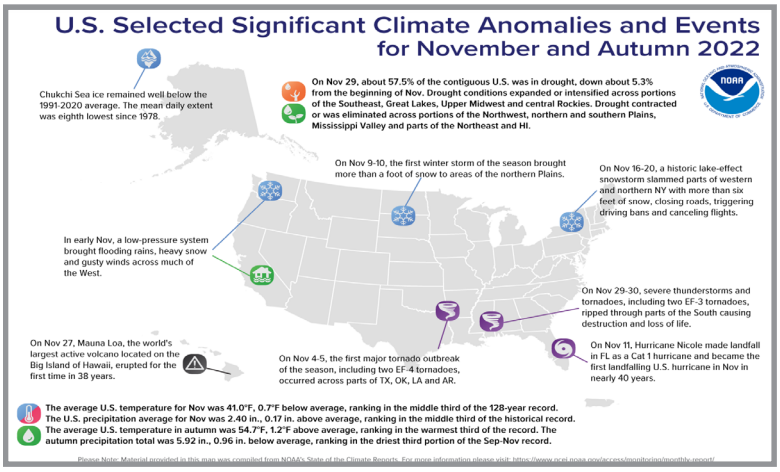
Quarterly Climate Impacts and Outlook

Southeast Region

December 2022

National and Regional Weather Highlights for Autumn 2022



*There was **considerable variation** in temperature and precipitation across the Southeast this autumn. Temperatures were near average in September, below average in October, and above average in November. **Florida had its 7th warmest November on record**. Precipitation was near to above average in September, below average in October (**Florida had its 8th driest October on record**), and above average in November. Autumn was warm and wet across Puerto Rico and the U.S. Virgin Islands. For more information, see: https://www.ncdc.noaa.gov/sotc/*

Highlights for the Southeast

Miami, FL recorded its **2nd warmest autumn** (SON) on record (81.3 degrees F), while West Palm Beach, FL and Fort Myers, FL recorded their **4th warmest autumn** on record (79.5 degrees F and 79.3 degrees F, respectively).

Between 6 and 12 inches of rain fell across parts of northern Georgia and South Carolina on September 3rd and 4th, resulting in **major flooding, damage to roadways and structures, and loss of power and water** to thousands of homes and businesses.

Orlando, FL recorded its **wettest autumn on record** with 28.83 inches of precipitation.

Four hurricanes impacted the Southeast region this autumn: **Earl** (Puerto Rico, U.S. Virgin Islands), **Fiona** (Puerto Rico), **Ian** (Florida, Carolinas), and **Nicole** (Puerto Rico, U.S. Virgin Islands, Florida).

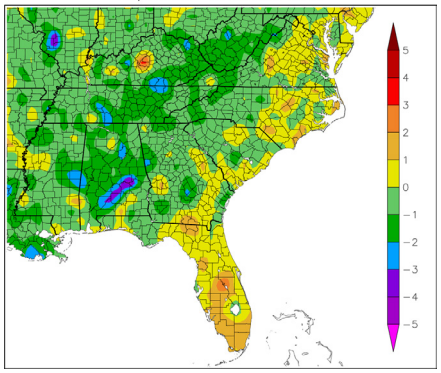
La Niña conditions developed for the third consecutive autumn season, a "triple-dip". This has happened only two other times since 1950.

There were four lightning fatalities and two lightning injuries across the Southeast this autumn.

Regional Weather Overview for Autumn 2022

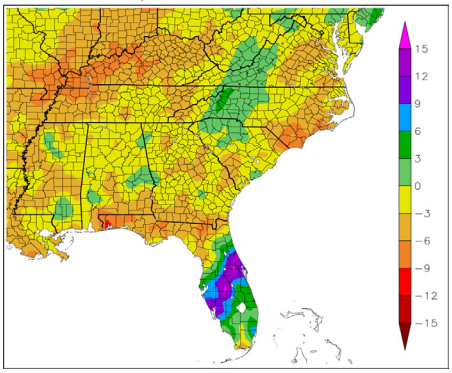
Temperature and Precipitation Anomalies

Mean Temperature Departure from Average (°F)
September – November 2022



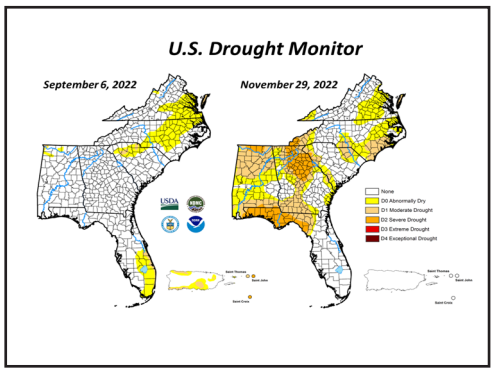
Temperatures this autumn were below average across the western half of the Southeast, particularly in central and southern parts of Alabama. Conversely, temperatures were above average across eastern and southern portions of the region, particularly the Florida Peninsula. Several locations recorded one of their greatest annual number of days at or above 80 degrees F. Temperatures were slightly above average across Puerto Rico and the U.S. Virgin Islands.

Precipitation Departure from Normal (in)
September – November 2022



Precipitation was below average across the Southeast, except in places affected by tropical cyclones. The driest locations were found across the Florida Panhandle, southern Alabama and Georgia, and eastern North Carolina and Virginia. The wettest locations were found across the Florida Peninsula and western portions of the Carolinas and Virginia. Precipitation was above average across Puerto Rico and the U.S. Virgin Islands.

Drought



Autumn began with about 82% of the region free of any drought designation. However, **conditions deteriorated throughout the season**, particularly across the Florida Panhandle and northern Georgia and Alabama. By the end of November, over 30% of the region was in moderate (D1) drought, and over 10% of the region was in severe (D2) drought. On the other hand, **drought conditions were eliminated** across Puerto Rico and the U.S. Virgin Islands.

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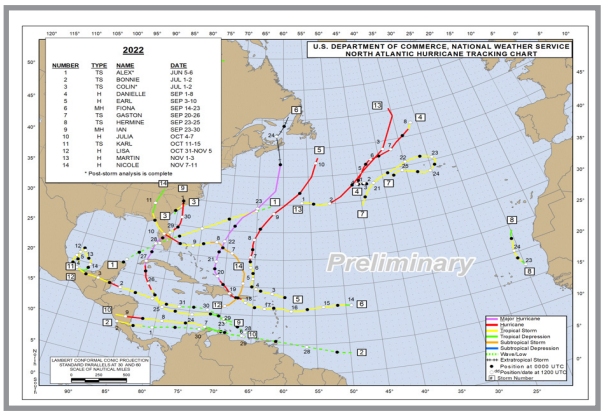
Ellen Mecray and Sharon Mesick (NOAA/NCEI)

Regional Climate Impacts for Autumn 2022

Atlantic Hurricane Season Comes to an End



2022 Atlantic tropical cyclone tracks (image from NHC)

The Atlantic hurricane season officially ended on November 30th. The 2022 season saw a total of **14 named storms, eight of which became hurricanes**, and **two of which became major hurricanes** (Category 3+). These numbers are close to their climatological averages calculated over the period 1991-2020. The Accumulated Cyclone Energy from these storms was slightly below the seasonal average. While a near-average season in terms of storm frequency and accumulated energy, the 2022 season was **one of the costliest on record** with damage estimates exceeding $55 billion. Of the 14 named storms, six affected the Southeast region, including both major hurricanes: T**ropical Storm Alex, Tropical Storm Colin, Hurricane Earl, Hurricane Fiona, Hurricane Ian**, and **Hurricane Nicole**.

Severe Weather

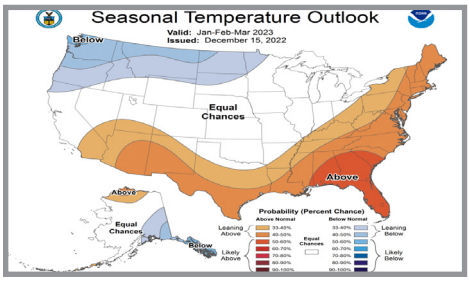
There were **221 reports of severe weather** this autumn, which is 17% greater than the median autumn frequency observed between 2000 and 2020. There were **30 confirmed tornadoes** (16 EF-0s, 10 EF-1s, 3 EF-2s, 1 EF-3), which is 14% below the median autumn frequency of 35. Almost half of these occurred as part of a **severe weather outbreak** that affected southern parts of Alabama, Georgia, and North Florida on November 29th and 30th. Two individuals were killed when a tree fell on a mobile home. Reports of high winds were 12% greater than the median autumn frequency. One person was killed, and one person was injured when strong winds flipped a small airplane that was waiting to take off at Orlando Executive Airport in Florida on September 1st. The largest hailstone reported was **2 inches** in Hale County, AL on October 12th.

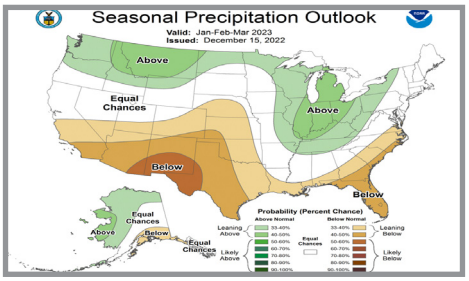
Agriculture and Livestock

Cooler and generally drier weather benefited agricultural production, including cattle and livestock, early in the season. However, a lack of precipitation and low soil moisture limited growth and field operations across parts of the Florida Panhandle and southern Georgia, where some locations went over a month without measurable precipitation. An earlier than normal freeze in mid-October damaged unopened cotton bolls in northern Georgia. Hurricanes Ian and Nicole greatly impacted agriculture across Florida, particularly citrus. On the other hand, the remnants of Hurricane Ian provided beneficial moisture to crops in the Carolinas and Virginia. Unseasonably warm weather in early November limited the number of chill hours for some winter crops.

Regional Climate Outlook for Autumn 2022

Temperature and Precipitation





NOAA's Climate Prediction Center (CPC) is forecasting above average temperatures across the Southeast during January-March 2023. There are equal chances of above and below average precipitation across much of the interior of the region, with the rest of the region expected to be drier than average. Drought development is likely from northeast Florida to southeast Virginia, but is not expected across Puerto Rico and the U.S. Virgin Islands.

ENSO Forecast

The seasonal projections described above largely reflect the expectation that La Niña conditions will continue through the winter months. This would mark the third consecutive La Niña winter, which has happened only two other times since 1950. According to the latest ENSO update issued by the CPC on December 8th, there are equal chances of La Niña and ENSO-neutral during the January-March 2023 period, with a 71% chance of ENSO-neutral conditions during the February-April period.

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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