



# 2022

# South Carolina Year in Review

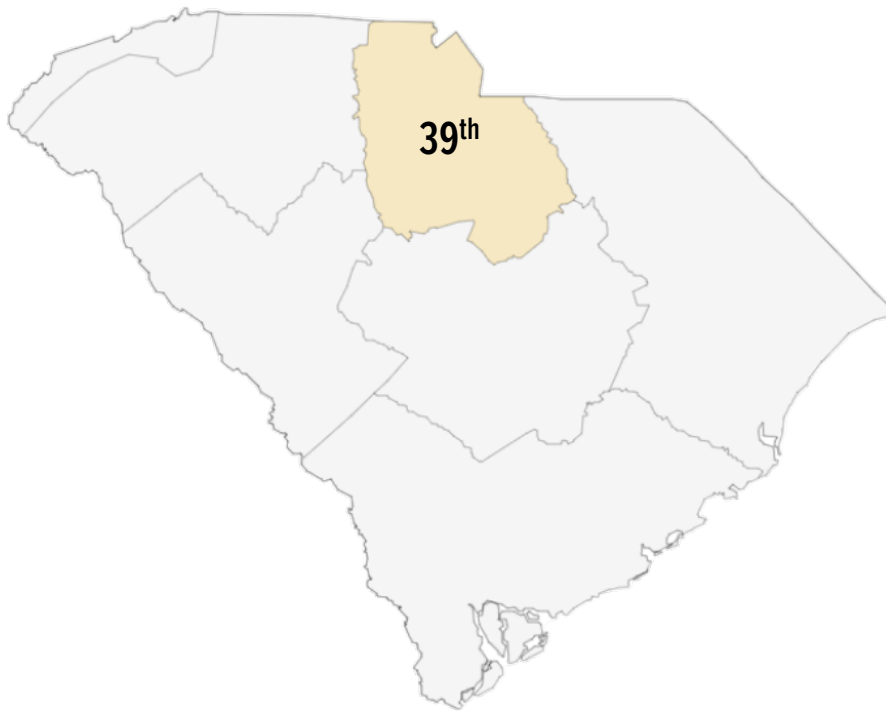
## South Carolina State Climatology Office



Detailed information from the [Weekly Weather and Climate Reports](#) from the South Carolina State Climatology Office was used to compile this comprehensive report.

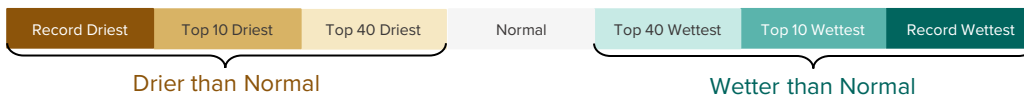


# Statewide Precipitation Data 2022



## 2022 Statewide Precipitation Totals, Departures and Rankings

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total	4.17"	2.08"	3.60"	4.01"	3.39"	3.46"	6.26"	5.31"	3.63"	2.51"	3.61"	3.24"
Depart	0.34"	-1.82"	-0.68"	0.67"	-0.19"	-1.22"	0.72"	0.03"	-0.61"	-0.48"	1.00"	-0.37"
Rank	--	24 <sup>th</sup>	--	40 <sup>th</sup>	--	35 <sup>th</sup>	38 <sup>th</sup>	--	--	--	32 <sup>nd</sup>	--



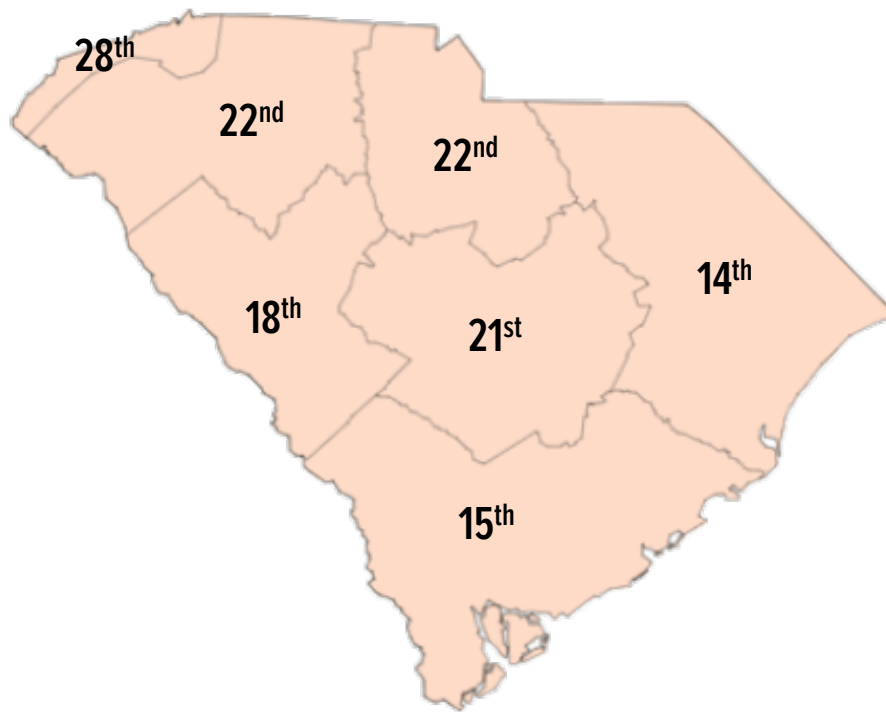
The statewide precipitation total for 2022 was 45.27 inches, which is 2.51 inches below the long-term average of 47.78 inches (1895 – 2022). However, precipitation totals varied across the state, with most stations reporting near-average or less-than-average totals during the year. The National Weather Service (NWS) station at the Anderson County Airport recorded 37.42 inches for the year, 8.92 inches below the 1991-2020 normal value. Most of the Upstate and northern Midlands recorded drier-than-normal conditions between May and October.

Above-normal precipitation was reported mainly in locations in the Upstate. A handful of stations recorded over 80 inches of rainfall, including the NWS station near Jocassee, which reported 87.40 inches. Additional NWS stations and CoCoRaHS observers in Greenville, Oconee, and Pickens counties measured over 60 inches of precipitation in 2022. Outside the Upstate, a few Charleston and Horry stations observed more than 60 inches of rain.

The highest 24-hour rainfall total recorded during the year was 7.12 inches, measured at the NWS station at Table Rock Reservoir on September 4.



# Statewide Temperature Data 2022



## 2022 Statewide Average Temperatures, Departures and Rankings

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total	43.7°F	52.0°F	57.8°F	62.4°F	72.9°F	78.9°F	81.3°F	79.1°F	73.6°F	60.9°F	56.9°F	46.1°F
Depart	-0.9°F	5.2°F	4.0°F	0.5°F	2.6°F	1.9°F	1.4°F	0.4°F	-0.1°F	-2.3°F	3.8°F	0.5°F
Rank	--	11 <sup>th</sup>	19 <sup>th</sup>	--	17 <sup>th</sup>	23 <sup>rd</sup>	29 <sup>th</sup>	--	--	20 <sup>th</sup>	17 <sup>th</sup>	--

Record Coldest	Top 10 Coldest	Top 40 Coldest	Normal	Top 40 Warmest	Top 10 Warmest	Record Warmest
Colder than Normal				Warmer than Normal		

The statewide average temperature for 2022 was 63.8°F, which was 1.4°F above average, making it the sixteenth warmest year on record (since 1895) for South Carolina.

Most of the days with low temperatures at or below freezing (32°F) occurred in January and December, with the National Weather Service (NWS) station at the Greenville-Spartanburg Airport (GSP) reporting 66 days. Charleston (CHS) recorded 21 days at or below freezing, while Florence (FLO) had 46 days, and there were 50 days at Columbia (CAE). The coldest temperature recorded in 2022 was -3°F on December 24 and 25 at the NWS station at Caesars Head in Greenville County.

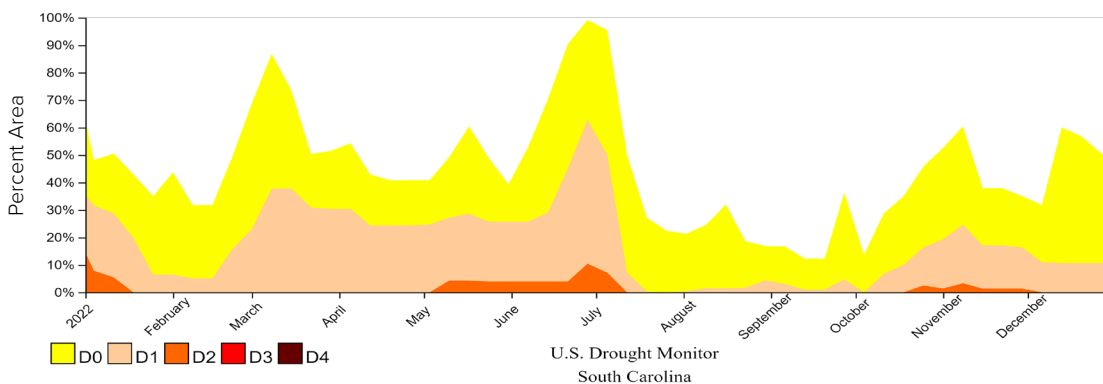
During the warm season (May to October), CAE and FLO recorded over 80 days with high temperatures at or above 90°F. The first 90°F day at CAE and FLO was May 3, while CHS reached 90°F on May 5 and it was May 19 before GSP hit 90°F. The hottest temperature recorded during the year was 103°F on June 13 at the NWS station at the Columbia Metropolitan Airport in Lexington County and on June 23 at the NWS station in Saluda.



# Impactful Weather Events in 2022

## Drought Conditions

Parts of the Lowcountry and Pee Dee started the year with below-normal precipitation. Multiple counties, including Allendale, Bamberg, Georgetown, Hampton, and Orangeburg, reported one of their driest Februaries on record. The dry trend continued until the end of April when rain helped improve conditions. Unfortunately, by the beginning of July, the lack of precipitation caused increased drought conditions across the entire state. Rainfall from Tropical Storm Colin (July) and Hurricane Ian (September) helped ease some drought conditions in the Lowcountry and Pee Dee. However, the lack of rain during the fall caused dry conditions to worsen across the state. By the end of November, portions of the Pee Dee region were experiencing severe drought conditions. The measured streamflow values were well below average in parts of the Catawba and Pee Dee river basins, and soil moisture was short in the top and subsoil.

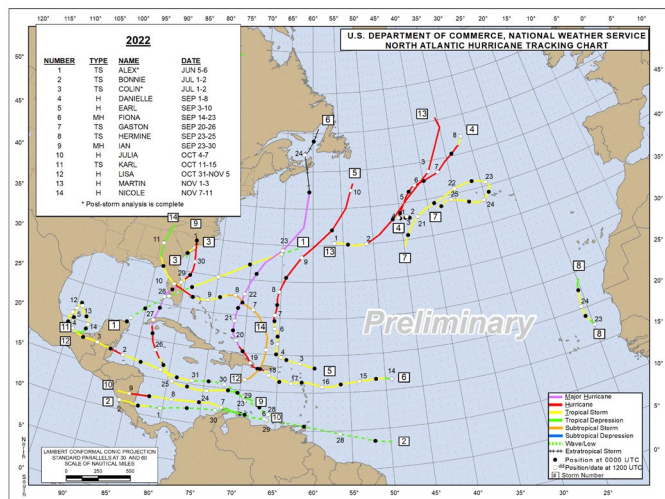


## 2022 Hurricane Season

Overall, the 2022 Atlantic Hurricane Season had fourteen (14) named storms, with eight (8) hurricanes and two (2) major hurricanes, near average in terms of activity. 2022 was the first season since 2014 that a tropical cyclone did not develop before June 1. It was also the first season since 1997, with no tropical cyclones forming during August. Hurricane Ian was the strongest hurricane to make landfall along the US coast during the 2022 season, and it was the first hurricane to make landfall in South Carolina since Hurricane Matthew in 2016.

## Coastal Flooding

In 2022, the tidal gauge at the Charleston Harbor reported 68 coastal flooding events (tides reported more than 7.0 ft), the second most events on record (1922-2022). There were 15 events recorded in October 2022, which ties September 2020 as the fifth-highest month with the most events. The Charleston Harbor tidal gauge recorded tides at or above 8 feet mean low lower water (MLLW) three times during 2022, including a crest of 8.35 ft MLLW on November 10, which is the thirteenth highest crest on record at the gauge.



### Top 10 Total Event Counts (Years)

- 89 (2019)
- 70 (2022)**
- 68 (2020)
- 58 (2015)
- 55 (2016)
- 46 (2017)
- 42 (2014, 2018)
- 41 (2021)
- 36 (2009)

### Recent Crests

- 8.35 ft on 11/10/2022
- 8.14 ft on 09/09/2022
- 7.94 ft on 06/15/2022
- 8.26 ft on 11/08/2021
- 8.51 ft on 11/07/2021
- 8.44 ft on 11/06/2021
- 8.00 ft on 11/05/2021
- 8.02 ft on 12/16/2020
- 8.13 ft on 11/15/2020
- 7.93 ft on 10/19/2020

# January 2022

Three separate winter weather events impacted the state during a twelve-day period between January 16 and 28. The first event (January 16) produced widespread snow across the Upstate, with some CoCoRaHS reports of between five and ten inches of snow. Some locations recorded up to half an inch of ice accretion in the Midlands and Pee Dee. The second event (January 21-22) produced two to three inches of snow across the Midlands and Pee Dee.



Snow Angel in Lexington County

A few observers near Hartsville in Darlington County recorded more than four inches of snow from the event. The official total of two inches of snow at the Columbia Metropolitan Airport broke the streak of 1839 days without measurable snow. The final event (January 28) produced up to two inches of snow across the northern Midlands and Pee Dee. A few observers in Horry County recorded half an inch of snow, and multiple observers reported a trace of snow in Charleston County.

Station	January Total Snowfall (inches)
Caesars Head	12.6
Taylors 6.1 NNW	10.6
Jocassee 8 WNW	9.0
Fountain Inn 4.1 ESE	8.2
Pickens 6.9 W	7.1
Clio 1.6 WNW	6.3
Cheraw	6.2

# February 2022



Pasture Conditions in Greenville County

Additionally, February 2022 was also the eleventh warmest February on record, with a statewide average temperature of 52°F. There were record high temperatures at the end of the month, including a maximum of 83 °F observed on February 25 at the NWS station on the University of South Carolina campus in Richland County.

The preliminary statewide average precipitation for February 2022 was 1.80 inches, which is 2.11 inches below the long-term average for the month (1895-2022) of 3.91 inches. Areas in the Lowcountry and Pee Dee measured between half an inch and an inch, or less than 50% of their normal rainfall for February. A few CoCoRaHS observers in the Lowcountry reported less than half an inch of rain. The station at the Charleston International Airport reported 0.92 inches for the month, 2.13 inches below average, making February 2022 the eighth driest February at the location since 1938.

Station	Record Maximum Temperature (°F) February 25
Charleston Int'l AP	86
Florence Reg AP	86
Columbia Metro AP	81
Greenville – Spartanburg Int'l AP	76

# March 2022

A hard freeze during the middle of March had adverse impacts on blueberry, peach, and strawberry crops that had started to bloom early due to warmer-than-average temperatures at the end of February and the beginning of the month.



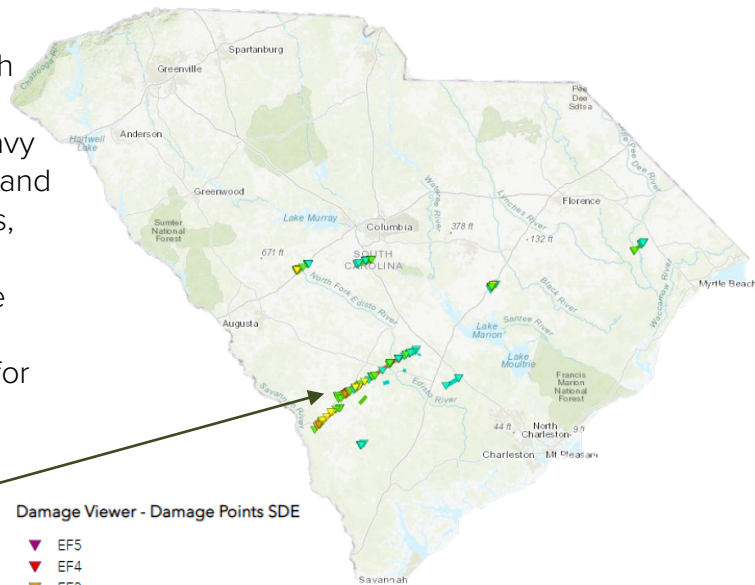
Damage to Blueberry Plants in Lancaster County, Credit: WCNC

The maximum temperatures at most stations on March 12 were reported during the early morning and rapidly fell throughout the day, with minimum temperatures recorded in the 20s shortly before midnight. Temperatures on the morning of the 13<sup>th</sup> were up to twenty-five degrees below normal. The NWS station in Wagener in Aiken County reported a low of 15 °F, and the NWS station on the campus of Winthrop University dropped to 19 °F on Sunday morning. At the coast, Charleston International Airport recorded a low of 25°F, and 30 °F was observed at Beaufort Marine Corps Air Station.

Station	Number of Hours =< 32°F
Greenville - Spartanburg Airport	16
Clemson Oconee Count Airport	15
Rock Hill York County Airport	15
Anderson County Airport	14

# April 2022

On April 5 – 6, 2022, a warm front lifted north across the state, helping to trigger a severe weather event south of the Fall Line with heavy rain, strong winds, and tornadoes. Supercell and severe thunderstorms spawned 14 tornadoes, including two EF3 tornadoes. Both tornadoes initially touched down in Allendale County; one moved through the town of Allendale, and the other was on the ground for nearly 35 miles, starting near Ulmer and finally lifting in Orangeburg County near Bowman.



Damage Viewer - Damage Points SDE

- ▼ EF5
- ▼ EF4
- ▼ EF3
- ▼ EF2
- ▼ EF1
- ▼ EF0



Damage near Allendale, with estimated max winds of 137 mph. Courtesy of NWS Charleston

Per preliminary data from the Storm Prediction Center and National Weather Service surveys, there were twenty-four (24) surveyed tornadoes in 2022; thirteen (13) EF0, six (6) EF1, three (3) EF2, and two (2) EF3.

Multiple rounds of severe weather during the month produced large hail, high winds, and a few tornadoes. On May 6, storm spotters relayed reports of hail up to the size of golf balls across the Midlands and Pee Dee, with reports of two-inch diameter hail near Prosperity in Newberry County and Dreher Island State Park in Saluda County. The storms also caused minor wind damage across the state, with the highest gusts reaching 50 mph, and spawned an EF1 tornado in Pickens County.



EF1 Tornado Damage in Spartanburg County

At the end of the month, a low-pressure system and associated frontal boundary produced another round of severe weather across the state. The NWS Greer Office (GSP) confirmed a strong EF1 tornado, with peak winds estimated at 110 mph, that touched down in northeast Spartanburg County near Boiling Springs and caused tree damage as it moved toward Chesnee. Additional tornadoes across the state, all EF0s, were confirmed: one near Great Falls in Chester County; one in Colleton County near Green Pond; and two in Horry County, with one confirmed near Conway and the other causing tree damage in Loris.

## June 2022

June 2022 was warmer and drier than normal. The NWS stations at the Columbia Metropolitan and Florence Regional Airports observed five days during the month with maximum temperatures at or above 100°F. The statewide average precipitation for June 2022 was 3.46 inches, 1.22 inches below the long-term average. Some areas north of the Fall Line measured less than 50% of their average monthly precipitation, with some isolated locations recording less than an inch, including 0.79 inches near Sandy Springs in Anderson County.

The combination of above-normal temperatures and continued lack of precipitation caused an expansion in moderate and severe drought conditions across the state, impacting surface water supplies and agricultural interests.



Reduced Water Supply in Union County



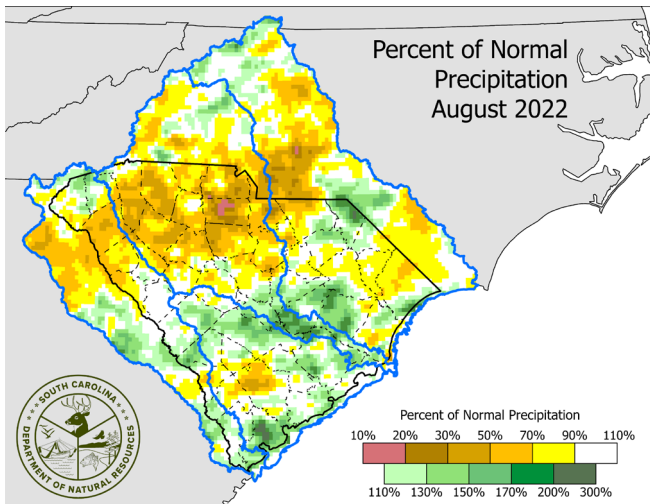
Wilted Cotton Crop in Bamberg County

On Friday, July 1, a low pressure developed along the stationary front off the South Carolina and Georgia coasts and tracked northeastward along the coast. Moisture streamed into portions of the Lowcountry, causing heavy rain across much of Charleston County. The low moved over the warm waters of the Gulf Stream and transitioned into a tropical cyclone, with sustained tropical-storm-force winds of 40 mph measured just off the coast of Charleston. The National Hurricane Center declared the system Tropical Storm Colin early on July 2, the third system to form in the Atlantic during the 2022 Hurricane Season. It made landfall near Hunting Island, South Carolina. The storm's center remained within 20 nautical miles of the coast as it headed north. The storm was downgraded to a Tropical Depression late Saturday evening as it pushed through North Carolina.

Station	Rainfall Total (in)
Wadmalaw Island 4.1 NE	8.14
Mount Pleasant 8.2 NE	7.44
Johns Island 3.3 WNW	7.38
Isle of Palms 0.1 E	7.14
Kiawah Island 1.0 SW	5.73
Edisto Island 2.2 ESE	4.63
Pawleys Island 2.6 N	4.34

The peak storm surge observed was 1.1 feet above Mean Higher High Water (MHHW) at the Charleston Cooper River Entrance Gauge, and there were no widespread reports of flooding due to the storm surge along the South Carolina coast.

## August 2022



While the statewide precipitation total for the month was near normal, the amount of precipitation varied greatly from the mountains to the coast.

Above-normal rainfall occurred across most of the Coastal Plain, with some CoCoRaHS observers recording between ten and fifteen inches of rain in Beaufort, Charleston, and Horry counties. Localized flooding was observed in downtown Charleston and Myrtle Beach during the month. At the same time, the North Central Climate Division (CD3), along the Catawba and Wateree rivers, recorded its nineteenth driest August, with an average of 2.65 inches of precipitation.

The first U.S. Drought Monitor (USDM) map in August (8/2) had 21% of the state designated as abnormally dry (D0), and moderate drought (D1) conditions affected 0.5% of the state. By the last USDM map of the month (8/30), the D0 conditions were reduced to 12.5% and were mainly confined across the Upstate and portions of the northern Midlands. However, the moderate drought (D1) area increased to 4.4% due to the lack of precipitation. Additionally, streamflow gauges in parts of the Broad, Catawba, Pee Dee, and Saluda river basins were well below normal.



# September 2022

Hurricane Ian was the strongest storm of the 2022 Hurricane season to make landfall along the United States Coast. The Category 4 hurricane made landfall near Punta Gorda, Florida, on September 28. The storm moved across the Florida Peninsula and emerged off the east coast of Florida on September 29. Ian turned northward and restrengthened to a Category 1 hurricane before making a second United States landfall near Georgetown on September 30. The storm had a maximum sustained wind speed of



Satellite Image of Hurricane Ian Nearing Florida

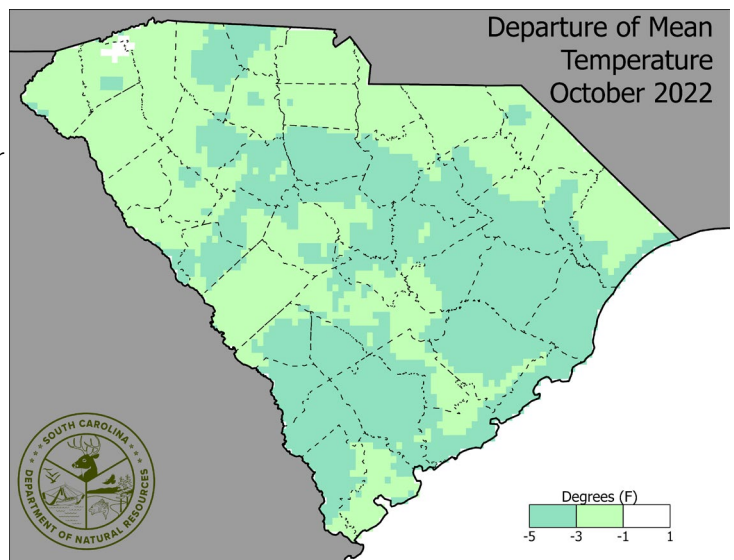
85 mph and pushed a 3- to 6-foot surge into portions of the Grand Strand. A rain band set up along the Interstate 26 corridor as the storm moved ashore, producing localized heavy rain in and near the Charleston area. Reports of up to nine inches of rain from the storm were submitted by CoCoRaHS observers in the area.

The storm followed an eerily similar track to Hurricane Charley in 2004, which also made landfall in southwest Florida and the South Carolina coast. Hurricane Ian was also the first hurricane to make landfall along the South Carolina coast since Hurricane Matthew in 2016.

More details about Hurricane Ian's impacts are available via our [Open-File Report](#).

## October 2022

Statewide, South Carolina had an average temperature of 60.9°F, 2.3°F below the long-term average (1895-2022) of 63.2°F for October. The coolest and driest airmass of the fall season pushed into the region on October 18, with cooler-than-normal weather across most of the eastern United States through the remainder of the workweek. Daily minimum and maximum temperatures were nearly twenty degrees cooler than usual. High temperatures ranged from the upper 50s to lower 60s in the Upstate and Midlands to nearly 70°F closer to the coast.



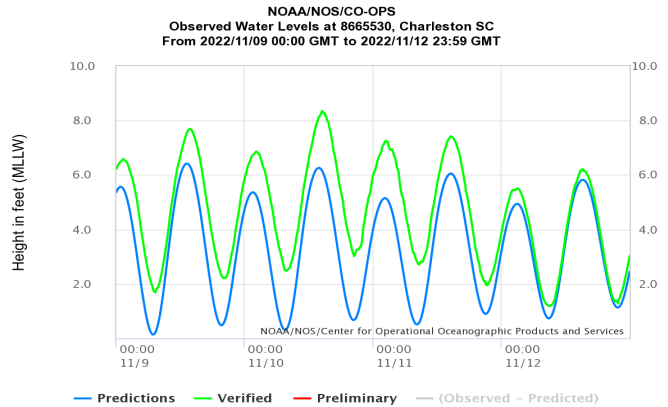
Overnight temperatures felt more like January than October. On the 19<sup>th</sup>, multiple new record low temperatures were observed across the state as morning temperatures dropped into the upper 20s in the mountains to the mid-30s near the coast. The NWS station at the Greenville-Spartanburg International Airport dropped to 30°F, setting a new daily record low temperature for the day of 30°F, and the NWS Charleston International Airport station hit a low of 37°F, breaking the previous record of 39 in 1948. In addition to the record lows, the NWS station at the Columbia Metropolitan Airport tied the record low maximum temperature of 62°F in 1997.

# November 2022

While the remnants of Hurricane Nicole passed well to the west of the state, the storm still produced heavy rain and high tides across the region. The pressure gradient between Nicole and a strong high pressure to the north of the area created gusty winds across the state, but especially along the coast.



The pattern continued over multiple days before the storm surge associated with Nicole affected the South Carolina coast on November 9 through November 12. The onshore flow caused saltwater flooding at high tide. The Charleston Harbor Tidal Gauge recorded values between 7.12 feet and 8.35 feet MLLW, which caused moderate and significant flooding in low-lying coastal areas.



# December 2022

Extreme temperature whiplash was felt during the month, as temperatures went from record warmth at the beginning of the month to record cold by the holidays. Arctic air surged into the region as the front pushed through the area early Friday morning, December 23, and wind gusts up to 55 mph were reported across the state. The high winds knocked down trees and powerlines, and by mid-Friday morning, more than 75,000 customers were without power. Behind the front, the temperatures plummeted, and many locations recorded their maximum temperature for the day before noon. Low temperatures bottomed out in the single digits and teens on Christmas Eve morning, as wind chill values dropped below zero in portions of the Midlands and Upstate, and single-digit values were observed even at the coast.

Station	Observed Temperatures (°F) December 24	
	High	Low
Charleston Int'l AP	32	18
Florence Reg AP	29	15
Columbia Metro AP	28	12
Gr'nvl-Spart Int'l Ap	28	7

Many locations reported new daily low maximum temperatures as temperatures struggled to climb out of the 20s. Temperatures on Christmas morning ranged from  $-3^{\circ}\text{F}$  at Caesars Head to  $22^{\circ}\text{F}$  at the NWS Charleston International Airport, making it one of the coldest Christmas mornings on record. There were reports of burst pipes across the state, as daytime temperatures reached the mid-30s to low 40s, after the extended period of sub-freezing temperatures.