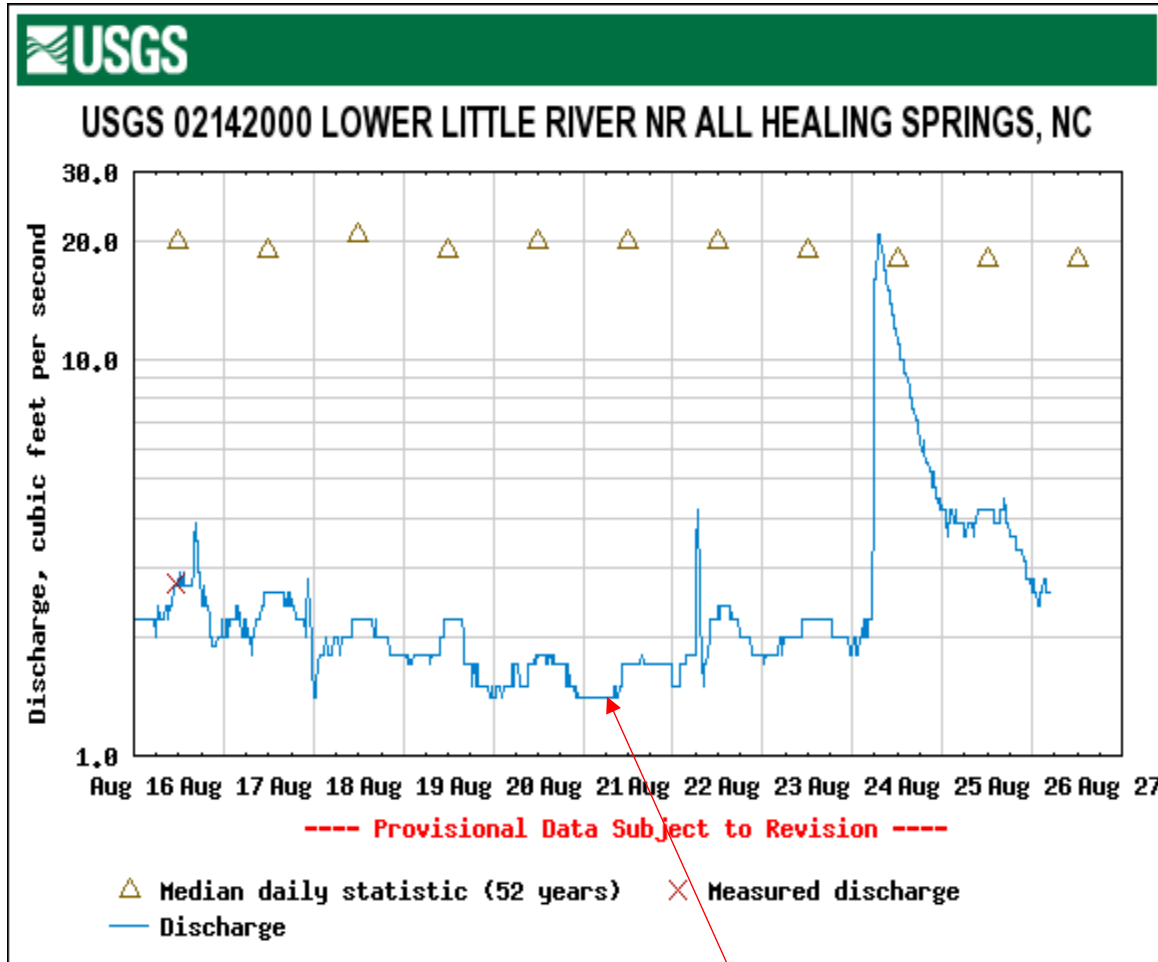


# Catawba River Tributaries Record Low Flows-August 2007

## Alexander County



In the 52 years since the USGS has collected flow data on this creek, the previous low flow was recorded as 3.8 cubic feet per second (cfs) in 2000.

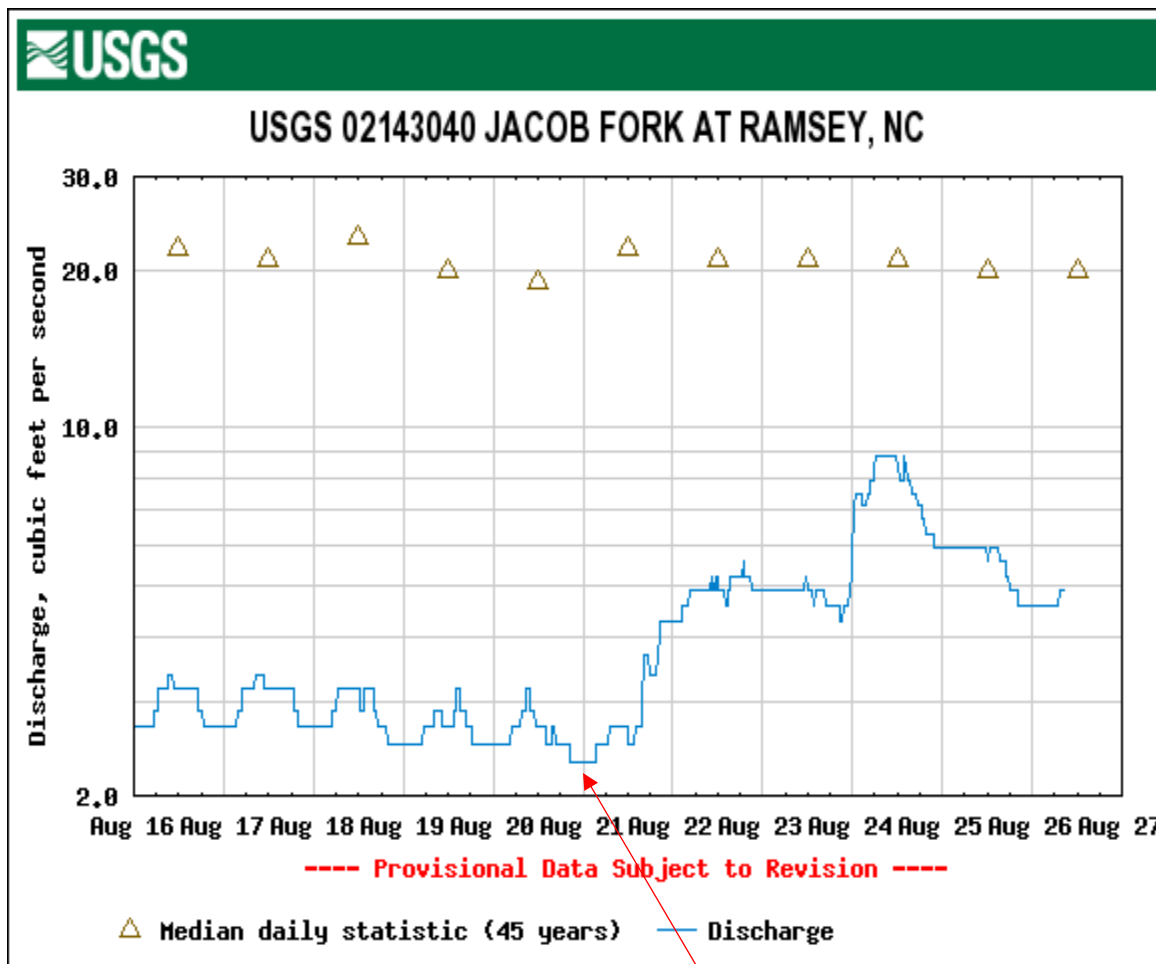
The instantaneous flow value recorded on at 8: 42 am Sunday morning August 26, 2007 was 2.6 cubic feet per second (cfs). This is lower than the previous record but the lowest value was actually recorded on August 21<sup>st</sup>, when water levels dipped to 1.5 cfs, *a new record low*.

Daily discharge statistics, in cfs, for Aug 26 based on 52 years of record [more](#)

Most Recent Instantaneous Value	Min (2000)	20%	Median	Mean	80%	Max (1961)
2.6	3.8	11	18	22	28	112

It is important to note that even after a brief thunderstorm on August 24<sup>th</sup> that caused creek levels to rise to 20 cfs, water levels quickly returned to record low levels within 48 hours. This illustrates why thunder storms will not break the drought.

Burke County



In the 45 years since the USGS has collected flow data on this river, the previous low flow was recorded as 4.9 cubic feet per second (cfs) in 1988.

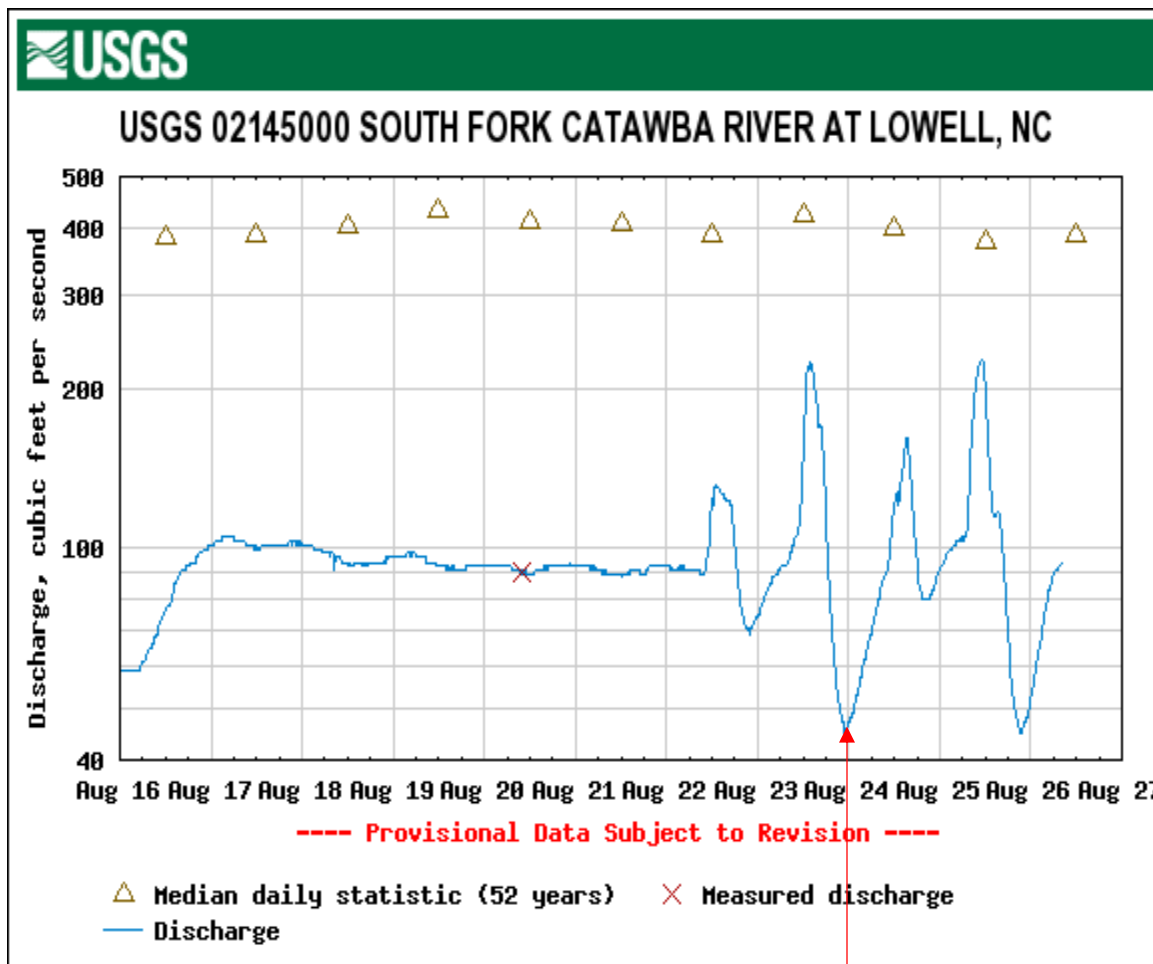
The instantaneous flow value recorded on at 9:04 am Sunday morning August 26, 2007 was 4.9 cubic feet per second (cfs). This is equal to the previous record but the lowest value was actually recorded on August 21<sup>st</sup>, when water levels dipped to 2.4 cfs, *a new record low*.

**Daily discharge statistics, in cfs, for Aug 26 based on 45 years of record [more](#)**

Most Recent Instantaneous Value	Min (1988)	20%	Median	Mean	80%	Max (1989)
4.9	4.9	12	20.	34	40.	333

It is important to note that even after a brief thunderstorm on August 21<sup>st</sup> and the 24<sup>th</sup> that caused creek levels to rise to 5 and 9 cfs respectively, water levels quickly returned to record low levels within 48 hours. This illustrates why sustained rainfall over many days is needed to break the drought.

Gaston County



In the 52 years since the USGS has collected flow data on this river, the previous low flow was recorded as 98 cubic feet per second (cfs) in 2002.

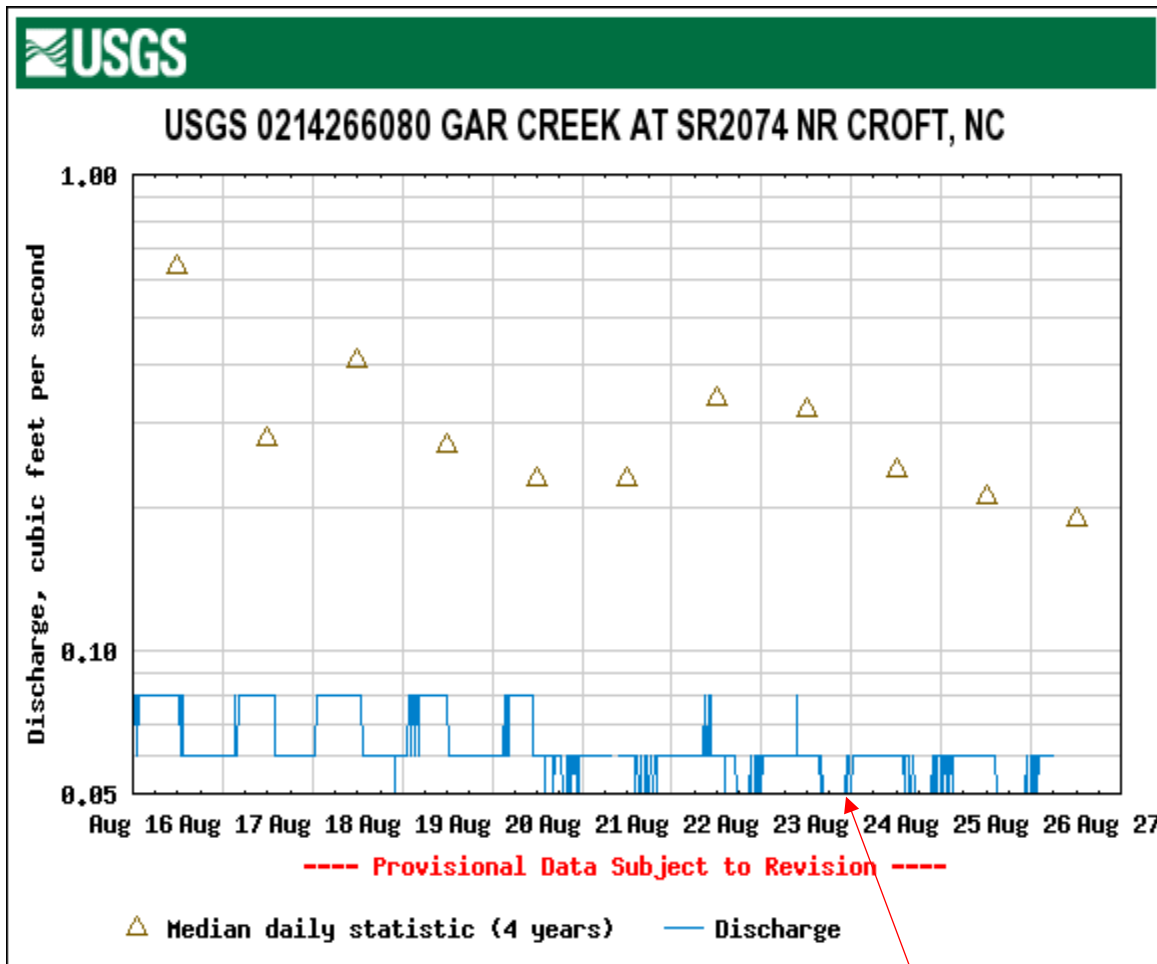
The instantaneous flow value recorded on at 9:17 am Sunday morning August 26, 2007 was 94 cubic feet per second (cfs). This is lower than the previous record but the lowest value was actually recorded on August 23<sup>rd</sup>, when water levels dipped to 46 cfs, *a new record low*. This new record low is two times lower than the previous record low level of the South Fork river.

**Daily discharge statistics, in cfs, for Aug 26 based on 52 years of record** [more](#)

Most Recent Instantaneous Value	Min (2002)	20%	Median	Mean	80%	Max (1967)
94	98	240.	391	491	672	2110

The South Fork Catawba River is the largest tributary to the mainstem Catawba River. It provides 30 % of the flow into Lake Wylie.

Mecklenburg County



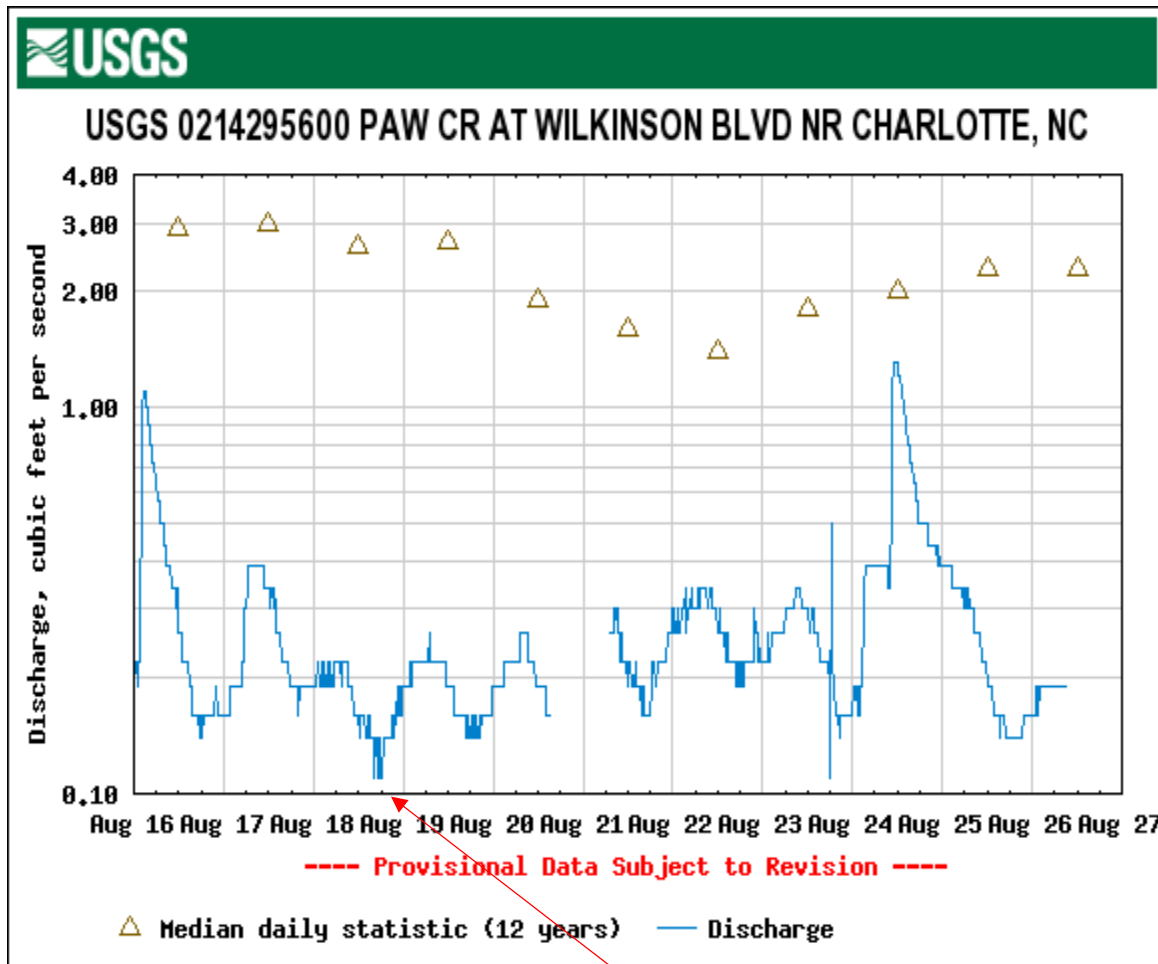
In the 4 years since the USGS has collected flow data on this creek, the previous low flow was recorded as 0.12 cubic feet per second (cfs) in 2004.

The instantaneous flow value recorded on at 9:32 am Sunday morning August 26, 2007 was 0.06 cubic feet per second (cfs). This is lower than the previous record but the lowest value was actually recorded on August 23<sup>rd</sup>, 24<sup>th</sup> and 25<sup>th</sup> when water levels dipped to 0 cfs, *a new record low*. Gar Creek *dried up* and aquatic life (fish, mussels, macroinvertebrates) *died without water*.

**Daily discharge statistics, in cfs, for Aug 26 based on 4 years of record** [more](#)

Most Recent Instantaneous Value	Min (2004)	20%	Median	Mean	80%	Max (2003)
0.06	0.12	0.12	0.19	0.30	0.69	0.69

Mecklenburg County



In the 12 years since the USGS has collected flow data on this creek, the previous low flow was recorded as 0.41 cubic feet per second (cfs) in 2001.

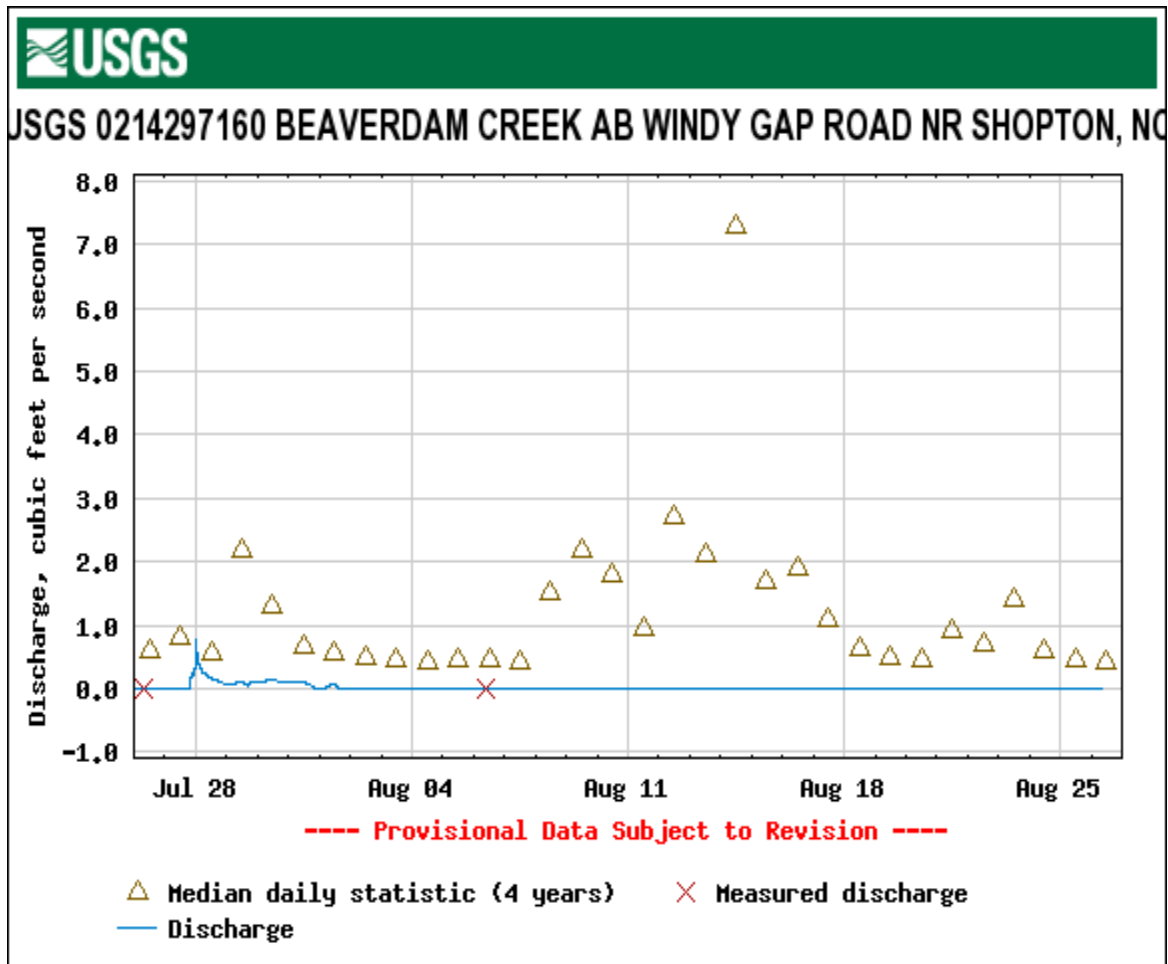
The instantaneous flow value recorded on at 9:41 am Sunday morning August 26, 2007 was 0.19 cubic feet per second (cfs). This is lower than the previous record but the lowest value was actually recorded on August 18<sup>th</sup> and 23<sup>rd</sup>, when water levels dipped to 0.12 cfs, *a new record low*. This new record low is four times lower than the previous record low level recorded on Paw Creek.

**Daily discharge statistics, in cfs, for Aug 26 based on 12 years of record** [more](#)

Most Recent Instantaneous Value	Min (2001)	20%	Median	Mean	80%	Max (1995)
0.19	0.41	1.4	2.3	2.9	4.2	8.4

The upper reaches of Paw Creek above the location of this gauging station did not have any flow from August 18<sup>th</sup> through August 22<sup>nd</sup>.

Mecklenburg County



In the 4 years since the USGS has collected flow data on this creek, the previous low flow was recorded as 0.38 cubic feet per second (cfs) in 2006.

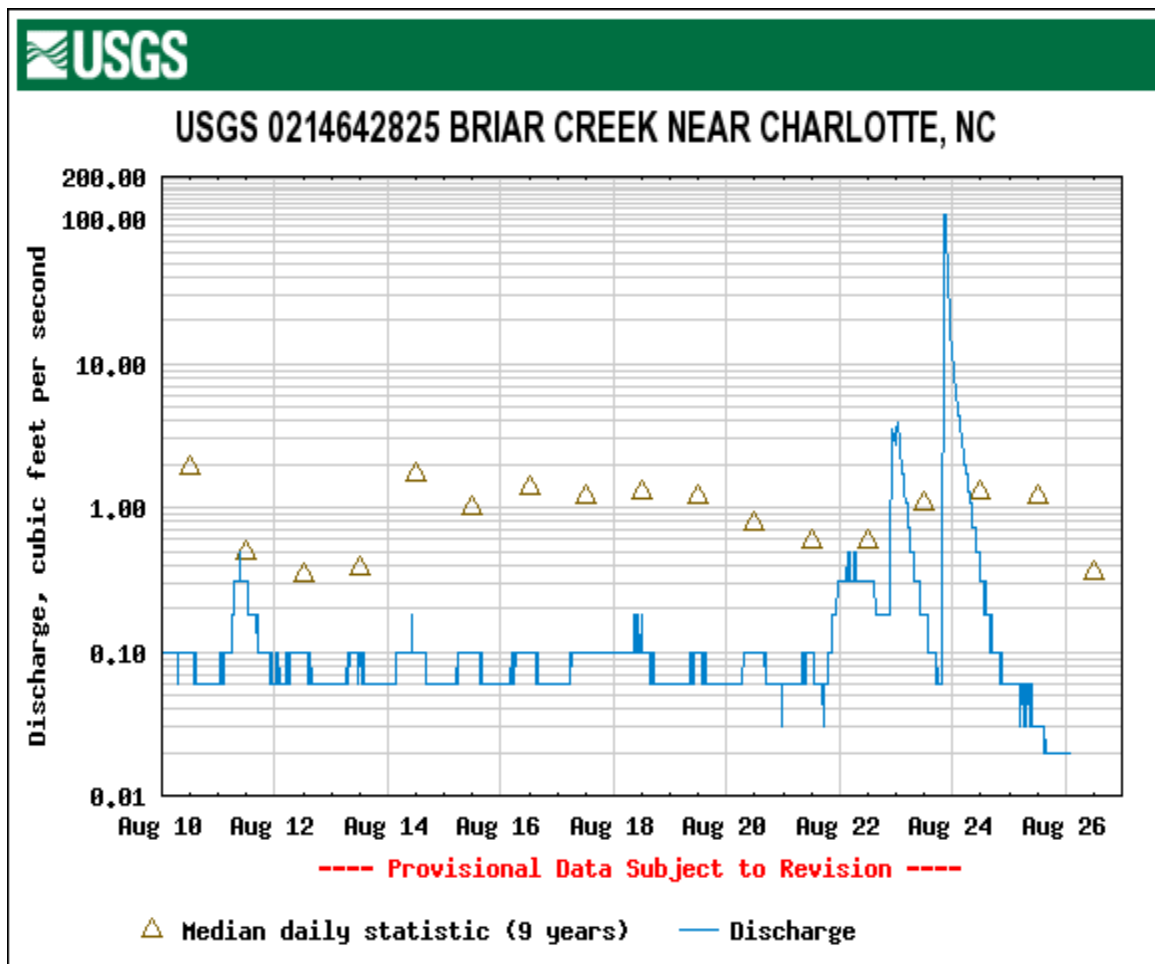
The instantaneous flow value recorded on at 9:53 am Sunday morning August 26, 2007 was 0.0 cubic feet per second (cfs). This is *a new record low*. As the graph above illustrates, Beaverdam Creek has been dry and without flow since July 28, 2007.

**Daily discharge statistics, in cfs, for Aug 26 based on 4 years of record [more](#)**

Most Recent Instantaneous Value	Min (2006)	20%	Median	Mean	80%	Max (2003)
0.00	0.38	0.38	0.42	0.80	2.0	2.0

Most of the entire **fish, mussel and macroinvertebrate population** on Beaverdam Creek **is dead**. The water dependant *aquatic life ecosystem* in Beaverdam creek has been *catastrophically devastated by the 2007 drought*. Urbanization of a watershed, particularly the removal of trees and replacement with impervious surface (roads, parking lots, houses, shopping centers, strip malls, houses, etc.) drastically changes the hydrologic capacity of a creek to withstand drought conditions.

Mecklenburg County



In the 9 years since the USGS has collected flow data on this creek, the previous low flow was recorded as 0.07 cubic feet per second (cfs) in 2001.

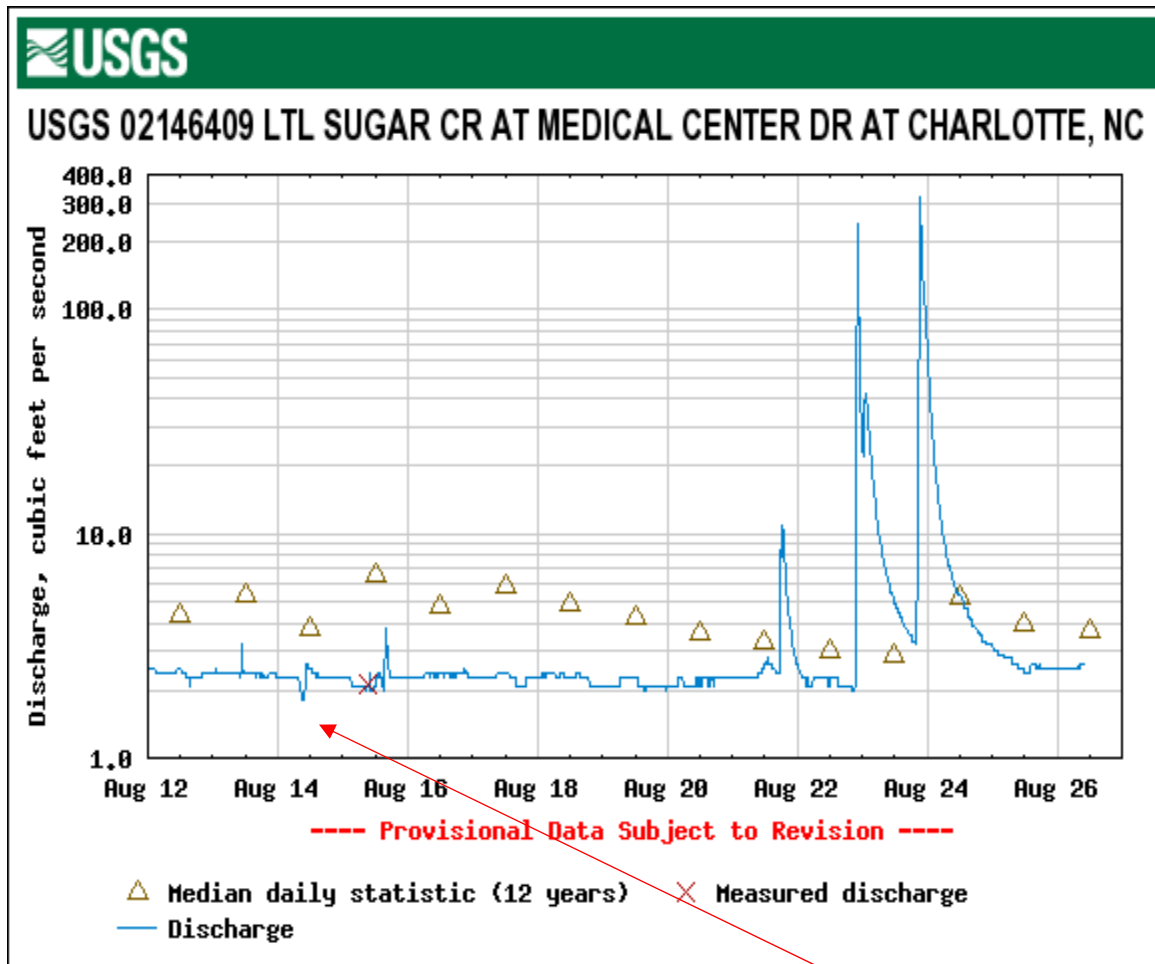
The instantaneous flow value recorded on at 10:08 am Sunday morning August 26, 2007 was 0.02 cubic feet per second (cfs). This is *a new record low*. As the graph above illustrates, Briar Creek has been nearly dry since August 10, 2007. Despite brief showers in Charlotte on August 23<sup>rd</sup> and 24<sup>th</sup>, Briar Creek immediately dropped to record low levels.

**Daily discharge statistics, in cfs, for Aug 26 based on 9 years of record [more](#)**

Most Recent Instantaneous Value	Min (2001)	20%	Median	Mean	80%	Max (1998)
0.02	0.07	0.24	0.36	0.68	1.7	1.9

Urbanization of a watershed, particularly the removal of trees and replacement with impervious surface (roads, parking lots, houses, shopping centers, strip malls, houses, etc.) drastically changes the hydrologic capacity of a creek to withstand drought conditions. When impervious surface covers the landscape, it blocks rain water from recharging groundwater, this results in creeks that dry up much more quickly than they did in the past.

Mecklenburg County



In the 12 years since the USGS has collected flow data on this creek, the previous low flow was recorded as 2.4 cubic feet per second (cfs) in 2001.

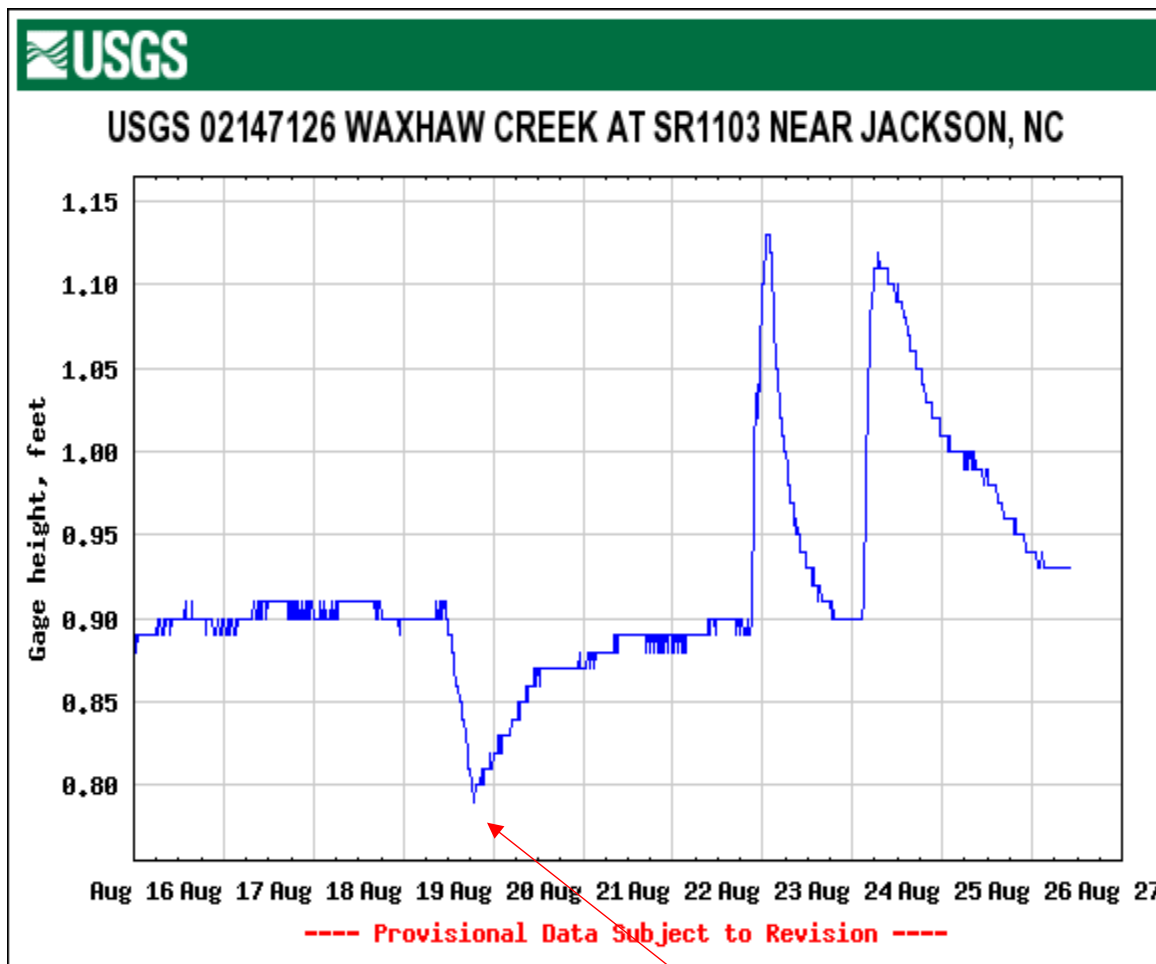
The instantaneous flow value recorded on at 10:21 am Sunday morning August 26, 2007 was 2.6 cubic feet per second (cfs). Little Sugar Creek recorded all time new low level of 1.9 cfs on August 14, 2007.

**Daily discharge statistics, in cfs, for Aug 26 based on 12 years of record [more](#)**

Min (2001)	Most Recent Instantaneous Value	20th percentile	Median	80th percentile	Mean	Max (1995)
2.4	2.6	2.9	3.7	5.9	9.5	71

Restoration of the Little Sugar Creek watershed with greenways and replacement of trees may help it become more drought tolerant. Without sustained rainfall however, it is likely that Little Sugar Creek will dry up like other creeks in Mecklenburg County.

Union County



In the 5 years since the USGS has collected flow data on this creek, the previous low flow was recorded as 0.24 cubic feet per second (cfs) in 2006.

The instantaneous flow value recorded on at 11:12 am Sunday morning August 26, 2007 was 0.12 cubic feet per second (cfs). This is two times lower than the previous record but the lowest value was actually recorded on August 19<sup>th</sup> when water levels dipped to 0 cfs, a new record low. Waxhaw Creek *dried up* and aquatic life (fish, mussels, macroinvertebrates) *died without water*.

**Daily discharge statistics, in cfs, for Aug 26 based on 5 years of record [more](#)**

Most Recent Instantaneous Value	Min (2006)	20th percentile	Median	Mean	80th percentile	Max (2003)
0.12	0.24	0.32	1.1	2.0	4.7	5.2

Despite thunder showers in Union County on August 23<sup>rd</sup> and August 24<sup>th</sup>, Waxhaw Creek returned to record low levels on August 26, 2007.

**Summary:** This information is provided as a public service of the Catawba Riverkeeper Foundation, Inc. to illustrate the seriousness of the 2007 drought. Sprawl and development that removes native forests and replaces them with impervious surfaces, dramatically changes the hydrology of a watershed. As more and more trees are replaced with roads, parking lots, houses, shopping centers, strip malls and other development, creeks, rivers and lakes record higher flood levels and lower drought levels.

As of August 24, 2007, approximately four times more water is leaving the Catawba River basin than is flowing into it. Major tributaries that help fill up the Catawba River and its lakes established new record setting all time low levels in the last 10 days. As the data in this report clearly illustrates, creeks and streams in more urban areas have completely dried up. This is having a devastating impact to aquatic life, particularly fish, mussels and benthic macroinvertebrates. Without water in creeks they cannot survive.

In normal years, the lowest creek flows are usually recorded in September or October. The fact that we are already seeing record low flows in August before the historically driest months of September and October suggests that the worst is yet to come.

The last drought in the Catawba Basin began in 1998 and continued through 2002. It took four years of sustained drought to see the kind of impacts we are seeing now after just a few months of low rainfall in 2007. Increased water withdrawals from the Catawba River coupled with uncontrolled development in the watershed that is removing approximately 40 acres of green space per day is having an escalating negative impact on the Catawba River and its tributaries. The river is far less drought resilient than it was just 7 years ago. Higher levels of land conservation, growth control, storm water management and water conservation is needed throughout the watershed in order to adequately protect the Catawba River from the continued detrimental effects of sprawl and urbanization.

The following pages contain pictures of some of the dry creeks listed above.



Beaverdam Creek, near Shopton Road, Charlotte, NC.

Tributary streams in the Catawba River Basin have dried up. Much of the aquatic life in Beaverdam Creek died without water. This picture was taken less than a quarter mile from the Brown's Cove region of Lake Wylie on August 21, 2007.



Briar Creek between Eastway Drive and Shamrock Road, Charlotte, NC

Mostly sand and rocks are all that is left in Briar Creek. What little water left in the creek bed has accumulated in stagnant pools, leaving aquatic life stranded and vulnerable to predation by great blue herons, raccoons and other birds and mammals. Both the aquatic life and predators depend on water in creeks for life.



Gar Creek near Latta Plantation, Charlotte, NC

Gar Creek with less than 1 cubic foot per second of flow. Most of the water is just standing in pools. Many USGS Gauging Station's throughout the Catawba River basin are recording record low flows.



Lake Wylie, Mecklenburg County shoreline.

Receding water in Catawba River lakes uncovers clams and mussels. They have died by the thousands on the banks of Lake Norman, Lake Wylie and Lake James, the lakes with the lowest levels. Here thousands of dead mussels and clams create a six inch tall mound lining the shoreline of Lake Wylie.



Lake James at 7.4 feet below full pond.

As water levels decline in lakes important aquatic life habitat is reduced significantly. Mussels and clams are left high and dry, baking to death in the heat and sun.