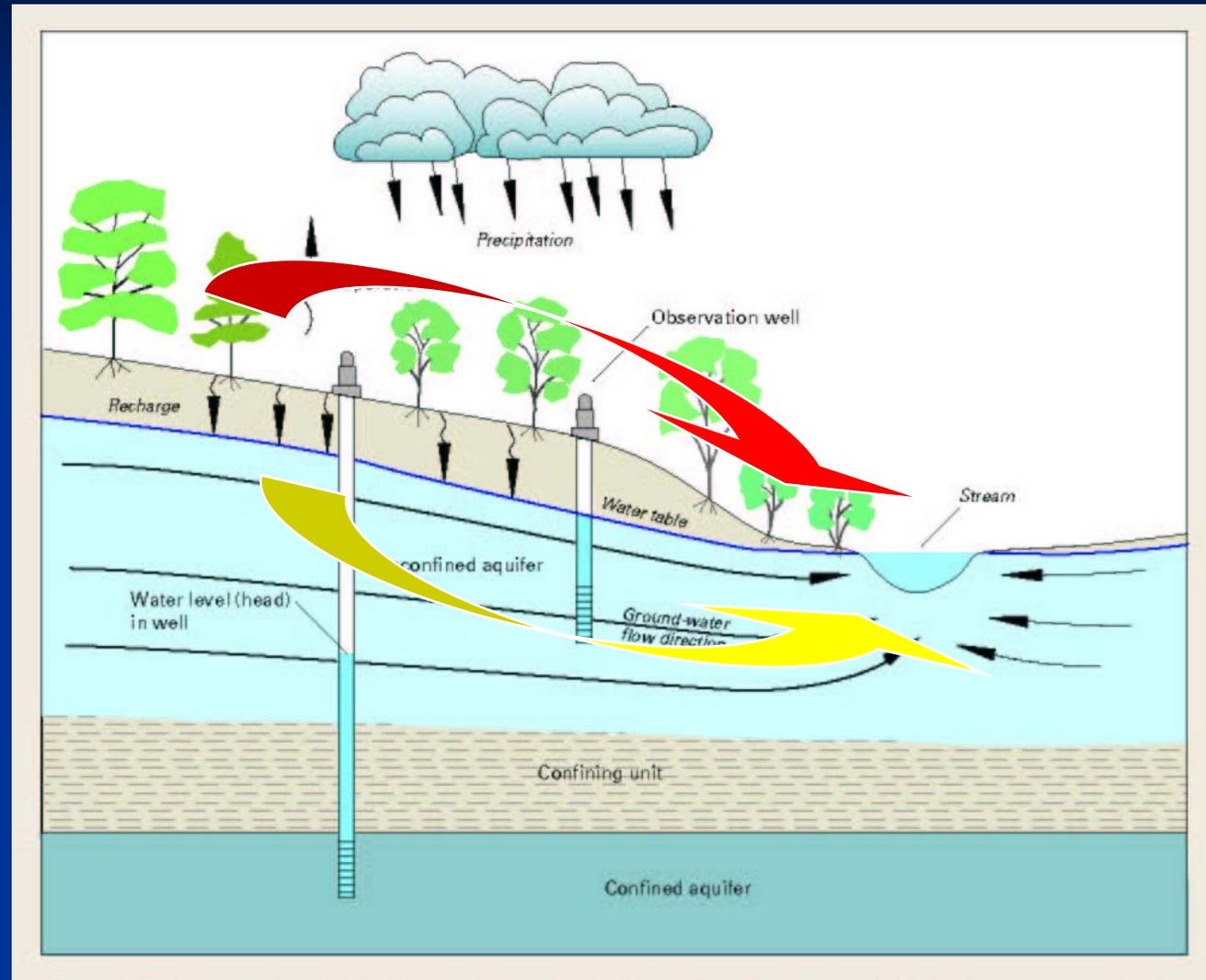
2011WY data available at URL:

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

Visualizing the components in streamflow

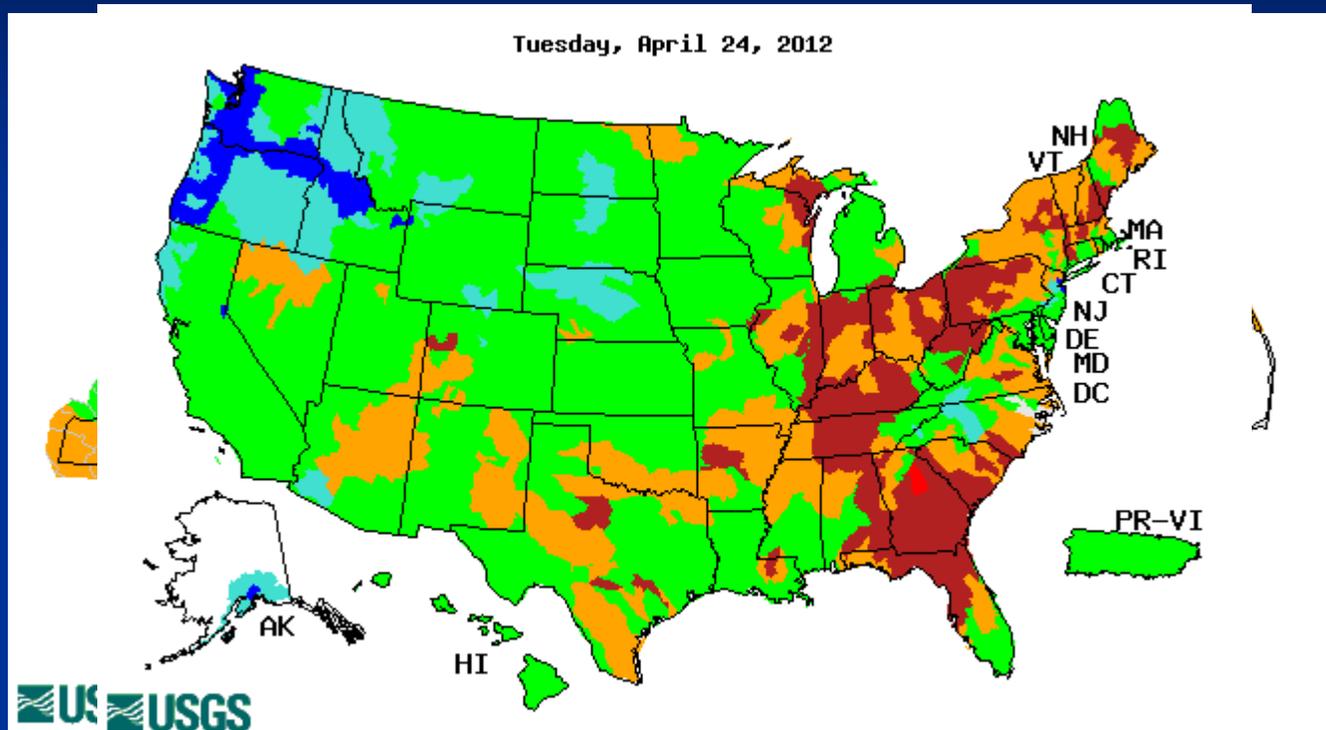
Overland
runoff

Base flow
(ground-
water
discharge
to
streams)



From:
Ground-water-level Monitoring and the Importance of Long-Term Water-Level Data
USGS Circular 1217 by Taylor and Alley, 2002 (Figure A-2, page 4)

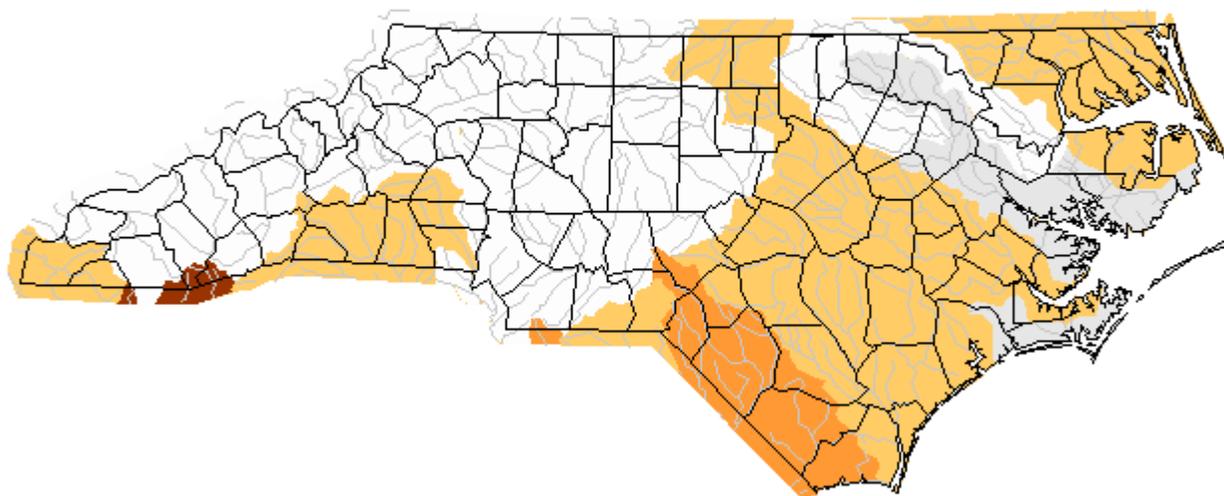
Overall 7-day average flows *as of April 24*



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

Below-normal 7-day average flows *as of April 24*

Tuesday, April 24, 2012



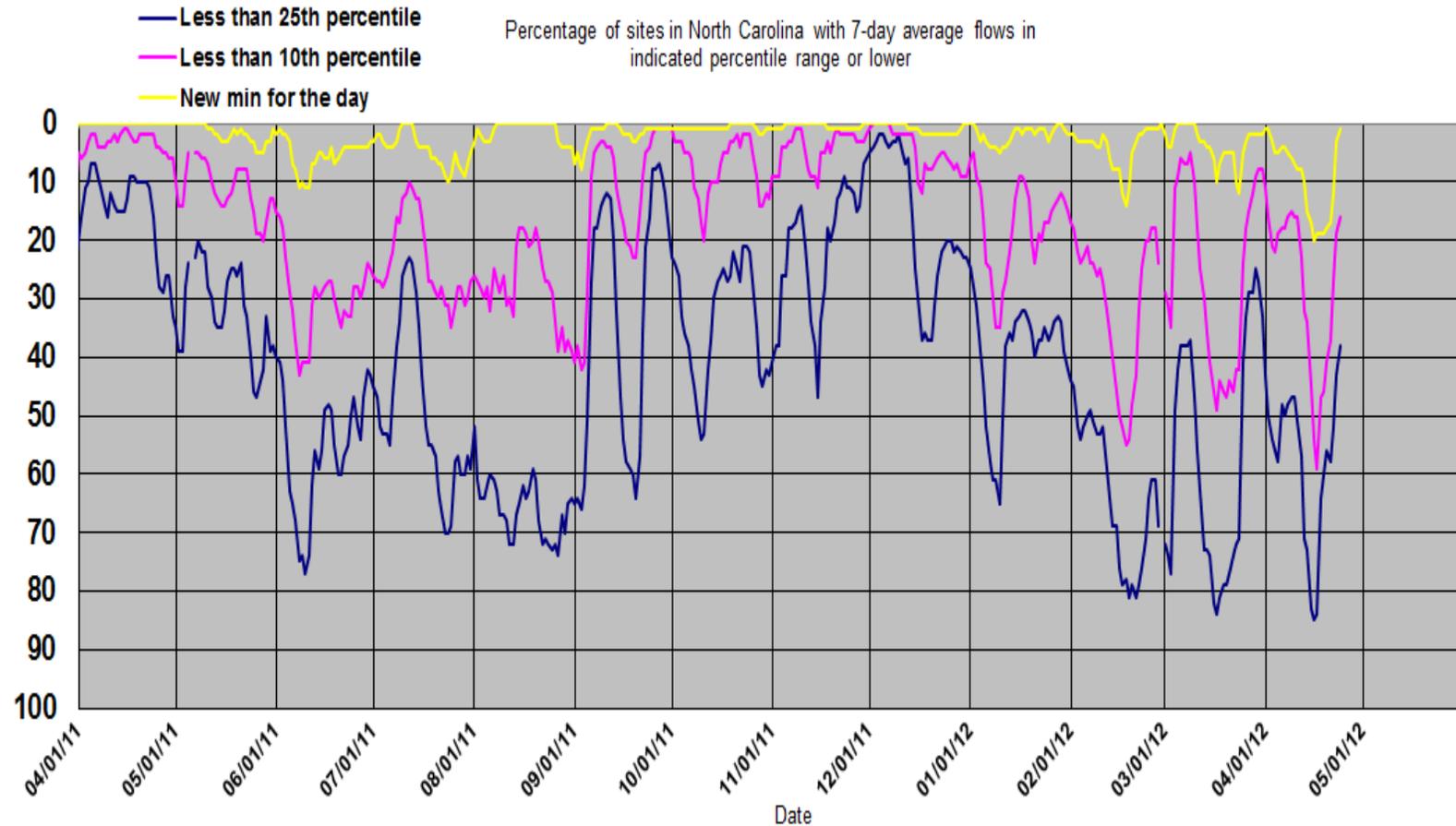
USGS

Explanation - Percentile classes				
Low	≤ 5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

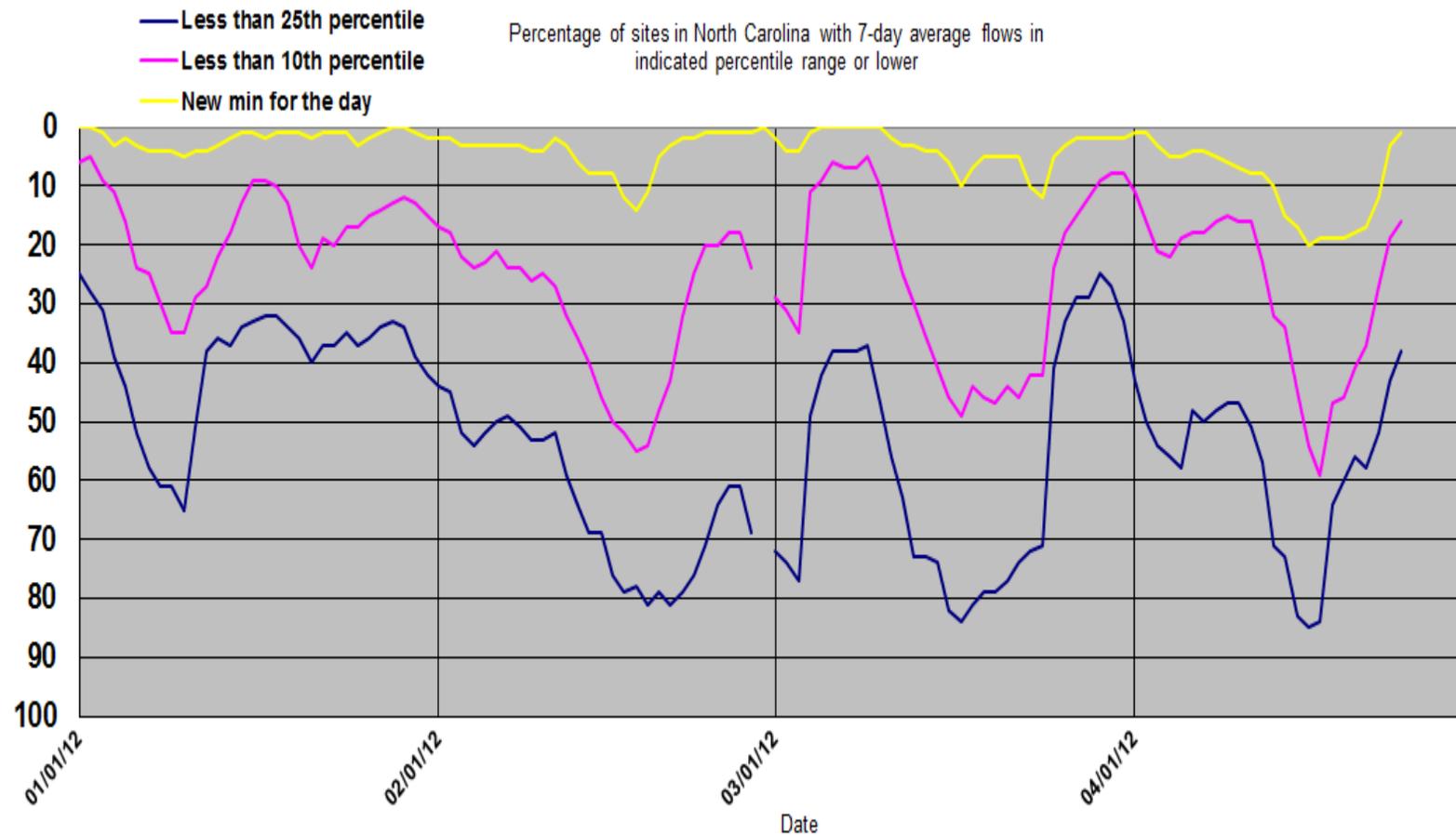
USGS

Available at URL <http://waterwater.usgs.gov/>

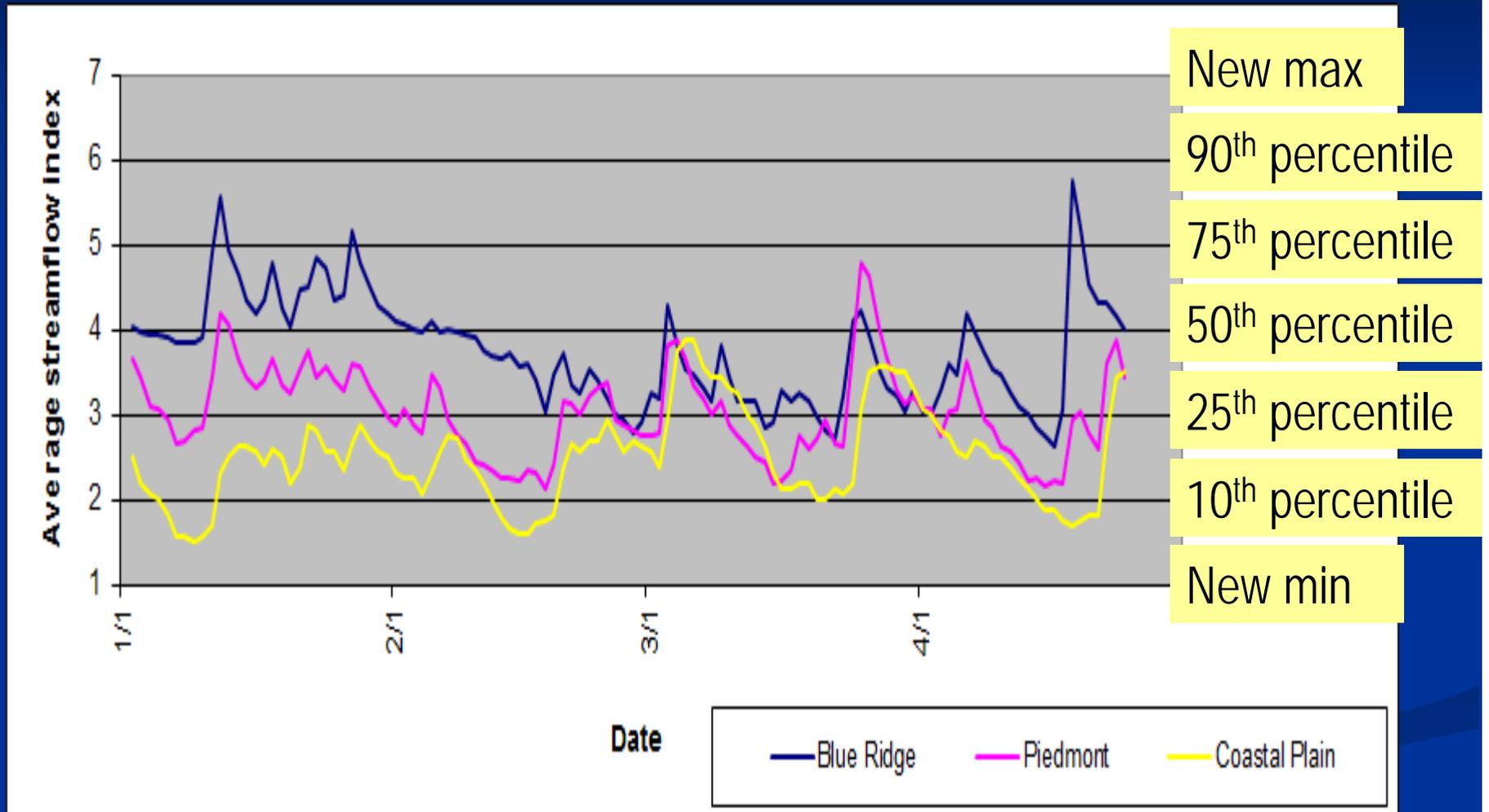
Percentage of sites with 7-day average flows below normal (< 25th percentile)



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



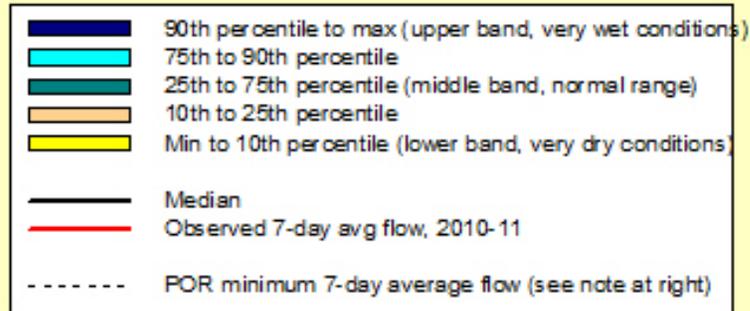
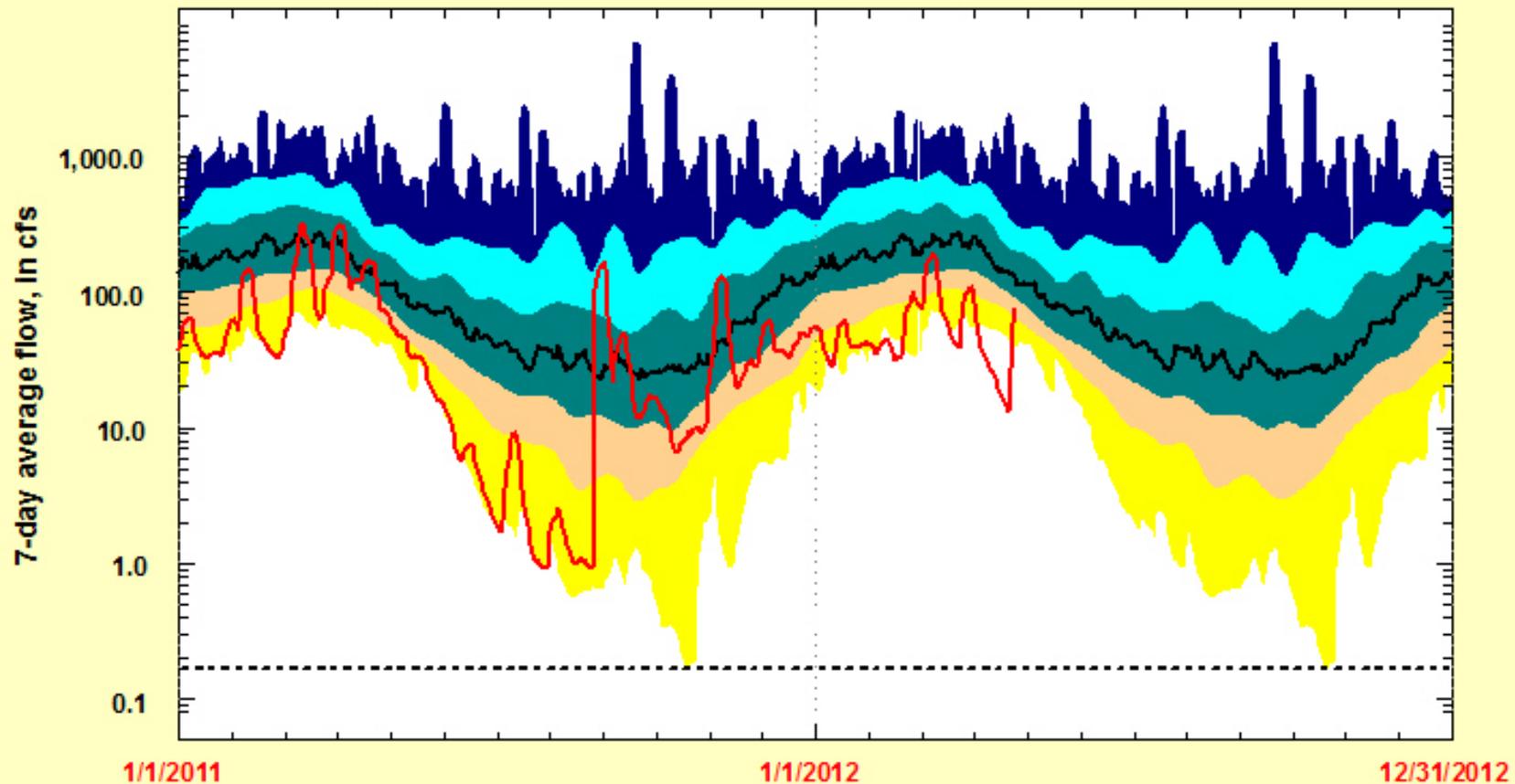
Average streamflow index (by Province)



Sta. 02082950, Little Fishing Creek near White Oak (Halifax County), DA = 177 sqmi

Period of record (POR): October 1959 to current

Approx. 53 total years record available to date, flow conditions at this site known or considered to be unregulated



POR minimum 7-day average flow:
0.17 cfs, ending on 10/21/2007

Observed data through 04/24/2012
Statistics based on 10/01/1959 through 09/30/2011

Note: Data and statistics since 09/30/2011
considered provisional and subject to revision.

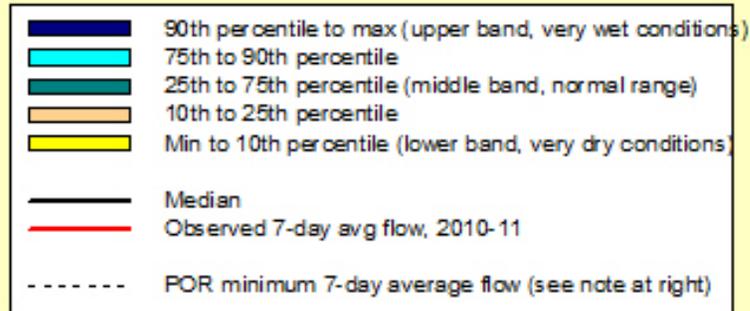
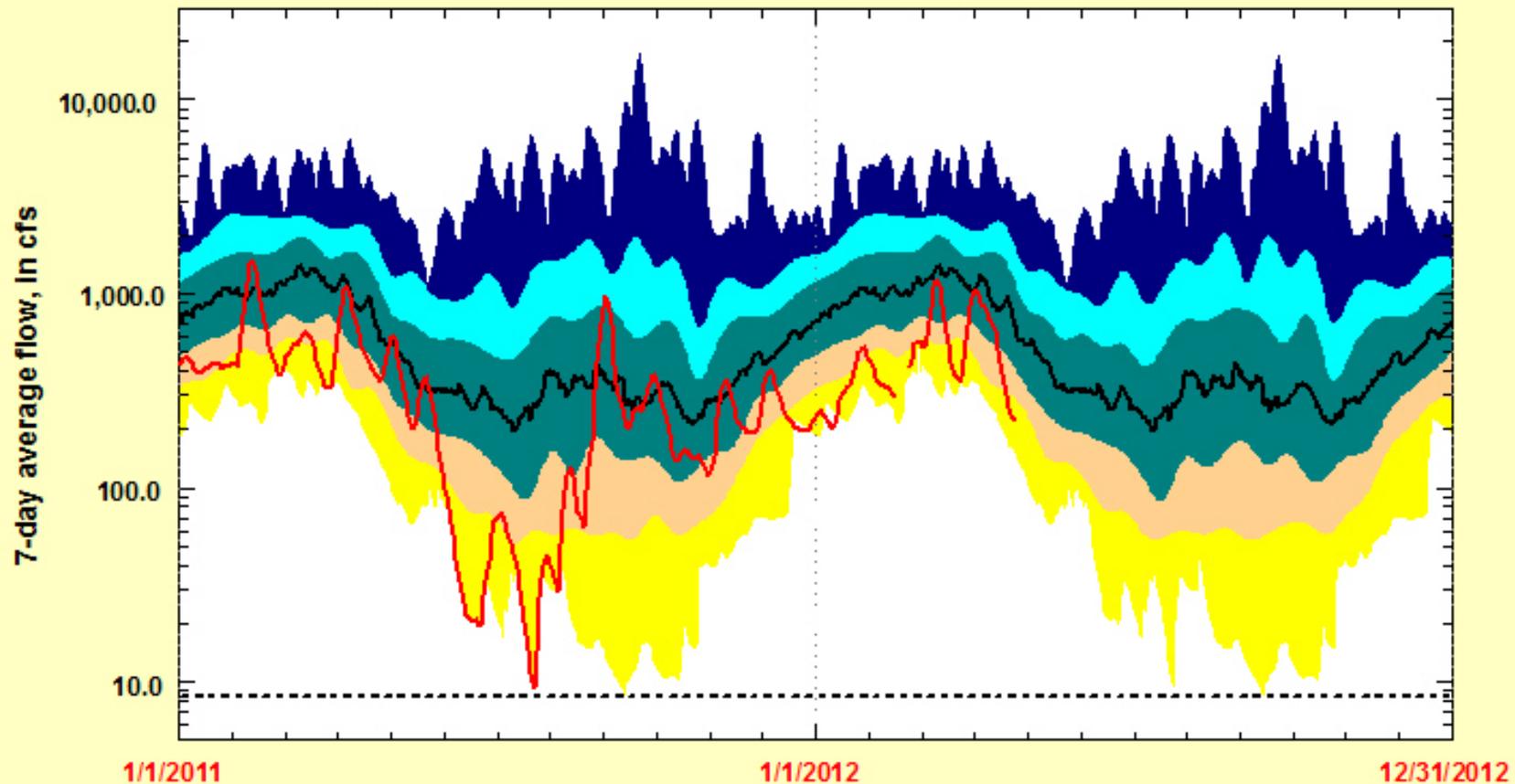
Plot created: Apr. 25, 2012 6:19:37 AM



Sta. 02106500, Black River near Tomahawk (Sampson County), DA = 676 sqmi

Period of record (POR): October 1951 to current

Approx. 61 total years record available to date, flow conditions at this site known or considered to be unregulated



POR minimum 7-day average flow:
8.44 cfs, ending on 09/14/2007

Observed data through 04/24/2012
Statistics based on 10/01/1951 through 09/30/2011

Note: Data and statistics since 09/30/2011
considered provisional and subject to revision.

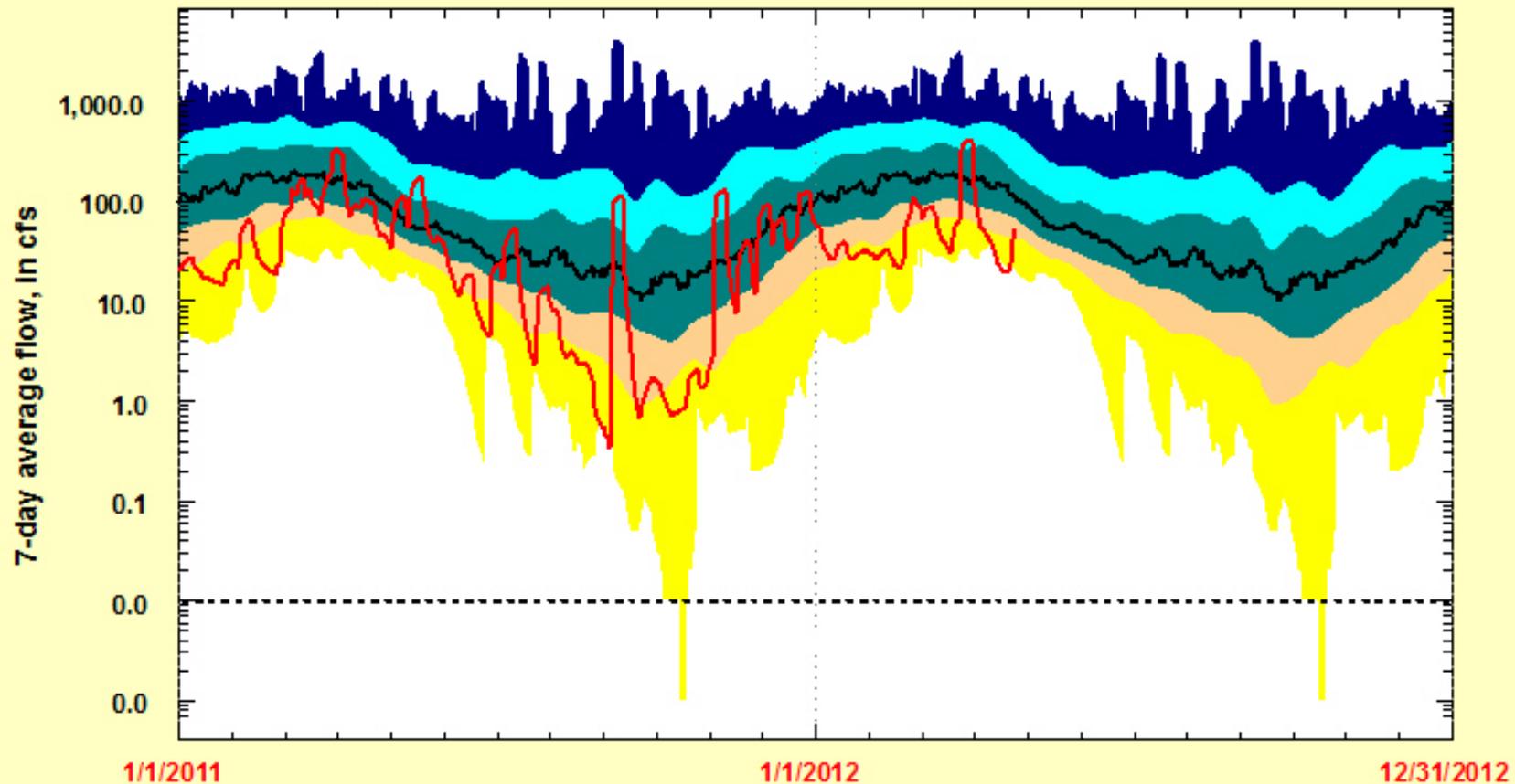
Plot created: Apr. 25, 2012 6:30:46 AM



Sta. 02085500, Flat River at Bahama (Durham County), DA = 149 sqmi

Period of record (POR): July 1925 to current

Approx. 87 total years record available to date, flow conditions at this site known or considered to be unregulated



POR minimum 7-day average flow:
0.01 cfs, ending on 10/20/2007

Observed data through 04/24/2012
Statistics based on 08/01/1925 through 09/30/2011

Note: Data and statistics since 09/30/2011
considered provisional and subject to revision.

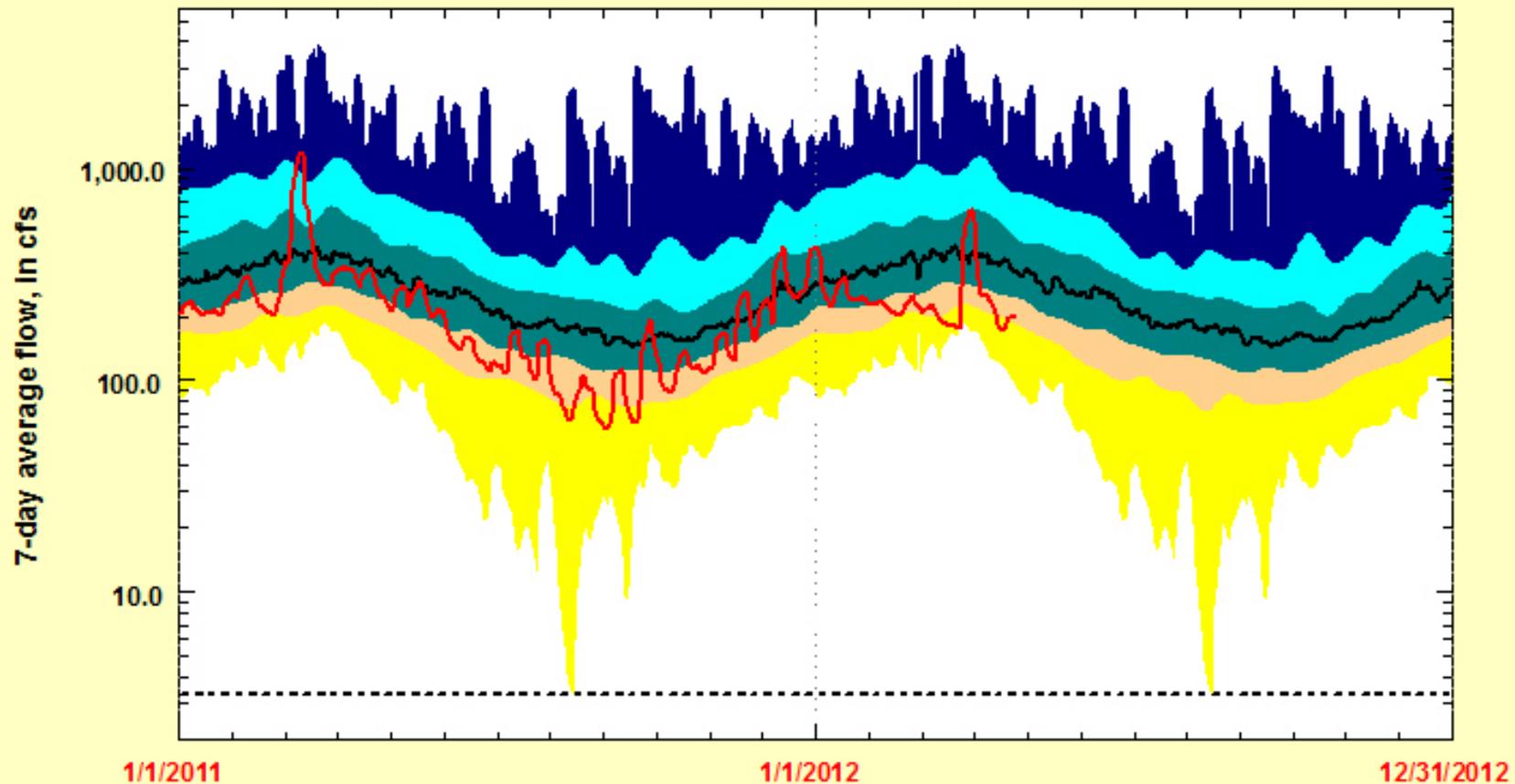
Plot created: Apr. 25, 2012 6:21:21 AM



Sta. 02118000, South Yadkin River near Mocksville (Rowan County), DA = 306 sqmi

Period of record (POR): October 1938 to current

Approx. 74 total years record available to date, flow conditions at this site known or considered to be affected by diversion(s)



POR minimum 7-day average flow:
3.31 cfs, ending on 08/15/2002

Observed data through 04/24/2012
Statistics based on 10/01/1938 through 09/30/2011

Note: Data and statistics since 09/30/2011
considered provisional and subject to revision.

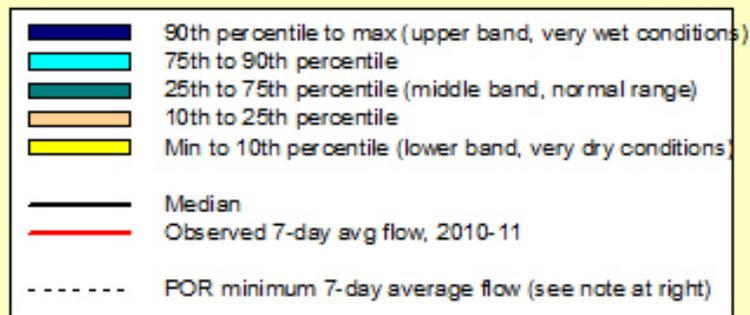
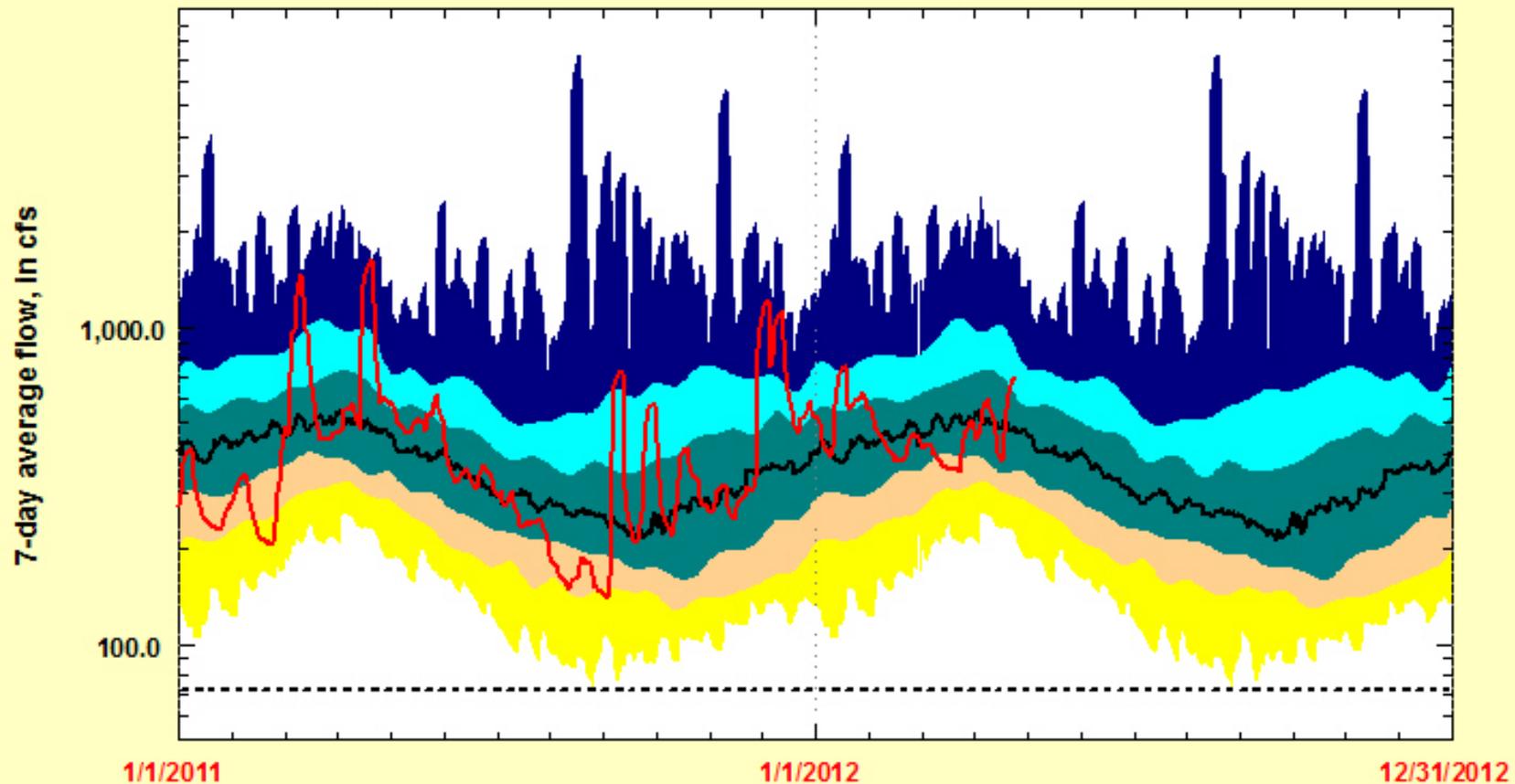
Plot created: Apr. 25, 2012 6:37:11 AM



Sta. 03161000, South Fork New River at Jefferson (Ashe County), DA = 205 sqmi

Period of record (POR): October 1924 to current

Approx. 88 total years record available to date, flow conditions at this site known or considered to be unregulated



POR minimum 7-day average flow:
72.14 cfs, ending on 08/27/1925

Observed data through 04/24/2012
Statistics based on 10/01/1924 through 09/30/2011

Note: Data and statistics since 09/30/2011
considered provisional and subject to revision.

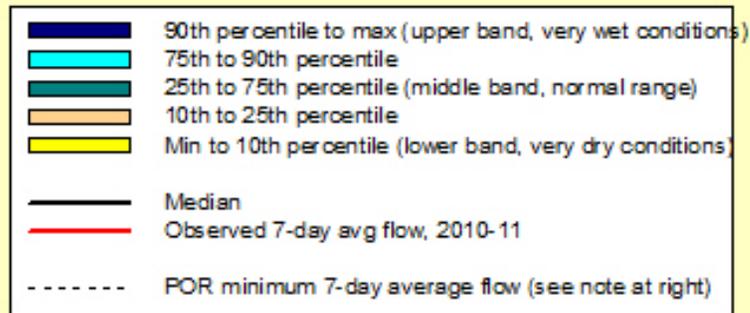
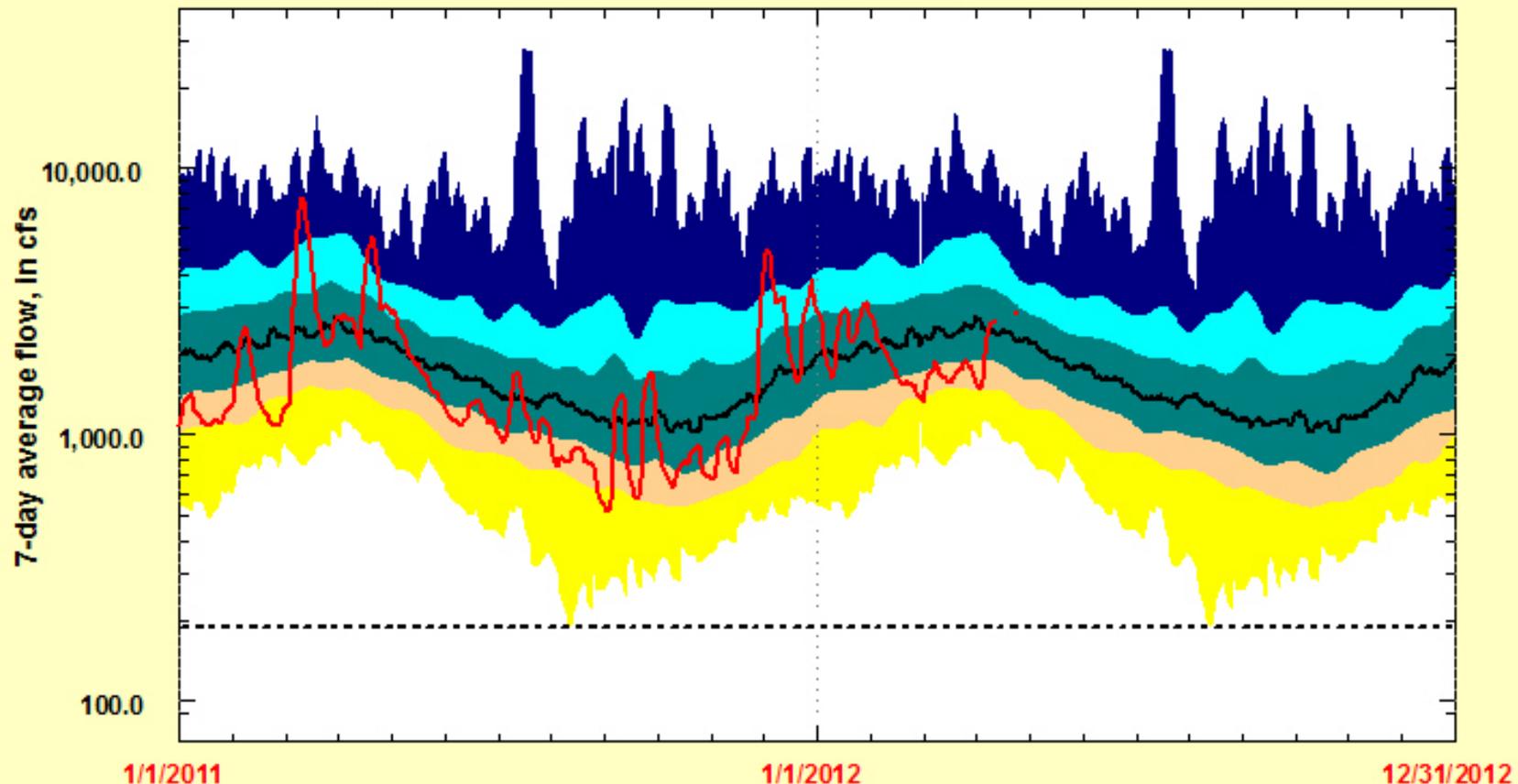
Plot created: Apr. 25, 2012 6:46:42 AM



Sta. 03451500, French Broad River at Asheville (Buncombe County), DA = 945 sqmi

Period of record (POR): Oct 1895 to current

Approx. 117 total years record available to date, flow conditions at this site known or considered to be affected by diversion(s)



POR minimum 7-day average flow:
190.29 cfs, ending on 08/13/2008

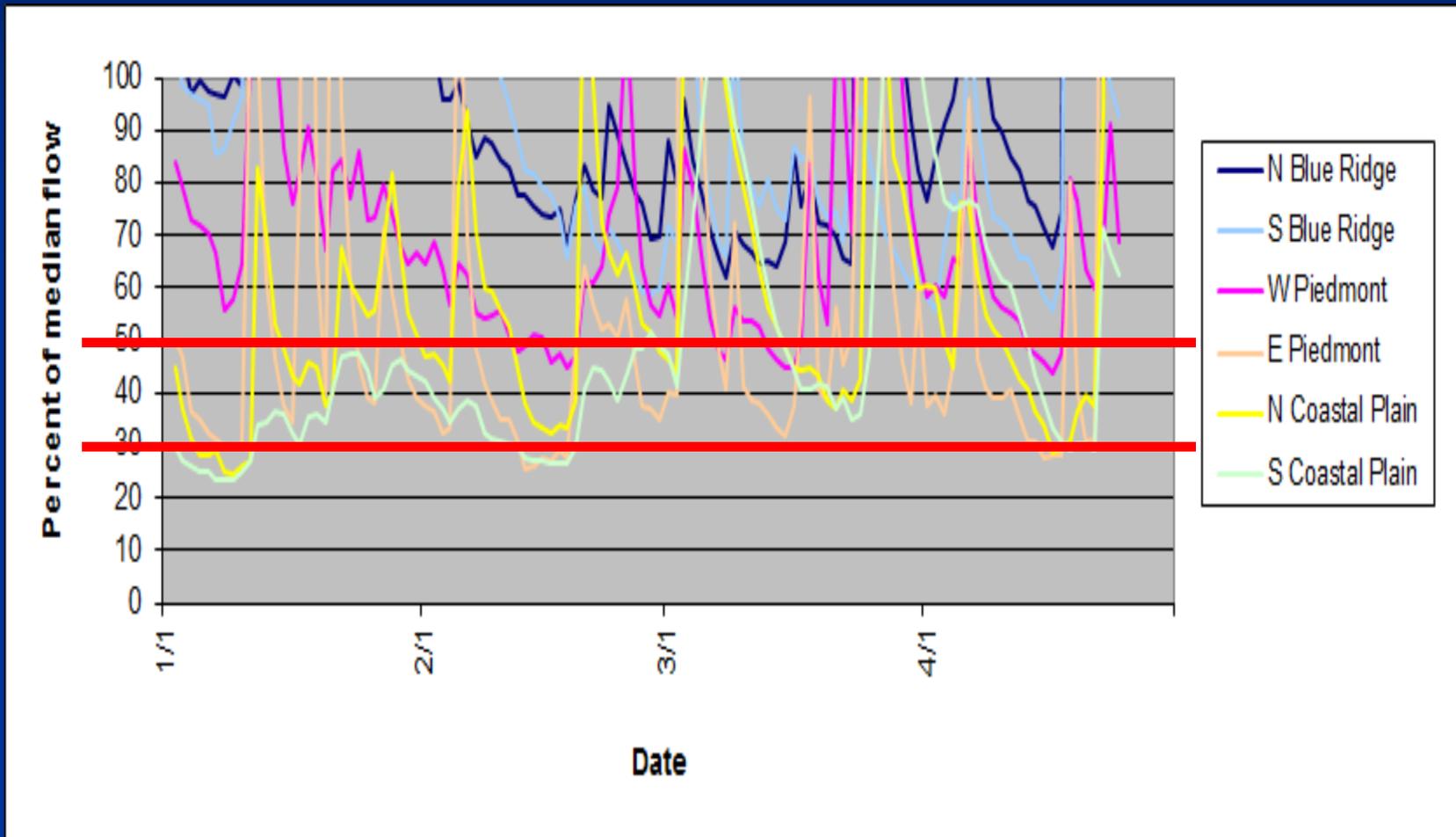
Observed data through 04/24/2012
Statistics based on 10/01/1895 through 09/30/2011

Note: Data and statistics since 09/30/2011
considered provisional and subject to revision.

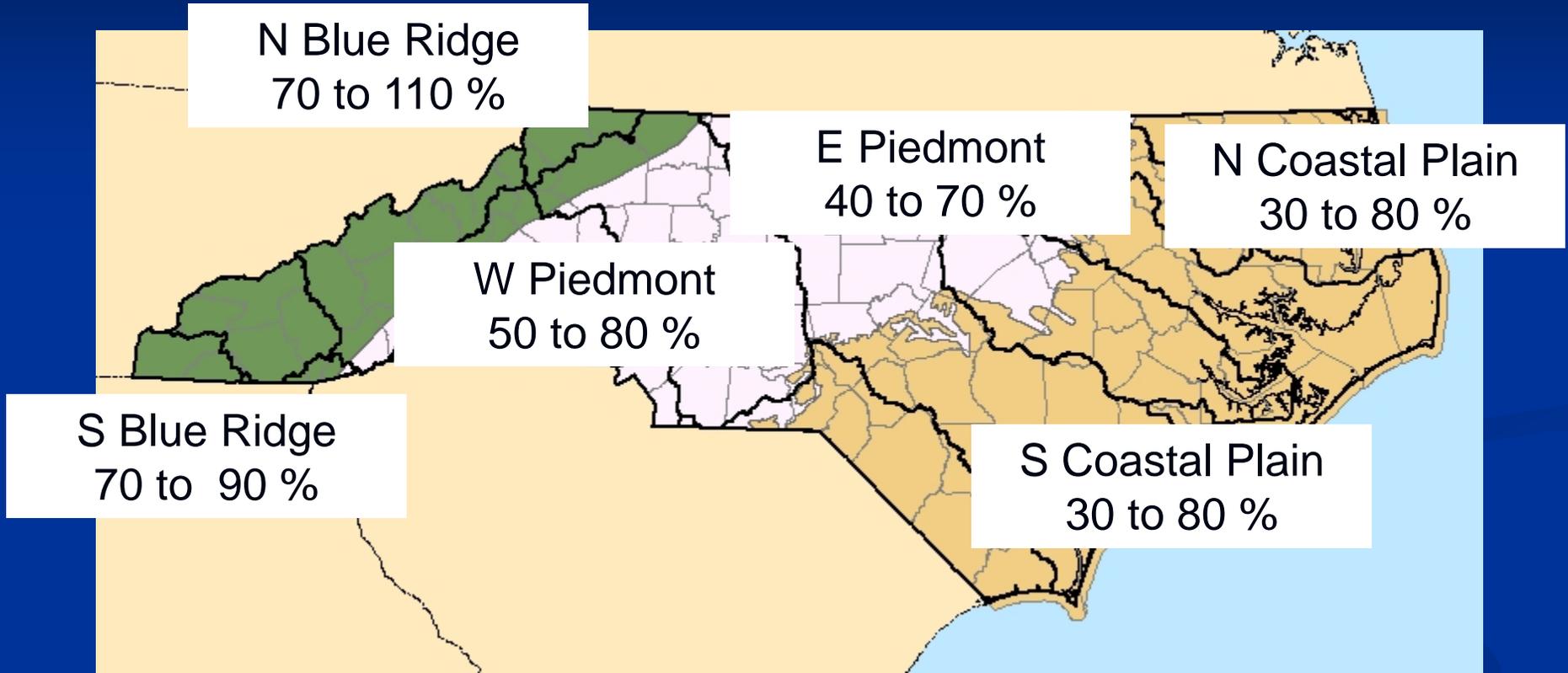
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Percent of median (by region)

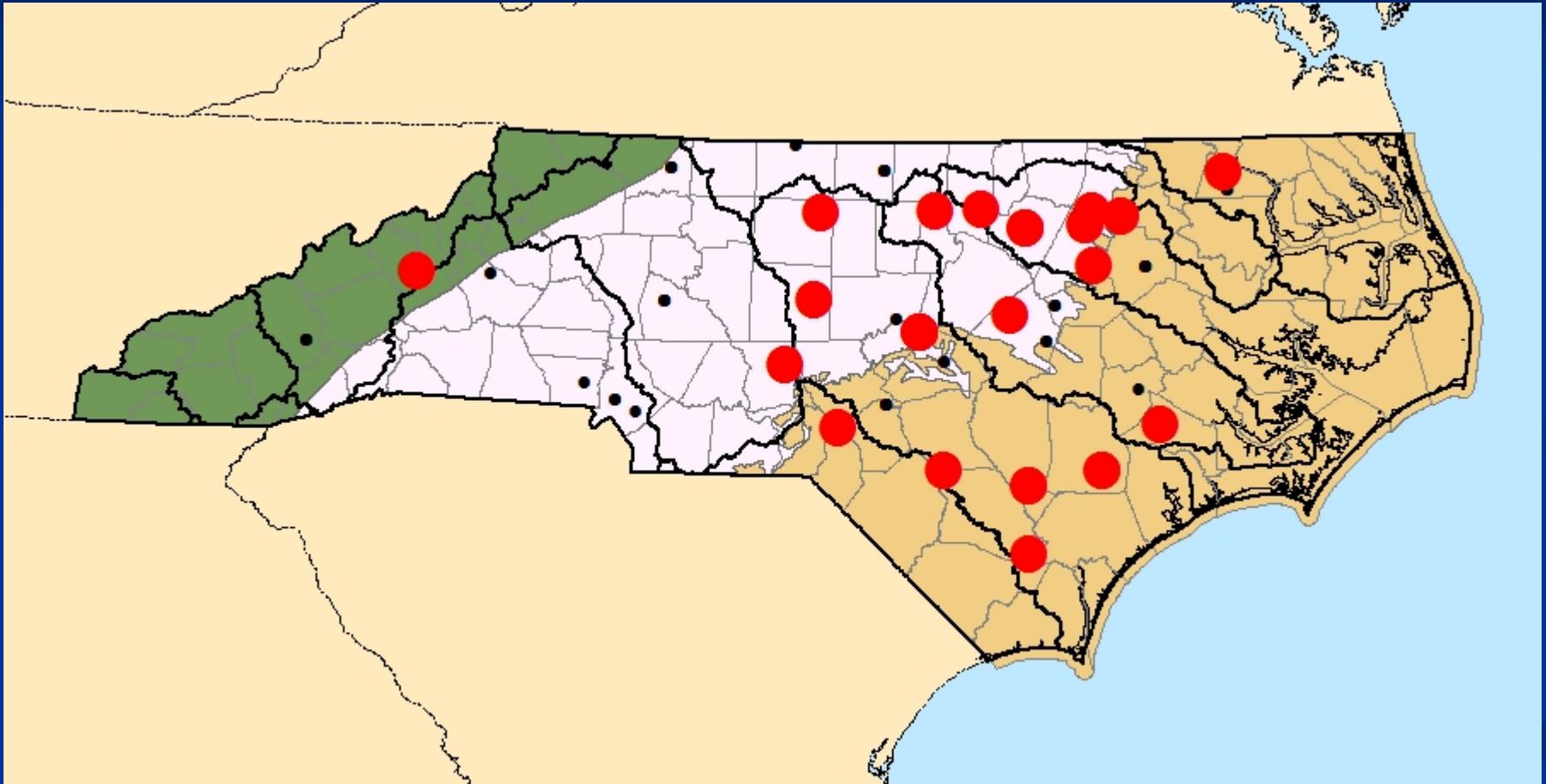


Typical ranges in **percentage of median flow** since **March 1**...(by region)

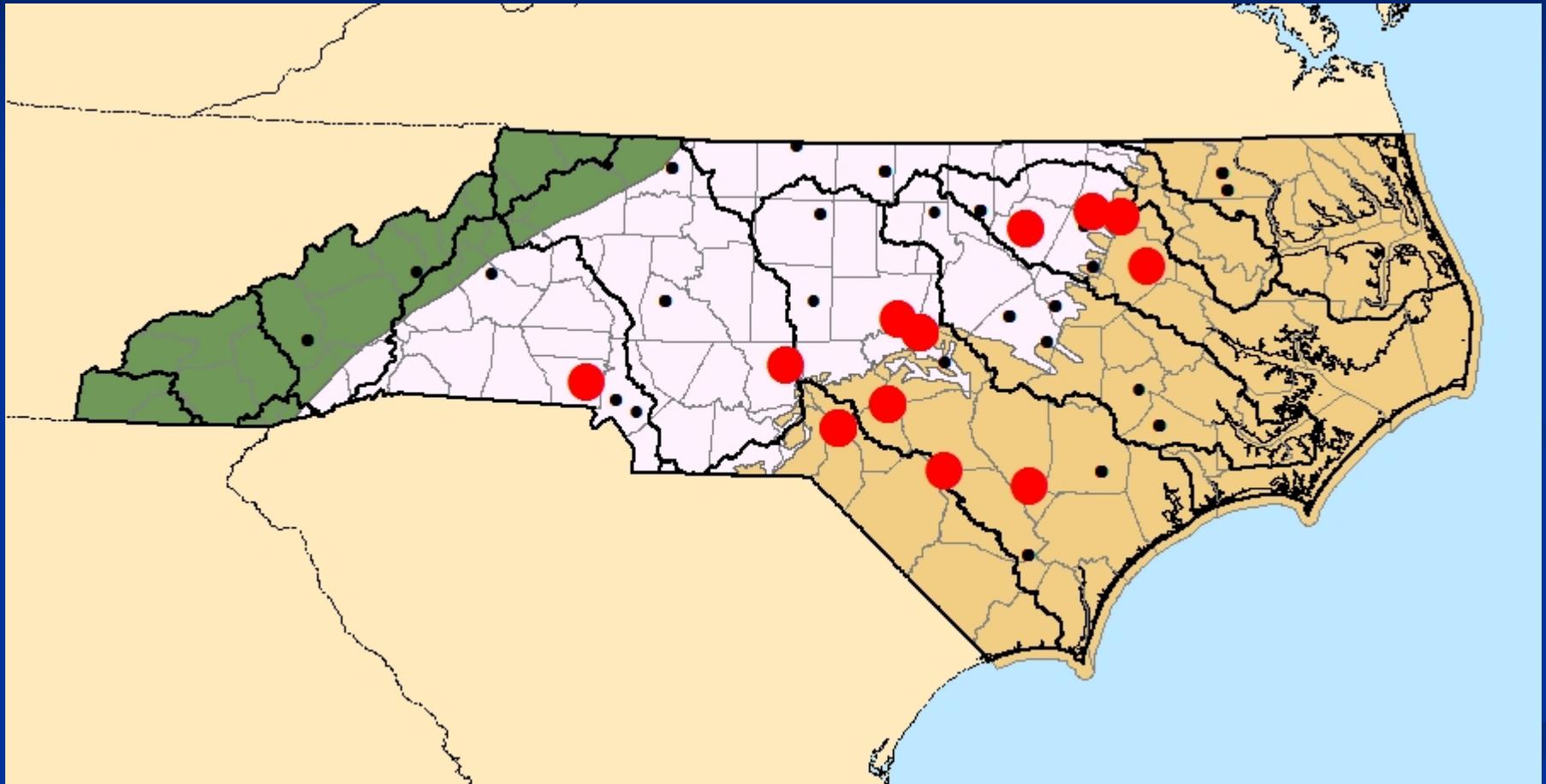


...as of April 24

*New record monthly minimum average
during 2011 water year*

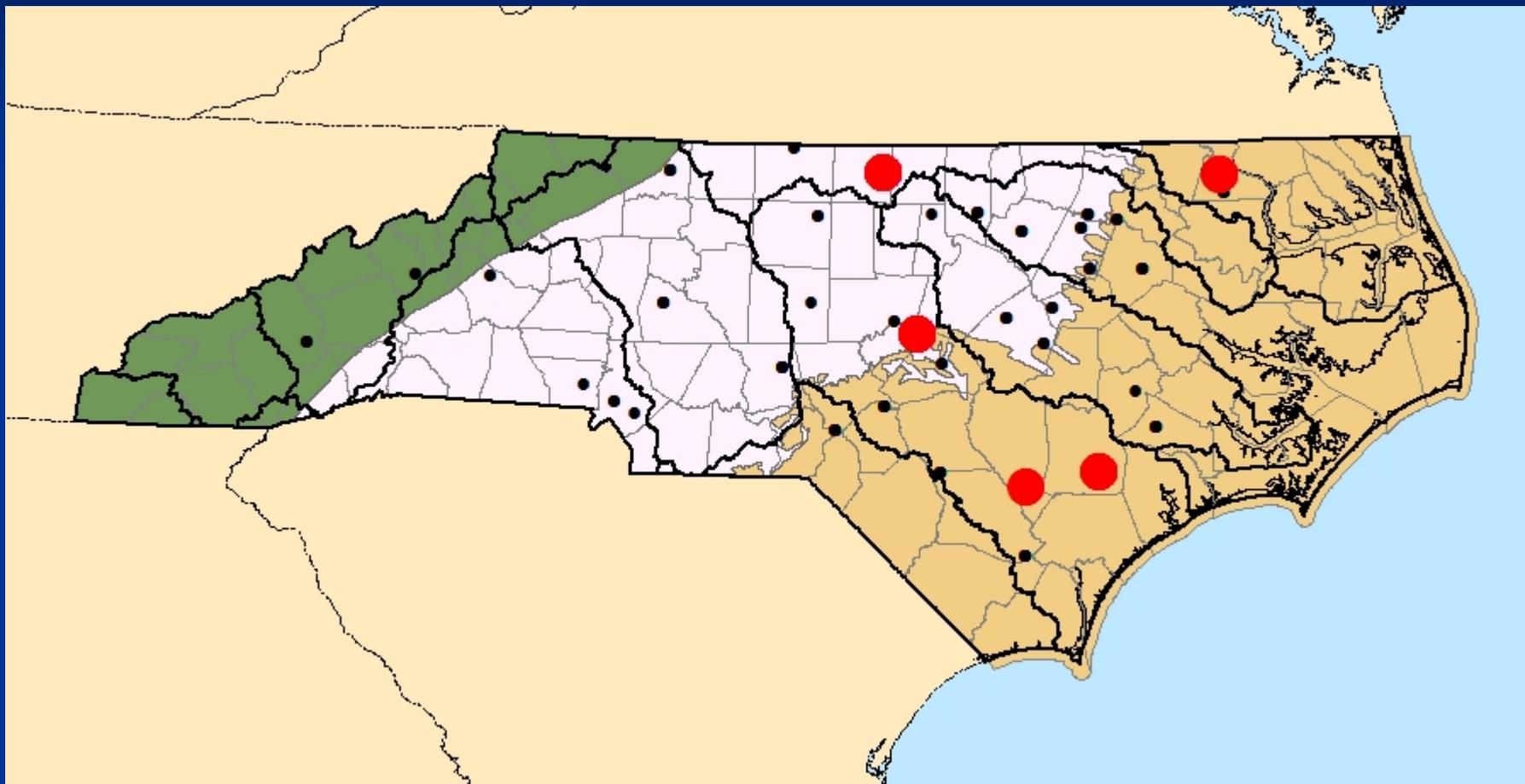


*New record monthly minimum average
during 2012 water year*



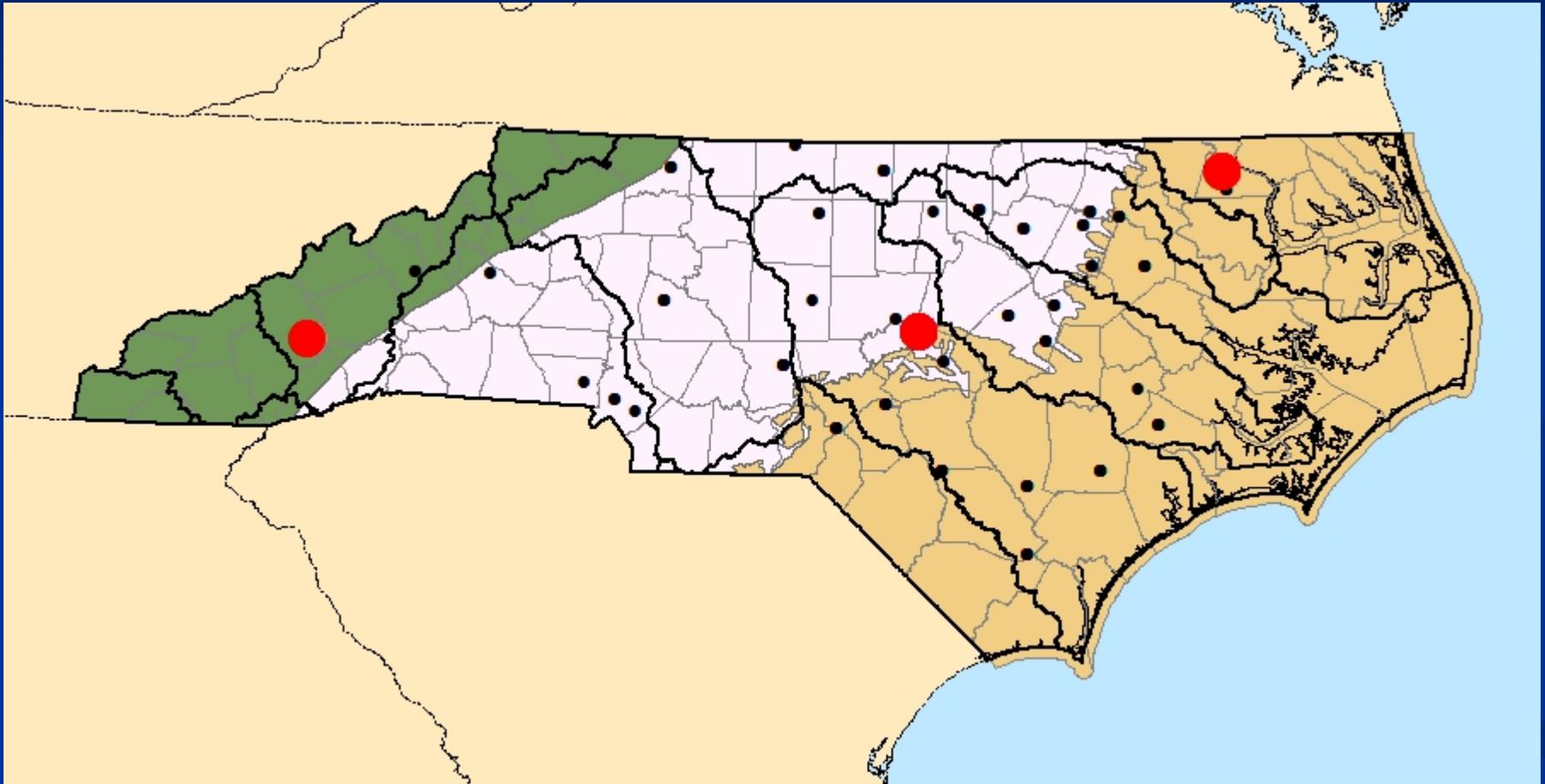
provisional data... 12 sites... as of April 24

New period of record minimum daily mean discharge during 2011 water year



8 sites in eastern half of NC

New period of record minimum daily mean discharge during 2012 water year



“Take home” message...

- Winter streamflows not very strong, particularly in the eastern half of the state...30 to 50 percent of median
- On-going “roller coaster” pattern with recent rainfall events...quickly rise in response to precipitation, then quickly decline following event

In closing...

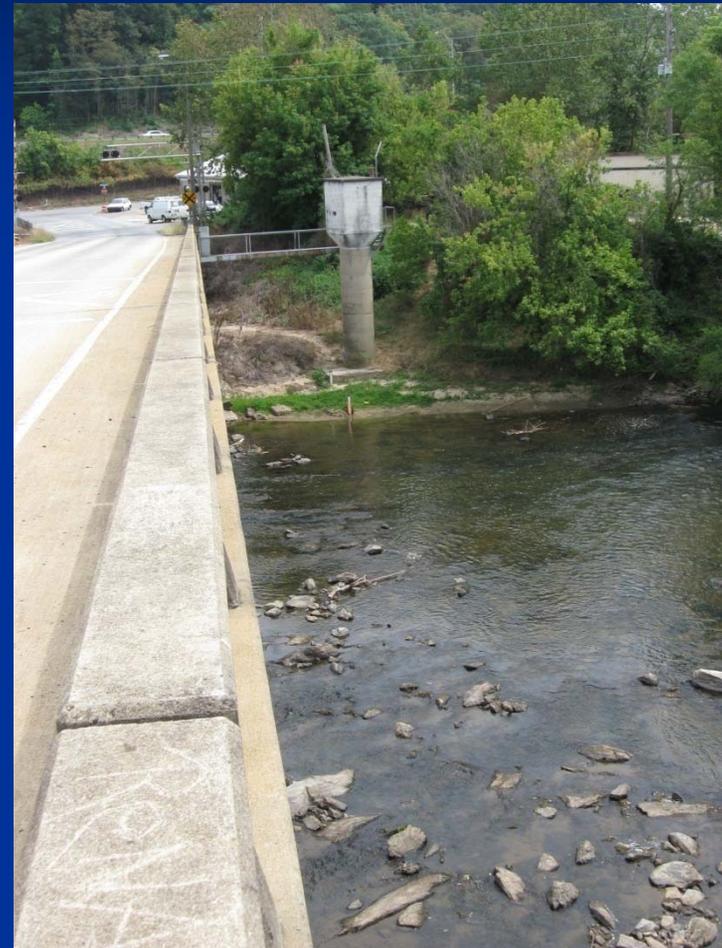
- Questions
- Concerns

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French Broad River at Asheville
Buncombe County