

<b>NWS Form E-5</b> (04-2006) (PRES. BY NWS Instruction 10-924)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE	HYDROLOGIC SERVICE AREA (HSA) <b>Columbia, SC</b>
<b>MONTHLY REPORT OF HYDROLOGIC CONDITIONS</b>		REPORT FOR: MONTH                      YEAR <b>August      2019</b>
TO: Hydrologic Information Center, W/OS31 NOAA's National Weather Service 1325 East West Highway Silver Spring, MD 20910-3283		SIGNATURE <b>Leonard Vaughan</b>  DATE <b>09/12/2019</b>
<i>When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).</i>		

☒ An X inside this box indicates that no flooding occurred within this hydrologic service area.

## River Conditions for August 2019

### Summary

August continued with the typically warm and humid conditions that traditionally occur in South Carolina. However, rainfall varied widely across the Midlands and Central Savannah River Area. Some portions of the state received several inches of rain while others received less than 2 inches for the month. Temperatures were slightly above normal for the month. Most of the area received between 3 and 5 inches for the month. Areas of drought remained across the Midlands and Central Savannah River Area, especially across the eastern Midlands and southern CSRA.

### Precipitation

The total precipitation at Columbia Metro Airport was 1.40 inches. The total precipitation at Augusta Bush Field was 12.92 inches. It was the wettest August on record at Augusta. Precipitation records for Columbia began in 1878. Precipitation records for Augusta began in 1871.

Here are a few reports from NWS Coop Stations:

Newberry WKDK (NWYS1) – 12.54 inches **\*3<sup>rd</sup> wettest on record (1893-2019)**

Lake Greenwood (CHPS1) – 10.29 inches

Saluda Water Plant (SADS1) – 8.64 inches

Holly Hill 1 SW (HHLS1) – 0.96 inches

Lugoff 2 NE (LUGS1) – 2.45 inches

Orangeburg 2 (ORBS1) – 2.55 inches

Here are a few reports from the CoCoRaHS (Community, Collaborative, Rain, Hail and Snow Network) observers:

South Carolina:

SC-NW-13 Newberry 1.0 N – 11.75 inches

SC-MC-5 McCormick 2.3 W – 10.18 inches

SC-AK-71 N. Augusta 3.5 ENE – 9.15 inches

SC-RC-71 Forest Acres 0.7 NE – 1.16 inches

SC-LX-137 Lexington 5.3 E – 1.36 inches

SC-OR-41 Elloree 2.2 WSW – 1.58 inches

Georgia:

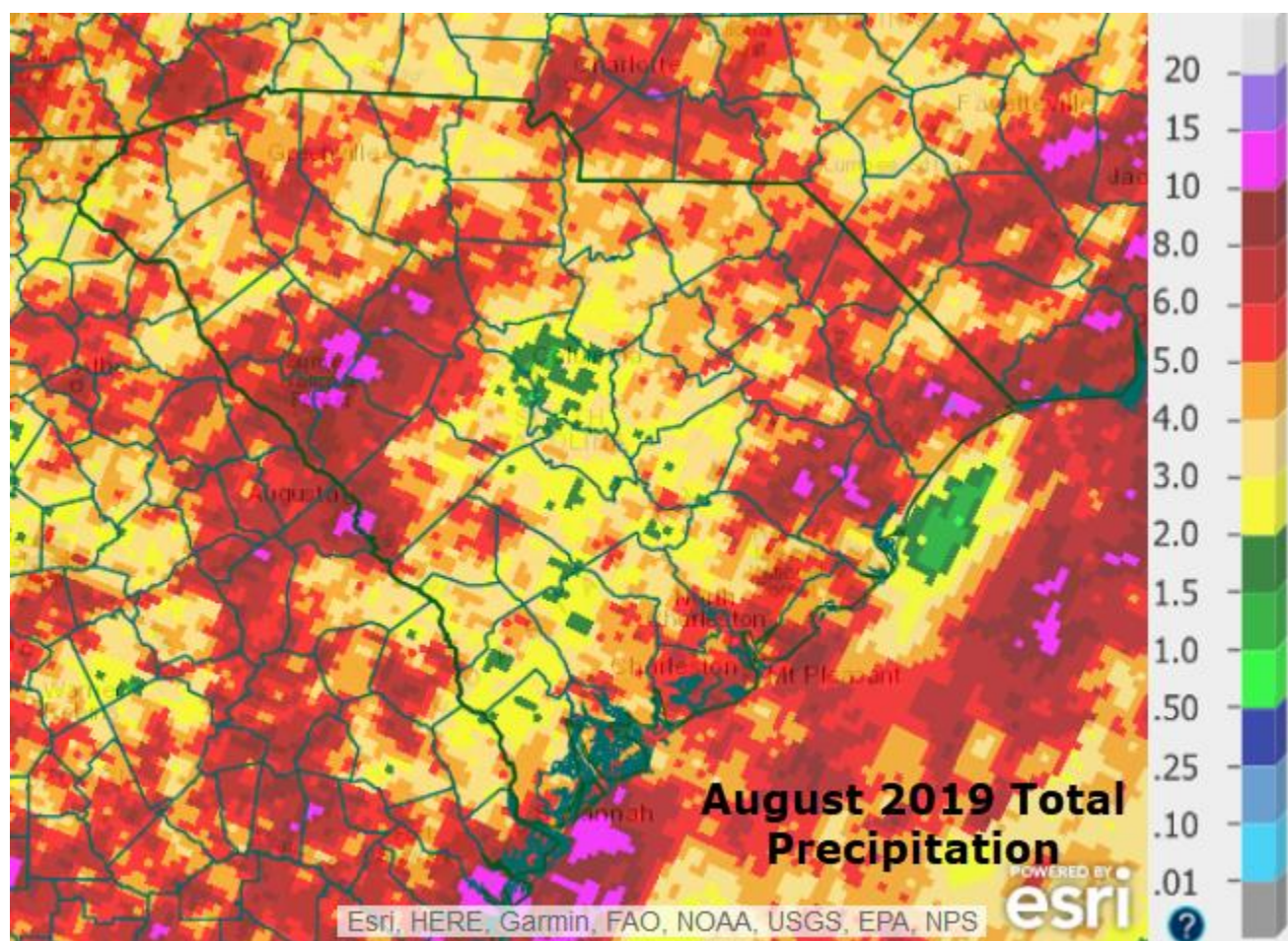
GA-CU-3 Evans 2.1 NNW – 10.30 inches

GA-BK-9 S. Augusta 4.1 S – 8.30 inches

GA-BK-10 Waynesboro 5.3 SE – 3.06 inches

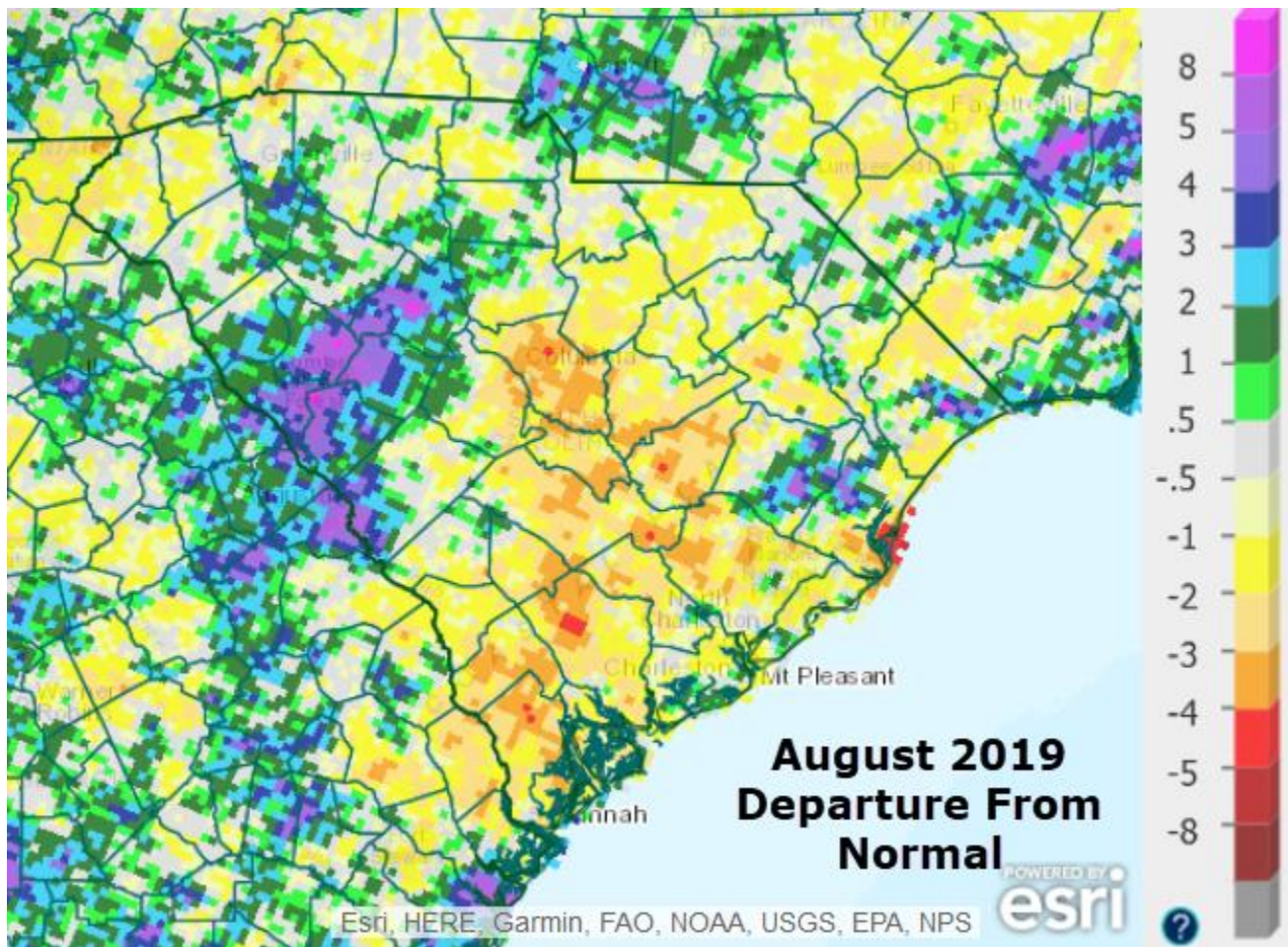
GA-CU-11 Grovetown 2.0 SSW – 4.81 inches

(Please see the precipitation maps below).



## August 2019 Total Precipitation (inches)

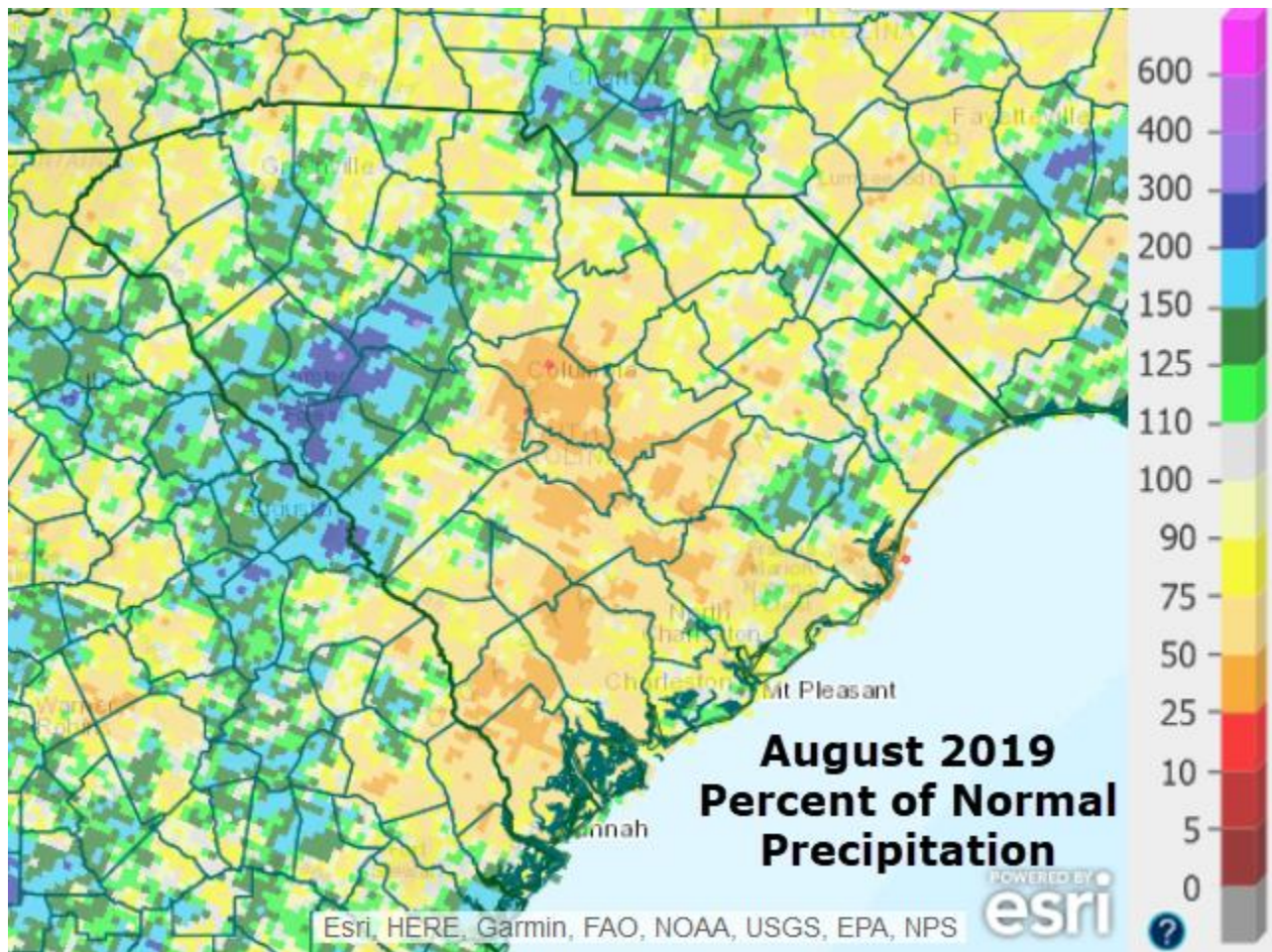
Source: Advanced Hydrologic Prediction Service, NWS



## August 2019 Precipitation Departure from Normal (inches)

Source: Advanced Hydrologic Prediction Service, NWS





## August 2019 Percent of Normal Precipitation

Source: Advanced Hydrologic Prediction Service, NWS

August 2019 precipitation at observation sites was as follows:

Station	Rainfall	Normal	Departure From Normal
Augusta (AGS)	12.92	4.32	+8.60
Augusta (DNL)	9.75	4.92	+4.83
Columbia (CAE)	1.40	5.26	-3.86
Columbia (CUB)	1.47	4.94	-3.47
Orangeburg (OGB)	M	5.28	M

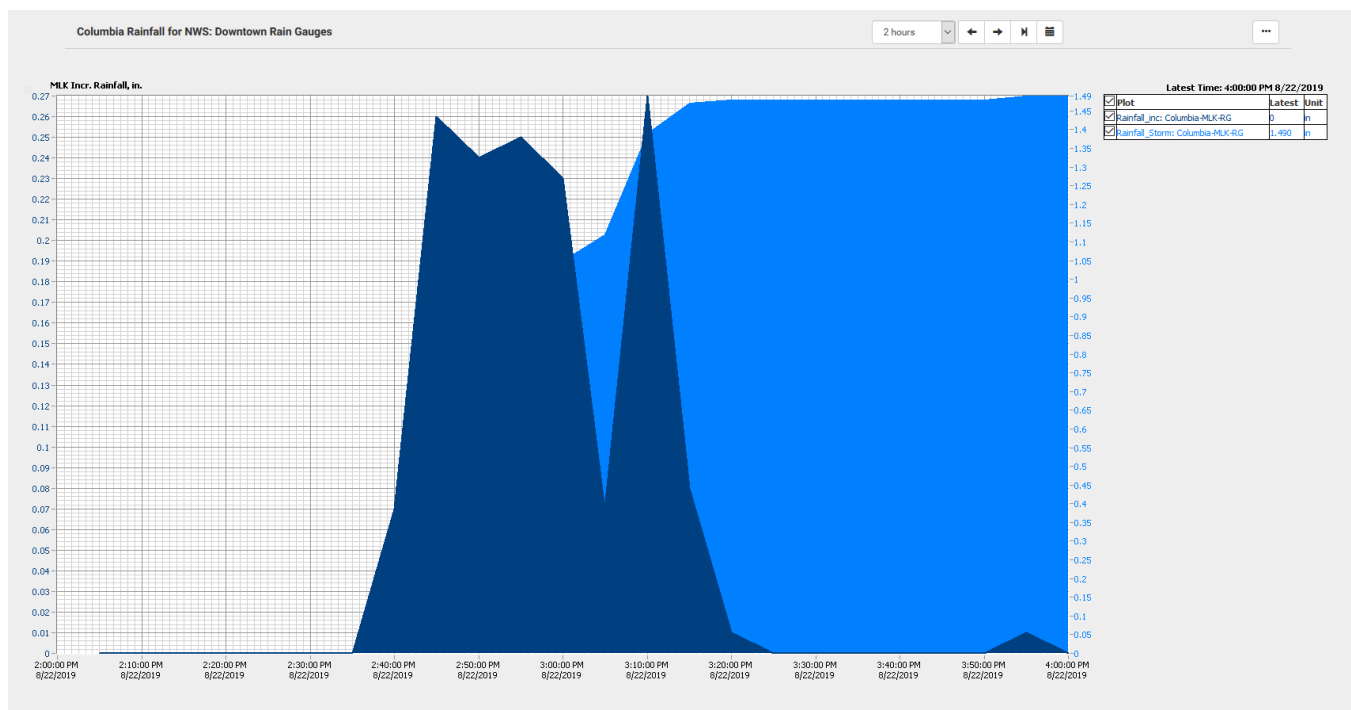
### **River/Flood Conditions**

Rainfall was well above normal across the northern and central portions of the CSRA. The remainder of the Midlands and CSRA had near to below average rainfall for the month.

Only one river forecast point approached flood stage during August. The river forecast point at Modoc along Stevens Creek crested at 18.4 feet on the morning of the 21<sup>st</sup>. Action Stage is 17.0 feet and Flood Stage is 19.0 feet. A cluster of persistent showers and thunderstorms produced heavy rainfall during the evening and overnight hours of the 20<sup>th</sup> into the 21<sup>st</sup> across the basin. Rainfall amounts ranged from 3 to 5 inches. A CoCoRaHS site in McCormick County reported 5.15 inches of rain and a RAWS site in McCormick County reported 4.05 inches of rain.

There was one locally heavy rainfall event that produced some minor flooding in the Columbia Metropolitan Area. During the afternoon of the 22<sup>nd</sup>, slow moving thunderstorms produced locally heavy rainfall over downtown Columbia. Rainfall amounts up to 1.50 inches fell in just over 1 hour. The stream gage along Rocky Branch near Whaley and Main Streets crested at 7.2 feet. Flood stage is 7.2 feet.

Attached are 5 minute rainfall readings and rainfall totals from the City of Columbia rain gage network. The first graph is from the site at MLK Park. This is located in the headwaters of the Rocky Branch Basin. The second graph is from a site located at the intersection of Whaley Street and Main Street in downtown Columbia. This gage is located near the stream gage along Rocky Branch. Also included are the hydrographs provided by the City of Columbia for locations along Rocky Branch.

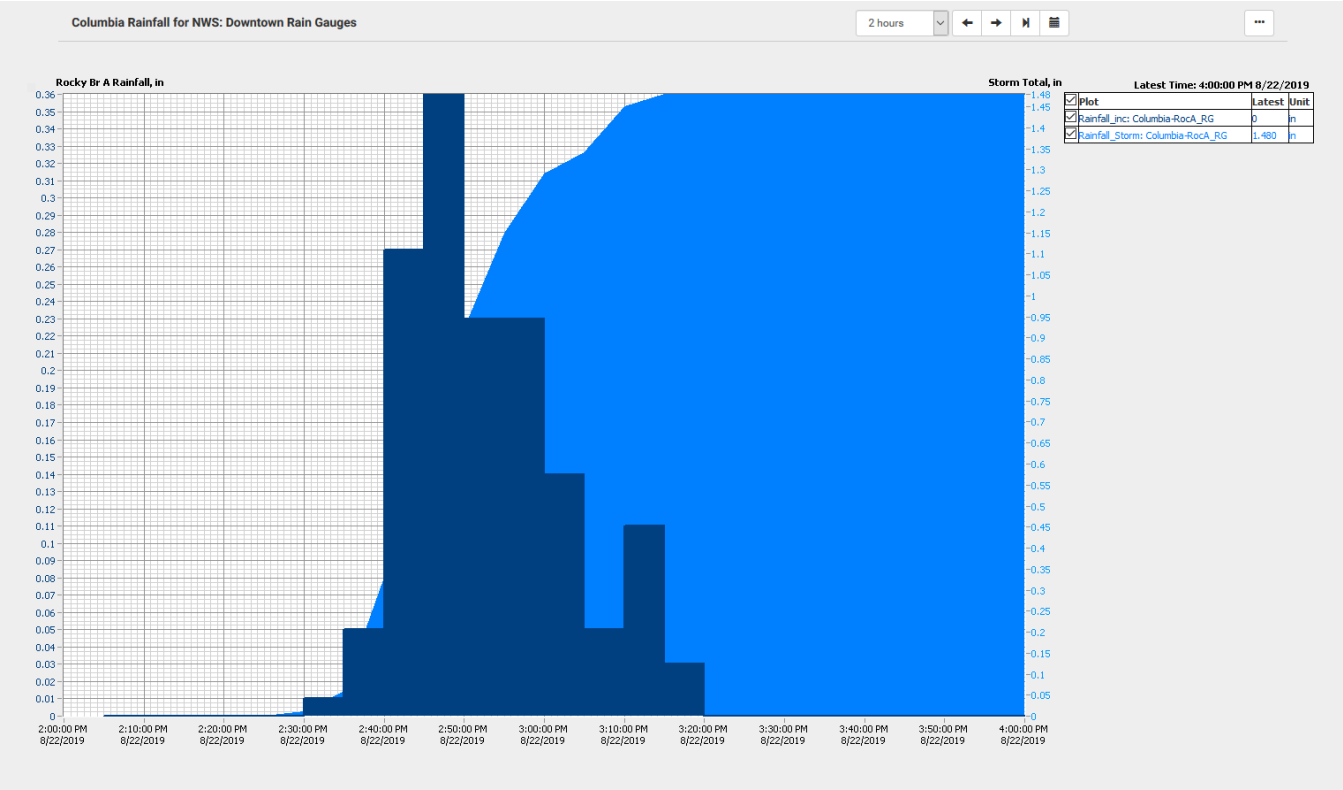


\*Image/Data courtesy of the City of Columbia

Columbia Rainfall for NWS: Downtown Rain Gauges			2 hours				
Time	Columbia-MLK-RG: Rainfall_inc [in]	Columbia-MLK-RG: Rainfall_Storm [in]					
2019-08-22 14:00:00	0	0					
2019-08-22 14:05:00	0	0					
2019-08-22 14:10:00	0	0					
2019-08-22 14:15:00	0	0					
2019-08-22 14:20:00	0	0					
2019-08-22 14:25:00	0	0					
2019-08-22 14:30:00	0	0					
2019-08-22 14:35:00	0	0					
2019-08-22 14:40:00	0.07	0.07					
2019-08-22 14:45:00	0.26	0.33					
2019-08-22 14:50:00	0.24	0.57					
2019-08-22 14:55:00	0.25	0.82					
2019-08-22 15:00:00	0.23	1.05					
2019-08-22 15:05:00	0.07	1.12					
2019-08-22 15:10:00	0.27	1.39					
2019-08-22 15:15:00	0.08	1.47					
2019-08-22 15:20:00	0.01	1.48					
2019-08-22 15:25:00	0	1.48					
2019-08-22 15:30:00	0	1.48					
2019-08-22 15:35:00	0	1.48					
2019-08-22 15:40:00	0	1.48					
2019-08-22 15:45:00	0	1.48					
2019-08-22 15:50:00	0	1.48					
2019-08-22 15:55:00	0.01	1.49					

\*Image/Data courtesy of the City of Columbia



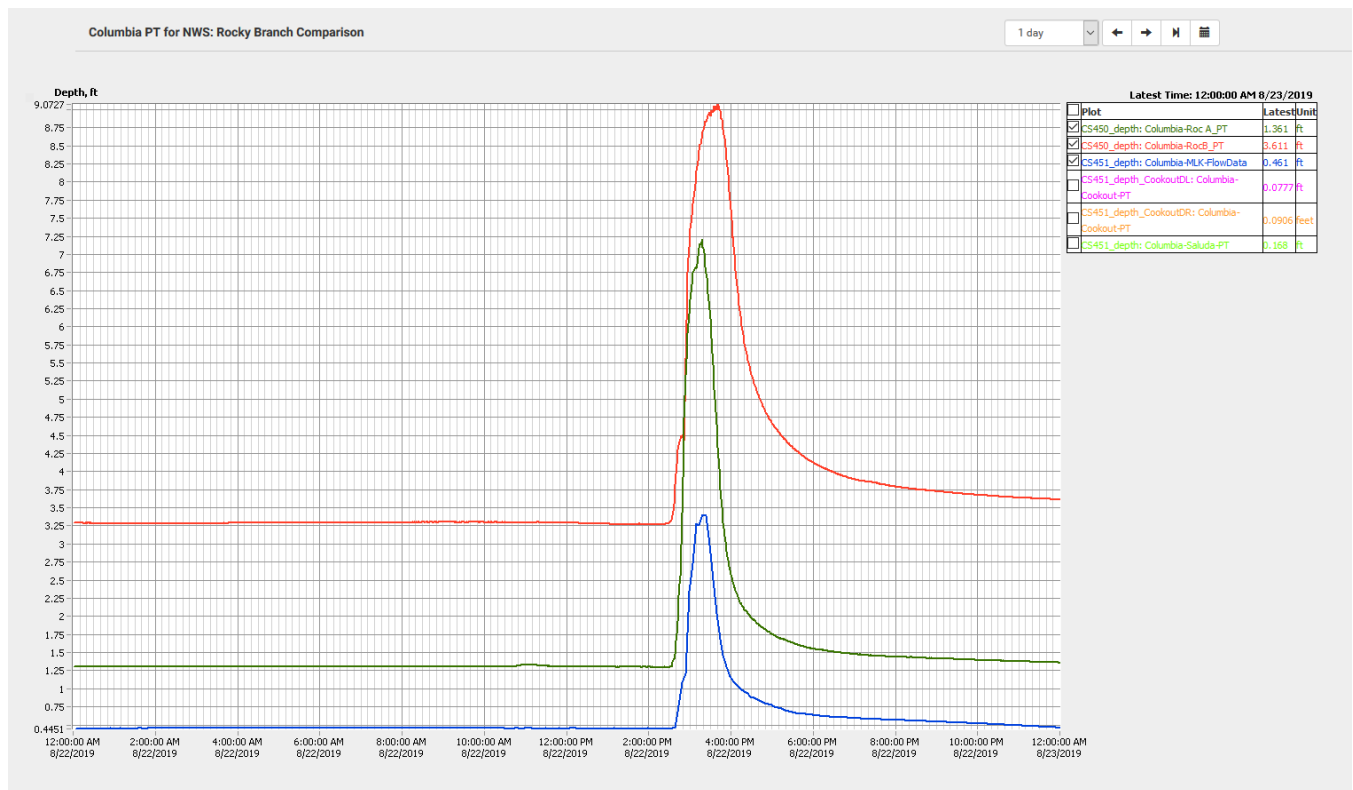


Columbia Rainfall for NWS: Downtown Rain Gauges

2 hours

Time	Columbia-RocA_RG: Rainfall_inc [in]	Columbia-RocA_RG: Rainfall_Storm [in]
2019-08-22 14:00:00	0	0
2019-08-22 14:05:00	0	0
2019-08-22 14:10:00	0	0
2019-08-22 14:15:00	0	0
2019-08-22 14:20:00	0	0
2019-08-22 14:25:00	0	0
2019-08-22 14:30:00	0.01	0.01
2019-08-22 14:35:00	0.05	0.06
2019-08-22 14:40:00	0.27	0.33
2019-08-22 14:45:00	0.36	0.69
2019-08-22 14:50:00	0.23	0.92
2019-08-22 14:55:00	0.23	1.15
2019-08-22 15:00:00	0.14	1.29
2019-08-22 15:05:00	0.05	1.34
2019-08-22 15:10:00	0.11	1.45
2019-08-22 15:15:00	0.03	1.48
2019-08-22 15:20:00	0	1.48
2019-08-22 15:25:00	0	1.48
2019-08-22 15:30:00	0	1.48
2019-08-22 15:35:00	0	1.48
2019-08-22 15:40:00	0	1.48
2019-08-22 15:45:00	0	1.48
2019-08-22 15:50:00	0	1.48
2019-08-22 15:55:00	0	1.48

\*Images/Data courtesy of the City of Columbia



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## **Drought Conditions**

Rainfall varied greatly across the Midlands and Central Savannah River Area during the month of August. This produced areas with no drought along with areas of D0 (Abnormally Dry) across much of the eastern half of the South Carolina and portions of the Upstate. It also produced an area of D1 (Moderate Drought) across portions of the eastern Midlands to the southern CSRA.

(Please see the maps below).

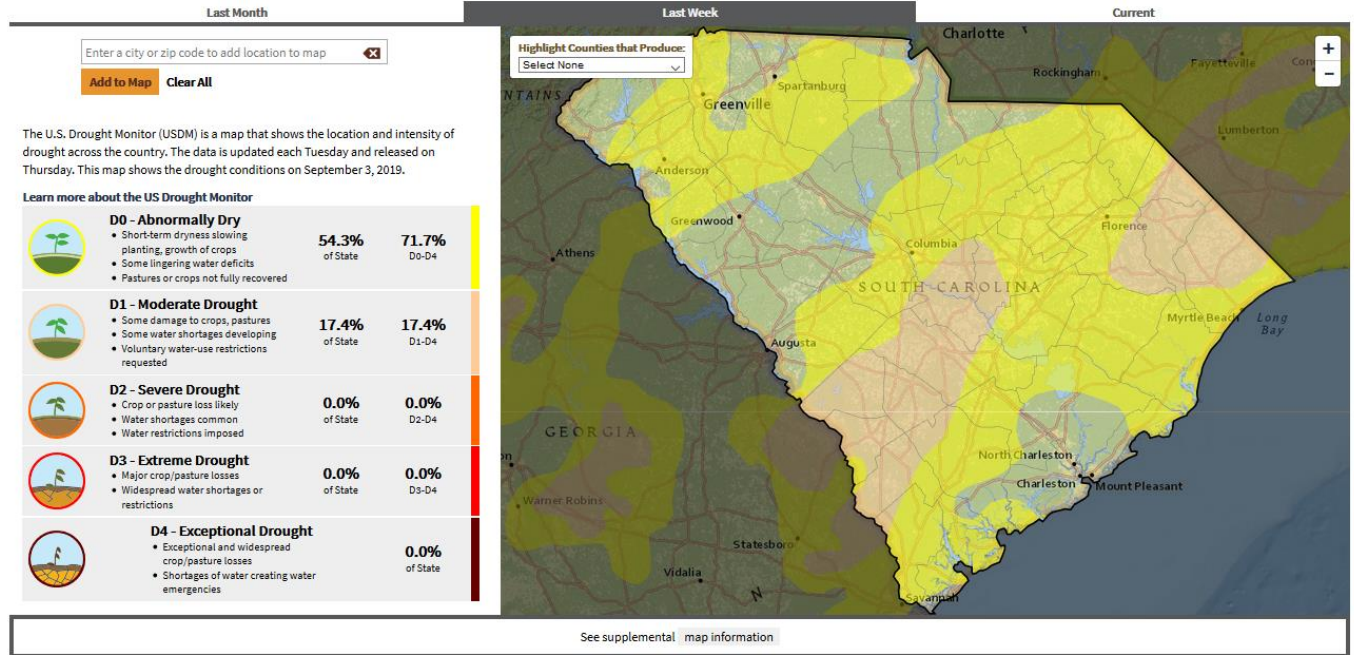
# Drought in South Carolina

Residents in drought:  
**820,000**  
2,053,000 more in abnormally dry areas.

This is:  
**18%**  
of the state's population,  
46% more in abnormally dry areas.



Report Your Drought Impacts



# Drought in Georgia

Residents in drought:  
**1,848,000**

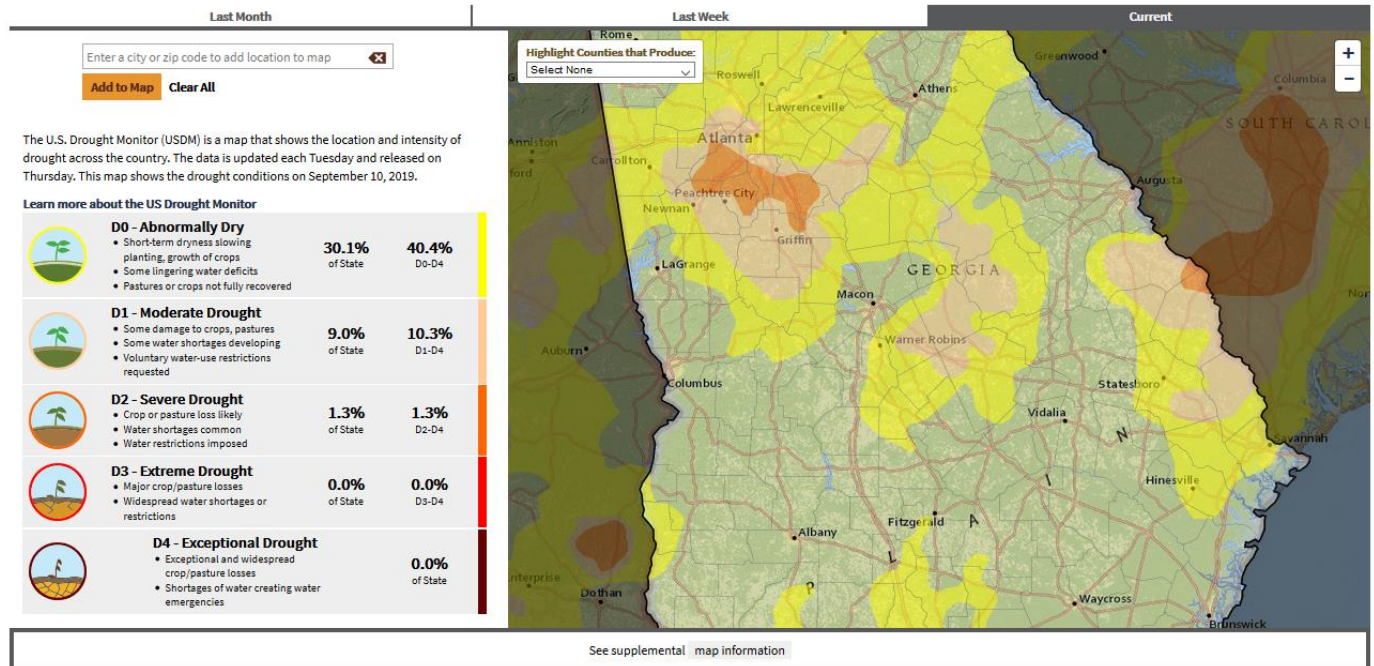
4,626,000 more in abnormally dry areas.

This is:  
**19%**

of the state's population,  
**48%** more in abnormally dry areas.



Report Your Drought Impacts

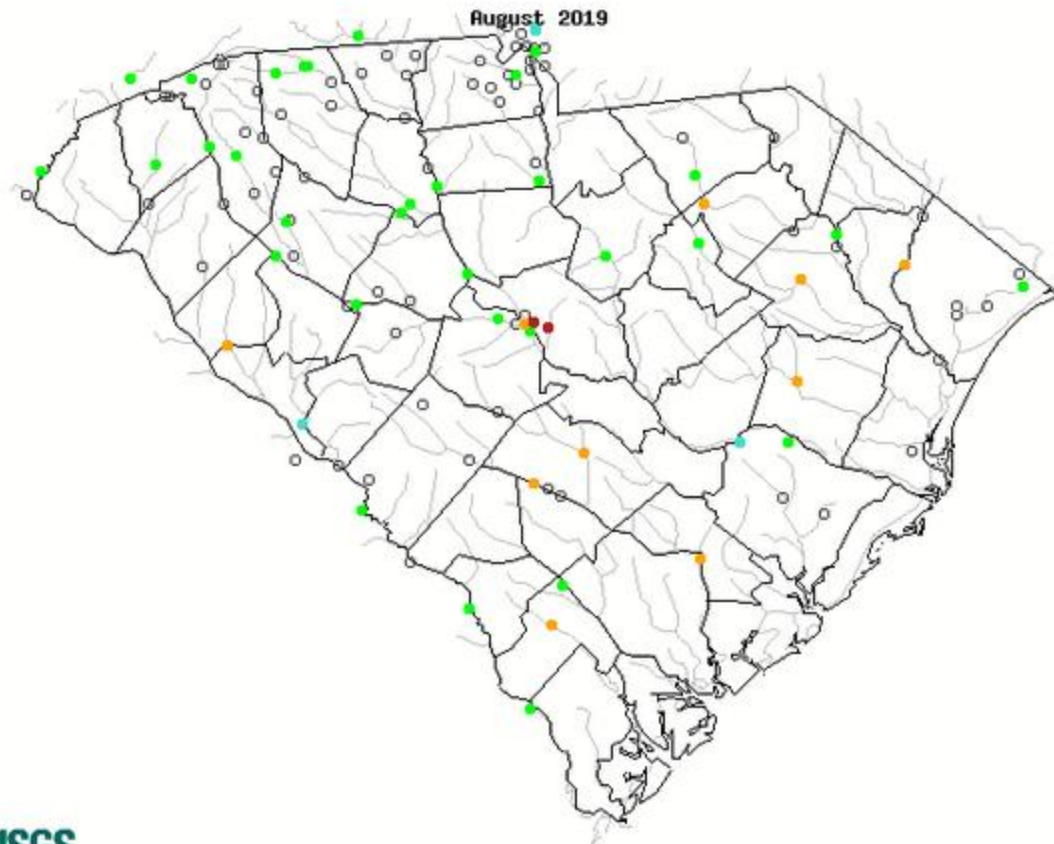


## Streamflow Conditions

Monthly average stream flows for August across the Midlands and Central Savannah River Area began to show some deterioration from July's lack of rainfall. Average stream flows for August ranged from Much Above Normal to Much Below Normal across the region. Above Normal conditions were noted along the Santee River Basin below Lake Marion and Stevens Creek. Normal conditions were noted along the Savannah River Basin, Saluda River Basin, Broad River Basin, Wateree River Basin and the Pee Dee River Basin. Below Normal conditions were observed along the Edisto River Basin. Much Below Normal conditions were noted along some of the streams around the Columbia Metropolitan area, such as Gills Creek and Smith Branch.

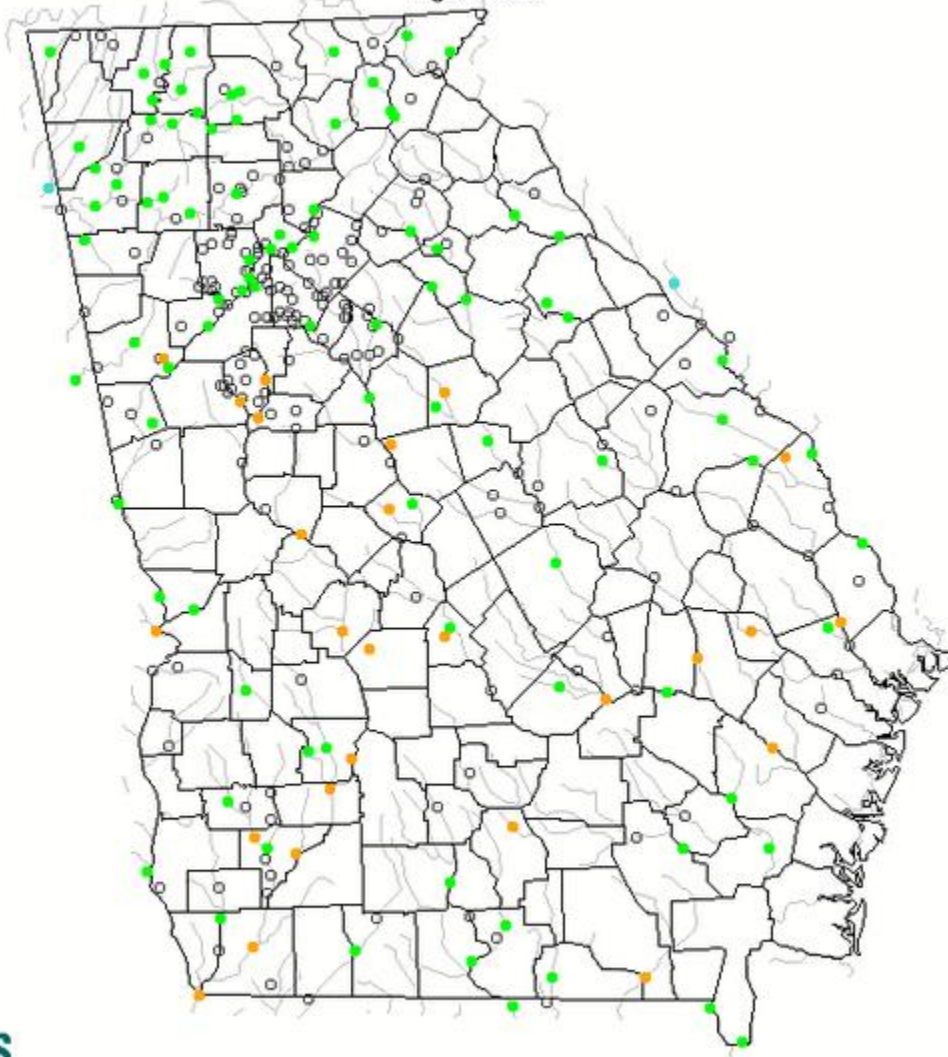










# Stream Flow Compared to Historical Stream Flow for the Month



Explanation - Percentile classes							
<span style="color: red;">●</span>	<span style="color: darkred;">●</span>	<span style="color: orange;">●</span>	<span style="color: green;">●</span>	<span style="color: cyan;">●</span>	<span style="color: blue;">●</span>	<span style="color: black;">●</span>	<span style="color: gray;">○</span>
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

August 2019



Explanation - Percentile classes							
							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

## **Temperatures**

August 2019 temperatures were above normal for the month.

The monthly average temperature at Columbia (CAE) was 82.3 degrees. This value was 1.5 degrees above the normal of 80.8 degrees. The highest temperature during the month was 101 degrees reached on the 14<sup>th</sup>. The lowest temperature was 58 degrees that occurred on the 30<sup>th</sup>.

The average temperature for the month at Augusta (AGS) was 82.6 degrees. This value was 2.1 degrees above the normal of 80.5 degrees. The highest temperature during the month was 101 degrees reached on the 14<sup>th</sup>. The lowest temperature was 60 degrees that occurred on the 30<sup>th</sup>.

The average temperature for the month at Orangeburg (OGB) was 81.9 degrees. This value was 1.7 degrees above the normal of 80.2 degrees. The highest temperature during the month was 98 degrees reached on the 9<sup>th</sup>, 10<sup>th</sup>, and 14<sup>th</sup>. The lowest temperature was 60 degrees that occurred on the 30<sup>th</sup>.

## Hydrological Products

The following products were issued during August 2019.

DGT	Drought Statements	0
ESF	Hydrologic Outlooks	0
FFA	Flash Flood Watches	0
FFS	Flash Flood Statements	1
FFW	Flash Flood Warnings	1
FLS	Flood Statements	0
FLW	Flood Warnings	0
FLS	Areal Flood Advisories	24