

Southeast Region: (Information provided by the Southeast Regional Climate Center)

- Temperatures were above average across the Southeast region during October, but relatively few monthly extremes were recorded due to periods of well-below-average temperatures during the second half of the month. Only 15 of more than 175 long-term stations (i.e., period of record equaling or exceeding 50 years) across the region observed October mean temperatures that were ranked within their five warmest values on record. Eleven of these 15 stations were located in North Carolina, Virginia, and the District of Columbia. At least 65 long-term stations observed or tied their highest count of October days with a minimum temperature at or above 70 degrees F (21.1 degrees C), including Federal Point, FL (1892–2017; 19 days), Charleston, SC (1938–2017; 8 days), Charlotte, NC (1879–2017; 5 days), Athens, GA (1902–2017; 4 days), and Richmond, VA (1897–2017; 4 days). An extraordinary number of daily temperature extremes were recorded during the month. On the 1st and 10th, Tampa, FL (1890–2017) tied its second warmest daily maximum temperature on record for October, at 94 degrees F (34.4 degrees C). From the 6th through the 12th, Augusta, GA (1874–2017) observed its longest streak of 7 days during October with a maximum temperature at or above 90 degrees F (32.2 degrees C). Across the Southeast, the warmest weather of the month occurred from the 9th through the 11th, as unseasonably warm and humid air surged northward ahead of an approaching cold front. Daytime maximum temperatures ranged from 80 to 95 degrees F (26.7 to 35 degrees C) across much of the region, while nighttime minimum temperatures remained above 70 degrees F. From the 7th through the 11th, a total of 142 long-term stations across the region observed or tied their highest daily minimum temperature on record for October, including Miami, FL (1896–2017; 83 degrees F, 28.3 degrees C), Columbia, SC (1887–2017; 77 degrees F, 25 degrees C), Norfolk, VA (1874–2017; 77 degrees F), Macon, GA (1897–2017; 75 degrees F, 23.9 degrees C), Birmingham, AL (1896–2017; 75 degrees F), Raleigh, NC (1887–2017; 75 degrees F), and Washington, D.C. (1872–2017; 75 degrees F). At least 15 of these stations were found in every state, with about one third (47 of 142) located in North Carolina. It is especially outstanding that several stations observed or tied their highest minimum temperature on record for any month outside meteorological summer (i.e., June–August), including Tampa, FL (1890–2017; 81 degrees F, 27.2 degrees C), Augusta, GA (1874–2017; 78 degrees F, 25.6 degrees C), Lumberton, NC (1903–2017; 75 degrees F), and Asheville, NC (1876–2017; 71 degrees F, 21.7 degrees C). In contrast, the coldest weather of the month occurred on the 29th and 30th, as a strong frontal passage ushered in unseasonably cold air from the northwest. Daily minimum temperatures fell below 40 degrees F (4.4 degrees C) across portions of every state in the region, with much of southern Florida reaching the 50s F (10 to 15 degrees C) or lower. During this two-day period, several locations observed or tied their lowest or second lowest maximum temperature on record for October, including Highlands, NC (1893–2017; 30 degrees F, -1.1 degrees C), Jasper 1 NNW, GA (1940–2017; 37 degrees F, 2.8 degrees C), Opelika, AL (1957–2017; 49 degrees F, 9.4 degrees C), Clarks Hill 1 W, SC (1952–2017; 51 degrees F, 10.6 degrees C), and Miami, FL (1896–2017; 70 degrees F).

- Precipitation was highly variable across the Southeast region during October, with several wet extremes recorded. Unusual dryness was found in portions of north-central Florida, east-central and southeastern Georgia, central and southern South Carolina, and central North Carolina, where monthly precipitation totals were 50 to less than 25 percent of normal. In contrast, the wettest locations were found primarily across broad portions of Alabama, southern and eastern Florida, the western half of the Florida Panhandle, northern and west-central Georgia, Upstate South Carolina, western North Carolina, and southwestern Virginia. Monthly precipitation totals ranged from 150 to more than 400 percent of normal in these areas. Twenty-four long-term stations across the region observed October precipitation totals that were ranked within their five highest values on record, including Brevard, NC (1902–2017; 15.00 inches, 381 mm), Federal Point, FL (13.91 inches, 353 mm), Mobile, AL (1871–2017; 13.44 inches, 341 mm), Walhalla, SC (1896–2017; 11.00 inches, 279 mm), and Blacksburg, VA (1953–2017; 7.72 inches, 196 mm). On the 1st and 2nd, a slow-moving frontal boundary generated heavy rainfall along the eastern coast of Florida, with road flooding and stalled vehicles reported in parts of Flagler and Brevard Counties. Federal Point observed its third highest 1-day and 2-day precipitation totals for any month on record, with 7.56 and 10.95 inches (192 and 278 mm), respectively. From the 3rd through the 5th, a combination of heavy rainfall, strong easterly winds, and king tides (i.e., highest astronomical tides that occur during autumn) produced coastal flooding in southeastern Florida, with 6 to more than 12 inches of standing water reported in parts of Miami, Hollywood, and West Palm Beach. From the 7th through the 9th, Hurricane Nate produced 3 to nearly 10 inches (76.2 to nearly 254 mm) of rainfall across portions of Alabama, the western half of the Florida Panhandle, northern and west-central Georgia, Upstate South Carolina, western North Carolina, and southwestern Virginia. Multiple stations (including CoCoRaHS) in every state except Virginia recorded a 1-day precipitation total exceeding 5 inches (127 mm), with some of the greatest amounts including 9.69 inches (246 mm) at Gulf Breeze 7.2 ENE, FL, 8.10 inches (206 mm) at Jonas Ridge 1.4 S, NC, 7.22 inches (183 mm) at Dillard 3.5 NE, GA, 7.10 inches (180 mm) at Foley 4.5 SE, AL, and 7.05 inches (179 mm) at Jocassee 8 WNW, SC. In addition, Hurricane Nate generated a storm surge of 3 to more than 5 feet along the Gulf Coast from Mobile, AL to Pensacola, FL, resulting in coastal flooding and beach erosion. On the 23rd, a slow-moving complex of thunderstorms produced heavy rainfall and flash flooding across Upstate South Carolina, western North Carolina, and southwestern Virginia. Several long-term stations in these areas observed their wettest or second wettest October day on record, including Brevard, NC (7.20 inches, 183 mm), Boone, NC (1929–2017; 5.95 inches, 151 mm), Staffordsville 3 ENE, VA (1951–2017; 3.79 inches, 96.3 mm), and Anderson Regional Airport, SC (1948–2017; 3.50 inches, 88.9 mm). This was also the third and fourth wettest day for any month on record in Boone and Brevard, respectively. Over 50 apartments in Boone sustained floodwater damage, while more than a dozen people were rescued from partially submerged vehicles. From the 28th through the 29th, Tropical Storm Philippe produced 3 to more than 10 inches of rainfall across portions of east-central and southern Florida. On the 29th, measurable snowfall was observed in the higher elevations of western North

Carolina and southwestern Virginia, with 1.0 and 0.5 inches (25.4 and 12.7 mm) recorded on Beech Mountain, NC and Mt. Mitchell, NC, respectively.

- There were 113 severe weather reports across the Southeast during October, which is about 240 percent of the median monthly frequency of 47 reports during 2000–2016. Approximately 80 percent (90 of 113) of the severe weather reports occurred in the Carolinas and Virginia, and nearly 75 percent (67 of 90) of these reports were recorded during a severe weather outbreak on the 23rd. On the 8th, wind gusts of 40 to more than 60 mph caused widespread downed trees and power lines across Alabama, as Hurricane Nate moved inland. Some of the highest recorded wind gusts in Alabama and the Florida Panhandle included 66 mph at Mobile Regional Airport, AL, 58 mph at Destin-Fort Walton Beach Airport, FL, 58 mph at a C-MAN station on Dauphin Island, AL, and 53 mph at Pensacola Regional Airport, FL. A total of 33 tornadoes (1 unrated, 11 EF-0s, 16 EF-1s, 5 EF-2s), with at least one in every state except Georgia, were confirmed across the region during the month, which is more than triple the median frequency of 10 tornadoes observed during October. In fact, this is the fourth highest October tornado count for the region since modern records began in 1950, trailing only 1995 (47 tornadoes), 1997 (42 tornadoes), and 2010 (37 tornadoes). On the 7th and 8th, Hurricane Nate spawned 16 tornadoes in Alabama and the Carolinas, resulting in 2 reported injuries. After touching down in Wilkes County, NC, an EF-1 tornado crossed the Blue Ridge Parkway at an elevation exceeding 3,000 feet and became the first observed tornado in Ashe County, NC since records began in 1950. From the 23rd through the 24th, another outbreak of 14 tornadoes, including three EF-2s, was produced by an extratropical low pressure system. On the 23rd, an EF-2 tornado damaged several vehicles and warehouse buildings on the northwest side of Spartanburg, SC, and one person was hospitalized with ruptured eardrums due to the rapid change in air pressure caused by the tornado. Later that day, another EF-2 tornado tracked nearly 23 miles across portions of four counties in western North Carolina. After touching down at Hickory Regional Airport, the tornado destroyed a hangar and damaged several planes that were stored inside. The tornado then widened to nearly three-fourths of a mile and downed hundreds of trees around Lake Hickory, with many falling onto houses and vehicles. On the 7th, a woman in Chiefland, FL was injured by a lightning strike while leaning on a metal fence.
- While over 97 percent of the Southeast region was drought-free at the end of October, abnormally dry (D0) conditions were observed in portions of every state except Florida. Indeed, the coverage of abnormally dry conditions across the region increased from 13 percent on October 3rd to 23 percent on October 31st. Above-average temperatures and a persistent lack of rainfall led to the development of moderate (D1) drought in portions of central North Carolina and south-central Virginia, as well as localized areas of north-central South Carolina and west-central Alabama. Predominately warm, dry weather across the Southeast was beneficial for crop harvesting and hay cutting during the month, but some pastures and crop fields were stressed by below-normal precipitation. Good yields of cotton, soybeans, and peanuts were reported across much of the region north of Florida. However, insufficient soil moisture delayed the planting of winter grains in drier

areas, while livestock producers in parts of North Carolina and Virginia began feeding hay to their cattle due to poor pasture conditions. Excessive rainfall in portions of Florida kept many pastures saturated or flooded since the landfall of Hurricane Irma on September 10th. Some livestock producers had to begin an early supplemental feeding for their herds during the first week of October, as pasture conditions declined rapidly. While agricultural and livestock impacts from Hurricane Nate were relatively modest across the Southeast, some farmers in Alabama and Florida reported damage to cotton fields that had defoliated prior to the storm. In addition, the heavy rainfall produced by Nate could significantly reduce the quality of peanuts in portions of northern Florida, resulting in increased crop losses. During late October, heavy rainfall from Tropical Storm Philippe disrupted the preparation of vegetable fields in southeastern Florida and may exacerbate fungal diseases (e.g., root rot and leaf spots) that were reported by growers in Palm Beach County.