



2018

South Carolina Annual Weather Review



Compiled by the South Carolina State Climate Office
For more information contact Melissa Griffin at GriffinM@dnr.sc.gov

2018 Extremes

South Carolina's statewide average February temperature for 2018 was 57.3°F, which is 1.3°F higher than the previous 1927 record and is 10.4°F departed from the climatological mean (46.9°F) for the base period (1895 - 2018).

For four weeks after Hurricane Florence, the Pee Dee River Basin experienced record breaking, widespread flooding.

During mid-September, Hurricane Florence caused widespread impacts throughout the state, but especially to the northeast portion of the state.



On December 8 - 9, a rare early winter storm brought unprecedented snowfall to portions of the Carolinas and Virginia. Caesars Head reported its greatest December snowfall on record (14.4 inches), and the Greenville-Spartanburg Airport had its second largest December snowfall in over 50 years.

On October 11, Hurricane Michael, which devastated Mexico Beach, FL, came through the Midlands, bringing several inches of rain to the area in less than 48 hours.

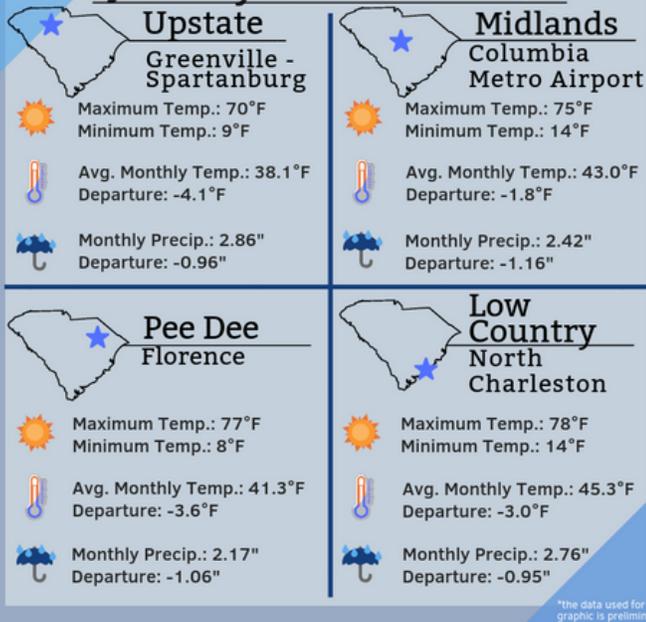
On January 3, locations in the Lowcountry and along the coast received up to 7 inches of snow.

Hottest Temperature Recorded: 105°F on July 11 at University of SC
Coldest Temperature Recorded: 3°F on January 8 at Ninety Nine Islands
Greatest Annual Rainfall: 123.45 in. at Jocassee 8 WNW (potential new annual record)
Greatest Annual Snowfall: 17 in. at Caesars Head

*All of the data in this report is considered preliminary.



January State Statistics



January: Coastal Snow Event

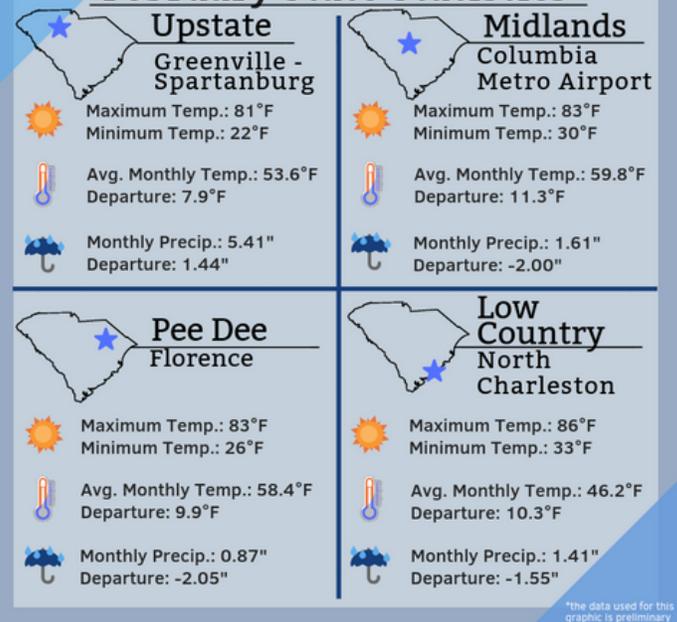
A major snowfall event occurred on January 3rd along the coastal areas of South Carolina, dropping over seven inches in Summerville, 6.5 inches in Monck's Corner, 4.8 inches in Mount Pleasant, and varying smaller amounts across the Lowcountry. The snowfall was heaviest at the coast, and as an offshore low deepened further, convective banding developed that produced up to six inches of snow in Marlboro, Dillon, and Marion counties. The following week, on Thursday, January 11, afternoon temperatures reached

77 degrees in Florence and Charleston after many locations reported lows in the 30's. After the mid-January warm episode, a cold front swept through the state, producing snow flurries in the Midlands and up to four inches of snow in the Upstate.

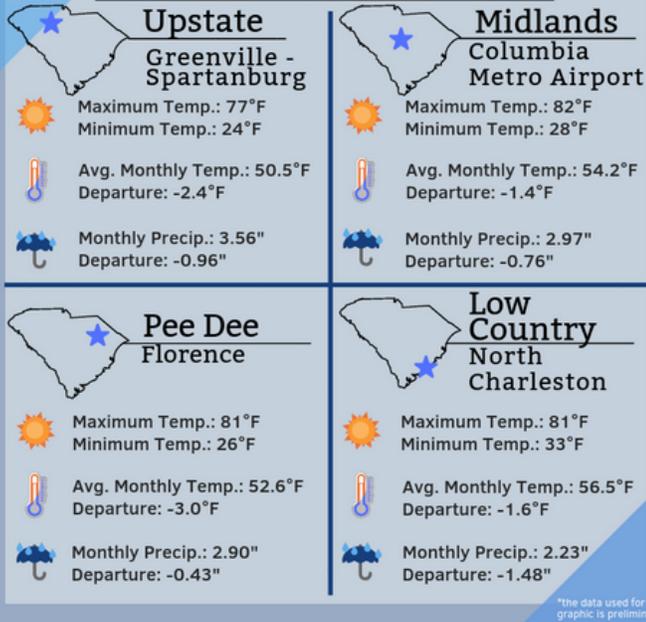
February: Hottest February on Record

February 2018 experienced record-breaking heat compared to the climatological normal. A total of 222 daily record high temperatures were set during February 19 – 25. Of those records, 139 new daily record high temperatures were set by two or more degrees. The NWS stations in Little Mountain and Walhalla broke records on February 21 that had stood since 1897, and the station at the Downtown Greenville Airport reported a high temperature of 80 degrees on February 24, which broke the record of 77 degrees set back in 1930. South Carolina's 2018 statewide average February temperature was 57.3°F, which is 1.3°F above the previous record from 1927 and is 10.4°F greater than the climatological mean (46.9°F) in the 1895 – 2018 base period.

February State Statistics



March State Statistics

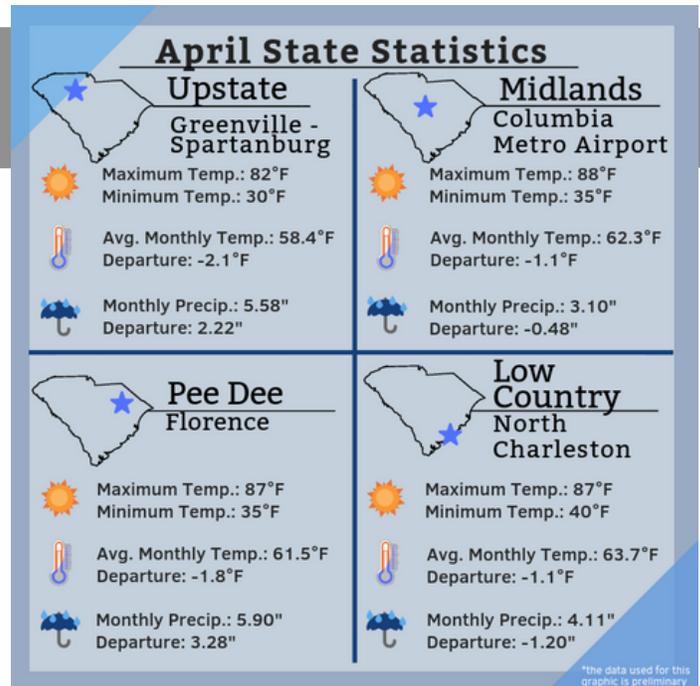


March: Widespread Drought

Below normal rainfall during the winter and early spring combined with above normal temperatures during February led to worsening drought conditions across much of the state by March. Drought conditions, varying from abnormally dry to incipient drought, were reported across the Lowcountry, Midlands and Pee Dee regions; only a small portion of the Upstate observed normal conditions. The NWS station in Brookgreen Gardens recorded a monthly total precipitation of 1.83 inches, which was more than 2.5 inches below the normal for the month.

April: Severe Weather Event

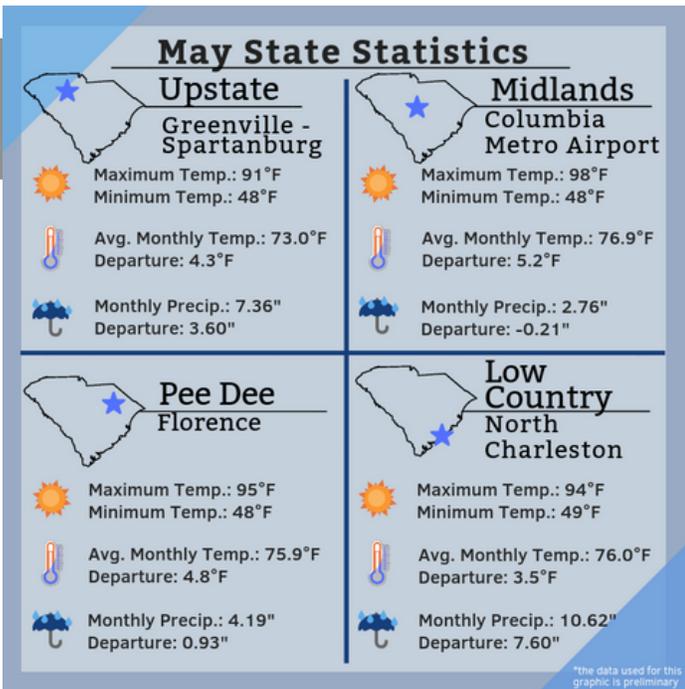
On April 15, a pre-frontal trough passed across the state, causing significant straight-line winds and producing five tornadoes (shown in the table below). A downburst with estimated wind gusts over 100 mph uprooted numerous trees and snapped trees up to four feet in diameter. The event caused extensive damage to structures and vehicles in Lexington and Richland counties and left more than 50,000 SCE&G customers without power. Additional damage was reported across the Lowcountry, as the squall line passed over the area with wind gusts up to 50 mph, and golf ball-sized hail was reported in the Piedmont.



Est. Start Time	Location/County	Max. Rating	Est. Max. Winds	Max. Width	Path Length	Inj.
12:55 PM	Clover/York	EF0	85 mph	31 yards	0.46 miles	0
2:03 PM	Gilbert/Lexington	EF2	120 mph	200 yards	3.0 miles	0
2:15 PM	Lexington/Lexington	EF0	80 mph	100 yards	0.4 miles	0
2:16 PM	Lexington-Irmo/Lexington	EF1	95 mph	150 yards	2.5 miles	0
2:46 PM	Ridgeway/Fairfield	EF1	105 mph	100 yards	4.4 miles	0



May: Widespread Rainfall

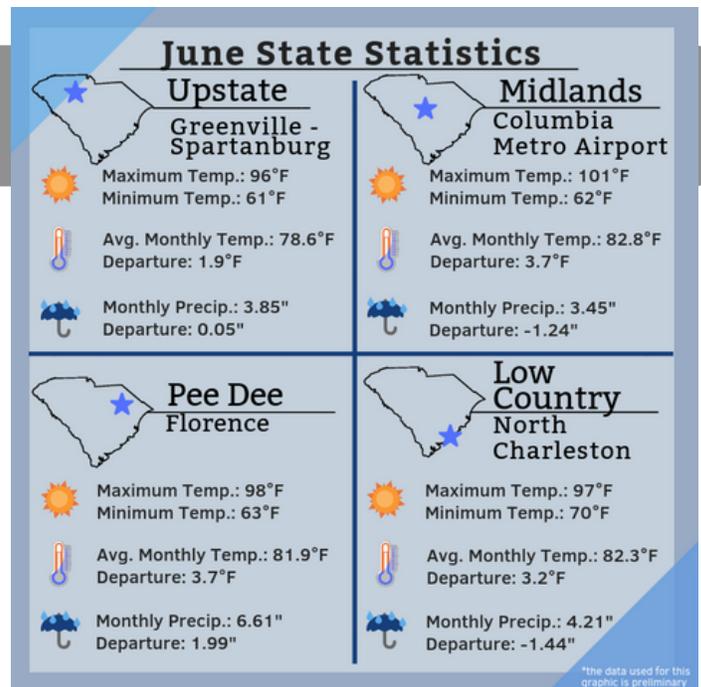


May began with warm and dry conditions; however, the second half of the month brought the long-awaited rainfall across the state. Many locations reported their wettest May on record, and the above-average rainfall totals for May brought the entire state out of drought conditions for the first time in nearly two years. Most of the beneficial rainfall was the result of two separate events. The first was a trough of low-pressure producing thunderstorms that brought heavy periods of rain over the

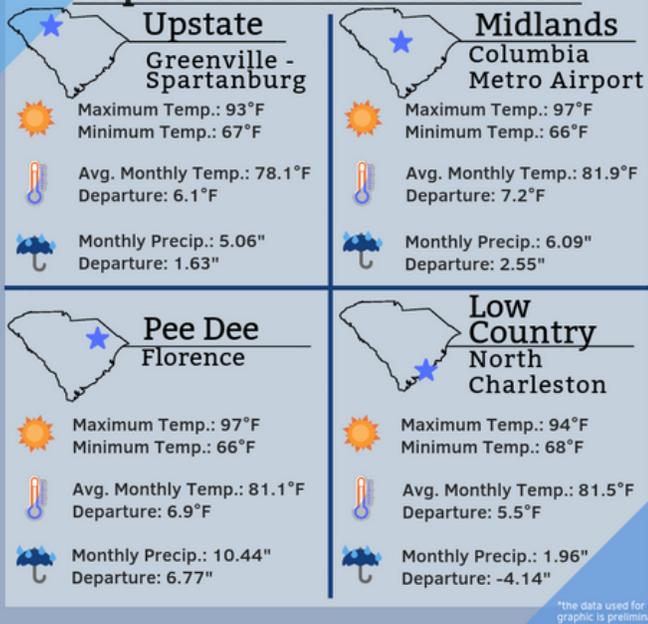
Midlands and the Upstate. The heaviest 24-hour total reported was 7.47 inches at USGS Slicking Mountain near Rocky Bottom, SC, on May 16. The second event was the passage of Subtropical Storm Alberto after making landfall in the Florida Panhandle on Monday, May 28. The storm system triggered more thunderstorms and brought moisture from the Gulf of Mexico to the state, producing heavy rain.

June: Heat and Severe Weather

The statewide average temperature for June 2018 was 80.1°F, which is 1.9°F below the warmest June on record of 82 degrees set in 1952. Many locations in the Midlands reported maximum temperatures over 100 degrees between June 19 and 24, and heat index values reached 115 degrees in some areas. The combination of an upper-level disturbance, weak cold front and a warm and humid environment resulted in severe thunderstorms from June 25 through June 27. The storms produced heavy rains, golf ball-sized hail and wind gusts up to 60 mph across the state.



September State Statistics



September: Hurricane Florence

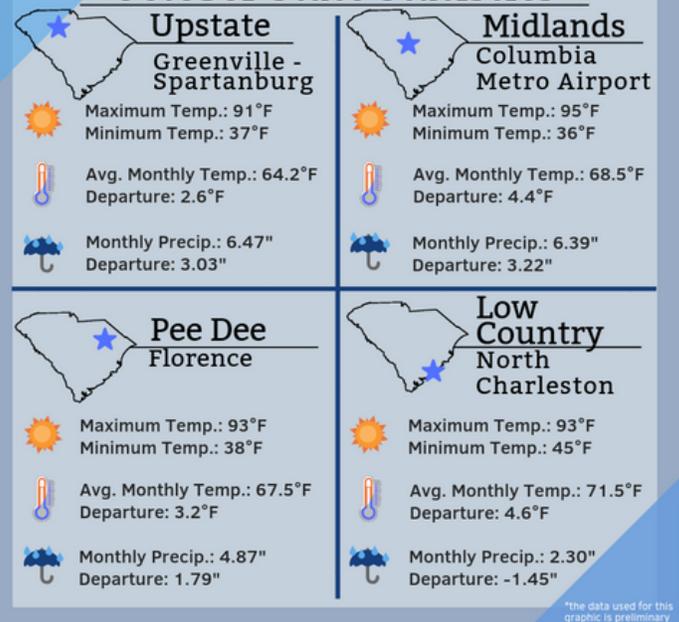
Hurricane Florence formed near the Cape Verde Islands on August 31 and rapidly intensified to a Category 4 hurricane as it moved across the Atlantic. After encountering colder waters and pockets of dry air, Florence weakened to a Category 1 Hurricane before making landfall near Wrightsville Beach, North Carolina, on September 14. Florence then proceeded to stall before it made a southwest turn and slowly traveled across South Carolina.

Because the storm was stationary for nearly a day, and its slow forward speed, Florence dumped excessive amounts of rainfall across most of the Pee Dee watershed. A CoCoRaHS station near Loris, South Carolina, recorded a storm total of 23.63 inches. The result was catastrophic flooding along the Pee Dee, Little Pee Dee, Lumber, Lynches and Waccamaw river systems, which plagued South Carolina for weeks after Florence's landfall.

October: Hurricane Michael

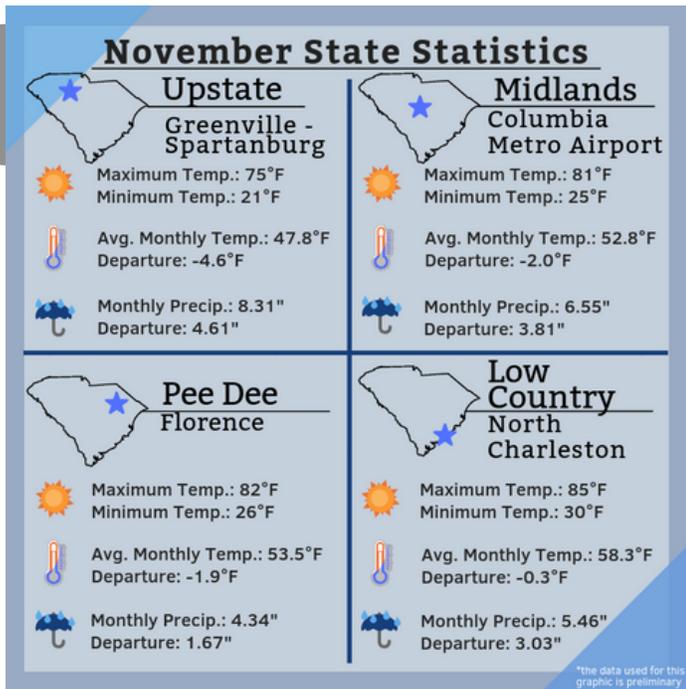
Hurricane Michael formed in the southwestern Caribbean Sea on October 7 and became a Category 4 hurricane two days later. The storm raced across the Gulf of Mexico making landfall near Mexico Beach, Florida on October 10, with peak winds of 155 mph, making it the third strongest hurricane to make landfall in the contiguous U.S.. The storm maintained hurricane strength as it made its way across Georgia but was downgraded to a Tropical Storm by the time it crossed the South Carolina state line on October 11. Unlike Florence, Michael's winds were stronger, as tropical storm force winds of at least 39 mph with wind gusts up to 60 mph were measured across the state. Strong storms embedded in the rain bands spawned tornadoes in the Midlands. The strongest was an EF1, with a maximum wind speed of 90 mph, that touched down near Eastover in Richland County.

October State Statistics



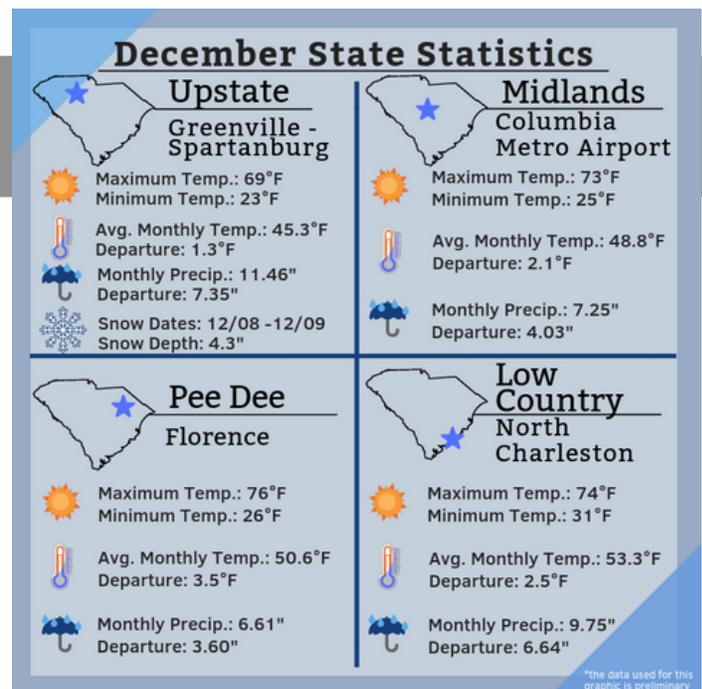
November: Cold Snap and King Tides

After a rather warm start to the month, the combination of cold-air damming events and strong cold fronts moving through the entire state caused temperatures to be below normal for the majority of November. Two extreme King Tide events also occurred in November, and both caused flooding along the coast. The first King Tide occurred in early November, ending on the 9th and the second event came in late November. The King Tide on 24th was enhanced by onshore flow and the tidal gauge in the Charleston Harbor reported a high tide of 8.76 ft., the fifth highest since 1901, surpassing the high tide from the historic 2015 floods.



December: Early Snow and Heavy Rains

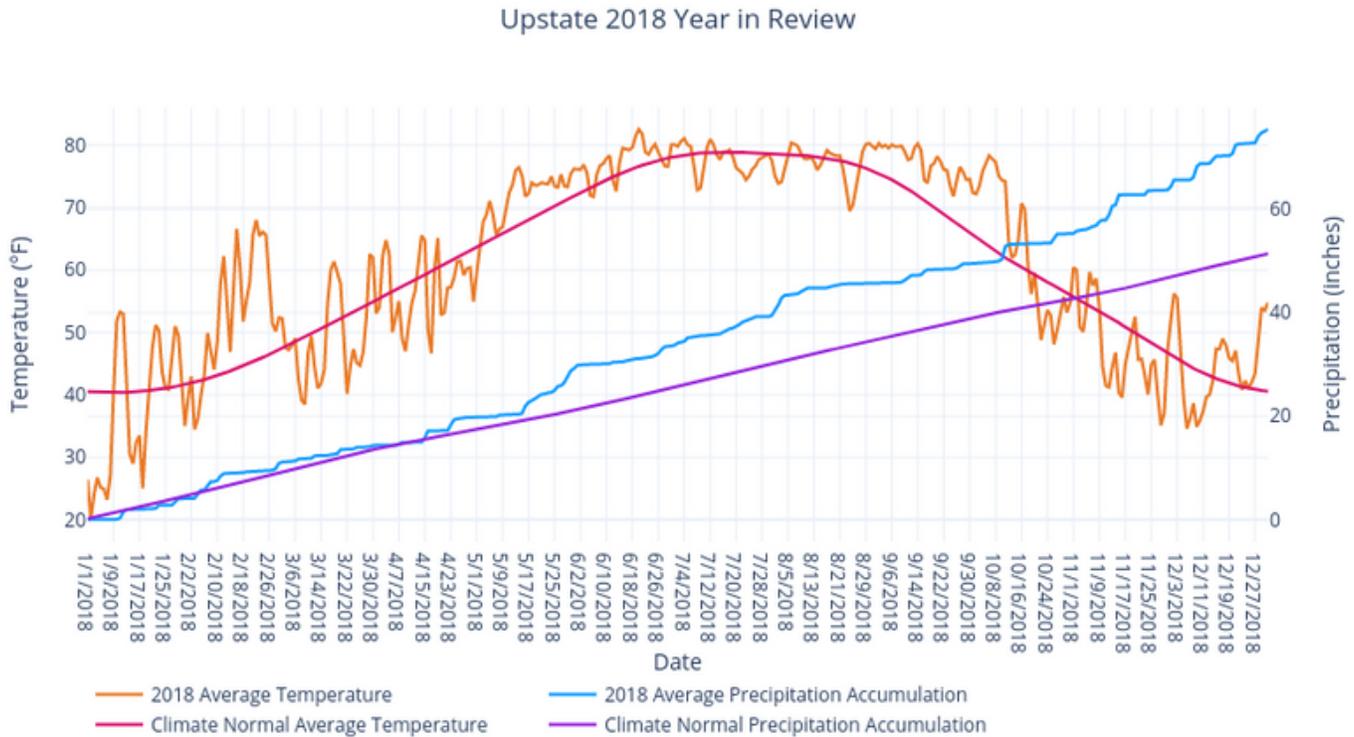
On December 8th and 9th, a low pressure storm system moved over the upstate, causing wintry precipitation in some areas and heavy rainfall in others. The National Weather Service station at Caesars Head in Oconee County recorded a snow depth of 14 inches, making it the snowiest December ever recorded for station. Other areas in the Upstate recorded values up to six inches. The month ended with many stations across the state with rainfall totals more than ten inches. December 2018 was the wettest on record for two of the longest operating NWS stations: 9.97 inches at Little Mountain (125-year record) and 9.92 inches at Newberry (113-year record).



★ The Jocassee 8 WNW National Weather Service Cooperative Weather Station located at the Walhalla Fish Hatchery received 17.25 inches of rain in December 2018 (nine inches above normal), pushing their annual total to a record-breaking 123.45 inches.



Upstate Year in Review



This graph shows 2018 average daily temperature and precipitation accumulation data averaged from several stations across the Upstate region of SC (orange and blue lines, respectively). It also shows the 1981 - 2010 average daily temperature and precipitation accumulation climate normals (red and purple lines, respectively).

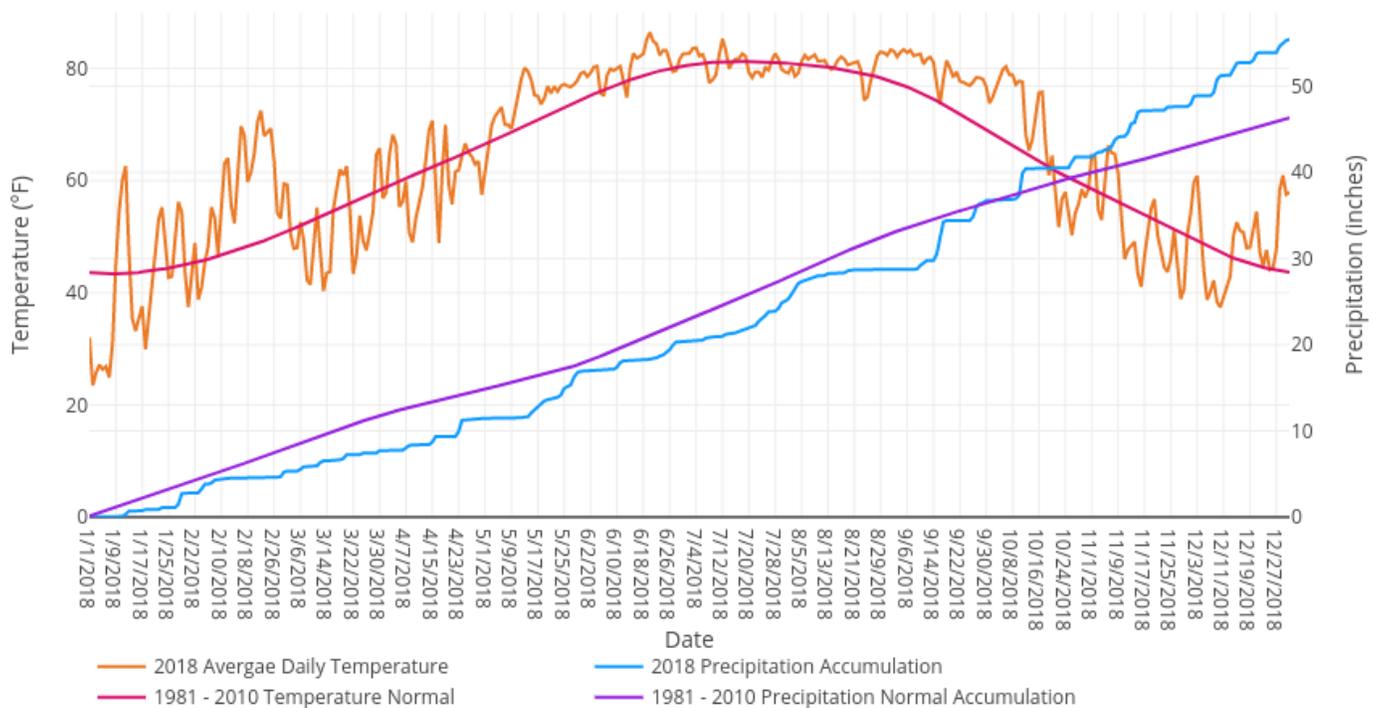
When comparing 2018's Upstate temperature and precipitation accumulation to the climate normals, one can draw several conclusions:

- February 2018 was anomalously warm across the region, as evidenced in the graph. South Carolina had their hottest February on record, with a statewide average of 57.3°F.
- Precipitation was well above the climatological normal for the region. Many stations in the Upstate had one of their wettest years on record, such as Caesars Head.
- Prior to May, the Upstate is almost perfectly in line with the precipitation accumulation climate normals. Heavy rains all throughout the remainder of the year led to the steeper 2018 precipitation accumulation.
- The National Weather Service station at Jocassee recorded a preliminary annual rainfall total of 123.45 inches, which would surpass the previous record of 119.16 inches at Hogback Mountain in 1979. The station did not have one big event, but excessive rainfall during multiple months in 2018.



Midlands Year in Review

Midlands 2018 Year in Review



This graph shows 2018 average daily temperature and precipitation accumulation data averaged from several stations across the Midlands region of SC (orange and blue lines, respectively). It also shows the 1981 - 2010 average daily temperature and precipitation accumulation climate normals (red and purple lines, respectively).

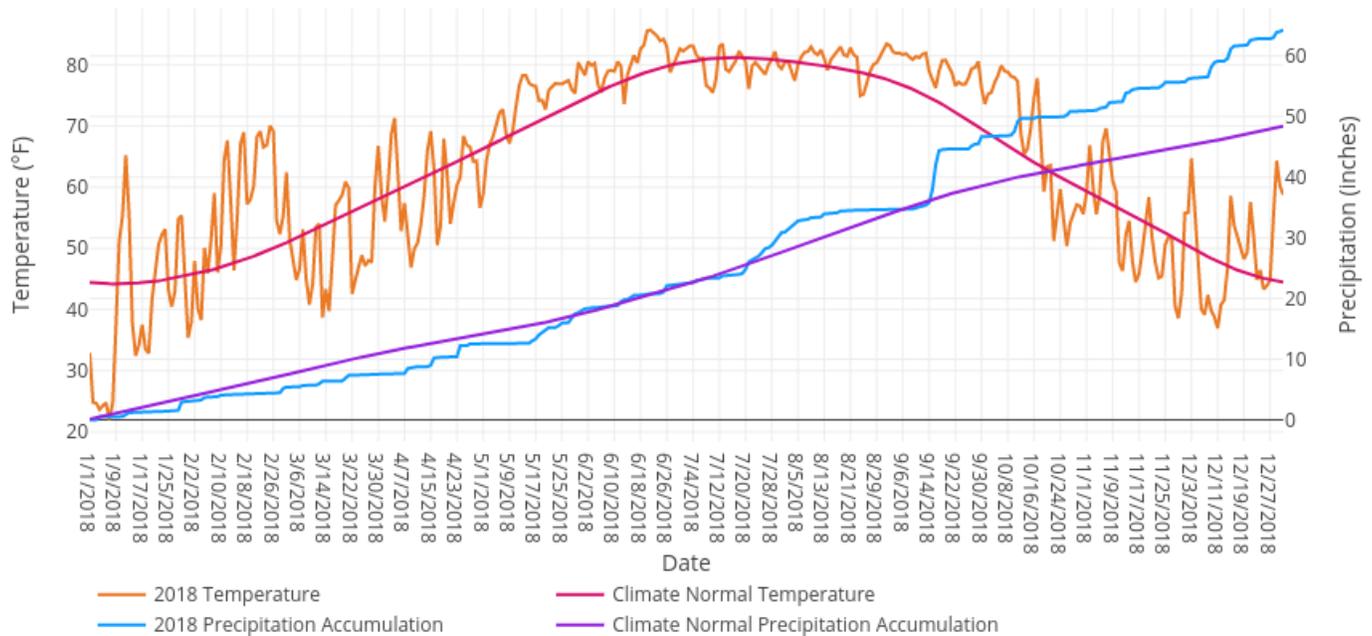
When comparing 2018's Midlands temperature and precipitation accumulation to the climate normals, one can draw several conclusions:

- February 2018 was anomalously warm across the region, as evidenced in the graph. South Carolina had their hottest February on record, with a statewide average of 57.3°F.
- Midlands precipitation tracked just under the normal throughout the year until Hurricane Michael brought several inches of rainfall to the Midlands in mid-October.
- November's cold snap is clearly depicted in the graph, showing a greater than ten degree drop in average temperature in a 24-hour period.



Pee Dee Year in Review

Pee Dee Year in Review



This graph shows 2018 average daily temperature and precipitation accumulation data averaged from several stations across the Pee Dee region of SC (orange and blue lines, respectively). It also shows the 1981 - 2010 average daily temperature and precipitation accumulation climate normals (red and purple lines, respectively).

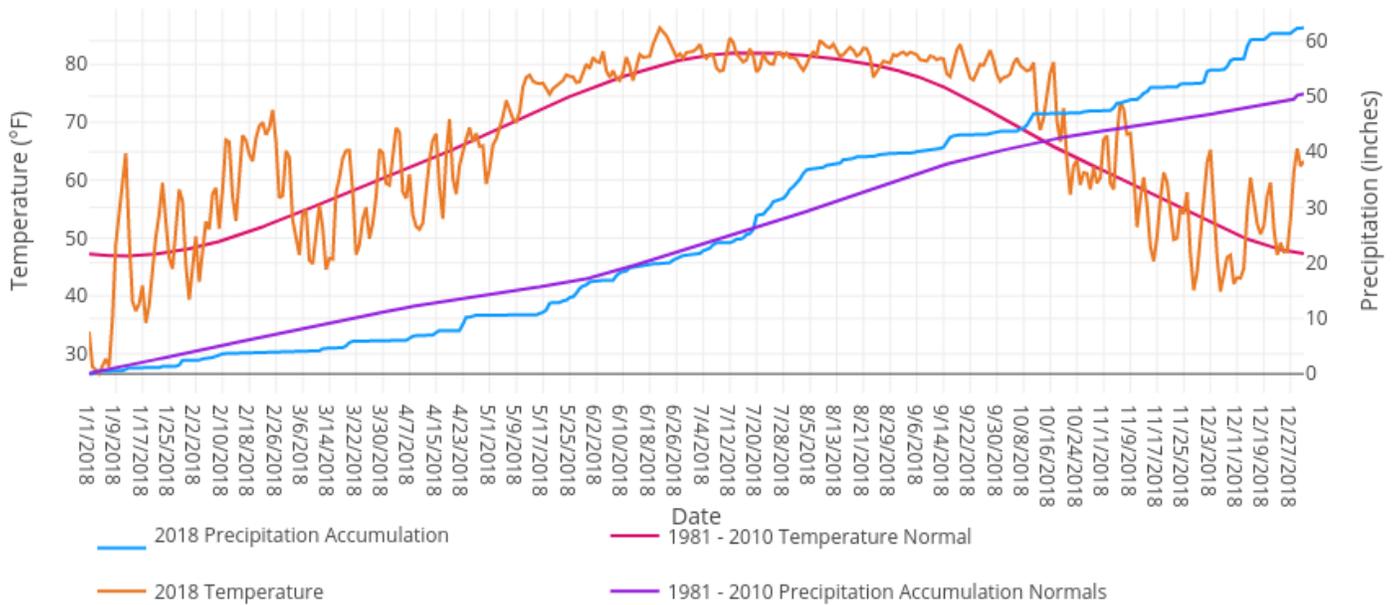
When comparing 2018's Pee Dee temperature and precipitation accumulation to the climate normals, one can draw several conclusions:

- February 2018 was anomalously warm across the region, as evidenced in the graph. South Carolina had their hottest February on record, with a statewide average of 57.3°F.
- The sharp incline in 2018's precipitation accumulation is seen on the day Hurricane Florence greatly affected the region. This led to the Pee Dee region of SC being well over the climatological normal for annual precipitation accumulation.



Lowcountry Year in Review

Lowcountry 2018 in Review



This graph shows 2018 average daily temperature and precipitation accumulation data averaged from several stations across the Lowcountry region of SC (orange and blue lines, respectively). It also shows the 1981 - 2010 average daily temperature and precipitation accumulation climate normals (red and purple lines, respectively).

When comparing 2018's Lowcountry temperature and precipitation accumulation to the climate normals, one can draw several conclusions:

- February 2018 was anomalously warm across the region, as evidenced in the graph. South Carolina had their hottest February on record, with a statewide average of 57.3°F.
- The first time that the Lowcountry breaks past the line of the 1981 - 2010 normal for precipitation accumulation is from the low pressure event in July discussed earlier in this report.

