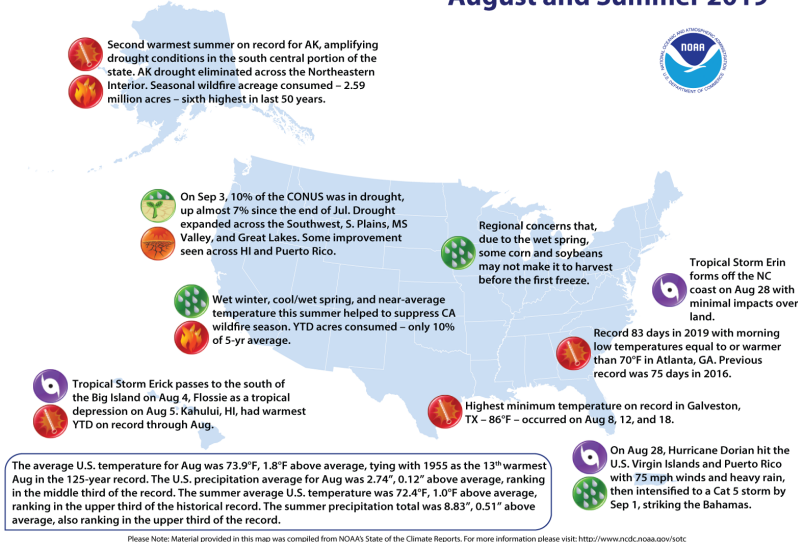




National — Significant Events for August and Summer, 2019

U.S. Selected Significant Climate Anomalies and Events August and Summer 2019



The average U.S. temperature for Aug was 73.9°F, 1.8°F above average, tying with 1955 as the 13th warmest Aug in the 125-year record. The U.S. precipitation average for Aug was 2.74 inches, 0.12 inches above average, ranking in the middle third of the record. The summer average U.S. temperature was 72.4°F, 1.0°F above average, ranking in the upper third of the historical record. The summer precipitation total was 8.83 inches 0.51 inches above average, also ranking in the upper third of the record.

Highlights for the Region

Temperatures were primarily around normal, with cooler than normal temperatures in parts of the north and warmer than normal temperatures in parts of the south and west.

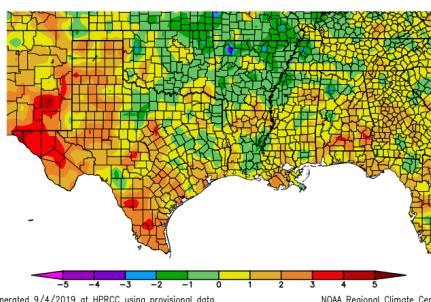
Precipitation was primarily above normal across the region, with parts of Texas and Oklahoma drier than normal.

The main impact this summer was Hurricane Barry, which made landfall in Louisiana and brought substantial rainfall to Louisiana, Arkansas, and Mississippi.

Regional — Climate Overview for June 2019 to August 2019

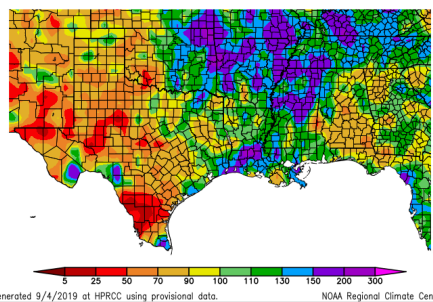
Temperature and Precipitation Anomalies

Departure from Normal (°F) 6/01/2019–8/31/2019



Summer temperatures were near normal for much of the region. Below-normal temperatures were reported in the northern part of the region, while above-normal temperatures were reported in the southern and western parts of the region. On the whole, the temperatures ranged between 2°F below normal to 4°F above normal.

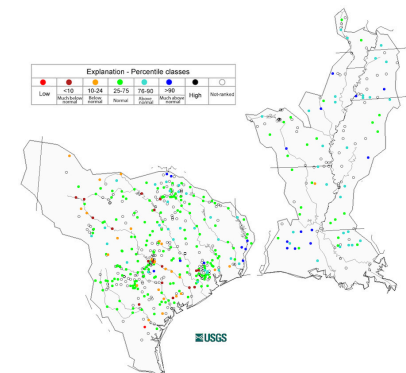
Percent of Normal (%) 6/01/2019–8/31/2019



Summer precipitation was above normal across much of the Southern Region with the exception of much of Texas and western Oklahoma. Parts of Texas received 25 percent or less of normal precipitation while parts of every state received 150 percent or more of normal precipitation.

Streamflows

August Average Streamflow vs. Historical Streamflow

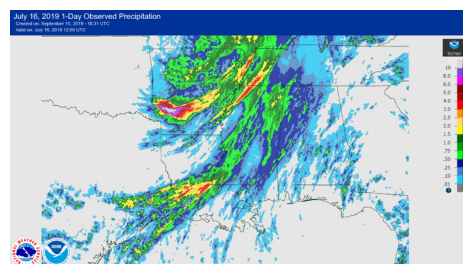
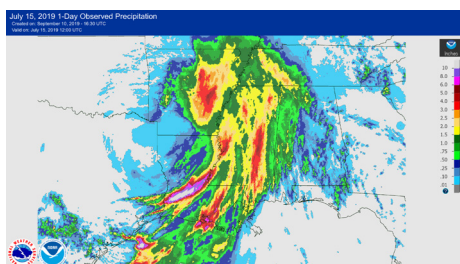


The above figure illustrates August average streamflows in the Texas Gulf and Lower Mississippi Basins as compared to historical streamflows. Streamflows in the Lower Mississippi Basin were primarily normal to above normal, while streamflows in the Texas Gulf basin were primarily normal to below normal.

Regional Impacts — for June 2019 to August 2019

Hurricane Barry

The Southern Region experienced a relatively rare July hurricane landfall when Barry came ashore in south-central Louisiana. It was only the fourth July hurricane landfall in Louisiana since 1851 and the first since Cindy in 2005. Originating from a mid-latitude system, the National Hurricane Center began issuing advisories on the disturbance that would become Barry on July 6. It gained organization over the northern Gulf of Mexico south of the Florida Panhandle and drifted south before turning to the west. Despite wind shear and dry air entrainment, it became Tropical Storm Barry and eventually made a northward turn. Reaching hurricane strength just prior, Barry made landfall in south-central Louisiana on July 13 and continued north into Arkansas, eventually weakening to a remnant low. Dierks, AR set three Arkansas state records: total rainfall from a tropical system or its remnants (16.59 inches), and the all-time state daily and July 24-hour rainfall record (16.17 inches). In Louisiana, 23.58 inches was recorded near Ragley, and in Mississippi, 13.30 inches was recorded near Pass Christian. Texas, Oklahoma, and Tennessee also received rainfall from Barry. A preliminary peak storm surge of 9.11 feet was reported at Caillou Lake near Dulac, LA, while a storm surge just over 6.5 feet was reported near the Atchafalaya River. Damage estimates from an analytics firm suggest Hurricane Barry caused just under \$1 billion in damage in Louisiana, without factoring in agricultural losses.



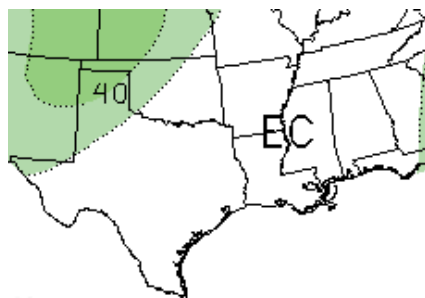
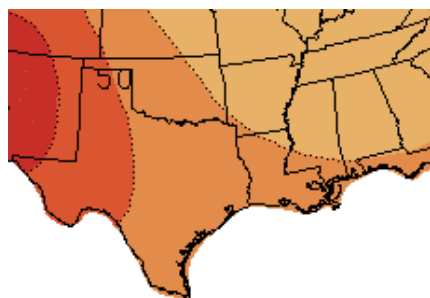
Above: Satellite image (credit: NASA) of Hurricane Barry (left), July 15 rainfall (middle), and July 16 rainfall (right).

CPC — Three-Month Outlook

Temperature

Precipitation

Outlook for October to December



A = Above-normal temperatures EC = Equal chances
B = Below-normal rainfall N = Normal

According to the Climate Prediction Center (CPC), October through December temperatures are expected to be above normal across the entire region, with chances for above-normal temperatures increasing from east to west. The greatest chances for above-normal temperatures are in far western Texas.

Precipitation has equal chances of being normal, above normal, or below normal across much of the region. The greatest chances for above-normal precipitation are centered around western Oklahoma and northern Texas in the Panhandle region.

Hurricane Outlook

As of September 19, 2019, there have been ten named storms, four hurricanes, and two major hurricanes. The Climate Prediction Center's August update to the seasonal forecast predicts a slightly above-average season, with 10–17 named storms, 5–9 hurricanes, and 2–4 major hurricanes.

Gulf Regional Partners

Earth Scan Laboratory at Louisiana State University (esl.lsu.edu)

NOAA/NWS Climate Prediction Center (cpc.noaa.gov)

NOAA/NOS Gulf of Mexico Coastal Services Center (csc.noaa.gov)

NOAA Gulf of Mexico Collaboration Team (regions.noaa.gov)

NOAA/NESDIS National Centers for Environmental Information (ncei.noaa.gov)

NOAA/NWS Southern Region (srh.noaa.gov)

Southern Climate Impacts Planning Program (southernclimate.org)

Southern Regional Climate Center (srcc.lsu.edu)