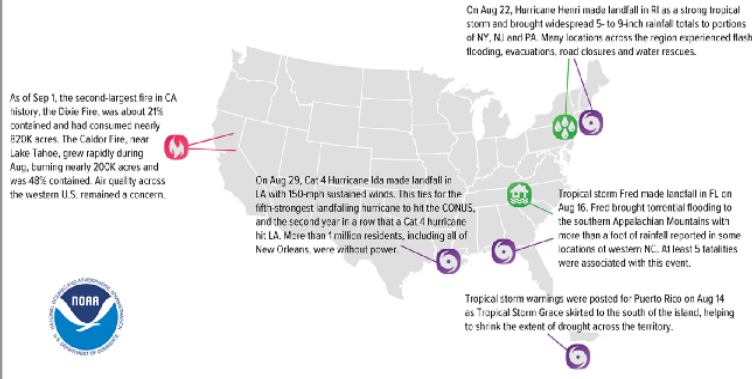




National and Regional Weather Highlights for Summer 2021

U.S. Selected Significant Climate Anomalies and Events for August and Summer 2021



Near-average temperatures were observed across the Southeast this summer. Precipitation varied over the summer, while five tropical systems and slow-moving thunderstorms caused localized flooding. Alabama experienced its **2nd wettest summer on record**. Rainfall from Tropical Storm Grace eased drought conditions in southern Puerto Rico. Tropical Storm Fred brought torrential flooding to the southern Appalachian Mountains. For more information, see: <https://www.ncdc.noaa.gov/sotc/national>

Highlights for the Southeast

There were **few extremes in summer temperatures** across the region. However, Tampa, FL observed its second warmest summer (JJA) on record and Roanoke, VA tied its third warmest summer. In contrast, Augusta, GA had its coldest 4th of July minimum temperature on record, at 58 degrees F.

Precipitation **varied greatly** across much of the Southeast for the summer. Tuscaloosa Airport, AL observed 8.16 inches of rain on June 19th making this the wettest day ever on record.

A strong thunderstorm on August 6th produced **extreme rainfall** rates of 3.4 inches per hour, and 4.75 inches in two hours, in Orlando, FL.

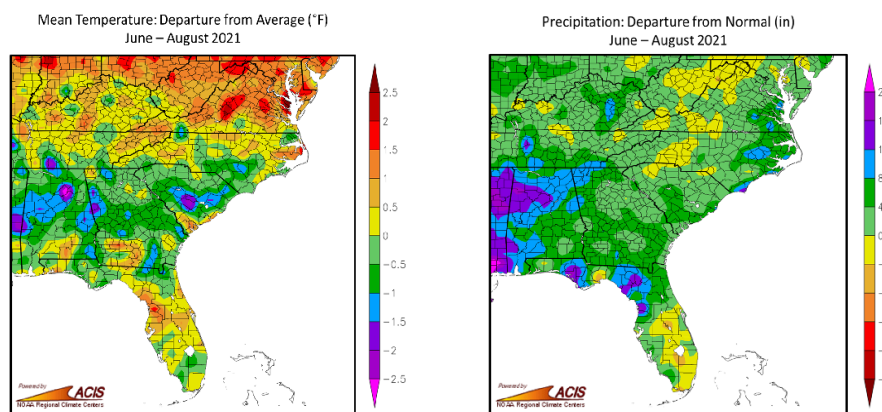
Five tropical systems, Claudette, Danny, Elsa, Fred and Ida impacted our region this summer, dropping significant amounts of rain, causing much damage, and resulting in a total of 24 fatalities.

Strong gusty **thunderstorm winds** caused a fatality to a kite surfer at Ft. Lauderdale Beach, FL on August 25th.

Unfortunately a total of 14 people were **struck by lightning** this summer (JJA), with 3 fatalities.

Regional Weather Overview for Summer 2021

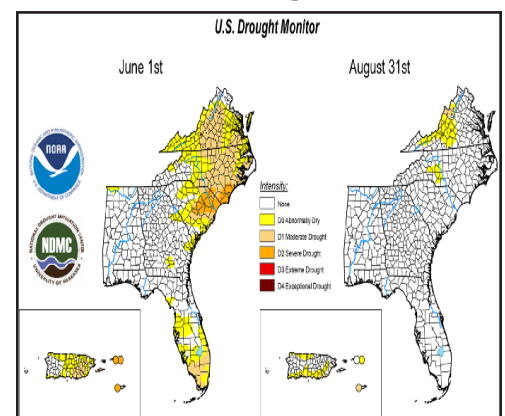
Temperature and Precipitation Anomalies



Above-average temperatures were recorded over Virginia and Florida, with near-average temperatures reported over the rest of the Southeast. High rates of evaporation and the persistent influx of tropical moisture suppressed nighttime cooling. A few stations observed their **top 5 warmest** minimum summer temperatures, including Tampa, FL (2nd warmest; 77.6 degrees F), and Sterling-Dulles Airport, VA (5th warmest; 66.5 degrees F).

Precipitation ranged from slightly below normal in southern Florida to over 8 inches above normal in Alabama. A few stations observed their **top 5 wettest** summers on record, including Gainesville, FL (2nd wettest; 33.58 inches), and Mobile, AL (3rd wettest; 35.44 inches). In contrast, parts of Puerto Rico and Virginia only had 70 percent of normal summer precipitation. Arecibo, PR reported more than 9 inches below normal.

Drought

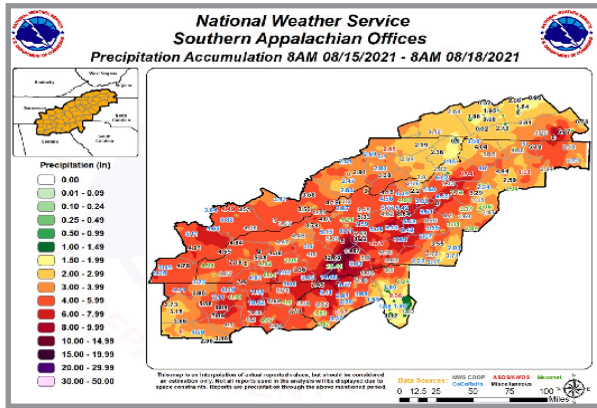


In early June, there was an area of severe drought (D2) in the eastern Carolinas and the U.S. Virgin Islands. As the summer progressed, adequate rainfall slowly eroded away this drought until only a small pocket of moderate drought (D1) ringed by abnormally dry conditions (D0) remained in western Virginia. The drought conditions in Puerto Rico also improved throughout the summer, due to the precipitation from the tropical systems.



Regional Climate Impacts for Summer 2021

Tropical Storm Fred



Tropical Storm Fred Flooding (image from [NWSGSP](#))

Tropical Storm Fred impacted the region from August 16th through 19th, causing **significant flooding** to the southern Appalachian Mountains. Heavy rainfall in the high elevations of the Balsam Range caused flash flooding in the headwaters of the Pigeon River and the French Broad River. A station just north of Lake Toxaway in Transylvania County, NC, measured a total of 23.41 inches of rain for the event. The flooding, along with **many landslides**, swept multiple recreational vehicles downstream and damaged many homes. As a result, **\$300 million dollars in damage** was estimated in Haywood County, NC and another \$11 million dollars in damage was calculated in Transylvania County, NC. Unfortunately there were **six fatalities** due to the flooding.

Severe Weather

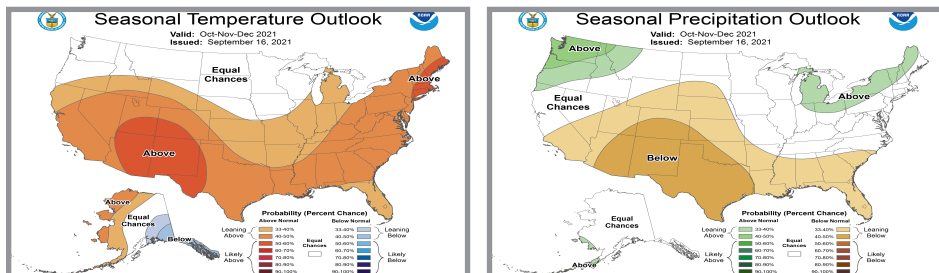
There were **1498 reports of severe weather** this summer, which is over 90% of the median summer count observed during 2000-2019. **Fifty six tornadoes** (30 EF-0s, 23 EF-1s, 2 EF-2s, 1 EF-U) were confirmed from June - August, which is over 187% of the average count of 30 tornadoes observed during 2000-2019. A total of 21 tornadoes were associated with Tropical Storm Fred, all rated EF-0 or EF-1 strength. A total of 15 tornadoes were associated with Hurricane Elsa, including an EF-2 tornado with winds of 128 mph in Camden County, GA. Fortunately no injuries or fatalities were reported. An EF-1 tornado with winds of 90 mph, damaged trees at the **National Mall** and around the **Lincoln Memorial** in Washington D.C. on July 1st. At the end of July, **billiard-ball sized hail** (2.25 inches) was reported in Stafford County, VA.

Agriculture and Livestock

The **persistent influx of tropical moisture and high humidity** across most of the Southeast increased disease pressures, with mold, and fungus on corn and peanuts. Meanwhile, producers were reporting **fall army worms** in several pastures and hay fields. In Georgia, the frequent rainfall events during the season, paired with the high humidity, increased rust issues on late-planted corn, and many farmers were battling with **whiteflies and boll rot** in cotton. Grove activities in the citrus growing region in Florida continued as normal. High humidity in the Midlands and Lowcountry region of South Carolina prevented corn from drying down appropriately; however, overall **fall vegetable** field preparations and planting were proceeding at a good pace.

Regional Climate Outlook for Autumn 2021

Temperature and Precipitation



[NOAA's Climate Prediction Center \(CPC\)](#), forecasted that above-normal temperatures are likely for all of the Southeastern region, during the months of October, November, and December. Precipitation is expected to have equal chances of wetter or drier than normal across Virginia and North Carolina, with drier than normal chances for the rest of the Southeast. Although the Southeast will remain drought-free, drought is likely to persist in Puerto Rico.

Atlantic Hurricane Season

Updated by NOAA's Climate Prediction Center on [August 4th](#), the Atlantic hurricane season outlook indicates a 65% chance of an **above-normal season**, a 25% chance of a near-normal season, and a 10% chance of below-normal season. The above-average season consists of 15-21 named storms, with 7-10 reaching hurricane strength, and 3-5 becoming major (category 3-5) hurricanes. This outlook reflects the competing climate factors of the [La Niña development](#) and near-to-slightly-below average SSTs.

Southeast Region Partners

- [National Oceanic and Atmospheric Administration](#)
- [National Centers for Environmental Information](#)
- [National Weather Service Eastern Region](#)
- [National Weather Service Southern Region](#)
- [Climate Prediction Center](#)
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