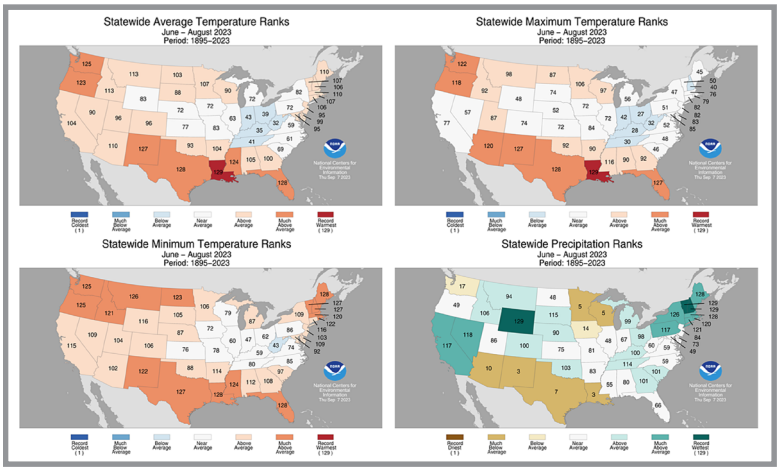
Quarterly Climate Impacts and Outlook

Southeast Region

September 2023

National and Regional Weather Highlights for Summer 2023



*The summer season was **warmer than average** across the Southeast. **Florida recorded its second warmest summer on record**. Temperatures were below average in June (except across Florida), above average in July, and much above average in August. Precipitation was above average in June and August (except in Florida), and near to below average in July. **Temperatures were much above average across the Caribbean**. Precipitation was variable across Puerto Rico while **dry conditions persisted across the U.S. Virgin Islands** during the summer. For more information, see NOAA's National Climate Report.*

Highlights for the Southeast

Florida recorded its **warmest month on record** in August and its **warmest July on record** (since 1895).

Smoke from wildfires in Canada resulted in **numerous air quality alerts** in the region in early June, including a rare Code Purple in Washington D.C. with visibility below 1 mile.

An **EF-3 tornado** destroyed a large manufacturing plant in central NC on July 19th, injuring 16 people. This was the first EF-3 recorded in NC in July and only the third EF-3 or greater in NC during meteorological summer (since 1950).

St. Thomas recorded its **5th driest summer on record** (sine 1953) with 4.27 inches of rain.

Severe flooding occurred in southern VA and northwest NC on August 28th, where over 10 inches of rain flooded roadways, homes, and businesses.

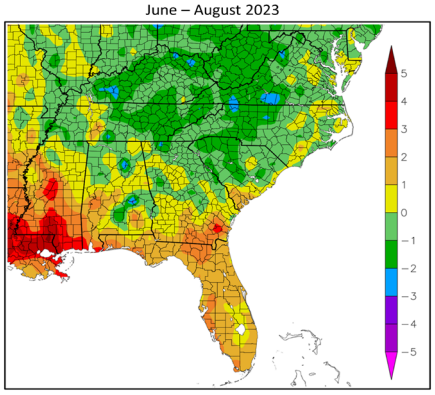
There were 26 rip current fatalities and two lightning fatalities across the Southeast this summer.

El Niño conditions are expected to continue through the upcoming winter (greater than 95% chance), with a **71% chance of a strong event**.

Regional Weather Overview for Summer 2023

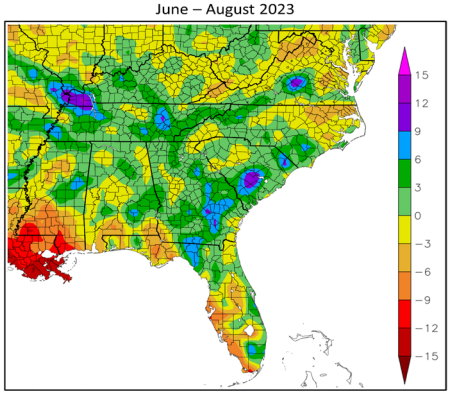
Temperature and Precipitation Anomalies

Mean Temperature Departure from Average (°F)
June – August 2023



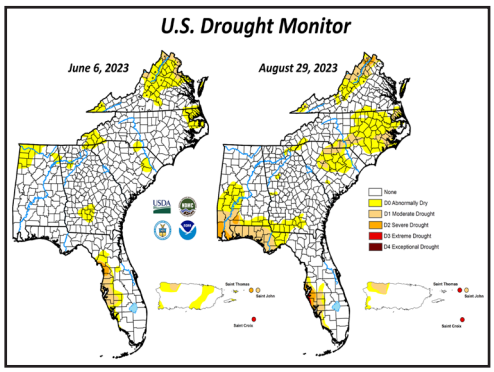
Temperatures were **near to below average** across northern and interior portions of the Southeast, with some locations running over 2 degrees F below average. In contrast, temperatures were **2 to 4 degrees F above average** across southern portions of AL, GA, and much of FL and the Caribbean. Several locations observed their warmest summer on record. Record warm ocean temperatures also contributed to **very high heat indices** in the region.

Precipitation Departure from Normal (in)
June – August 2023



Above average precipitation was found across interior portions of the region, PR, and along the East Coast of FL. The **wettest locations** extended from the Big Bend region of FL through southeast GA and coastal sections of the Carolinas, where **Hurricane Idalia** dropped 5 to 10 inches of rain. Precipitation was **below average** across the northern Gulf Coast, West Coast of FL, northeast NC, northern VA, and U.S. Virgin Islands.

Drought

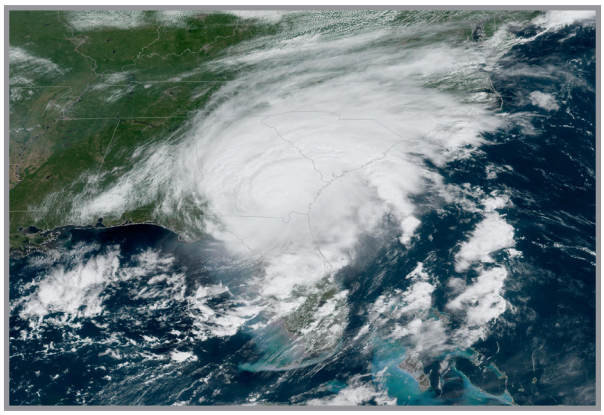


Moderate (D1) and severe (D2) drought emerged across the northern Gulf Coast and persisted across western FL. **Extreme (D3) drought emerged** along the Sun and Cultural FL coasts. Abnormal dryness (D0) and moderate (D1) drought expanded across the Carolinas and persisted across northern VA, with a pocket of severe (D2) drought emerging. Moderate (D1) drought expanded across northwest PR and persisted across St. John. **Extreme (D3) drought emerged** on St. Thomas and persisted on St. Croix, with **exceptional drought (D4) briefly emerging** in June.

Contacts: Chip Konrad, Chris Fuhrmann and William Schmitz (SERCC)
Ellen Mecray and Sharon Mesick (NOAA/NCEI)

Regional Climate Impacts for Summer 2023

Hurricane Idalia Strikes the Southeast



Idalia over southeast Georgia on August 30th (source: NOAA)

On the morning of August 30th, **Hurricane Idalia** made landfall near Keaton Beach, FL as a Category 3 with winds of 125 mph, making it the **strongest hurricane to strike the Big Bend region of FL in over a century**. The storm surge, which was exacerbated by the full moon and high tide, **reached 8 feet at Cedar Key, FL**, inundating roadways, bridges, buildings, and vehicles. Idalia weakened to a Category 1 as it moved across southeast GA and became a tropical storm as it tracked through eastern SC. **High winds, flooding, and tornadoes** were reported across central and eastern portions of GA and the Carolinas. Charleston Harbor recorded its fifth highest crest on record, which contributed to significant flooding downtown. Hundreds of thousands of **power outages** were reported in FL and GA. Estimated **insured losses** are currently $2-5 billion. Four **deaths** have been confirmed in FL, and one in GA.

Severe Weather

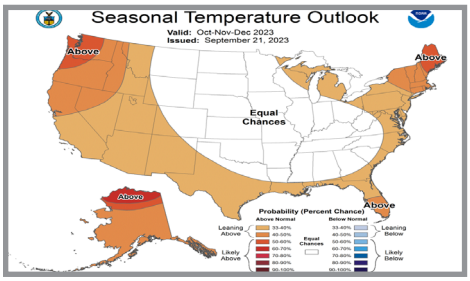
There were **3,913 reports of severe weather**, which is 236% of the median summer frequency from 2000 to 2022. There were **55 confirmed tornadoes** (27 EF-0s, 25 EF-1s, 2 EF-2s, 1 EF-3), which is 190% of the median summer frequency. Nearly half of these occurred as part of a **severe weather outbreak** from June 14th to the 19th, which included wind gusts up to 90 mph and hail up to 4 inches in diameter. Two weak tornadoes were also reported in PR. There were 3,545 reports of high winds, which is 243% of the median summer frequency. A severe thunderstorm produced gusts up to 80 mph in northern AL on August 3rd, injuring at least 20 people. The largest hailstone reported was 4.75 inches (the size of a DVD) in Caroline County in eastern VA on August 7th, the **third largest hailstone recorded in the state** since 1950.

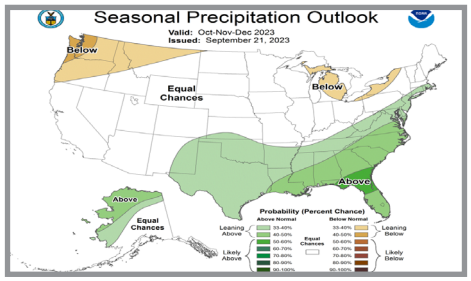
Agriculture and Livestock

Wet weather in June prevented some farmers from planting crops and increased disease pressures. There were numerous reports of crop damage due to **hail and high winds**. **Cool temperatures** in June slowed growth, but warm weather in July and August allowed many crops to progress. There were reports of **heat stress** in cattle and livestock. **Hot and dry weather** led to wilting of row crops and some pastures turned brown. Dry conditions contributed to premature ripening of apples in northern VA. **Hurricane Idalia** caused significant damage to crops, buildings, and farm equipment, and led to livestock losses in GA and FL. Farmers in the Caribbean reported crop stress, feed shortages, and livestock losses due to the heat and **long-term moisture deficits** on the islands.

Regional Climate Outlook for Autumn 2023

Temperature and Precipitation





NOAA's Climate Prediction Center (CPC) is forecasting **above average temperatures** across FL, northern VA, and along the northern Gulf and Atlantic coasts from October-December. **Above average precipitation** is expected across the region. Drought **removal** is expected across VA, the Carolinas, PR, and St. John, with **improvements** across southern AL, northwest FL, the West Coast of FL, St. Thomas, and St. Croix. **No additional development** is expected.

Atlantic Hurricane Season

The outlook issued by CPC on August 10th increased the odds of an above-average season from 30% to 60%, with **as many as 21 named storms**. Six to 11 of these could become hurricanes, and two to five could become major hurricanes (Category 3+). The updated outlook reflects a **combination of factors** that may counteract the limiting effects of the current El Niño, including record-warm Atlantic Ocean temperatures, below-normal wind shear, and an above-normal west African monsoon.

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
  - National Hurricane Center
  - National Integrated Drought Information System
  - Carolinas Integrated Sciences and Assessments
  - National Sea Grant Office
  - Southeast and Caribbean Regional Collaboration Team
- State Climatologists
- Southeast Regional Climate Hub
- Southeast Climate Science Center
- South Atlantic Landscape Conservation Cooperative

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