Streamflow conditions across North Carolina

Assessment of hydrologic conditions observed through early April 2014...

USGS North Carolina Water Science Center
http://nc.water.usgs.gov

Online drought pages for USGS North Carolina WSC
http://nc.water.usgs.gov/drought/

Presented to:
North Carolina Drought Management Advisory Council
Gov. James G. Martin Building, NC State Fairgrounds, Raleigh, NC
April 10, 2014
Real-time: SW (265) GW (47) WQ (23) Precip (143)

2013WY data available at URL: http://nc.water.usgs.gov/reports/WDR/
New online mapper for USGS precipitation sites

Mapper page available at URL: http://nc.water.usgs.gov/realtime/rainfall.php
Overall 7-day average flows as of April 08

Available at URL http://waterwatch.usgs.gov/
Percentage of sites with 7-day average flows below normal (< 25th percentile)
Percentage of sites with 7-day average flows below normal (< 25\textsuperscript{th} percentile)

Since January 1, 2014
Sta. 02106500, BLACK RIVER NEAR TOMAHAWK, N C (Sampson County), DA = 676 sqmi
Period of record (POR): 04/07/ through 04/07/
Approx. 63 total years record available to date  (Site info from http://waterdata.usgs.gov/nwis/inventory)

28-day average flow, ln cfs

1/1/2013  12/31/2013  12/31/2014

90th percentile to max (upper band, very wet conditions)
75th to 90th percentile
25th to 75th percentile (middle band, normal range)
10th to 25th percentile
Min to 10th percentile (lower band, very dry conditions)

Median
Observed 28-day avg flow, 2013-14
POR minimum 28-day average flow (see note at right)

POR minimum 28-day average flow:
11.92 cfs, ending on 10/15/1964

Observed data through 04/07/2014
Statistics based on 10/01/1961 through 09/30/2012

Note: Data and statistics since 09/30/2012 considered provisional and subject to revision.
Plot created: Apr. 9, 2014 1:50:28 AM
Sta. 02085500, FLAT RIVER AT BAHAMA, NC (Durham County), DA = 149 sqmi

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

Approx. 89 total years record available to date (Site info from http://waterdata.usgs.gov/nwis/inventory)

28-day average flow, ln cfs

90th percentile to max (upper band, very wet conditions)
75th to 90th percentile
75th to 75th percentile (middle band, normal range)
10th to 25th percentile
Min to 10th percentile (lower band, very dry conditions)
Median
Observed 28-day avg flow, 2013-14
POR minimum 28-day average flow (see note at right)

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

Observed data through 04/07/2014
Statistics based on 08/01/1925 through 09/30/2012

Note: Data and statistics since 09/30/2012 considered provisional and subject to revision.
Plot created: Apr. 9, 2014 0:53:11 AM
Sta. 03451500, FRENCH BROAD RIVER AT ASHEVILLE, NC (Buncombe County), DA = 945 sqmi
Period of record (POR): 0/0/ through 0/0/
Approx. 119 total years record available to date
(Site info from http://waterdata.usgs.gov/nwis/inventory)

POR minimum 28-day average flow:
248.90 cfs, ending on 08/25/2008
Observed data through 04/07/2014
Statistics based on 10/01/1895 through 09/30/2012

Note: Data and statistics since 09/30/2012 considered provisional and subject to revision.
Plot created: Apr. 9, 2014 3:37:08 AM
“infamous spaghetti plot…”
Percent of median (by region)
Typical ranges in percentage of median flow since March 1…(by region)

N Blue Ridge: 80 to 100%
S Blue Ridge: 50 to 75%
W Piedmont: 60 to 190%
E Piedmont: 60 to 230%
N Coastal Plain: 50 to 160%
S Coastal Plain: 65 to 145%

…as of April 09
New record monthly minimum average during 2014 water year

USGS Sta. 02146600  McAlpine Creek at Sardis Road near Charlotte, NC
Monthly average flow October 2013 at 1.95 cfs
(superseding previous min value of 3.16 on 10/31/1962 (1963 water year)

provisional data...1 site...as of April 09
New period of record minimum daily mean discharge during 2014 water year

provisional...no sites...as of April 09
Below-normal 28-day average flows
July 2004 to current

Percentage of sites in North Carolina with 28-day average flows in indicated percentile range or lower

Less than 25th percentile

Calendar year
Below-normal 28-day average flows
January through April 08 for years 2004 to 2014
“Take home” message…

• Summer 2013 first period of sustained normal or above-normal 7-day average flows since late 2009/early 2010

• Only 1 site with record minimum monthly average flow (site in Charlotte, October 2013)

• No POR minimum daily discharges to date for 2014 water year

• As of early 2014, 28-day average flows favorable relative to 6 of 10 most recent years for first 4 months of calendar year

• Continue to monitor conditions in Blue Ridge
In closing…

- Questions
- Concerns

J. Curtis Weaver, Hydrologist
USGS North Carolina
Water Science Center
jcweaver@usgs.gov
(919) 571-4043