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State of the Climate National Overview August 2012

National Oceanic and Atmospheric Administration National Climatic Data Center

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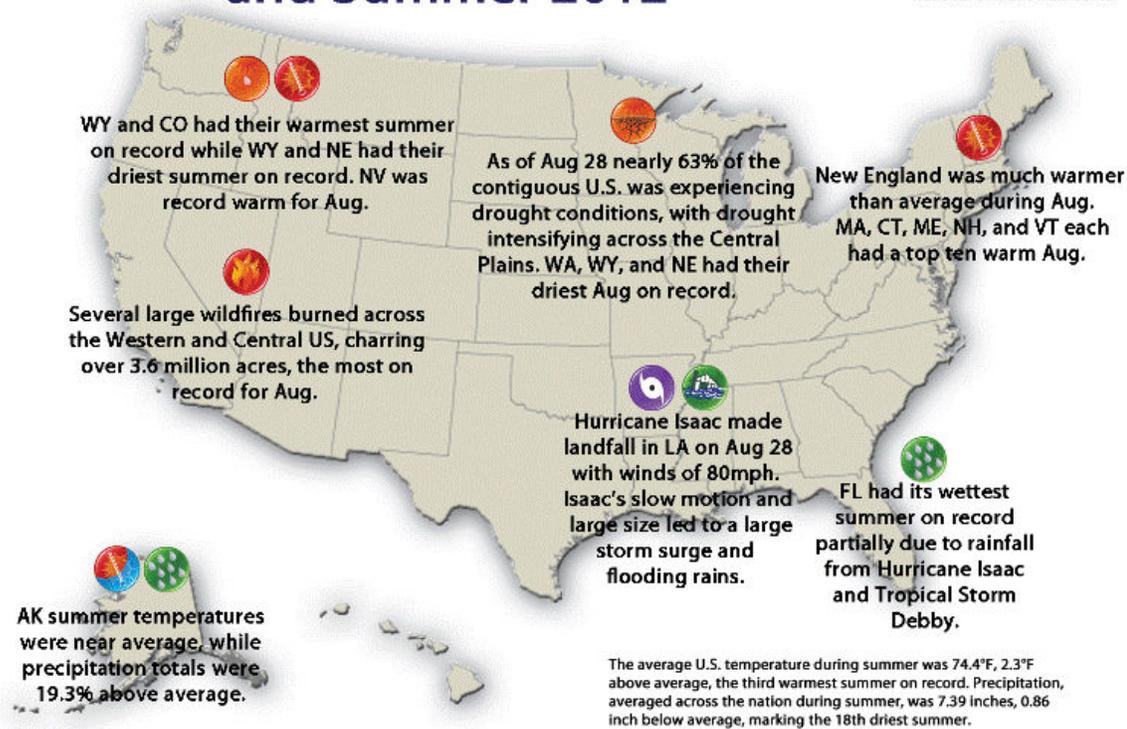
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National Overview:

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Climate Highlights — August

- The [average temperature for the contiguous U.S.](#) during August was 74.4°F, 1.6°F above the 20th century average, marking the [16th warmest August](#) in a period of record that dates back to 1895.
- [Higher-than-average temperatures](#) occurred across much of the West, where Nevada [tied August 1934](#) as its [warmest August](#) on record, with a statewide temperature [4.0°F above average](#). [Six additional states](#) across the region had August temperatures ranking among their ten warmest. Much of the [Northeast](#) was also warmer than average, where [five states](#) from [Maine](#) to [Delaware](#) had monthly temperatures among the ten warmest.
- Much of the [Central U.S.](#) had near to below average August temperatures, with lower-than-average temperatures across the [Ohio Valley](#) and the [Southeast](#).

- [Record breaking temperatures](#) affected several parts of the country during August. There were over 4,200 daily warm temperature records broken or tied during August, and just over 2,000 daily cool temperature records broken or tied. [Oklahoma City's Will Rogers International Airport](#) broke and tied its all-time hot temperature record on three consecutive days, August 1st through 3rd. The temperature reached 112°F on August 1st and 2nd surpassing the previous record of 110° set in August 2011. The temperature reached 113°F on August 3rd.
- The [August nationally-averaged precipitation](#) total of [2.59 inches](#) was near the 20th century average, with [regional variability](#) across the nation.
- [Drier-than-average conditions](#) stretched from the Pacific Northwest, through the Rockies, and into the Upper Midwest. [Nebraska](#), [Washington](#), and [Wyoming](#) each had their driest August on record. [Colorado](#), [Idaho](#), and [Oregon](#) each had a top ten dry August.
- [Hurricane Isaac](#) made landfall along Louisiana's coast on August 28th, with maximum sustained winds of 80 mph. The major impacts from the hurricane were storm surge along the Gulf Coast and heavy rainfall, both of which were driven partially by the storm's slow motion and large size. Isaac contributed to [Louisiana](#) and [Mississippi's](#) second wettest August on record, as well as [Florida's](#) fourth wettest and [Alabama's](#) eighth wettest. The beneficial rains across the region improved drought conditions across the Lower Mississippi River Valley.
- The warm and dry conditions across much of the West were associated with another month of ideal wildfire conditions. Over [3.6 million acres burned nationwide](#), mostly across the West. The acreage burned was nearly twice the August average and the most in the 12-year period of record.
- According to the [Palmer Drought Index](#), which goes back to the beginning of the 20th century, 55.1 percent of the contiguous U.S. was in moderate to extreme drought, a decrease of about 3 percent compared to last month. The percent area in [severe to extreme drought](#) increased to 39.0 percent, indicating that the drought has intensified. The 2012 values have been exceeded only by the droughts of the 1930s and 1950s.
- According to the August 28, 2012, [U.S. Drought Monitor \(USDM\)](#), 62.9 percent of the contiguous U.S. (52.6 percent of the U.S. including Alaska, Hawaii, and Puerto Rico) was experiencing moderate-to-exceptional drought, the same as the end of July. The percent area of the nation experiencing the worst drought category, exceptional drought, doubled from 3 percent of the contiguous U.S. at the end of July to 6 percent at the end of August.
- [A list of select August and Summer temperature and precipitation records can be found here.](#)

Climate Highlights — Summer (June-August)

- The warmer than average [August](#), in combination with the [hottest July](#) and a warmer than average [June](#), contributed to the [third hottest summer](#) on record for the

contiguous United States. The summer season's [nationally-averaged temperature](#) was 74.4°F, 2.3°F above the 20th century average. Only the summers of [2011 \(74.5°F\)](#) and [1936 \(74.6°F\)](#) had higher temperatures for the Lower 48.

- The summer season was [warmer than average](#) for a large portion of contiguous United States, with the exception of the Southeast and parts of the Northwest. [Sixteen states](#) across the West, Plains, and Upper Midwest had summer temperatures among their ten warmest. [Colorado](#) and [Wyoming](#) each had their record hottest summer, with seasonal temperatures [4.4°F](#) and [4.9°F](#) above average, respectively. [Much of the Northeast](#) was warmer than average, where seven states from [New Hampshire](#) to [Maryland](#) had a top ten warm summer.
- The nationally-averaged summer precipitation total of [7.39 inches](#), which was [0.86 inch](#) below average, marked the [18th driest summer](#) on record for the contiguous United States.
- [Drier-than-average conditions](#) prevailed across much of the central U.S., from the Rocky Mountains to the Ohio Valley. [Nebraska's](#) summer precipitation was [5.92 inches](#) below its average of [9.46 inches](#), while [Wyoming's](#) precipitation was [2.30 inches](#) below its average of [3.97](#), marking the driest summer on record for both states. [Missouri](#), [Illinois](#), [Iowa](#), [South Dakota](#), and [New Mexico](#) had summer precipitation totals among their ten driest.
- The summer was [wetter than average](#) across the West Coast, the Gulf Coast, and New England. [Florida](#) had its wettest summer on record, partially driven by Hurricane Isaac in August and Tropical Storm Debby in June. The total statewide summer precipitation of [30.58 inches](#) was [8.85 inches](#) above the long term average. In addition, both [Louisiana](#) and [Mississippi](#) had one of their ten wettest summer seasons.
- The [U.S. Climate Extremes Index \(USCEI\)](#), an index that tracks the highest and lowest 10 percent of extremes in temperature, precipitation, drought and tropical cyclones across the contiguous U.S., was more than [one and a half times the average value](#) during summer 2012, and marked the [eighth largest USCEI](#) value for the season. Extremes in warm daytime temperatures, warm nighttime temperatures, and extremely dry conditions, according to the Palmer-Drought Severity Index, covered large areas of the nation, contributing to the high USCEI value.

Climate Highlights — Year-to-Date (January-August)

- The [January-August period](#) was the [warmest first eight months](#) of any year on record for the contiguous United States. The [national temperature](#) of 58.7°F was 4.0°F above the 20th century average, and 1.0°F above the previous record warm January-August of 2006. During the eight-month period, [33 states](#) were record warm and an additional [12 states](#) were top ten warm. Only [Washington](#) had [statewide temperatures near average for the period](#).
- [January-August 2012](#) was the [14th driest](#) such period on record for the contiguous United States with a precipitation total [1.90 inches](#) below the average of [20.20 inches](#). [Drier-than-average conditions](#) stretched from the West across the heart of the nation into the Northeast. [Ten states](#) had year-to-date precipitation totals among their ten

driest.

- The [U.S. Climate Extremes Index \(USCEI\)](#) had a value for the January-August period that was a record large 47 percent, over twice the average value and beating the previous record set last year of 46 percent. Extremes in warm daytime temperatures and warm nighttime temperatures contributed to the record high USCEI value.

Climate Highlights — 12-month period (September 2011-August 2012)

- The [September 2011-August 2012 period](#) was the warmest such 12-month period on record for the contiguous U.S., with an average temperature of 56.0°F, 3.2°F above average. This 12-month temperature average ranks as the [fourth warmest](#) of any 12-month period. The [five warmest 12-month periods](#) have all ended during 2012.

Alaska Temperature and Precipitation:

- [Alaska](#) had its 38th warmest August since records began in 1918, with a temperature 0.4°F (0.2°C) below the 1971–2000 average.
- [Alaska](#) had its 39th coolest June-August since records began in 1918, with a temperature 0.7°F (0.4°C) below the 1971–2000 average.
- [Alaska](#) had its 17th coolest January-August since records began in 1918, with a temperature 2.2°F (1.2°C) below the 1971–2000 average.
- [Alaska](#) had its 33rd driest August since records began in 1918, with an anomaly that was 1.4 percent below the 1971–2000 average.
- [Alaska](#) had its 24th wettest June-August since records began in 1918, with an anomaly that was 19.3 percent above the 1971–2000 average.
- [Alaska](#) had its 28th wettest January-August since records began in 1918, with an anomaly that was 13.5 percent above the 1971–2000 average.

For additional details about recent temperatures and precipitation across the U.S., see the [Regional Highlights](#) section below and visit the [Climate Summary page](#). For information on local temperature and precipitation records during the month, please visit NCDC's [Records page](#). For details and graphics on weather *events* across the U.S. and the globe please visit [NCDC's Global Hazards page](#).

Regional Highlights:

These regional summaries were provided by the six [Regional Climate Centers](#) and reflect conditions in their respective regions. These six regions differ spatially from the [nine climatic regions of the National Climatic Data Center](#).

[Northeast](#) | [Midwest](#) | [Southeast](#) | [High Plains](#) | [Southern](#) | [Western](#)

Northeast Region: *(Information provided by the [Northeast Regional Climate Center](#))*

- Temperatures during August 2012 averaged 1.7 degrees F (0.9 degrees C) above normal in the Northeast region. The monthly average of 70.0 degrees F (21.1 degrees C) was 1.1 degrees F (0.6 degrees C) warmer than August 2011 and 2.0 degrees F (1.1 degrees C) cooler than the warmest August in 1937. It was the warmest August

since 2005, and the 20th warmest August since 1895. The northern states had the greatest temperature departures compared to normal, with Maine (+3.6 degrees F, 2.0 degrees C) and Vermont (+3.4 degrees F, 1.9 degrees C) leading the pack. This month was the 3rd warmest August in 118 years in Maine, the 7th warmest in New Hampshire and the 8th warmest in Massachusetts and Vermont. West Virginia (-0.1 degrees F, -0.1 degrees C) was the only state in the region with a temperature average that was cooler than normal. Climatological summer (June through August) also averaged warmer than normal the average temperature of 69.4 degrees F (20.8 degrees C) was 1.5 degrees F (0.8 degrees C) above normal. It was the 12th warmest summer in the Northeast since recordkeeping began in 1895. Each of the states in the region had summer temperature averages that were above normal. Departures ranged from 0.8 degrees F (0.4 degrees C) warmer than normal in West Virginia to 2.0 degrees F (1.1 degrees C) above normal in Delaware. It was the 3rd warmest summer since 1895 in Delaware.

- August precipitation averaged 3.90 inches (99.1 mm), which was 100 percent of normal. For the most part, areas closest to the coast saw above normal rainfall, while inland regions were drier than normal. Maine (127 percent), Maryland (123 percent), Massachusetts (124 percent), New Hampshire (122 percent) and New Jersey (134 percent) were the states with positive precipitation departures. Departures in the remaining states ranged from 70 percent of normal in Vermont to 100 percent in Delaware. This was the first month since September 2011 that Delaware's precipitation was not below normal. Summer (June through August) precipitation totals averaged below normal in the Northeast (95 percent) and in eight of the twelve states. The four wetter-than-normal states were New Hampshire (102 percent), Rhode Island (106 percent), New Jersey (108 percent, and Maine (126 percent). It was the 11th wettest summer since 1895 in Maine. Departures in the drier-than-normal states ranged from 98 percent in Massachusetts to 77 percent in West Virginia, where it was the 22nd driest summer in 118 years. The US Drought monitor issued August 28, 2012 indicated that conditions improved slightly in Delaware, but the southern two thirds of the state were still in D1 (moderate) or D2 (severe) drought. In addition, slight improvements were seen in Maryland where most areas of D2 drought surrounding Chesapeake Bay on July 31 improved to D1 on August 28. Conditions in Massachusetts also improved the region of D1 drought in the western two thirds at end of July shrunk to just the southwestern portions of the state. A new area of abnormally dry conditions popped up in northern Vermont.
- Lightning strikes during severe thunderstorms in August resulted in two fatalities. One was a spectator at the NASCAR race in Pennsylvania's Pocono Raceway on the 5th. The other fatality occurred on the 15th in Long Branch, NJ when a man fishing with his son was struck by lightning.
- Fruit crop growers in New York were beginning to quantify impacts of the roller coaster temperatures last spring. The September 2 Auburn, NY Citizen newspaper stated that "The last time farmers saw such devastating loss was in the early 40's. This year's forecast is the lowest production estimate since 1948, according to the USDA's NASS.

For more information, please go to the [Northeast Regional Climate Center Home Page](#).

Midwest Region: *(Information provided by the [Midwest Regional Climate Center](#))*

- August temperatures averaged to near normal across the Midwest. The first and last weeks of the month were above normal but the middle two weeks were below normal. Daily records followed the same pattern with mostly record highs on the first and last eight days of the month while mostly record lows were recorded from the 9th to the 23rd. The two cooler weeks in the middle of the month were a welcome break in a warm year. Summer temperatures in the Midwest were 1 to 3 degrees F (1 to 2 C) above normal but were near normal in eastern Kentucky. Year-to-date temperatures in the Midwest ranged from 2 degrees F (1 C) in eastern Kentucky to more than 5 degrees F (3 C) above normal in the western parts of the region.
- August precipitation totals were above normal in south central Missouri and from western Kentucky, into southeast Illinois, across northern and central Indiana, and into northwest Ohio and southeast Michigan. The rest of the region was below normal with northern and central Missouri hardest hit at less than 25 percent of normal for August. Missouri rain totals failed to reach the 1 inch (25 mm) mark in many locations and with some failing to record even 0.50 inches (13 mm). Summer rainfall was below normal for most of the region. Summer totals were less than half of normal in parts of Missouri, Iowa, Illinois, southern Indiana, southwest Wisconsin, and southwest Minnesota. A few locations in the upper Midwest and Kentucky were slightly above normal for the summer. Year-to-date precipitation totals were less than 75 percent of normal for most of Missouri, Iowa, Illinois, Indiana, and western Kentucky. The upper Midwest had a mix of above and below normal totals for the year-to-date. The rainfall deficits for those areas ranged from 6 to 14 inches (150 to 350 mm).
- The drought conditions in the Midwest saw both improvement and degradation during August. In southern Michigan, northern Indiana, and northwest Ohio, rains eased the drought but in Missouri and western Iowa conditions got worse through the month. While the percentage of the region in drought dropped from 71 percent to 65 percent in August, the areas in extreme (32 to 33 percent) and exceptional (5 to 7 percent) drought increased. The biggest improvements were in Indiana, Michigan, and Ohio while Iowa and Missouri had the largest degradations. August rains were too late for improvements in the corn crop conditions but there were some improvements in soybean conditions in locations that received above normal rains.
- The remnants of hurricane Isaac moved into Missouri on the 31st and spread to the east. A handful of tornadoes were reported in Missouri and Illinois but damage was minor. One minor injury was reported in Morgan County, Illinois from severe thunderstorm winds. The rain was welcome across the drought stricken areas and it continued to spread across the southern Midwest into the first few days of September.

For details on the weather and climate events of the Midwest, see the weekly summaries in the [Midwest Climate Watch page](#).

Southeast Region: *(Information provided by the [Southeast Regional Climate Center](#))*

- Mean temperatures were near normal to below normal across much of the Southeast region in August. The greatest departures were found across northern and extreme southern Florida, central sections of Alabama and Georgia, northern South Carolina, and the U.S. Virgin Islands, where monthly temperatures were between 1 and 2 degrees F (0.5 and 1.1 degrees C) below normal. Key West, FL, tied its lowest daily August maximum temperature of 81 degrees F (27.2 degrees C) on the 25th of the

month (period of record 1872-2012). Over 200 daily low maximum temperature records were tied or broken in August across the Southeast, compared to only 30 high maximum temperature records. Elsewhere across the region, monthly temperatures were near normal, except along the North Carolina and Virginia coast and across northern Virginia, where monthly temperatures were between 1 and 2 degrees F (0.5 and 1.1 degrees C) above normal. Monthly temperatures were variable across Puerto Rico, with above normal temperatures across the northeastern part of the island and below normal temperatures across the southwestern part. The end of August marked the third warmest summer (June-August) on record in San Juan, PR, with a mean temperature of 84.3 degrees F (29.1 degrees C) (period of record 1898-2012). Across the rest of the Southeast region, mean summer temperatures were generally near normal to slightly above normal.

- Precipitation in August was generally above normal across the Southeast. Widespread totals in excess of 10 inches (254 mm) were recorded along the Atlantic and Gulf Coasts, as well as across much of the Florida Peninsula, with some locations exceeding 20 inches (508 mm). Niceville, FL (period of record 1927-2012), located near Pensacola, and West Palm Beach, FL (period of record 1895-2012), recorded their wettest August on record with 21.05 inches (534.7 mm) and 22.66 inches (575.6 mm) of precipitation, respectively. Augusta, GA, recorded its second wettest August on record with 12.28 inches (311.9 mm) (period of record 1871-2012). Hurricane Isaac dropped between 6 and 10 inches (152.4 and 254 mm) of rain across a large portion of south Florida from the 26th to the 28th of the month. Several locations in Palm Beach County, FL, recorded over 10 inches of rain from the storm, including Vero Beach with 16.6 inches (421.6 mm). Rainfall from Isaac ranged from 2 to 5 inches (50.8 to 127 mm) across the western Florida Panhandle to as much as 14 inches (355.6 mm) along the Alabama coast. Prior to reaching the U.S. mainland, Isaac dropped between 4 and 8 inches (101.6 and 203.2 mm) of rain across Puerto Rico, with locally heavier amounts across the interior mountains. In addition to Isaac, there were other reports of locally heavy rainfall events across the Southeast. Roanoke Rapids, NC, recorded 11.5 inches (292.1 mm) of rain on the 25th of the month, which broke the previous all-time 24-hr precipitation total of 10 inches recorded during Hurricane Floyd in 1999 (period of record 1972-2012). As much as 8 inches of rain fell in the vicinity of Charleston, SC, resulting in major flooding of downtown streets. In terms of summer season precipitation, Tampa, FL, recorded 36.13 inches (917.7 mm), making it the second wettest summer in a record extending back to 1890.
- Hurricane Isaac formed from a tropical wave east of the Lesser Antilles on the 21st of the month yet remained a tropical storm for much of its lifetime. Although the storm never made landfall in the Southeast region, its large size and slow movement resulted in numerous impacts across Puerto Rico, Florida, and Alabama. The heavy rain across Puerto Rico resulted in flash flooding and mudslides, which forced the closure of several roadways and bridges. Tropical storm force winds also brought down power lines, leaving thousands without power across the island. The combination of heavy rain and power outages also compromised municipal water systems, leaving thousands temporarily without clean or running water. The heavy rain across parts of south Florida resulted in flooding along major roadways and in neighborhoods and commercial districts, particularly in Palm Beach and Broward counties. Heavy surf, coastal flooding, and beach erosion were observed along the Florida and Alabama coasts. Mandatory evacuations were ordered for Baldwin and

Mobile counties in Alabama as Isaac strengthened to hurricane status prior to making landfall along the Louisiana coast on the 29th of the month. Isaac also delayed the start of the Republican National Convention in Tampa, FL, a day from the 27th to the 28th of the month. Two deaths in the region have so far been confirmed from Isaac, one involving an automobile accident and one involving a jet ski accident in south Florida.

- There were 439 reports of severe weather across the Southeast in August, with at least one report on 28 of the 31 days. There were 15 preliminary tornado reports, of which seven have so far been confirmed. On the 1st of the month, an EF-0 tornado touched down near Kiawah Island in Charleston County, SC. No damage was reported. On the 11th of the month, an EF-1 tornado was confirmed in the town of Stantonsburg in Wilson County, NC. Four homes sustained significant structural damage, one of which shifted approximately 20 feet (6.1 m) off of its foundation. A tornado touched down in Accomack County, VA on the 25th of the month, injuring an individual in a trailer park in the town of Melfa. There were several tornado reports associated with Hurricane Isaac between the 27th and 30th of the month. An EF-0 tornado was confirmed near Vero Beach in Indian River County, FL, with damage to as many as 95 homes. A water spout moved onshore and damaged six houses in the Tampa Bay area in Hillsborough County, FL, while two EF-0 tornadoes were confirmed in Jackson County and Holmes County, FL. Four separate tornadoes were reported across southern Alabama, including an EF-1 tornado that brought down several large trees and power lines and tore the roof off of a home in Geneva County.
- For the second straight month, drought conditions improved or stabilized across the Southeast. By the end of August, over 60 percent of the region was drought-free, up from 40 percent at the end of July. Most notably, drought conditions were eliminated in Florida (the first time the State has been drought-free in over two years), and across a large section of Alabama. Additionally, improvements of one to two drought categories in the U.S. Drought Monitor were observed across South Carolina by the end of the month. There was a slight contraction of drought conditions across central Georgia; however, over one-third of the State remained in extreme (D3) or exceptional (D4) drought. By the end of the month, the harvesting of row crops was nearly complete (some delays were reported in areas that were particularly wet, especially along the Florida Panhandle) and most crops were reported to be in generally good condition across much of the region. The beneficial rain also helped livestock and pasture conditions, though some farmers were beginning to spray for disease and insects. Tobacco and cotton were also being sprayed in areas that were particularly wet.

For more information, please go to the [Southeast Regional Climate Center Home Page](#).

High Plains Region: *(Information provided by the [High Plains Regional Climate Center](#))*

- For the first time since February of this year, there were widespread below normal monthly temperatures in the High Plains Region. Much of North Dakota, South Dakota, Kansas, and southern Nebraska had average temperatures which were up to 3.0 degrees F (1.7 degrees C) below normal. Interestingly, some of these areas have not had below normal monthly averages since last year, as the cooler areas in February were mainly in Colorado, Wyoming, and western Nebraska. For instance, the last time the majority of South Dakota had below normal temperatures was September of last year. Meanwhile, areas of Colorado, Wyoming, southern South

Dakota, and western and central Nebraska had temperatures which were above normal. Departures were not high or low enough to break monthly records. However, there were still many daily records as temperatures dipped in the middle of the month and soared at the end of the month. One example was Academy 2 NE, South Dakota, which had a high temperature of 113 degrees F (45.0 degrees C) on the 30th. This beat out the old record of 101 degrees F (38.3 degrees C) and was the second highest August temperature on record (period of record 1898-2012). The highest August temperature of 115 degrees F (46.1 degrees C) was set on August 4, 1934. On the other end of the spectrum, there were also low temperature records. Lincoln, Nebraska had a low temperature of 44 degrees F (6.7 degrees C) on August 17th, which beat out the previous record of 46 degrees F (7.8 degrees C), set in 1943. August was a busy month for producers as drought damaged crops had to be chopped for silage or baled for hay in Nebraska, Kansas, and the Dakotas. The lack of feed and water caused the culling of herds to continue in Nebraska and Kansas. According to the USDA, by the end of the month 85 percent of all corn, 82 percent of all soybeans, 63 percent of all hay acreage, and 72 percent of all cattle were within an area experiencing drought conditions in the United States. This was a slight improvement from last month.

- August was yet another dry month for the majority of the High Plains Region. A large expanse of the Region including Wyoming, eastern Colorado, the eastern and western sides of Kansas, most of Nebraska, central and southern South Dakota, and pockets of North Dakota had precipitation totals which were at the most 50 percent of normal. There were even areas of Wyoming, northeast Colorado, and the panhandle of Nebraska which received less than 5 percent of normal precipitation. Because of the lack of precipitation, there were new records set again this month. For instance Scottsbluff, Nebraska received no measurable precipitation and set a new record for driest August. The old record of 0.04 inches (1 mm) was set in 2001 (period of record 1893-2012). On average, Scottsbluff receives 1.30 inches (33 mm) of precipitation in August. Another location which had its driest August on record was Colorado Springs, Colorado which only received 0.12 inches (3 mm) of precipitation. This beat out the old record of 0.15 inches (4 mm) set in 1962 (period of record 1894-2012). The only areas of the Region which received much needed rainfall were pockets of central North Dakota, central and northeastern Kansas, far southeastern Nebraska, and a few pockets of western Colorado. These areas had precipitation totals ranging from 110 percent of normal to 300 percent of normal. The heavy rainfall improved drought conditions, however, at this point many of the crops will not benefit from the precipitation. According to the U.S. Drought Monitor, drought conditions worsened yet again this month across the High Plains Region. By the end of August, about 88 percent of the Region was under moderate (D1) to exceptional (D4) drought, with nearly 15 percent of the Region in the D4 designation. In contrast, at the end of last month, only 4 percent of the Region was in D4. Over the past month, the D4 areas that expanded include an area in central Nebraska that grew westward across the state and even into northeastern Colorado, an area in western Kansas that expanded all the way across the middle of the state to the eastern border, and an area in eastern Colorado that grew to include most of the southeastern corner of the state. By the end of the month over half the state of Kansas was in D4 drought. Extreme drought conditions (D3) also expanded in Colorado, Nebraska, South Dakota, and Wyoming. In addition, there was only a little over 1 percent of the Region that did not have any sort of drought or abnormally dry conditions (D0). According to the U.S. Seasonal Drought Outlook released August 16th, drought conditions were expected to

improve in North Dakota, southwestern Colorado, and the northern half of South Dakota. Other areas of drought in the Region were expected to persist. Luckily, no new areas of drought were expected to develop.

- Summer (June, July, and August) 2012 went down as one of the hottest on record for many locations in the High Plains Region. Even the locations that did not break records were very warm as every station had average temperatures which were above normal. The larger temperature departures occurred in eastern Colorado, eastern Wyoming, southern South Dakota, western and northern Nebraska, and pockets of Kansas where the departures from normal temperature ranged from 4.0-5.0 degrees F (2.2-2.8 degrees C) above normal. There were even a few pockets of northeastern Colorado, southeastern Wyoming, and southwestern Nebraska where temperature departures topped 5.0 degrees F (2.8 degrees C) above normal. Denver, Colorado was one of the record breaking locations with an average temperature of 76.3 degrees F (24.6 degrees C) which was 4.9 degrees F (2.7 degrees C) above normal. This easily beat the old record of 74.1 degrees F (23.4 degrees C) set in 1934 (period of record 1872-2012). Denver also set a new record for most days at or above 100 degrees F (37.8 degrees C) with 13. The previous record of 7 occurred in 2005. It was an overall dry summer for the Region and most locations ranked in the top 20 driest summers. Some locations set new precipitation records as well. Grand Island, Nebraska had its driest summer on record with only 2.37 inches (60 mm) of precipitation. This was 8.45 inches (215 mm) below normal and only 22 percent of normal precipitation. The old record of 2.87 inches (73 mm) was set back in the summer of 1940 (period of record 1895-2012). The impacts from the hot and dry summer have been numerous and many more will be realized as the summer is assessed. Just some of the impacts include widespread drought, crop damage and failure, low river levels, and fish kills.

For more information, please go to the [High Plains Regional Climate Center Home Page](#).

Southern Region: *(Information provided by the [Southern Regional Climate Center](#))*

- August temperatures varied spatially across the Southern Region. In the east, Both Tennessee and Mississippi experienced average monthly temperatures that ranged from 0 to 2 degrees F (0 to 1.11 degrees C) below expected values. This was also the case for much of southeastern Louisiana and northeastern Arkansas. In the west, temperatures generally averaged 0 to 3 degrees F (0 to 1.67 degrees C) above normal, with the exception of the western Texas panhandle, where temperatures ranged from 3 to 5 degrees F (1.67 to 2.78 degrees C) above normal. The state average temperatures were as follows: Arkansas averaged 80.00 degrees F (26.67 degrees C), Louisiana averaged 81.80 degrees F (27.67 degrees C), Mississippi averaged 79.30 degrees F (26.28 degrees C), Oklahoma averaged 81.30 degrees F (27.39 degrees C), Tennessee averaged 75.50 degrees F (24.17 degrees C), and Texas averaged 83.70 degrees F (28.72 degrees C). For Texas it was the eighteenth warmest August on record (1895-2012), while Mississippi experienced its twenty-sixth coldest August on record (1895-2012). All other state ranking fell within the two middle quartiles.
- August precipitation varied dramatically over the Southern Region, mostly in part to Hurricane Isaac, which drenched much of Louisiana, Mississippi, and southern

Arkansas. Elsewhere, such as Texas and Oklahoma, conditions were quite dry. A small pocket of wetter than normal conditions occurred in north central Texas. In Tennessee, conditions were normal to slightly above normal in the central and eastern counties, while the western third of the state received below normal precipitation for the month. The driest part of the Southern Region was observed in southern Texas, where a majority of the stations there received only between 0 to 50 percent of normal precipitation. Hurricane Isaac's slow track over the south central portion of the region allowed for some rather impressive rainfall totals. Southern Mississippi average between 10 and 15 inches. In southeastern Louisiana, rainfall totals for the last week of the month ranged between 4 and 12 inches. Louisiana and Mississippi both experienced their second wettest August on record (1895-2012). Louisiana averaged a total of 8.47 inches (215.14 mm), whereas Mississippi averaged a total of 8.58 inches (217.93 mm). Arkansas experienced its twenty-second wettest August on record (1895-2012) with a state average precipitation total of 4.38 inches (111.25 mm). Other state precipitation totals include Texas with 2.07 inches (52.58 mm), Tennessee with 3.76 inches (95.50 mm), and Oklahoma with 2.80 inches (71.12 mm).

- Despite heavy rainfall totals in the southeastern portion of the region, drought conditions remain relatively unchanged. This is in part due to the fact that much of the drought in this region is situated in areas outside of the reach of Hurricane Isaac. Conditions have deteriorated though most of Oklahoma, with almost the entire state being in extreme or exceptional drought. Elsewhere, the majority of Texas is still experiencing moderate to severe drought conditions. This is also the case in western Tennessee, where conditions were generally drier than normal for the month. In the case of Arkansas, much of the northern portions of the state are in exceptional to extreme drought conditions.
- The main story of severe weather in the month of August for the Southern Region is that of Hurricane Isaac. Formed on August, 21, 2012 as a tropical storm, Isaac tracked slowly up the eastern Gulf of Mexico. On August 28, 2012 Isaac achieved hurricane status and made its first landfall between 6 and 7 pm central time near the mouth of the Mississippi River. At that point, much of southeastern Louisiana, southern Mississippi and southern Alabama were receiving heavy rainfall from the outer bands of the storm. Isaac then stalled just west of Plaquemines Parish. The storm made a second landfall near Port Fourchon, Louisiana in the early hours of August 29, 2012. A total of 5 fatalities were reported in Louisiana, and two fatalities were reported in Mississippi. As the storm tracked northwestward to Baton Rouge, much of southeastern Louisiana was under the grip of tropical storm force winds. According to WAFB news in Baton Rouge, approximately 800,000 Louisiana citizens lost power during the storm, with approximately 600,000 being in the greater New Orleans metropolitan area. Impacts of the storm on the Southern Region were plentiful. In Mississippi, a storm surge of 8.3 feet was reported in Hannon County. Wind gusts of 70 mph (112.65 km/h) were reported as far east as Gulfport. In Louisiana, the hardest hit area was Plaquemines Parish, where levees were overtopped. According to some officials, portions of the parish were inundated with as much as 12 feet (3.66 m) of water. Flooding was a major issue in many parts of the state including Laplace, Louisiana and Slidell, Louisiana. It is unclear at this point how many were impacted by the flooding, but initial reports suggest that thousands of flood insurance claims have already been filed in the wake of the storm. Storm surges in Louisiana varied from observations of around 6 feet (1.83 m) near Liberty Bayou at Highway 433 to 13.6 feet (4.15 m) in the vicinity of Lake Borgne. Damage in Baton

Rouge was reported, with several homes being damaged by falling trees. However, by the time the storm reached the capital city, Isaac was weakened to a tropical storm. Over the next day, Isaac pushed north through southeastern Arkansas, where it dropped between 4 to 6 inches (101.6 to 152.4 mm) of needed rainfall in drought stricken areas.

For more information, please go to the [Southern Regional Climate Center Home Page](#).

Western Region: *(Information provided by the [Western Regional Climate Center](#))*

- An active monsoon doused the southern Great Basin this month, while drier conditions dominated the Northwest, favoring development of numerous large and destructive wildfires. Average August temperatures ranged from 2-6 F (1-3 C) above normal over most of the West, with some locations recording their hottest August on record. Only the coastal regions of northern California and southern Oregon and a few other isolated locations averaged cooler than normal for the month.
- A persistent upper level ridge and strong surface heating over the Great Basin and desert Southwest facilitated moisture transport into the area, supporting monsoon activity. The southern Great Basin saw most of the action, with numerous accounts of flash flooding, and several instances of record daily precipitation. Rainfall at the Las Vegas, Nevada airport totaled 2.31 in (58.7 mm), the second wettest August since records began there in 1937 (behind 2.59 in / 65.8 mm in 1957). Las Vegas also tied its record number of 12 thunderstorm days in August, set in 1955. Farther north, the airport at Tonopah, Nevada recorded 1.94 in (49.3 mm), its fourth wettest August in a record beginning in 1954. Many locations in the Southwest that receive a large portion of their annual precipitation during the summer monsoon (Las Vegas, Nevada and Phoenix, Yuma, and Tucson, Arizona) recorded above or near average August precipitation totals and are on track to meet the monsoon season (June-Sept) average at their respective locations. In contrast, New Mexico was dry in August, and statewide has experienced its driest 18 consecutive month period on record. By mid-August, 89% of the pasture and rangelands there were rated as poor, one of the highest percentages in the nation. Farther north, Reno Nevada experienced the third driest water year to date in its 75-year airport record.
- The Pacific Northwest, which typically experiences low rainfall totals in August, was exceptionally dry this month. August 31st marked 42 days without measurable precipitation in Portland, Oregon, the 14th longest streak of this type on record. Billings, Montana experienced its driest first 8 months of the year since records began in 1934, only receiving 5.08 in (129 mm) in that time, 52 percent of average and below the previous minimum of 5.82 in (147.8 mm) in 1946.
- Triple digit temperatures and record high minimum temperatures dominated much of the Southwest this August. Temperatures at Reno, Nevada airport averaged 79.0 F (26.1 C) for the month, 5.8 F (3.2 C) above normal and the hottest August on record since 1888. Reno reached 100 F (37.8 C) on 11 days, tied with 1970 and 2 days fewer than the 1972 record. In southern California, Lancaster recorded 23 consecutive days (July 29-August 20) of triple-digit F (over 37.8 C) heat, breaking the 2009 streak of 20 days. The average maximum temperature in Lancaster in August is 95.7 F (35.4 C). Various locations in southwest California hit daily high minimum temperature records on more than half the days in August. Further east, Phoenix,

Arizona recorded its third warmest August minimum temperature of 84.9 F (29.4 C).

- August (all month) Fires throughout the Northwest: Hot, dry, and windy conditions primed the region for wildfires this month. In conjunction with the fires, poor air quality prevailed in many areas, notably Idaho, Montana, and the northwestern Great Basin. The following are several fires that had significant impacts.
- Washington: The Taylor Bridge Fire in central Washington burned 23,500 acres (9,510 hectares) along with 51 homes and 26 other structures. The fire did an estimated \$8 million in damage.
- Montana: The 19-Mile Fire, 10 miles southeast of Butte, Montana, consumed 14 homes and six structures over the last few days of August. At month's end, 4,141 acres (1,675 hectares) had burned and containment stood at 64%.
- Idaho: The Trinity Ridge Fire, near Featherville, Idaho, consumed 144,430 acres (58,448 hectares) and stood at 22% contained on [give the date]. The resort towns of Featherville and Pine were evacuated for a time due to the fire.
- Nevada: On August 5 the state reported that 200,000 acres (80,972 ha) had burned, a total that had jumped to 800,000 acres (323,887 ha) three weeks later.
- Northern California: The lightning-caused Ponderosa Fire in Shasta County destroyed seven homes, threatened 3,000 and caused an emergency declaration for the county. Further east near Quincy, CA, the Chips fire burned 75,217 acres (30,439 hectares) in August. That fire was 100% contained at the end of the month.

For more information, please go to the [Western Regional Climate Center Home Page](#).

See [NCDC's Monthly Records web-page](#) for weather and climate records for the most recent month. For additional national, regional, and statewide data and graphics from 1895-present, for any period, please visit the [Climate at a Glance](#) page.

PLEASE NOTE: All of the temperature and precipitation *ranks* and values are based on preliminary data. The ranks will change when the final data are processed, but will not be replaced on these pages. Graphics based on final data are provided on the [Temperature and Precipitation Maps](#) page and the [Climate at a Glance](#) page as they become available.

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