Regional Weather Highlights for Autumn 2018

Statewide Average Temperature Ranks — September–November 2018, Period: 1895–2018
Statewide Maximum Temperature Ranks — September–November 2018, Period: 1895–2018
Statewide Minimum Temperature Ranks — September–November 2018, Period: 1895–2018
Statewide Precipitation Ranks — September–November 2018, Period: 1895–2018
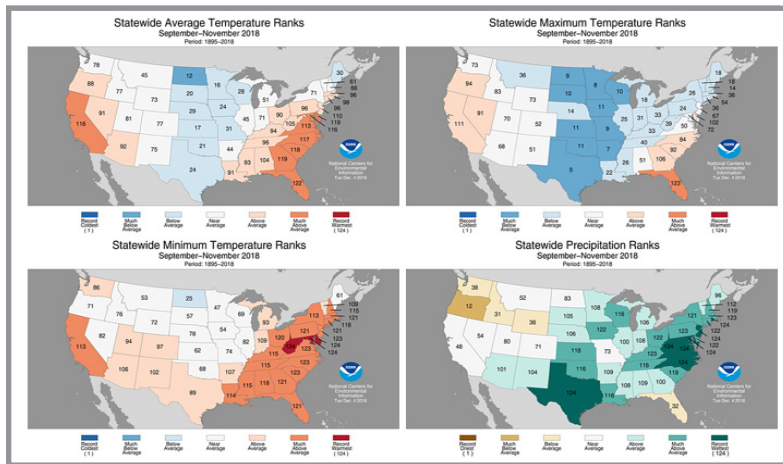
Much warmer than normal temperatures through mid-October contributed to the Southeast's 8th warmest autumn on record. September was the warmest on record for Florida and the 2nd or 3rd warmest in the other states. Three tropical systems and a shift to a storm track along the Southeast coast in mid-October brought significant amounts of rain (6th wettest November on record for the Southeast) to all of the Southeast except southern Florida, which was drier than normal except in November.

Highlights for the Southeast

Two hurricanes and one tropical storm made landfall in the Southeast in autumn 2018. Tropical Storm Gordon made landfall on late on September 4 immediately east of Pascagoula, MS with winds near hurricane force.

Hurricane Florence came onshore south of Wrightsville Beach, NC early on September 14. Florence's slow movement led to record-breaking rainfall and flooding in North and South Carolina.

Hurricane Michael came onshore as a strong Category 4 storm on October 10 at Mexico Beach, FL and moved northeast across Georgia, the Carolinas, and Virginia, destroying crops at peak harvest time in southern Georgia and also damaging millions of acres of timber.
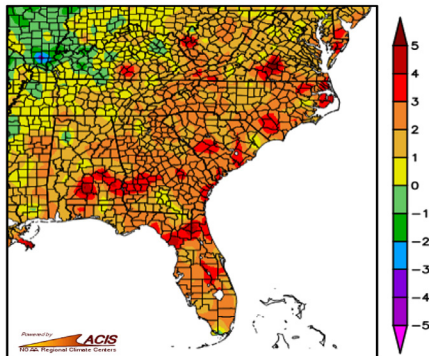
Snow was observed unusually early in the season in the Washington D. C. area on November 15, as a developing low pressure system moved up the East Coast. This resulted in the first measurable snow there in November in the last 22 years.

Sixty-seven confirmed tornadoes this autumn, more than double the median value from 2000-2016.
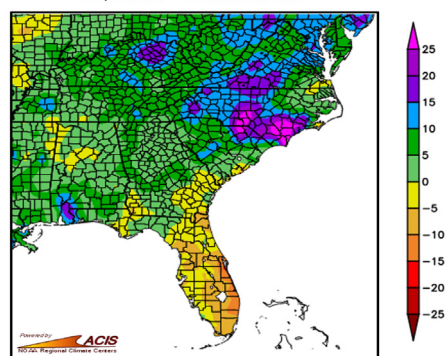
Regional Weather Overview for Autumn 2018

Temperature and Precipitation Anomalies

Drought

Mean Temperature: Departure from Average (°F) September — November 2018

Precipitation: Departure from Normal September — November 2018

U.S. Drought Monitor — September 4th / November 27th

Intensity:
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought

Above-average temperatures were observed over almost all of the Southeast. Many stations in the Florida peninsula and along the East Coast recorded temperatures that were in the top five warmest for their periods of record. Maximum temperatures were generally within 1-2 F of normal but minimum, temperatures were generally 3-6 F warmer than normal. Key West, FL (83.1 F) recorded their warmest autumn in 148 years.

Precipitation ranged from less than 50% of normal on the East Coast of Florida to over 300% of normal along the border between North and South Carolinas. West Palm Beach, FL (6.92 inches) reported their driest autumn in 122 years. Wilmington, NC (32.75 inches) recorded their wettest autumn in 145 years, and Charlotte, NC (20.71 inches) experienced their wettest autumn in 140 years, due in part to the extreme rainfall from Hurricane Florence.
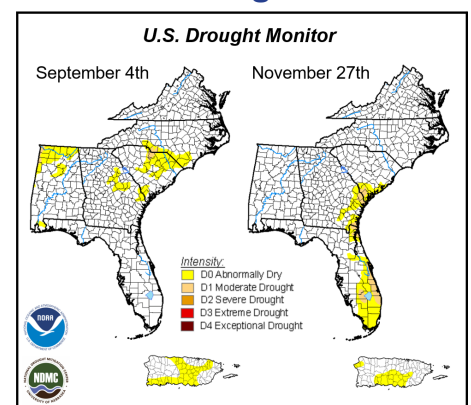
The Southeast was free of drought in September 2018, although scattered abnormally dry conditions were observed. By the end of autumn, moderate drought covered 2.6% of the region in areas along the East Coast of the Florida peninsula, as well as in coastal counties near Jacksonville, FL and Savannah, GA. Abnormally dry conditions in Puerto Rico decreased from 42 to 4 percent areal coverage by mid-October but expanded again in November.

Hurricane Florence
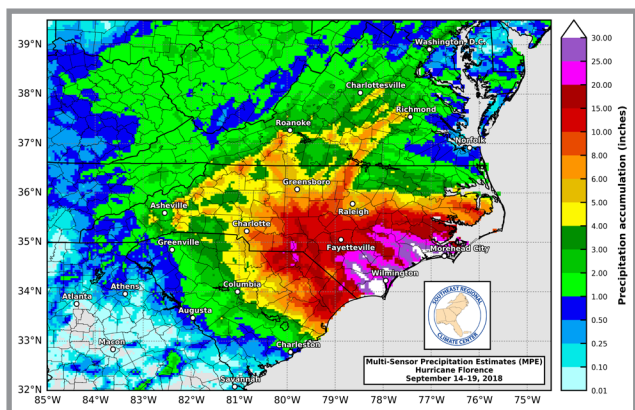
Multi-Sensor Precipitation Estimates September 14-19

Hurricane Florence made landfall near Wrightsville Beach, NC on September 14 as a Category 1 storm. Florence moved very slowly westward over the region for a period of three days and continued to drop very heavy rain, before turning northward. The highest rainfall totals in North Carolina was 35.93 inches near Elizabethtown and 23.63 inches near Loris in South Carolina. Both reports are likely to become new record hurricane rainfalls for those two states. Most of southeastern North Carolina and parts of northeastern South Carolina received rain in excess of the estimated 1000-year return period. Thirty direct and 23 indirect deaths were attributed to the storm, with damage estimated at nearly $18 billion. At one point, floodwaters entirely cut off the city of Wilmington from the mainland.

Hurricane Michael

Hurricane Michael attained peak winds of 155 mph, as it made landfall near Mexico Beach, FL on October 10, the first time a Category 4 hurricane has hit the region. A maximum wind gust of 129 mph was measured at Tyndall Air Force Base. Catastrophic damage occurred along the Florida coast at Mexico Beach and Panama Beach due to the extreme winds and storm surge. The 9 to 14 feet storm surge wiped out most structures along the coast near the landfall point. The storm tracked northeast across southwest Georgia as a major hurricane and continued northeast as a tropical storm over the Carolinas and parts of Virginia, causing additional damage from flooding rain and tornadoes. At least 60 fatalities were attributed to Michael in the United States. Preliminary damage estimates from Michael were over $15 billion.

Agriculture and Livestock

Agriculture took a tremendous hit from Hurricanes Florence and Michael. The heavy rains from Florence in the Carolinas caused manure lagoons to overflow and drowned hogs, chickens, and other livestock in the record-setting floods. Cotton and soybean crops were decimated and peanut production was also impacted. Hurricane Michael hit the Florida Panhandle and southwestern counties of Georgia at the peak of harvest, resulting in a nearly total loss of a record-setting cotton crop. Pecan orchards were toppled in the high winds and nearly ripe nuts were blown out of the trees. Timber losses in both Florida and Georgia were tremendous, with millions of acres blown down by the hurricane winds. Losses in Florida alone were estimated at $1.3 billion.

Regional Climate Outlook for Autumn 2018

Temperature and Precipitation
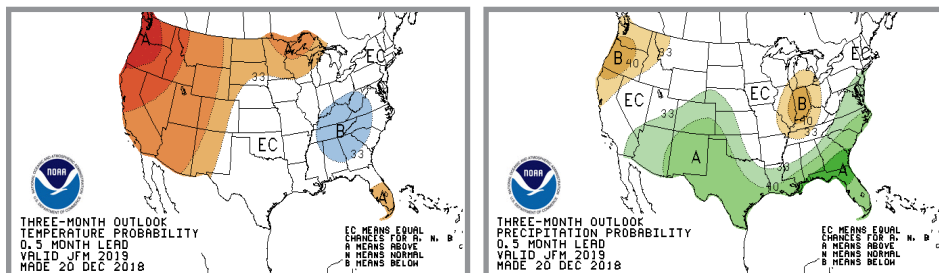
NOAA's Climate Prediction Center (CPC), forecasted that cooler-than-normal temperatures are likely to occur in northern Georgia and Alabama and the western Carolinas and Virginia and warmer-than-normal temperatures are likely in southern Florida. Precipitation is expected to be wetter-than-normal across the region, except western Virginia. Drought is not expected in Puerto Rico and should be removed from Florida.

El Niño

NOAA's Climate Prediction Center indicated on December 13 that while an El Niño has not yet officially formed in the Eastern Pacific Ocean, there is at least a 90% chance of an El Niño occurring this winter. It is likely to continue through spring (60% chance) before a transition to ENSO-neutral conditions occurs later in the year. Climatologically, El Niño is associated with an increase in precipitation and cloud cover and cooler temperatures in winter, with the strongest impacts occurring over Florida and southern Alabama and Georgia.

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