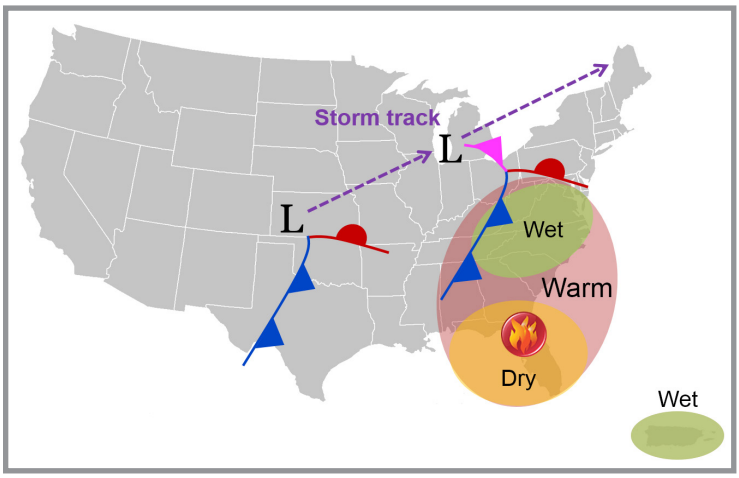
Quarterly Climate Impacts and Outlook

Southeast Region

June 2017

Regional Weather Pattern and Highlights for Spring 2017



*An **extraordinary number of weather and climate extremes** occurred from March–May 2017 (i.e., meteorological spring), causing a diverse array of economic and societal impacts. Upper-level ridging was unusually prevalent over much of the country and resulted in **above-average temperatures** across the Southeast. Numerous low pressure systems tracked from the Southern Great Plains toward the Great Lakes region, producing **well-above-normal precipitation** across portions of northern Georgia, the Carolinas, and Virginia. In contrast, **unusual dryness** lingered in areas farther removed from the storm track, including much of Florida and southern Georgia. Near-average to above-average temperatures and **well-above-normal precipitation** were observed in Puerto Rico and the U.S. Virgin Islands.*

Highlights for the Southeast

Record-breaking warmth was observed during April, as mean temperature departures across the region ranged from 1°F to as much as 9°F above average. At least 56 long-term (i.e., period of record equaling or exceeding 50 years) stations, with 34 located in North Carolina and Virginia, observed their **warmest April mean temperature on record**. Sixty-three long-term stations observed or tied their **highest daily minimum temperature on record for April**, including Melbourne, FL (78°F) and Norfolk, VA (76°F).

A north-to-south gradient in spring precipitation occurred across the region, with **extreme wetness in broad portions of North Carolina and Virginia**. At least 26 long-term stations in these two states observed spring precipitation totals that were ranked within their **five highest values on record**, including Asheville, NC and Raleigh, NC. **Well-above-normal precipitation** also occurred over Puerto Rico and the U.S. Virgin Islands. Christiansted, USVI observed its **third wettest spring on record**, with 16.14 inches of rainfall.

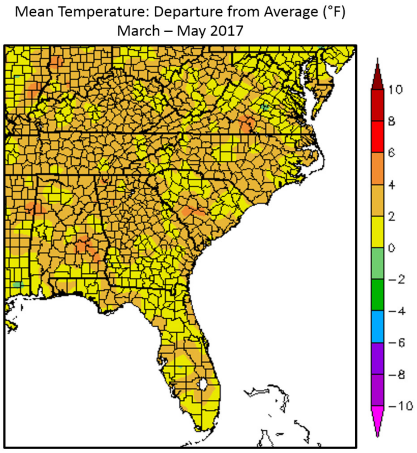
A hard freeze during mid-March caused over **$1 billion** in fruit crop losses across the region, with the greatest damage in Georgia and South Carolina. While the freeze did not occur unusually late in the season, many fruit crops had **budded or bloomed prematurely due to an extremely warm winter (especially February)**, which increases their vulnerability to spring freezes.

Seventy tornadoes (36 EF-0s, 26 EF-1s, 8 EF-2s) were confirmed across the Southeast during April, which is the **third greatest count for the month** since modern records began in 1950.

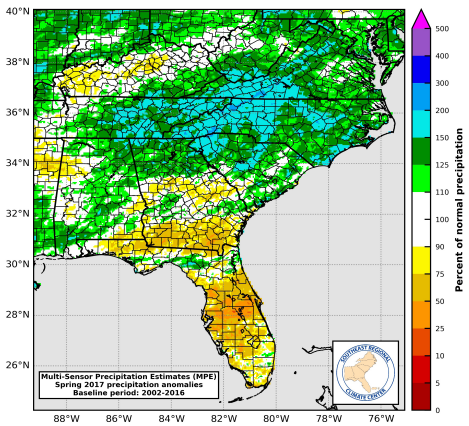
Drought conditions were **nearly eliminated** from the interior portion of the region but **developed and intensified** over much of Florida and southern Georgia. Florida experienced its most active wildfire season since 2011, with 1,785 fires reported during spring.

Regional Climate Overview for Spring 2017

Temperature and Precipitation Anomalies

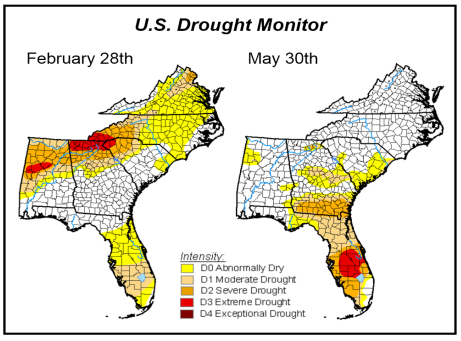


Above-average temperatures were observed across the Southeast region, particularly during April. Spring temperature departures of 1°–5°F above average were found across much of the region. At least 36 long-term stations, with one or more in every state, observed spring mean temperatures that were ranked within the **top 5 warmest values on record**, including Birmingham, AL, Atlanta, GA, Pensacola, FL, and Cape Hatteras, NC. Sixteen long-term stations tied or recorded their **highest or second highest spring count of daily maximum temperatures at or above 80°F**, such as Augusta, GA (61 days) and Pensacola, FL (58 days). Tampa, FL and Miami, FL observed or tied their **warmest May day and second warmest day for any month on record**, with both stations reaching 98°F.



The northern half of the Southeast region received well-above-normal precipitation amounts, with departures of **125% to over 200% of normal** across much of northeastern Alabama, northern Georgia, the Carolinas, and Virginia. In contrast, spring precipitation totals were **25% to 75% of normal** across much of Florida and southern Georgia. Orlando, FL recorded its **second driest March** (0.10 inches) and tied its **driest April** (no measurable rainfall). From April 23rd–25th, Raleigh, NC observed its highest **1-day** (4.51 inches), **2-day** (6.68 inches), and **3-day** (7.45 inches) **precipitation totals on record for meteorological spring**, leading to widespread flooding and several water rescues. On May 20th, Montgomery, AL observed its **wettest May day and fourth wettest day for any month on record**, with 8.15 inches of rainfall.

Drought

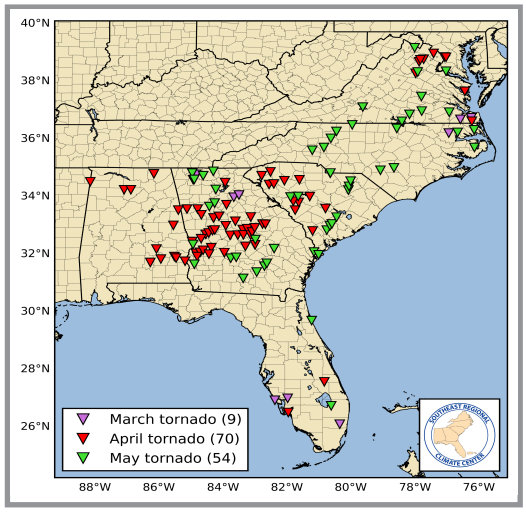


As of May 30th, the U.S. Drought Monitor indicated that about **21% of the Southeast region** was classified in moderate-to-extreme (D1–D3) drought conditions, which is a decrease of 9% in coverage since February 28th. Well-above-normal rainfall **nearly or completely ended the drought** across interior portions of Alabama, Georgia, the Carolinas, and Virginia. Conversely, a persistent lack of spring rainfall resulted in the **development of moderate-to-severe (D1–D2) drought** across southern Georgia. In addition, moderate-to-extreme drought continued to **intensify and expand** across Florida, covering nearly 72% of the state for the first time since February 2013. Moultrie, GA and Tampa, FL tied their **second and fifth highest count of spring days with no measurable precipitation**, at 79 and 83 days, respectively. However, periods of heavy rainfall that occurred after the end of spring led to **rapid drought improvement** in Florida and southern Georgia.

Contacts: Chip Konrad, Jordan McLeod, and William Schmitz (SERCC)
Ellen Mecray (NOAA/NCEI)

Regional Climate Impacts for Spring 2017

Severe Weather



Confirmed tornadoes during spring 2017.

Severe weather was **extremely active** across the Southeast, with more than 175% of the typical number of reports observed during spring. Numerous thunderstorm wind gusts ranging from **50 to over 100 mph** were observed across the region, resulting in **3 fatalities and at least 24 injuries**. There were 35 reports of large hail (i.e., at least 2 inches in diameter), including **4-inch (grapefruit-sized) hail** in Talladega County, AL on April 5th. A total of **134 tornadoes** (2 unrated, 60 EF-0s, 58 EF-1s, 14 EF-2s) were confirmed from March–May, which is the **fifth highest spring count** for the region since 1950. Nearly 45% (58 of 134) of the tornadoes occurred in Georgia, which set **new state records** for its highest April (35) and spring tornado counts. Tornadoes caused **1 fatality and 22 injuries** across the region. On March 26th, an EF-0 tornado touched down in the southeastern portion of San Juan, PR. Two EF-0 tornadoes tracked across the District of Columbia on April 6th, which doubled the D.C. tornado count from 1950–2016. On April 5th, **three people were injured** by lightning strikes in Navarre, FL.

Agriculture and Livestock

Numerous agricultural and livestock impacts were reported during the spring planting season. After blooming prematurely from an exceptional lack of winter chill hours, about **90%** of South Carolina peaches and **80%** of Georgia peaches and blueberries were **destroyed by a hard freeze during mid-March**. Moderate-to-severe frost damage was also reported in winter wheat fields in nearly every state. Pastures **improved** across much of the region that received above-normal precipitation, but drier areas experienced **limited** pasture growth despite the seasonal green-up. Harmful armyworms were reported in some Alabama and Georgia pastures, while insufficient grazing conditions required many livestock producers in Florida to **obtain water and hay from outside the state**. Fruit and vegetable crops in Florida were affected by an **extreme infestation of** whiteflies, which was attributed to a warm and dry spring as well as an unseasonably warm winter. In early April, severe thunderstorms **damaged agricultural fields, buildings, and equipment** across several states. Excessive rainfall in early and late May **delayed crop planting and winter wheat harvesting** across much of the Southeast.

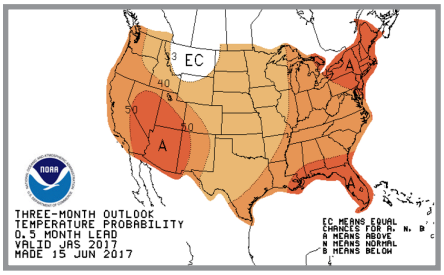
Water Resources and Wildfires

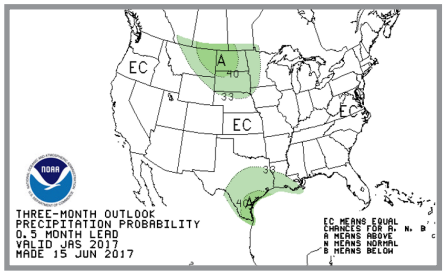
Streamflows and soil moisture were **well below normal** across much of the region during March, as below-average precipitation exacerbated the long-term effects of the drought. Much wetter conditions in April and May **recharged** streamflows and soil moisture over much of the Southeast. However, water resources remained **stressed** across Florida and southern Georgia due to a persistent lack of rainfall. An **extremely active wildfire season** burned over 120,000 acres in Florida. The largest wildfire, known as the West Mims Fire, consumed over **150,000 acres** of the Okefenokee National Wildfire Refuge in southeastern Georgia. Smoky conditions reduced tourism to the swamp and nearby beaches along the Atlantic coast.

West Mims Fire. (Image credit: Jim Pixley)

Regional Climate Outlook for Summer 2017

Temperature and Precipitation

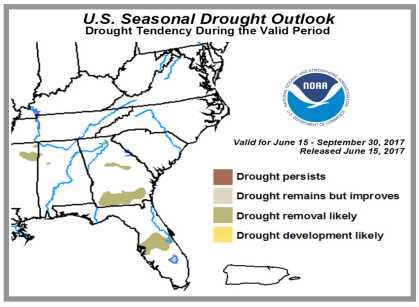




According to the seasonal outlook from NOAA's Climate Prediction Center (CPC), a high probability of **warmer-than-normal** summer temperatures is forecasted for the Southeast, particularly in Florida, southern Alabama, and southern Georgia. This reflects a trend toward above-normal summer temperatures across the region. **Equal chances** of below-normal, above-normal, and near-normal summer precipitation are predicted for the region.

Drought

The U.S. Seasonal Drought Outlook issued by the CPC indicates that current drought conditions across Georgia, Florida, and localized areas of Alabama are **likely to be removed** during the summer. Summer is typically one of the wettest seasons of the year for much of the Southeast, but rainfall can vary significantly on a local scale. Summer marks the core of the wet season in Florida and the beginning of the Atlantic hurricane season, with the potential for drought-busting storms.



Atlantic Hurricane Season

According to the Atlantic hurrricane season outlook issued by the CPC, an **above-normal** (45% chance) or **near-normal** (35% chance) **season** is most likely this year. An average season produces 12 named storms, with 6 reaching hurricane strength and 3 becoming major (Category 3–5) hurricanes. Weak or non-existent El Niño conditions in the tropical Pacific are not expected to suppress Atlantic hurricane activity.

Southeast Region Partners

National Oceanic and Atmospheric Administration
- National Centers for Environmental Information
- National Weather Service Eastern Region
- National Weather Service Southern Region
- National Weather Service River Forecast Centers
- National Integrated Drought Information System
- Carolinas Integrated Sciences and Assessments
- National Sea Grant Office
- Southeast and Caribbean Regional Collaboration Team

State Climatologists

U.S. Department of Agriculture
- Southeast Regional Climate Hub

U.S. Department of the Interior
- Southeast Climate Science Center
- South Atlantic Landscape Conservation Cooperative

Contacts: Chip Konrad, Jordan McLeod, and William Schmitz (SERCC)
Ellen Mecray (NOAA/NCEI)