

Streamflow conditions across North Carolina

*Assessment of hydrologic conditions
observed since July 2021...*

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Wilson Creek, western North Carolina
[\(Source URL\)](#)

Presented to:
North Carolina Drought Management Advisory Council (annual meeting)
Steve Troxler Agricultural Sciences Center, Raleigh, NC
September 27, 2022

Visualizing the components of streamflow

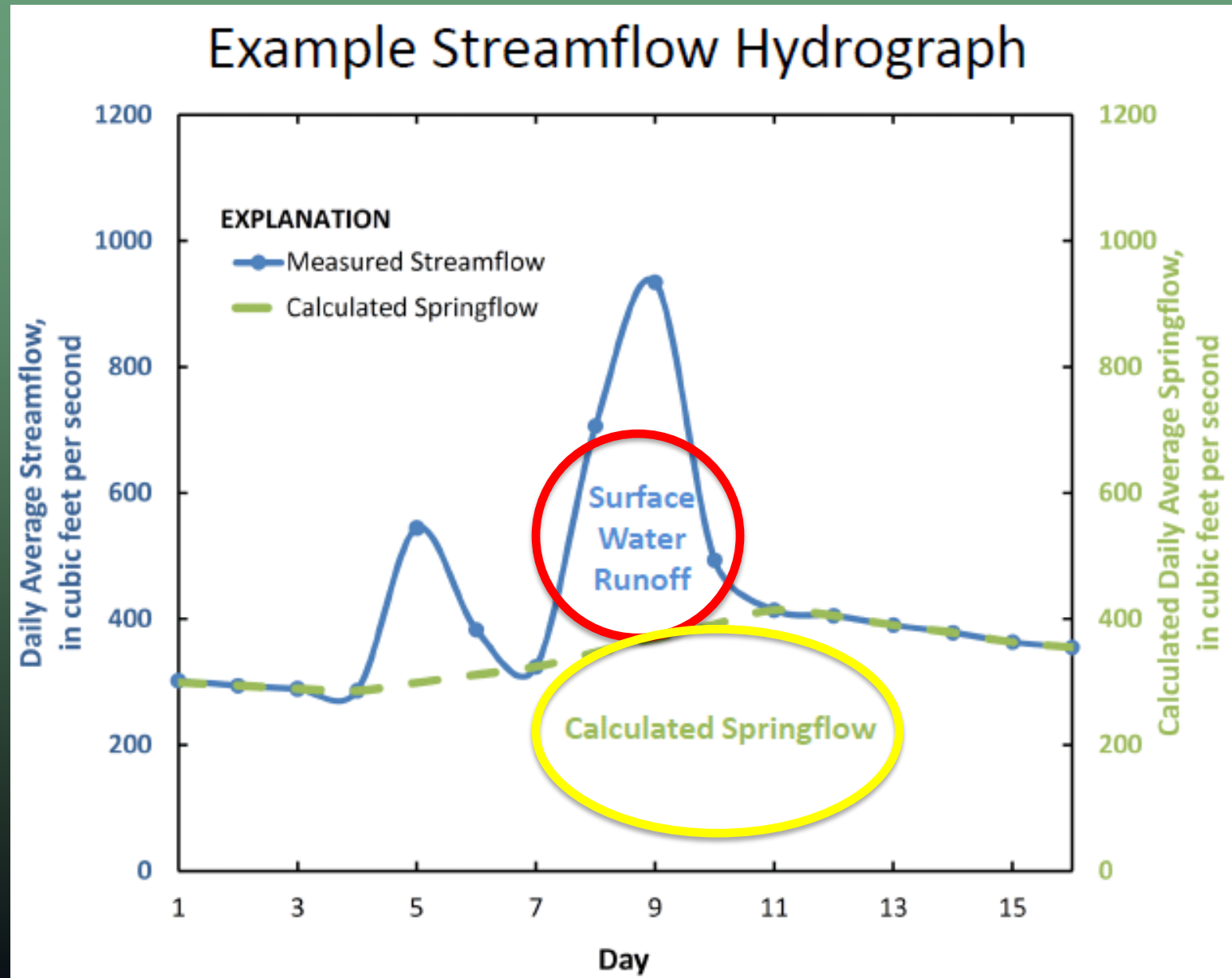


Initial source: Selected stock images associated with Google search using term "North Carolina streams rivers"



*Brooks Creek, above Eddie Perry Road, Chatham County
Source: Flickrriver: Photoset 'Rivers And Streams, North Carolina' by Alan Cressler*

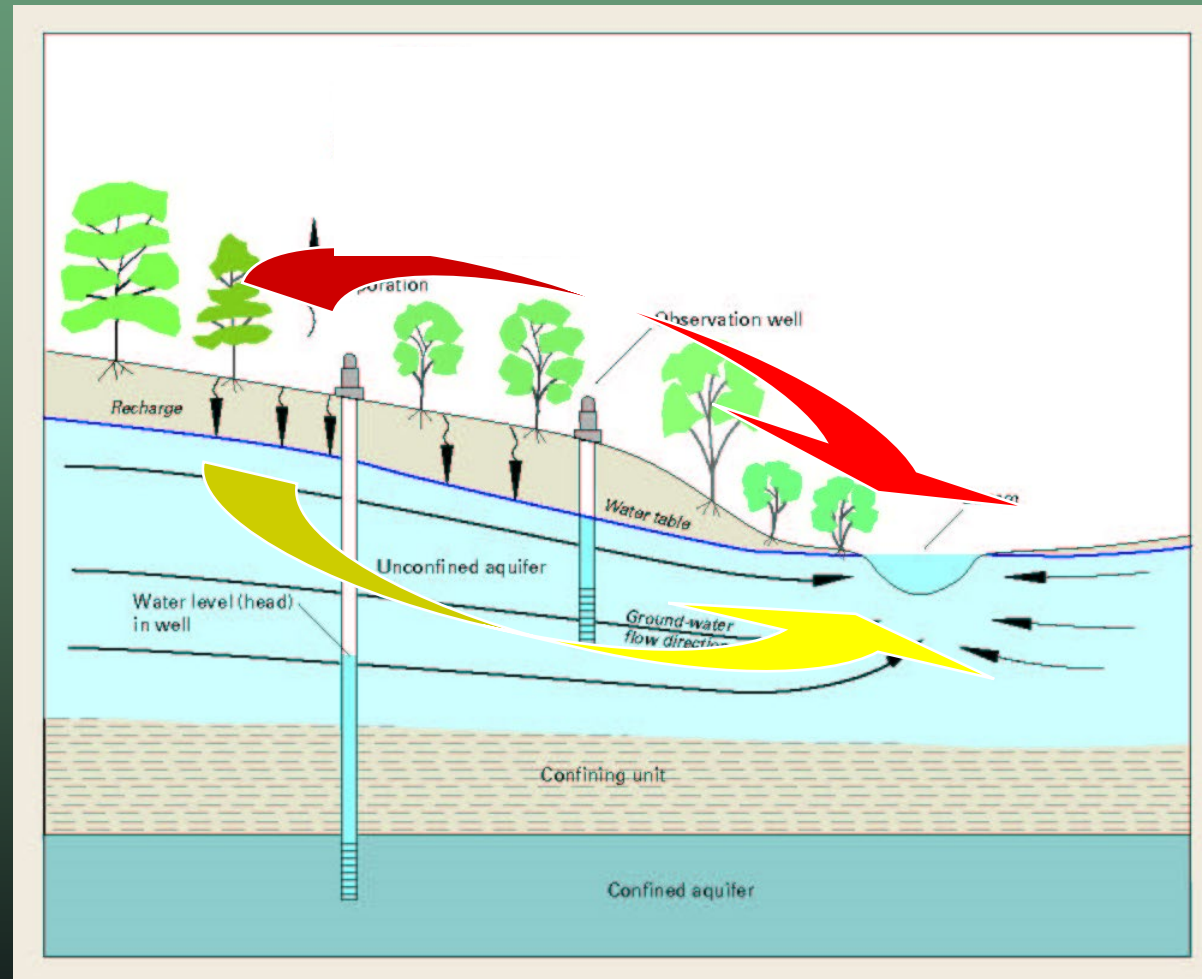
Visualizing the components of streamflow



Visualizing the components of streamflow

Overland
runoff

Base flow
(ground-
water
discharge
to
streams)



Access to USGS real-time records for NC



Ararat River, Mount Airy, Surry County
Source: Selected stock images associated with Google search using term "North Carolina streams rivers"

Access to

Streamflow (

<https://waterdata.usgs.gov/nc/nwis/rt>

Groundwater

<https://waterdata.usgs.gov/nc/nwis/rt>

Water quality

<https://waterdata.usgs.gov/nc/nwis/rt>

Precipitation

<https://waterdata.usgs.gov/nc/nwis/rt>



USGS Current Water Data for North Carolina

<https://waterdata.usgs.gov/nc/nwis/rt>

-or-

Search on "usgs real time conditions NC"

***** PLEASE BOOKMARK THIS PAGE FOR EASE OF ACCESS *****

- USGS Water Resources of the South Atlantic Water Science Center: the place to start for all USGS water information in the SAWSC.
- Real-time data [Streamflow](#) || [Water-Quality](#) || [Groundwater Levels](#) || [Precipitation](#)
- [Statewide Rainfall Map](#)
- [Live Streaming RiverCams](#)
- [StreamStats](#) - online tool for basin and flow characteristics
- [USGS Flood Event Viewer](#)
- Sign up for [custom Water Alerts by text or email](#)

Questions about data? [Click here.](#)

Predefined displays: Introduction go

Daily Streamflow Conditions

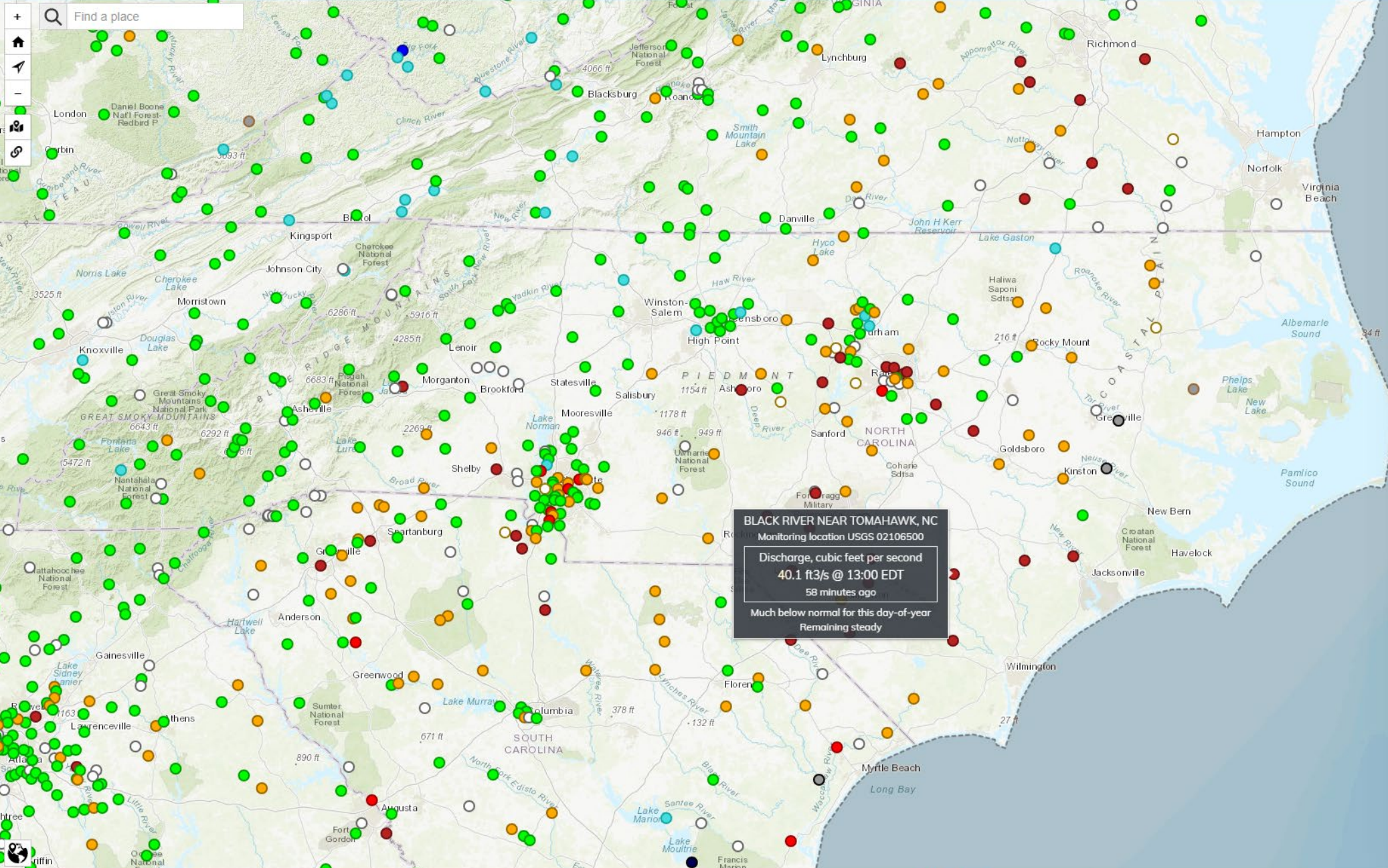
Select a site to retrieve data and station information.
Wednesday, April 03, 2019 10:30ET

Statewide Streamflow Table

Current data typically are recorded at 15- to 60-minute intervals, stored onsite, and then transmitted to USGS offices every 1 to 4 hours, depending on the data relay technique used. Recording and transmission times may be more frequent during critical events. Data from current sites are relayed to USGS offices via satellite, telephone, and/or radio telemetry and are available for viewing within minutes of arrival.

All real-time data are **provisional and subject to revision.**

Build Current Conditions Table	Show a custom current conditions summary table for one or more stations.
Build Custom Graphs or Tables	Show custom graphs or tables for a series of



BLACK RIVER NEAR TOMAHAWK, NC
 Monitoring location USGS 02106500
 Discharge, cubic feet per second
 40.1 ft³/s @ 13:00 EDT
 58 minutes ago
 Much below normal for this day-of-year
 Remaining steady

Legend

- Streamflow: Status**
- Above flood stage
 - All-time high for this day (100th percentile (maximum))
 - Much above normal (>90th percentile)
 - Above normal (76th – 90th percentile)
 - Normal (25th – 75th percentile)
 - Below normal (10th – 24th percentile)
 - Much below normal (<10th percentile)
 - All-time low for this day (0th percentile (minimum))
 - Not flowing
 - Not ranked
 - Measurement flag
 - Recent measurement unavailable

Comments: Marker color indicates the current streamflow condition. Categories are based on the percentile of existing streamflow records on this day-of-the-year. A streamgauge is not ranked when there is less than 10 years of record or a current streamflow value is unavailable. Flood stages are maintained by the National Weather Service (NWS) and are not established for all USGS streamgages.

Data Source: [USGS Water Data for the Nation](#)

TIP – Click streamflow stations to access real-time data, time-series graphs, and station information.

Radar: Static



- 20 dBZ Trace amounts of precipitation
- 30 dBZ Approx. 0.1 inch/hour
- 36 dBZ Approx. 0.25 inch/hour
- 41 dBZ Approx. 0.5 inch/hour
- 47 dBZ Approx. 1.25 inch/hour
- 52 dBZ Approx. 2.5 inch/hour
- 58 dBZ

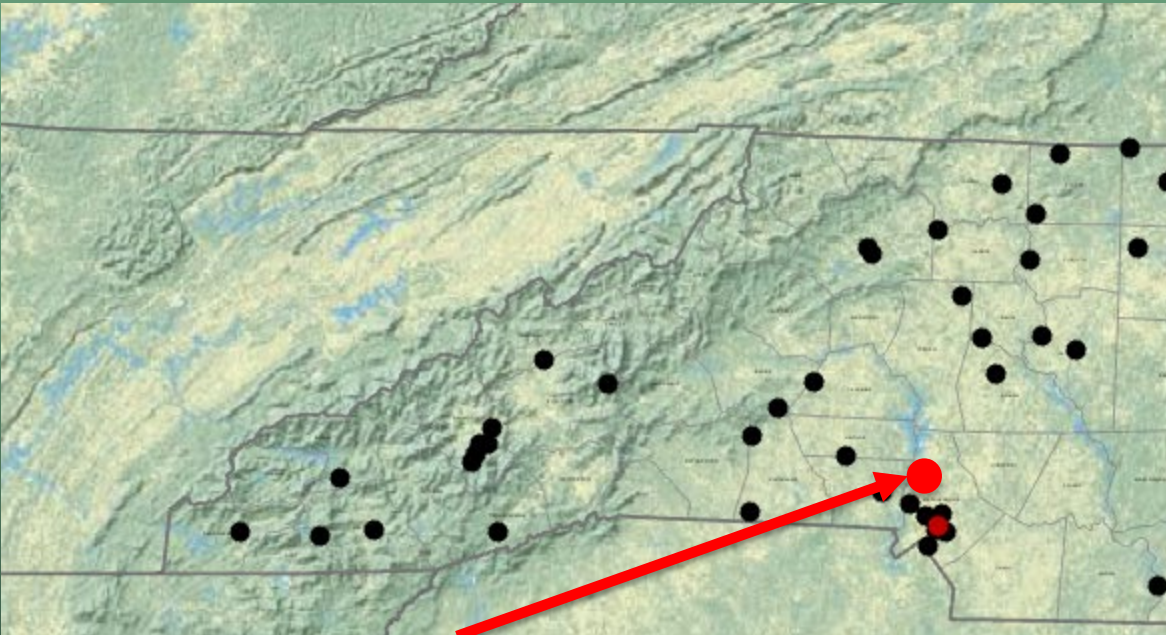
New streamflow records this past year



Low water bridge, Uwharrie River, near Eldorado, Montgomery County

Initial source: Selected stock images associated with Google search using term "North Carolina streams rivers"

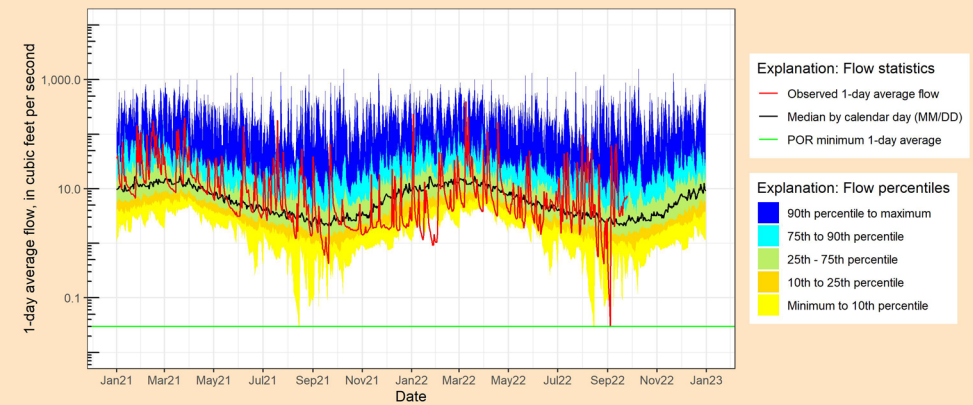
New record POR minimum



USGS Sta. 02142900 Long Creek near Paw Creek
in Mecklenburg County
POR since June 1965, DA = 16.4 sqmi
POR min daily Q = 0.03 cfs on September 04, 2022
(meeting previous record of 0.03 cfs on 08/14-15/2002)



USGS Sta. 02142900 LONG CREEK NEAR PAW CREEK, NC
Drainage Area: 16.4 sq mi, available POR for daily mean discharge: 1965-06-01 to 2022-09-25
Flow conditions at this site are known or considered to be affected by Diversion(s)

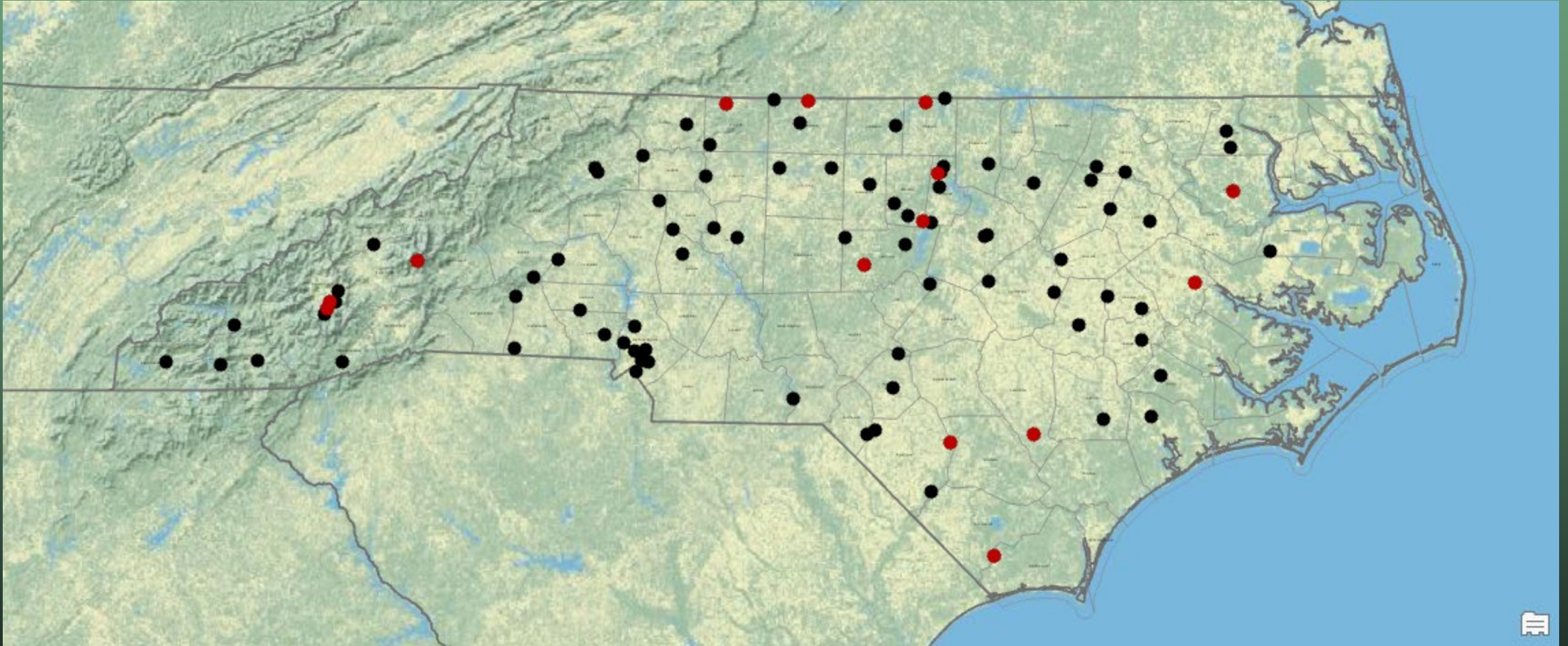


Period of record minimum 1-day average flow: 0.03 cfs ending on 2022-08-14
Observed data through: September 25, 2022
Data are provisional after 2022-07-06
Flow percentile statistics calculated using POR from 1964-10-01 to 2020-09-30
Plot generated: 2022-09-26 13:18:05 EDT

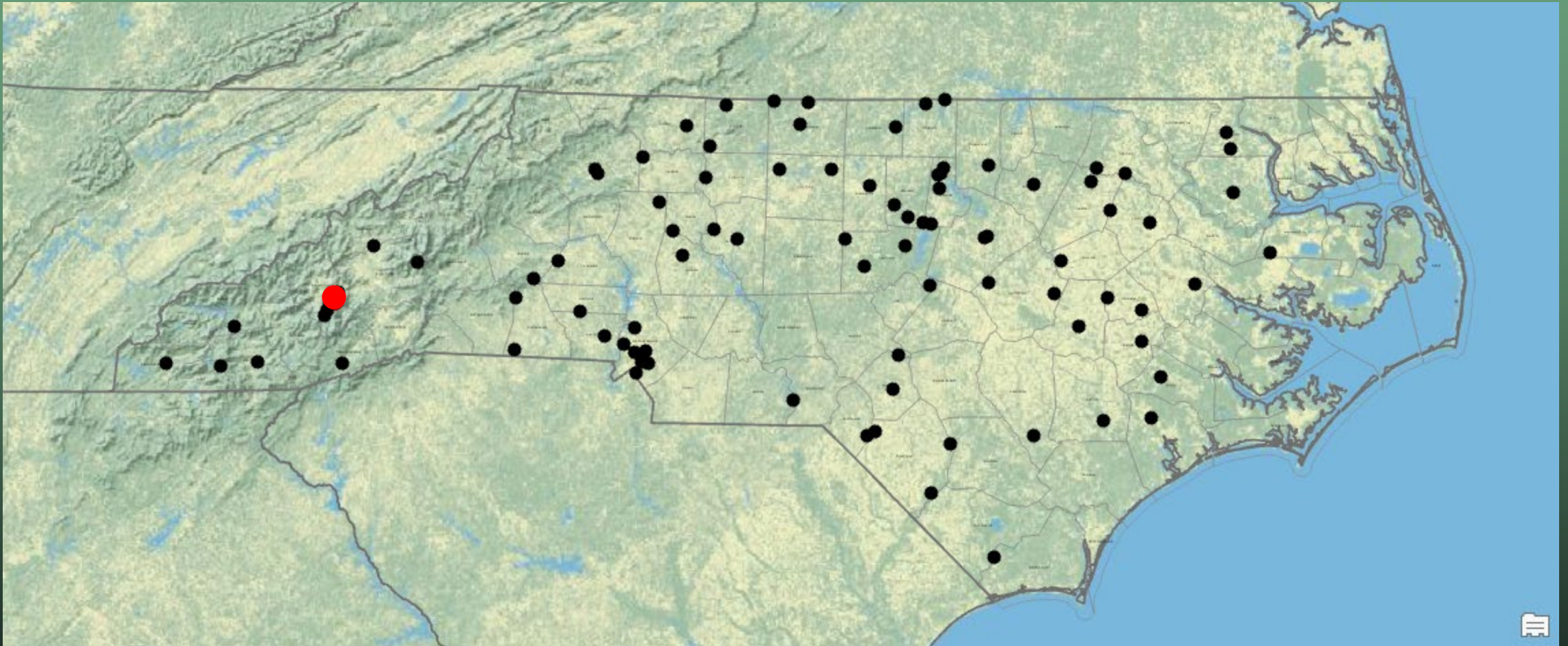


9 sites during July 2020 through latter September 2022

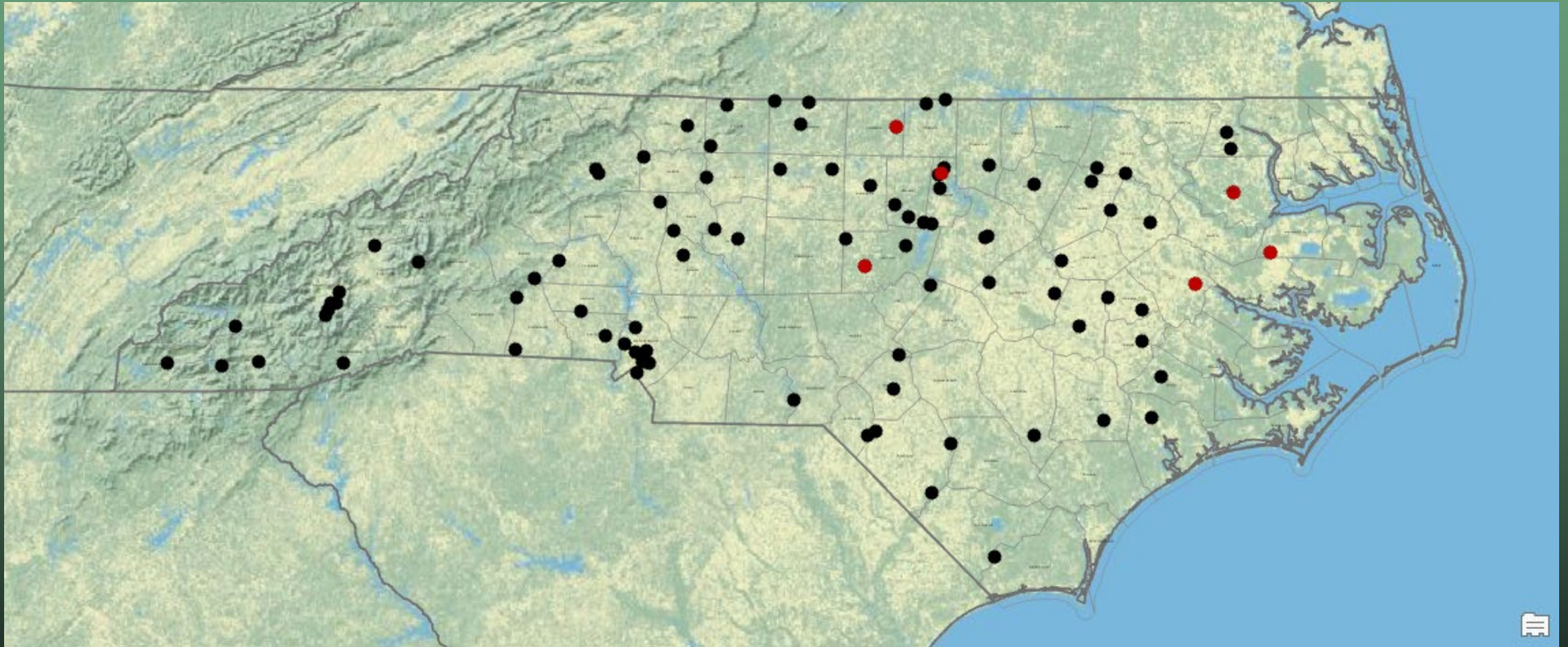
New record minimum monthly average discharges



New record MAXIMUM monthly average discharges

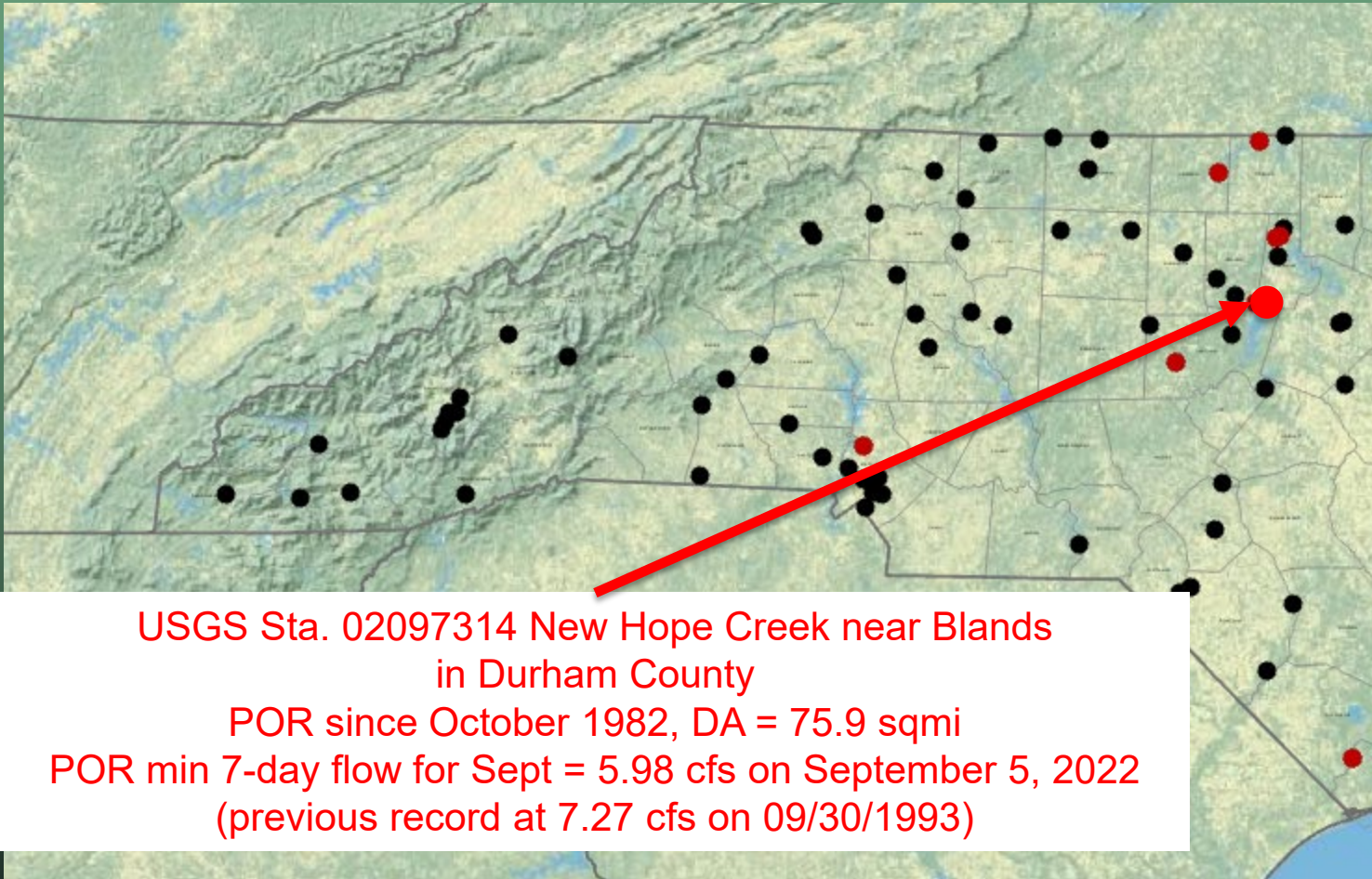


New record POR minimum 7-day average streamflow



*6 sites during July 2021 through latter September 2022
(all meeting previous records of $\frac{1}{2}$ zero flow)*

New record minimum monthly 7-day average discharges



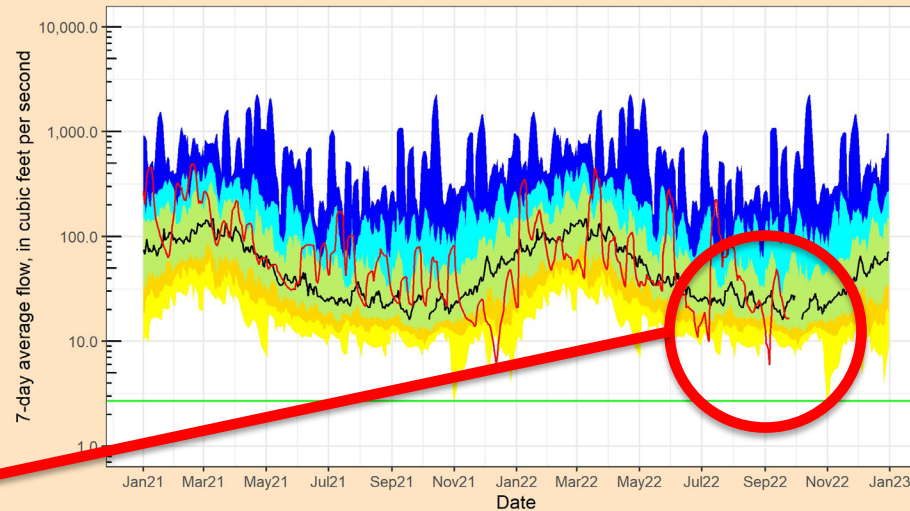


USGS Sta. 02097314
 New Hope Creek near Blands
 in Durham County
 POR since October 1982, DA = 75.9 sqmi

 POR min 7-day flow **for Sept** = 5.98 cfs
 on September 5, 2022
 (previous record at 7.27 cfs on 09/30/1993)



USGS Sta. 02097314 NEW HOPE CREEK NEAR BLANDS, NC
 Drainage Area: 75.9 sq mi, available POR for daily mean discharge: 1982-10-01 to 2022-09-25
 Flow conditions at this site are known or considered to be affected by Diversion(s)



- Explanation: Flow statistics**
- Observed 7-day average flow
 - Median by calendar day (MM/DD)
 - POR minimum 7-day average
- Explanation: Flow percentiles**
- 90th percentile to maximum
 - 75th to 90th percentile
 - 25th - 75th percentile
 - 10th to 25th percentile
 - Minimum to 10th percentile

Period of record minimum 7-day average flow: 2.694 cfs ending on 2011-11-01
 Observed data through: September 25, 2022
 Data are provisional after 2022-05-16
 Flow percentile statistics calculated using POR from 1982-10-01 to 2020-09-30
 Plot generated: 2022-09-26 12:33:29 EDT

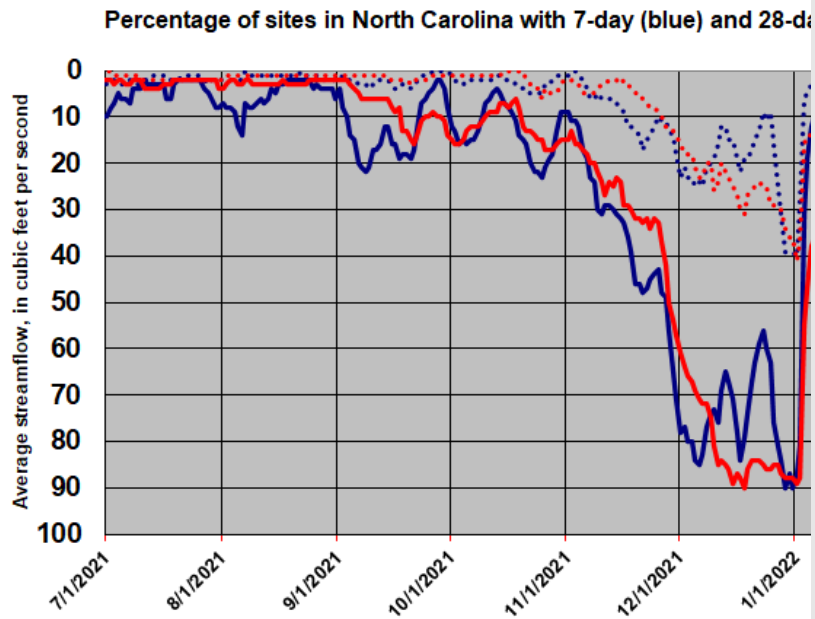
Explanation - Percentile classes						
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile -highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		Flow

USGS 7-day average streamflows

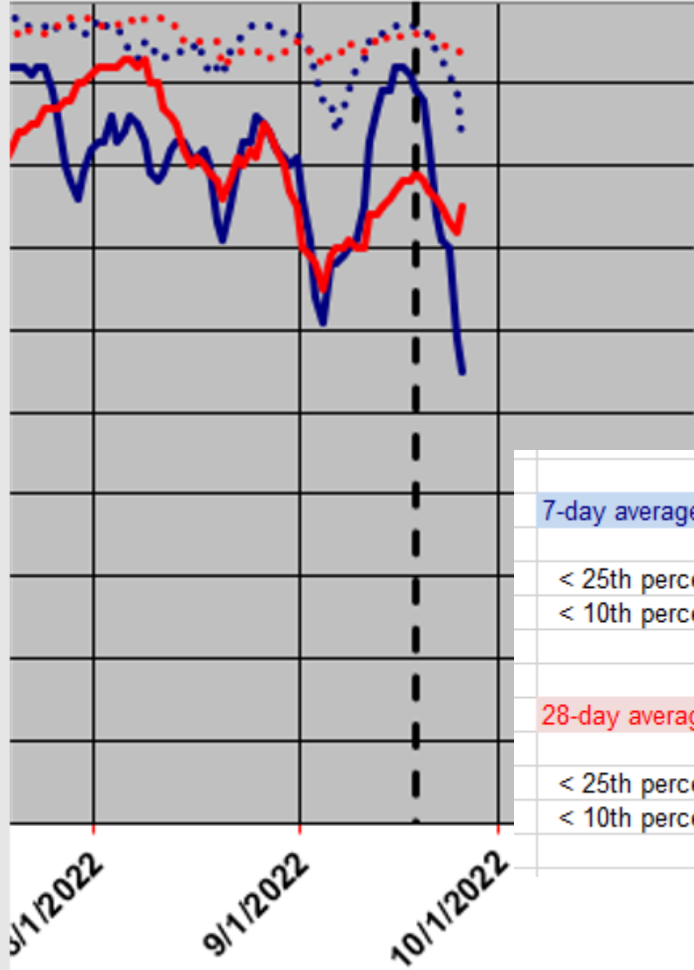


Trent River, vicinity of Pollocksville, Jones County
Initial source: Selected stock images associated with Google search using term "North Carolina Trent River"

Percentage of sites with 7-day and 28-day average streamflows below the 25th percentile



10th percentile (dotted)



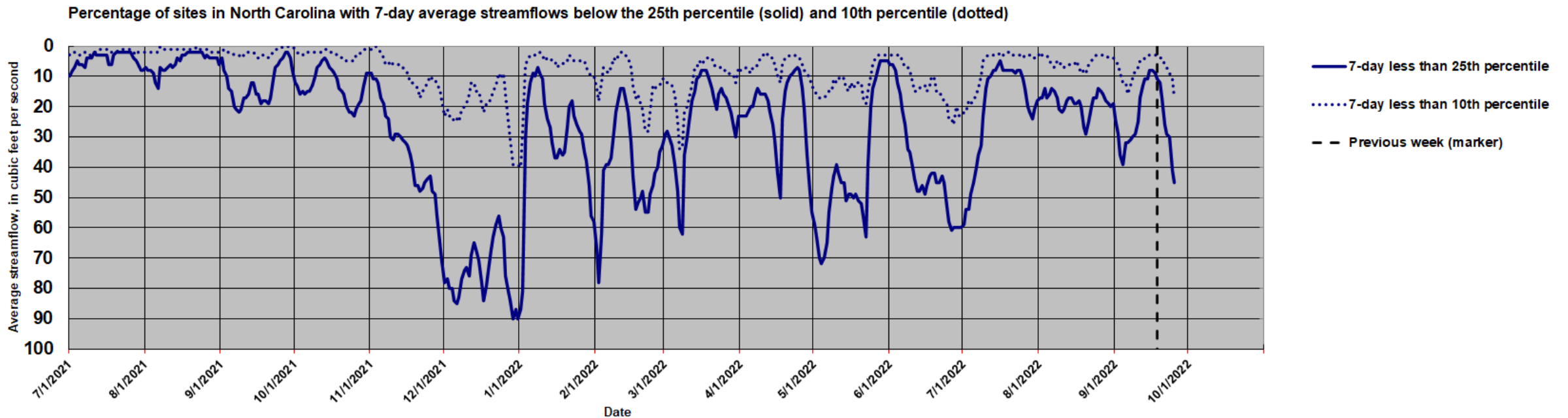
- 7-day less than 25th percentile
- 7-day less than 10th percentile
- 28-day less than 25th percentile
- 28-day less than 10th percentile
- - Previous week (marker)

	Previous 9/18/2022	Current 9/25/2022
7-day average streamflow		
< 25th percentile	11	45
< 10th percentile	3	17
28-day average streamflow		
< 25th percentile	21	25
< 10th percentile	4	6

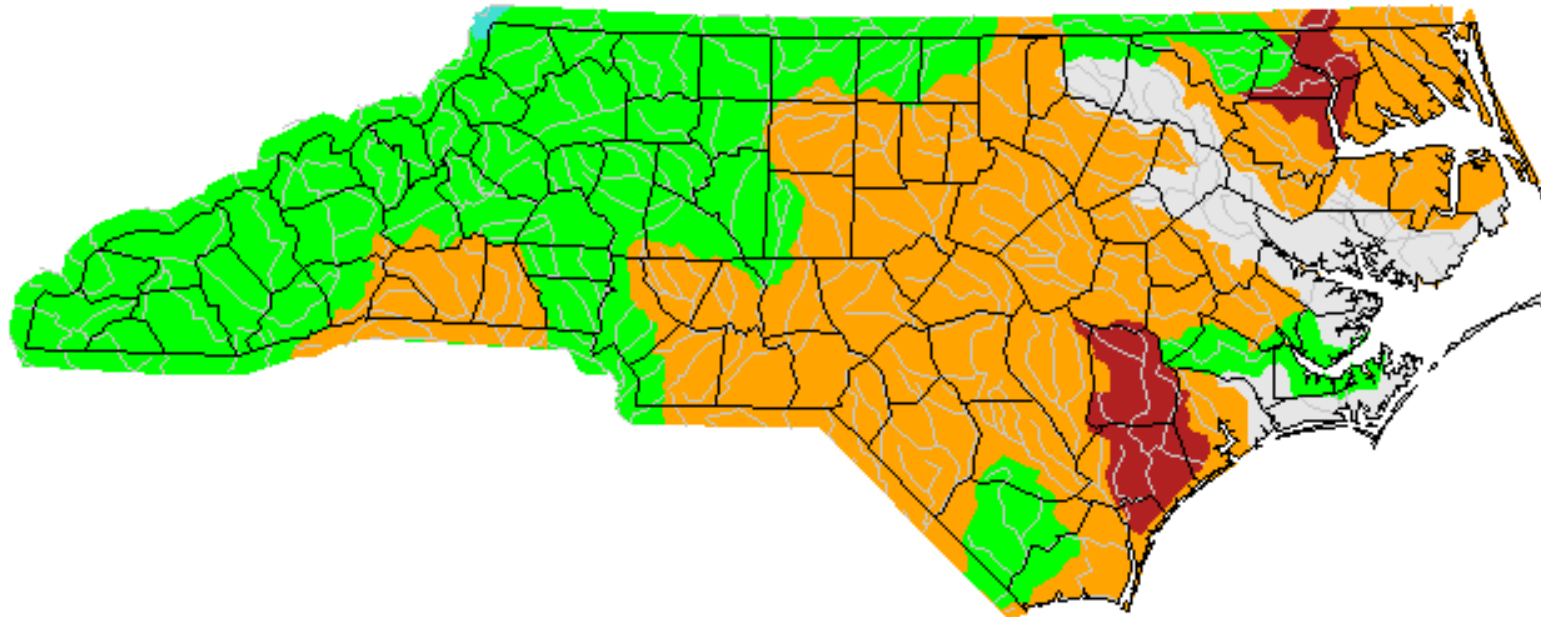


...since July 1, 2021

Percentage of sites with 7-day average streamflows below the 25th percentile (solid) and 10th percentile (dotted)



Sunday, September 25, 2022



*...as of
Sept 25*

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



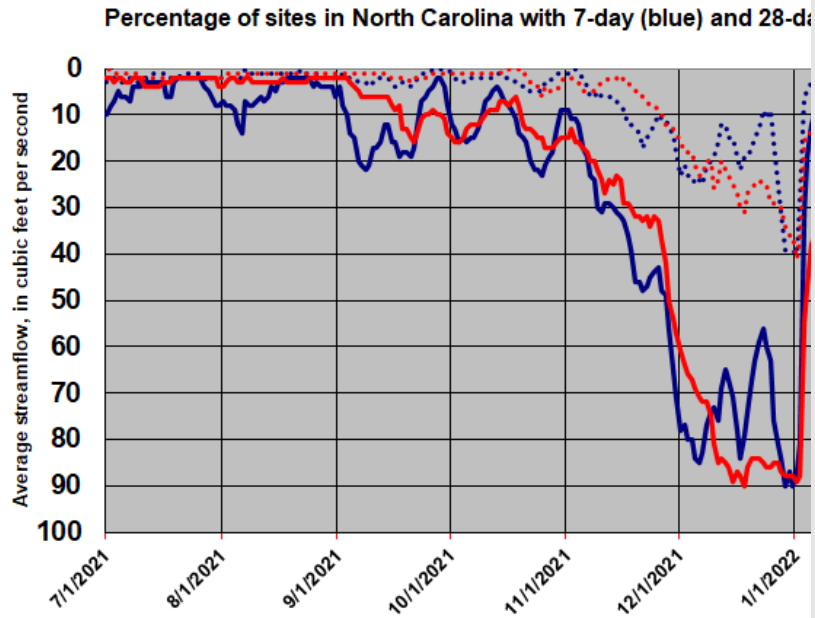
Available at URL <http://waterwatch.usgs.gov/index.php>

USGS 28-day average streamflows

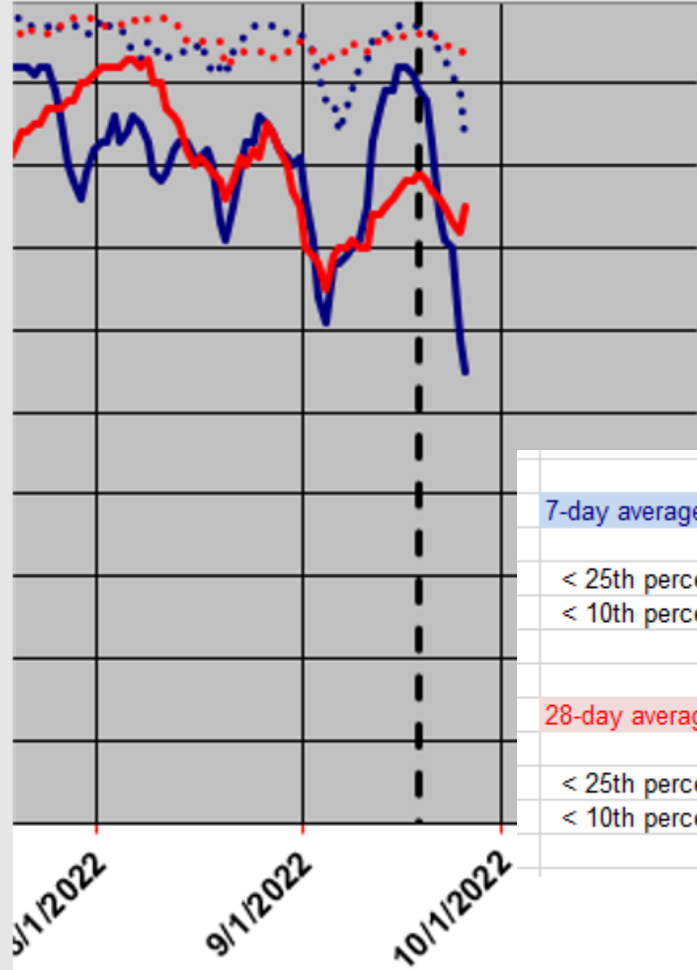


*South Fork of the New River, northwestern North Carolina
Initial source: Selected stock images associated with Google search using term "North Carolina streams rivers"*

Percentage of sites with 7-day and 28-day average streamflows below the 25th percentile



10th percentile (dotted)



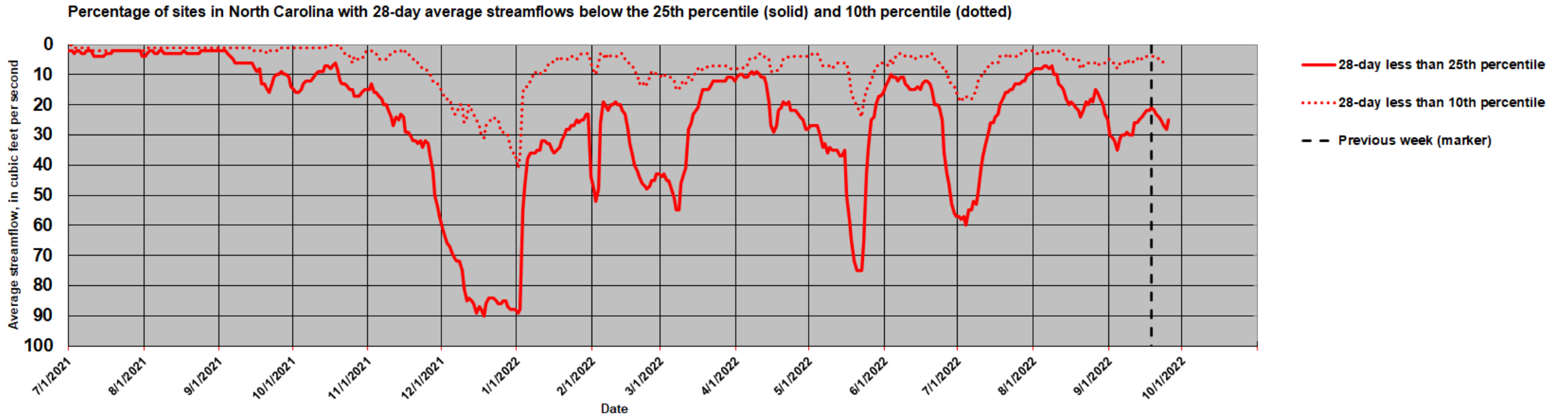
- 7-day less than 25th percentile
- 7-day less than 10th percentile
- 28-day less than 25th percentile
- 28-day less than 10th percentile
- - Previous week (marker)

	Previous 9/18/2022	Current 9/25/2022
7-day average streamflow		
< 25th percentile	11	45
< 10th percentile	3	17
28-day average streamflow		
< 25th percentile	21	25
< 10th percentile	4	6

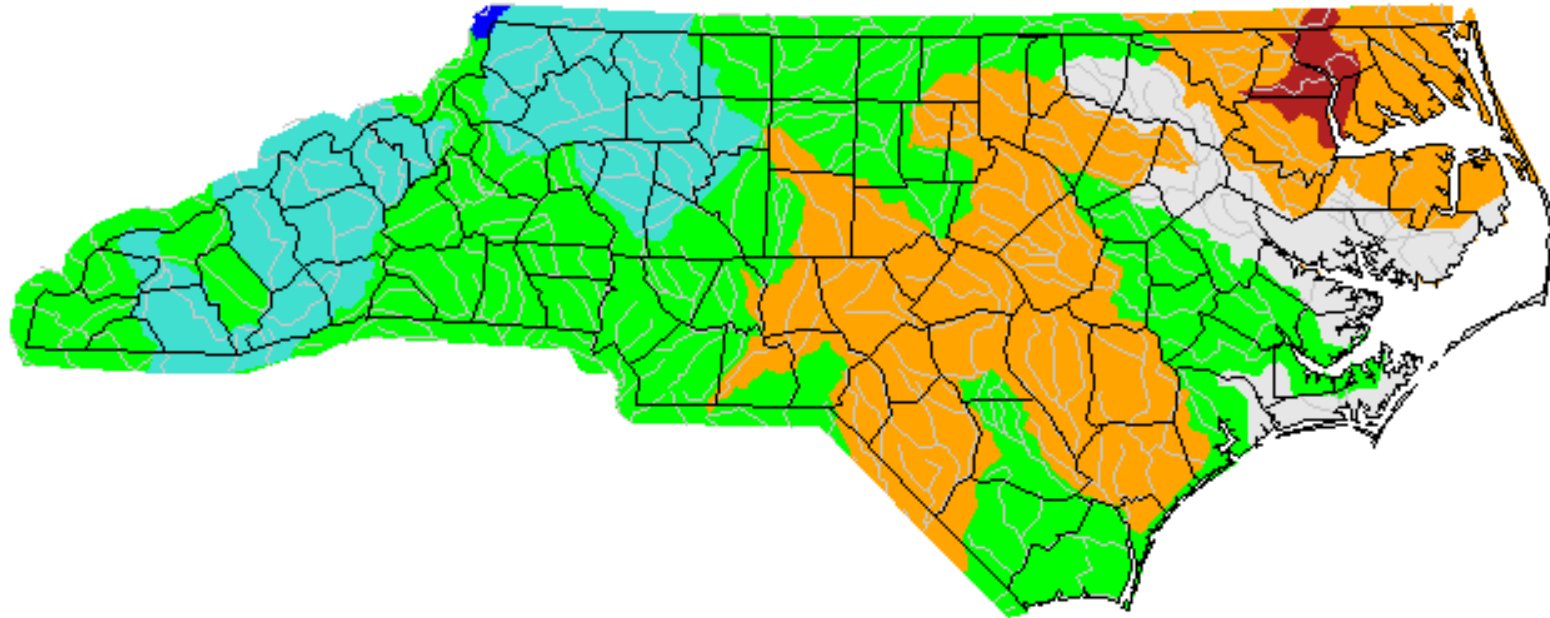


...since July 1, 2021

Percentage of sites with 28-day average streamflows below the 25th percentile (solid) and 10th percentile (dotted)



Sunday, September 25, 2022



...as of
Sept 25

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



Available at URL <http://waterwatch.usgs.gov/index.php>

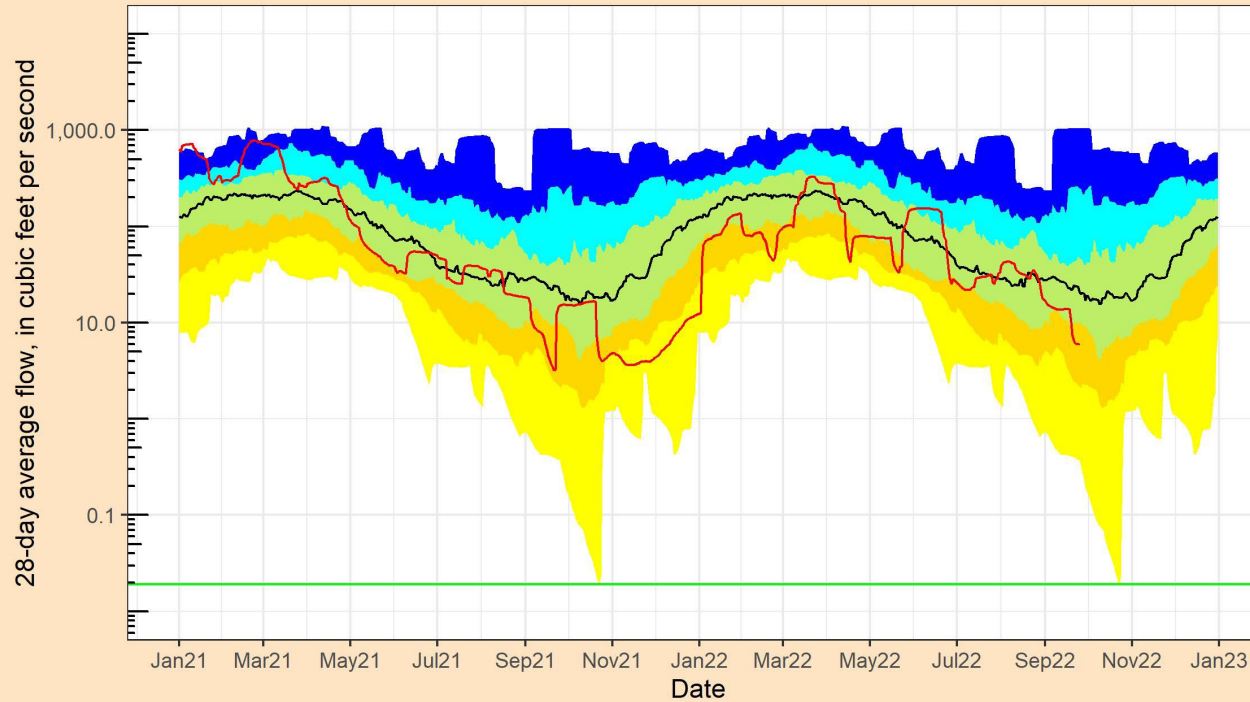
HUC map
28-day
average
flows



USGS Sta. 02085500 FLAT RIVER AT BAHAMA, NC

Drainage Area: 149 sq mi, available POR for daily mean discharge: 1925-08-01 to 2022-09-25

Flow conditions at this site are known or considered to be Unregulated



Explanation: Flow statistics

- Observed 28-day average flow
- Median by calendar day (MM/DD)
- POR minimum 28-day average

Explanation: Flow percentiles

- 90th percentile to maximum
- 75th to 90th percentile
- 25th - 75th percentile
- 10th to 25th percentile
- Minimum to 10th percentile

Period of record minimum 28-day average flow: 0.019 cfs ending on 2007-10-23

Observed data through: September 25, 2022

Data are provisional after 2022-08-24

Flow percentile statistics calculated using POR from 1962-10-01 to 2020-09-30

Plot generated: 2022-09-26 12:40:22 EDT

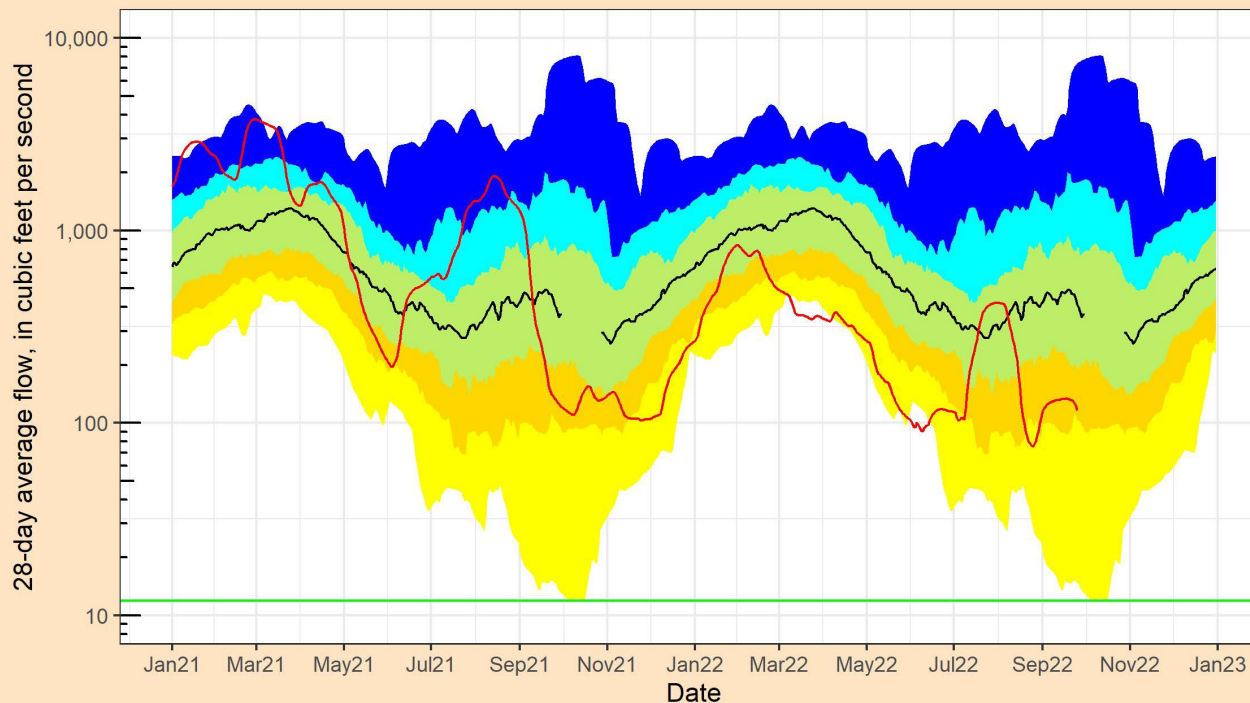




USGS Sta. 02106500 BLACK RIVER NEAR TOMAHAWK, NC

Drainage Area: 676 sq mi, available POR for daily mean discharge: 1951-10-01 to 2022-09-25

Flow conditions at this site are known or considered to be Unregulated



Explanation: Flow statistics

- Observed 28-day average flow
- Median by calendar day (MM/DD)
- POR minimum 28-day average

Explanation: Flow percentiles

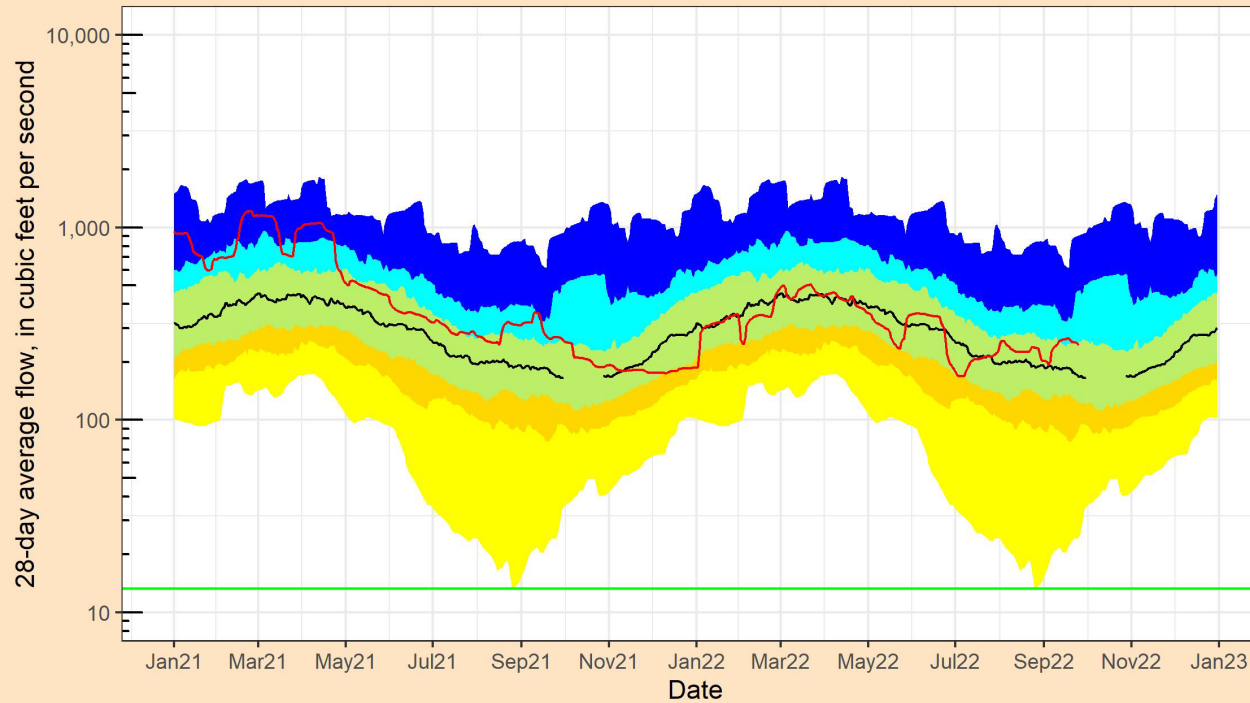
- 90th percentile to maximum
- 75th to 90th percentile
- 25th - 75th percentile
- 10th to 25th percentile
- Minimum to 10th percentile

Period of record minimum 28-day average flow: 11.925 cfs ending on 1954-10-15
Observed data through: September 25, 2022
Data are provisional after 2022-05-10
Flow percentile statistics calculated using POR from 1951-10-01 to 2020-09-30
Plot generated: 2022-09-26 12:41:36 EDT





USGS Sta. 02118000 SOUTH YADKIN RIVER NEAR MOCKSVILLE, NC
Drainage Area: 306 sq mi, available POR for daily mean discharge: 1938-10-01 to 2022-09-25
Flow conditions at this site are known or considered to be affected by Diversion(s)



Explanation: Flow statistics

- Observed 28-day average flow
- Median by calendar day (MM/DD)
- POR minimum 28-day average

Explanation: Flow percentiles

- 90th percentile to maximum
- 75th to 90th percentile
- 25th - 75th percentile
- 10th to 25th percentile
- Minimum to 10th percentile

Period of record minimum 28-day average flow: 13.271 cfs ending on 2002-08-26
Observed data through: September 25, 2022
Data are provisional after 2022-06-09
Flow percentile statistics calculated using POR from 1938-10-01 to 2020-09-30
Plot generated: 2022-09-26 12:42:06 EDT

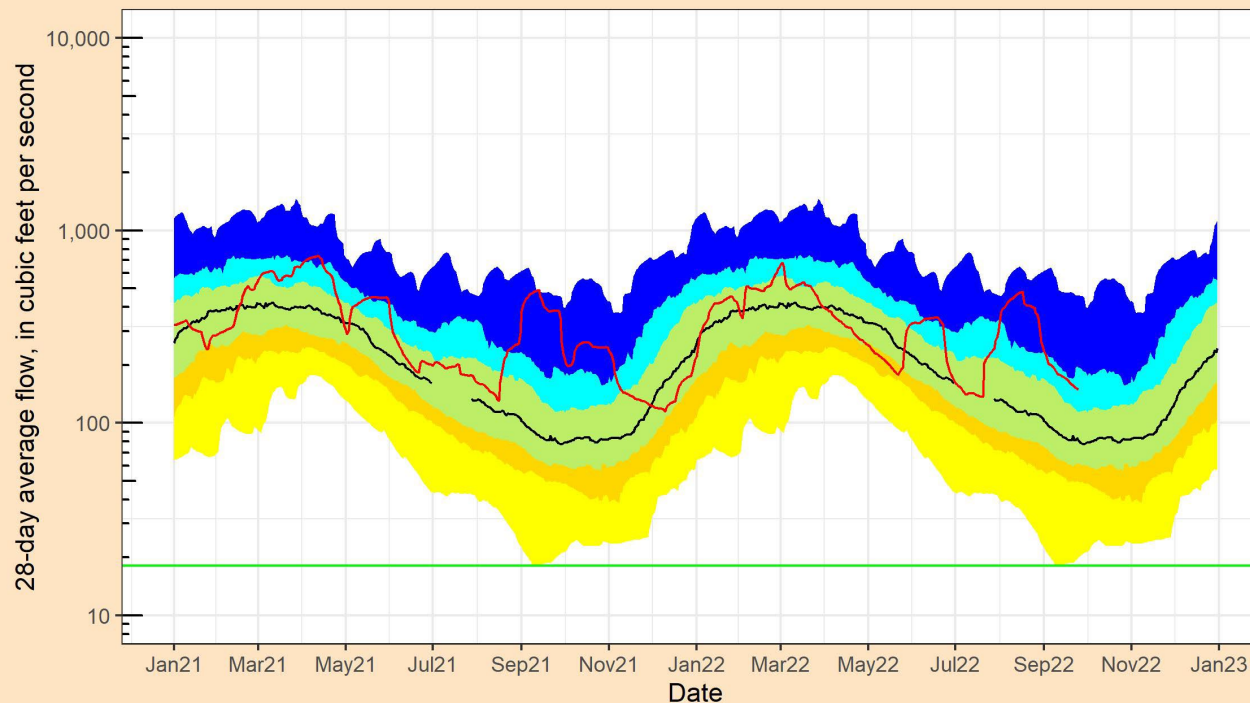




USGS Sta. 03550000 VALLEY RIVER AT TOMOTLA, NC

Drainage Area: 104 sq mi, available POR for daily mean discharge: 1904-07-01 to 2022-09-25

Flow conditions at this site are known or considered to be Unregulated



Explanation: Flow statistics

- Observed 28-day average flow
- Median by calendar day (MM/DD)
- POR minimum 28-day average

Explanation: Flow percentiles

- 90th percentile to maximum
- 75th to 90th percentile
- 25th - 75th percentile
- 10th to 25th percentile
- Minimum to 10th percentile

Period of record minimum 28-day average flow: 18.071 cfs ending on 1925-09-12

Observed data through: September 25, 2022

Data are provisional after 2022-05-10

Flow percentile statistics calculated using POR from 1903-10-01 to 2020-09-30

Plot generated: 2022-09-26 12:44:28 EDT



In closing...questions...comments...concerns

Contact info:

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USGS South Atlantic Water Science Center

<https://www.usgs.gov/centers/sa-water>