State of the Climate
National Overview
February 2011
National Oceanic and Atmospheric Administration
National Climatic Data Center

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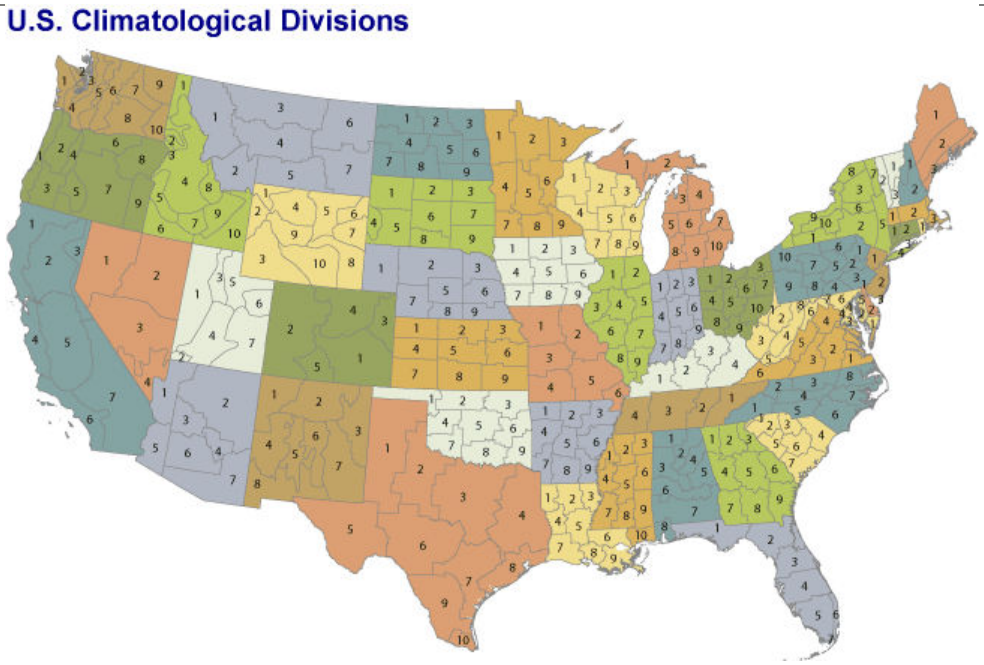
Climate Division Database Transition



For years, the Climate Divisional Database has been the only long-term temporally and spatially complete database from which to generate historical climate analyses (1895 to the present) for the contiguous United States. Traditionally, the monthly values for all of the Cooperative Observer Network (COOP) stations in each division are averaged to compute divisional monthly temperature and precipitation averages/totals.

NCDC's Climate Monitoring Branch plans to transition from the traditional dataset to the more modern 5km gridded divisional dataset (GrDD) by 2013. The GrDD is based on a similar station inventory as is currently used. However, new methodologies are used to compute temperature, precipitation, and drought for United States climate divisions. These are expected to improve the data coverage and the quality of the dataset, while maintaining the current product stream.

While this transition will not disrupt the current product stream, some variances in temperature and precipitation values may be observed in the new data record. A visualization toolkit can help users examine snapshots of both datasets. Changes in monthly, seasonal and annual variability can be examined through the use of the interactive time series plots.

More about climate monitoring…

National Overview:

February 2011 had a very active weather pattern over the contiguous United States. A high amplitude circulation (one with many troughs and ridges and low pressure sytems) dominated during the first part of the month, resulting in several winter storm systems moving across many parts of the country. Significant troughing occurred in the West early in the month, sending frigid Canadian air plunging into the Lower 48 States. By the 10th, the maximum national snow cover extent for the month, about 65 percent, was reached. Snow

cover extent was the 9th largest for February for the contiguous U.S. and 8th largest for North America in the 45-year satellite snow cover extent record.

The pattern switched to a more zonal flow later in the month, with the storm track more along the northern states. Temperatures moderated when the circulation pattern flattened at mid-month, but the month ended with surges of cold air behind strong cold fronts, which brought severe weather and tornado outbreaks. There were 59 preliminary tornado reports during February 2011, ranking the month in the top ten busiest Februaries. Drought-stricken areas in the southeast received beneficial precipitation early in the month, but the shift of the storm track further north later in the month left the South dry while bringing relief to the Midwest and Ohio Valley. February ended with moderate-to-extreme drought covering 23 percent of the U.S., about 3 percent higher than at the end of January. Wildfire activity was high during the month, particularly across the South and Southeast, with a record high February number of wildfires and second highest for acres burned. The mid-month circulation shift was accompanied by a surge of winter storms into the West, whose rain and snow ended a one and a half month lull in precipitation. The month started with about half (52.2 percent) of the country covered in snow and ended with about half (49.5 percent) snowcovered. The circulation pattern flip-flop resulted in nationally-averaged temperature and precipitation ranks near the middle of the 117-year historical distribution (51st coolest and 41st driest February).

Weather systems are influenced by the broadscale atmospheric circulation. Two such large-scale atmospheric circulation patterns were dominant during February. The first was a weakening La Niña, which. at this time of year, is typically associated with dry conditions in the Southwest, Southeast, and southern Plains, a wet signal along the Ohio Valley and in the northern tier states, and warmer-than-normal temperatures across most of the country, especially in the Southwest. The second was the Pacific/North American (PNA) pattern, which transitioned from a near-neutral phase in early February to negative during the last half of the month. A negative PNA this time of year is typically associated with warmer-than-normal temperatures over the southeast third of the U.S., colder-than-normal temperatures in the Northwest, and wetter-than-normal conditions in the Pacific Northwest and from the Ohio Valley northward.

Climate Highlights - February

- During the month's first half, a southward-plunging polar jet stream held temperatures as much as 15 degrees F below normal in much of the Central and Southern United States. Warm tropical air advanced northward across these regions during the second half of the month, and average temperatures reversed to nearly 15 degrees F above normal. This flip-flop resulted in near-normal temperatures for February as a whole.
- Conditions were persistently warm throughout the entire month in the extreme Southeast, resulting in above normal averages for the region. Below average temperatures affected much of the western U.S
- The precipitation pattern in February was well defined. Most of the Gulf and Atlantic

Coast states experienced below average precipitation. It was the eighth driest February in Louisiana and Mississippi (tied 1954).

- A continuous flow of moisture contributed to above normal precipitation in: Ohio (fifth wettest), South Dakota (sixth), and Indiana (tenth).

- Two severe weather outbreaks during February's last week brought the month's preliminary tornado count to 59. The final tornado count for February 2011 will likely rank among the ten busiest Februaries on record.

- The year-to-date period (January - February) was the ninth driest such period on record for the Contiguous United States. For the period, three times as many states had below normal precipitation than those with above normal. It was the second driest such period in Virginia, fourth driest in New Mexico, and seventh driest in North Carolina. Much of the west, south and southeast also had precipitation below the 20th century average.

- Several record breaking snowstorms caused the U.S. to have above average snow cover extent during February. The "Groundhog Day Blizzard" dropped at least 5 inches of snow in 22 states. On February 10th, nearly two thirds of the contiguous U.S. was snow covered with every state except Florida having snow on the ground.

- Dry conditions across the southern and southeastern U.S. were associated with much-above average wildfire activity during February. Across the country, 8,226 wildfires burned approximately 187,000 acres - the most February wildfires during the 21st Century and the second most acreage burned.

- Drought coverage, as indicated by the U.S. Drought Monitor, continued to expand during February. As of March 1, 27.9 percent of the United States was affected by D1-D4 (Moderate-Exceptional) drought. Many of the areas that were experiencing drought at the beginning of February only saw conditions worsen through the end of the month. Across southern New Mexico, Arizona, and western Texas, drought conditions worsened from moderate to severe. Severe drought also expanded across the Front Range in Colorado and across central Oklahoma during the month. Severe and extreme drought expanded across most of Texas, and the footprint of extreme drought grew across the Lower Mississippi River Valley. Moderate drought conditions developed across northern Alabama and Mississippi and severe drought covered much of the Carolina piedmont.

Climate Highlights - December through February

- The average winter temperature in the United States was 0.7 degrees F below the 20th century average. Much of the cooler than normal temperatures were confined to the regions east of the Rockies.

- The majority of states, especially those east of the Rockies, were cooler than average during the winter period. Maine and Nevada were the only two states that averaged a temperature that was above normal. Georgia (3.9 degrees F below normal) and Florida (3.7 degrees F below normal) experienced the greatest departures from normal (or temperature anomalies) during the winter period.

- Persistent dryness defined winter, especially in the South and Southeast climate

regions where it was the third and ninth driest on record, respectively. Further north, the active weather pattern resulted in the eighth wettest winter season on record for the West North Central Climate Region.

- Much unlike the previous winter, a persistent high pressure system in the Gulf of Mexico, prevented moisture-laden systems from entering the southern regions. This resulted in several states having a winter period among their driest ten percent on record. It was the third driest for Alabama, Louisiana, Mississippi, and North Carolina. Virginia had thier seventh driest such period.
- Relentless precipitation in South Dakota and Montana resulted in their fourth and ninth wettest winter period, respectively.

Alaska Temperature and Precipitation:

- Alaska had its 47th warmest February on record, with a temperature 0.7°F (0.4°C) above the 1971–2000 average.
- Alaska had its 45th coolest December–February on record, with a temperature 0.4°F (0.2°C) below the 1971–2000 average.
- Alaska had its 32nd warmest year-to-date period on record, with a temperature 2.3°F (1.3°C) above the 1971–2000 average.
- Alaska had its 10th wettest February since records began in 1918, with an anomaly that was 85.8 percent above the 1971–2000 average.
- Alaska had its 23rd wettest December–February on record, with an anomaly that was 23.4 percent above the 1971–2000 average.
- Alaska had its 12th wettest year-to-date period on record, with an anomaly that was 45.0 percent below 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 in the Northeast averaged just below normal in February. The region?s average of 25.6 degrees F (-3.6 degrees C) was -0.8 degrees F (-0.4 degrees C) below normal. It was the coolest February since 2007. Four states in the region, Delaware, Maryland, New Jersey, and West Virginia, averaged above normal with departures that ranged from +1.0 degrees F (+0.6 degrees C) in Delaware to +2.9

degrees F (+1.6 degrees C) in West Virginia. Temperature departures in the cooler-than-normal states ranged from -0.3 degrees F (-0.2 degrees C) in Pennsylvania to -3.1 degrees F (-1.7 degrees C) in New Hampshire. A warm-up during the third week of February sent readings 15 to 25 degrees F (8 to14 degrees C) above normal. A few new maximum temperature records were established, including a new high of 77 degrees F (25.0 degrees C) on the 18th at Washington National Airport, DC. The temperature average for the winter of 2010-2011 (December - February) was 24.2 degrees F (-4.3 degrees C), which was 2.0 degrees F (1.1 degrees C) below normal. Every one of the Northeast states except Maine were cooler than normal. Departures ranged from 1.2 degrees F (0.7 degrees C) above normal in Maine to 3.3 degrees F (1.8 degrees C) below normal in Delaware and Maryland.

- On average, the Northeast saw 119 percent of the normal precipitation amount, or 3.22 inches (81.8 mm). The three southernmost states were drier than normal with departures of 88 percent in West Virginia, 75 percent in Maryland and 58 percent in Delaware. It was the 17th driest February in 117 years in Delaware. The states with above normal precipitation had departures that ranged from 104 percent in New Jersey to 143 percent in Pennsylvania, where it was the 17th wettest February since 1895. Precipitation totals for climatological winter were exactly normal. The range of departures among the states was 68 percent of normal in Delaware to 122 percent in Maine. It was the 10th driest winter in Delaware and the 16th driest in Maryland. Drier than normal conditions in the southern part of the region has led to drought concerns there. The March 1, 2011 U.S. Drought Monitor indicated that parts of West Virginia, Maryland, Delaware and Pennsylvania were abnormally dry, while extreme eastern West Virginia was in moderately drought (D1). In addition, small areas in northern New York, Vermont, and New Hampshire were abnormally dry.

- The news-making winter storm that blasted through Chicago and the Midwest had plenty of energy remaining when it hit the Northeast on the 1st and 2nd. When the storm cleared out on the 3rd, eastern New York and New England had amassed an additional 6 to 12 inches (15 to 30 cm) of new snow on top of the 12-18 inches (30-46 cm) on the ground from storms in January. Sleet and freezing rain mixed in with the snow in some areas, adding to the weight of the snowpack. Besides the usual problems associated with a major storm, such as air travel delays and poor road conditions, the accumulated snow, sleet, and freezing rain caused ice dams on roofs, numerous roof collapses, and dangerous conditions from snow and ice falling off roofs in downtown areas. Once the reports of roof collapses began, many schools, stores and restaurants closed as a precaution until the snow could be cleared from the roofs. Damage to buildings and their contents from leaks and collapses are estimated to be in the millions. Just one roof collapse at a small airport hangar in Norwood, MA resulted in at least $1.1 million in damages to the aircraft inside.

For more information, please go to the Northeast Regional Climate Center Home Page.

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

- February temperatures varied in both time and space. The second week of the month was cold and the third week warm across the region. Weeks one and four varied spatially giving a mix of temperature departures for the month. Departures varied from -4 degrees F (2 degrees C) to -6 degrees F (-3 degrees C) along the western edge of the region to 3 degrees F (2 degrees C) in southern Ohio and extreme eastern

Kentucky. Winter temperatures were near normal in northern Michigan and Wisconsin and ranged from 2 degrees F (1 degrees C) to 5 degrees F (3 degrees C) below normal across most of the other Midwest states. February was the only winter month to report above normal temperatures for parts of the Midwest.

- Midwest February totals included pockets of below normal precipitation but also large areas exceeding 200 percent of normal. The below normal areas were extreme eastern Kentucky, southwestern Iowa, and the northern quarter of the region. The driest area was the upper Midwest were totals were less than 50 percent of normal. Snowfall totals were also quite variable in February. Below normal snowfall totals, as much as 50 percent below normal, occurred in southern Indiana, southern Ohio, and eastern Kentucky as well as across the upper Midwest. Snowfall totals were above normal with totals exceeding 200 percent of normal over swaths from southern Minnesota to southern Michigan and from Missouri to northern Ohio. Totals approached 700 percent of normal in southwest Missouri. Monthly records for snowfall were set in Chicago, Illinois, Galesburg, Illinois, Lansing, Michigan, and Flint, Michigan. Almost 900 daily snowfall records were set across the Midwest during the month. Winter season snowfall totals were above normal for nearly all of the Midwest. Slightly below normal totals fell in northern Michigan while totals exceeded 200 percent of normal in parts of the other eight Midwest states. More than 2900 daily snowfall records occurred during the three-month winter season. Winter season snowfall records were set in Peoria, Illinois and Rochester, Minnesota.

- Numerous storms affected the Midwest in February. A blizzard hit the region on the 1st and 2nd of the month and another snowstorm followed just days later. On the 9th and 10th a big storm moved out of the southern plains and across southern Missouri and Kentucky leaving snow and very cold temperatures in its wake. A big thaw event began mid-month and lasted through the third week of the month. The thaw melted most of the Midwest snow except in Minnesota, Wisconsin, Upper Michigan, and northern Iowa where snow depths remained in excess of 12 inches (30 cm). Winter weather returned on the 20th and 21st as a system swept out of the Dakotas, across southern Minnesota to southern Michigan and northern Ohio. On the 24th and 25th a storm dropped snow from west to east across the middle of the Midwest. The last three days of the month saw the final system that not only dropped snow in the north but also brought severe weather to the central and southern parts of the Midwest.

- At least 15 tornadoes were confirmed in Missouri (1), Illinois (2), Indiana (6), Kentucky (5), and Ohio (1) on the 27th and 28th. Among the strongest was an EF3 rated storm in Henry County, Kentucky. Along with the tornadoes and hail, the storms brought heavy downpours, measured in excess of 5 inches (127 mm) in parts of Indiana, Kentucky, and Ohio. Flooding was widespread in those states and five people died in two incidents of vehicles washed into flooded waterways. Four children died in Graves County, Kentucky when their buggy was overturned in the raging waters of a normally tiny creek and a woman died in Norwalk, Ohio when her car was pushed into the Huron River by floodwaters.

For details on the weather and climate events of the Midwest, see the weekly summaries in the MRCC Midwest Climate Watch page.

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

- Mean temperatures were above normal across the Southeast in February. Temperatures were 3 to 5 degrees F (1.6 to 2.8 degrees C) above normal across the interior of the region and 1 to 3 degrees F (0.5 to 1.6 degrees C) above normal along the coasts. Mean temperatures were near normal across Puerto Rico, while the U.S. Virgin Islands experienced their fourth consecutive month of below normal temperatures. The cold weather that dominated the region in December and January continued into early February, particularly across parts of Alabama and Florida. However, temperatures rebounded significantly during the second half of the month as the Arctic Oscillation transitioned to a positive phase and more southerly and westerly winds became established over the Southeast. Columbia, SC and Charlotte, NC tied their all-time February maximum temperature records of 84 degrees F (28.9 degrees C) on the 28th of the month and 82 degrees F (27.8 degrees C) on the 27th of the month, respectively. For the month, Charlotte, NC recorded nine days of 70 degree F (21.1 degrees C) temperatures or greater, which is the most ever for February in a record extending back to 1875. Raleigh-Durham, NC surpassed 80 degrees F (26.7 degrees C) twice in February, which tied the previous record set in 1989. Despite a return to warm temperatures in February, mean temperatures during meteorological winter (December-February) ranked among the top 5 coldest in many locations across the region. Wilmington, NC recorded its second coldest winter in a record extending back to 1871, while Jacksonville, FL recorded its fifth coldest winter in a record extending back to 1870.

- Mean precipitation for the Southeast region was slightly below normal in February, though there was much local variability. There were two relatively narrow corridors of above normal precipitation (125 to 150 percent), one that cut across the eastern Panhandle of Florida and one that stretched across southern Alabama, central Georgia, and eastern portions of the Carolinas. Much of this precipitation was tied to a series of storms that crossed the region on the 4th and 5th of the month. The driest locations (less than 25 percent of normal) were found in the southern half of Florida with some locations recording less than 5 percent of normal precipitation for the month. Most notably, Key West, FL recorded only 0.01 inches (0.25 mm) of precipitation for the month, making it the second driest February in a record extending back to 1871. Elsewhere across the Southeast, monthly precipitation was generally between 50 and 75 percent of normal.

- There were 214 reports of severe weather across the Southeast in February, including nine confirmed tornadoes. Most of these occurred on the 28th of the month, as a line of strong storms spawned six tornados across Alabama and the Carolinas. A weak tornado was reported along I-40 in Iredell County, NC, while an EF-1 tornado was reported in Newberry County, SC. Four separate tornadoes were also reported in Alabama. The strongest was an EF-1 that snapped large hardwood trees and destroyed at least one home in Lowndes County. Large hail and damaging straight-line winds were also reported in Georgia. This severe weather outbreak resulted in tens of thousands of power outages across the region.

- Light to moderate snowfall occurred across a large portion of the Southeast from the 9th to the 11th of the month as a weak area of low pressure tracked along the Gulf and Atlantic coasts. Snowfall totals of up to 3 inches (76.2 mm) were reported across northern portions of Alabama and Georgia, while over 4 inches (101.6 mm) of snow was reported across eastern sections of North Carolina and Virginia. Many other locations in central Alabama, Georgia, and the Carolinas reported less than 1 inch

(25.4 mm) of snow from this event, while coastal sections of the Carolinas, including Wilmington, NC, and Conway, SC, reported ice pellets mixed with light snow.

- The lack of precipitation in February resulted in the emergence of severe (D2) and extreme (D3) drought conditions across the northern half of Alabama and southeastern Florida, respectively. However, the beneficial rains through portions of central Georgia and South Carolina resulted in a reduction from severe drought to moderate drought (D1) conditions in those areas. The warm temperatures near the end of the month caused many of the peach and blueberry crops to bloom across Georgia, making them especially vulnerable to a killing frost. According to the Georgia State Climate Office, a killing frost could have an economic impact of over $150 million to the industry. In addition to the warm temperatures, a combination of high winds, dry soils, ample leaf litter, and low relative humidity created ideal conditions for wildfires across much of the Southeast. In North Carolina, the Division of Forest Services reported over 12,000 fires across the state in February and more than 1,700 acres burned.

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)*

- February 2011 was a month of extremes in the High Plains Region. The lowest temperatures of the month were, for the most part, observed at the beginning of the month. An arctic air mass settled into the Region and many daily low temperature records were set. Dangerous wind chills were also experienced throughout the Region. According to the National Weather Service in Cheyenne, Wyoming, the coldest wind chill in that area was -61 degrees F (-51.7 degrees C) at the Laramie Airport on February 2. Also on that date, the Rawlins Municipal Airport, Wyoming tied its all time lowest temperature record when the temperature plummeted to -36 degrees F (-37.8 degrees C). The all-time record is shared with 2/6/1989, 1/4/1973, and 1/19/1963 (period of record 1951-2011). There was a warm-up mid month and daily high temperature records were broken in parts of Colorado, Kansas, Nebraska, and South Dakota but the month ended on the chilly side as cold air quickly moved back into the Region.

- Overall, February average temperatures were 2-6 degrees F (1.1-3.3 degrees C) below normal for most of the Region including Kansas, Colorado, the eastern Dakotas, and eastern Nebraska. Large areas of western North Dakota, central and western South Dakota, the panhandle of Nebraska, and central and eastern Wyoming had average temperatures which were more than 6 degrees F (3.3 degrees C) below normal. The cold weather allowed many locations to break into the top 20 coldest Februaries on record. In addition, locations in Wyoming and the panhandle of Nebraska had average monthly temperatures which ranked in the top 10 coldest Februaries on record. Sunshine 3NE, Wyoming, which is located in the northwest part of the state, had its 2nd coldest February on record with an average temperature of 15.0 degrees F (-9.4 degrees C). The record of 11.0 degrees F (-11.7 degrees C) was recorded in 1989 (period of record 1963-2011).

- Several storm systems affected the Region this month. Overall, South Dakota, eastern Kansas, and pockets of both Colorado and Wyoming had precipitation which was above normal. The rest of the Region had either near to below normal

precipitation. A strong system brought extreme cold and snow to the Region at the beginning of the month. While many locations within the Region received snowfall, the main impacts of the storm were just east of the Region. A large area from Kansas City through Chicago was hit particularly hard as dangerous blizzard conditions led to interstate and airport closures. Another round of snow hit the eastern portion of the Region on February 8-9. The heaviest snow fell in eastern Kansas where up to 16 inches (41 cm) was reported. A mid-month warm-up allowed for much of the snow cover across the Region to melt, however the snow cover quickly built up again. Later in the month a storm system moved through the Region bringing thunderstorms, ice, and snow. On the 21st, thunderstorms occurred in eastern Nebraska while just to the north, ice accumulations up to a quarter inch were reported. Meanwhile, heavy snow fell across South Dakota, where over a foot (30 cm) of snow was reported in many locations. On February 24th another snow storm hit the Region. Heavy snows of up to a foot (30 cm) were again reported in southwestern South Dakota and up to 5-9 inches (13-23 cm) were reported in Kansas and Nebraska. Also, in Kansas and Nebraska, much of the snow fell in a short amount of time and snowfall rates of 2 inches/hour (5 cm/hour) were reported. The month ended with the first round of severe storms to hit the Region. On February 27th thunderstorms produced large hail in southern Kansas and a brief tornado was spotted along the Kansas-Oklahoma border.

- The heavy snow this month not only led to new February records but also new winter (December, January, and February) records. Bonner Springs, Kansas, which is just outside of Kansas City, recorded its snowiest February on record with 17.5 inches (44 cm) of snowfall (period of record 1938-2011). The old record was set in 1978 with 17.0 inches (43 cm). Aberdeen, South Dakota had its 4th snowiest February with 21.0 inches (53 cm) and its snowiest winter with 61.2 inches (155 cm) of snow (period of record 1893-2011). This beat the longstanding record of 57.0 inches (145 cm) which was set in 1915.

- Meanwhile, North Dakota was on the dry side this month. Fargo, North Dakota only received 0.08 inches (2 mm) of liquid equivalent precipitation which was the 6th driest February on record and Grand Forks, North Dakota only received 0.04 inches (1 mm) of liquid equivalent precipitation which was the 4th driest February on record. The dry conditions this month did not stop the concern over flooding along the Red River or flood preparations. According to the North Dakota State Climate Office, Fargo had already filled 1.5 million sand bags and the North Dakota National Guard began training sessions to help prepare for the potential flooding.

- The U.S. Drought Monitor did not change over the last month for the High Plains Region. Severe drought conditions (D2) persisted over south-central Colorado and western Kansas. A large area of moderate drought conditions (D1) across eastern Colorado, western Kansas, and the panhandle of Nebraska also remained. A second area of D1 in southeastern Kansas also existed. In addition, the areas of abnormally dry conditions (D0) in western Wyoming and surrounding the D1 areas remained unchanged. According to the U.S. Seasonal Drought Outlook released February 17th drought conditions across Colorado, Kansas, and Nebraska were expected to persist and drought conditions were expected to develop in southern Nebraska and central Kansas.

For more information, please go to the High Plains Regional Climate Center Home

Page.

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

- February average temperatures in the Southern Region varied spatially from west to east. In the north western areas of the region, temperatures were generally 2 to 6 degrees F (1.11 to 3.33 degrees C) below the monthly normal. In Tennessee in Mississippi, however; temperatures averaged between 2 to 6 degrees F (1.11 to 3.33 degrees C) above the monthly normal. Elsewhere, temperatures remained within approximately 2 degrees F (1.11 degrees C) of the monthly expected values. The state average temperatures in the region were: 43.80 degrees F (6.56 degrees C) in Arkansas, 52.40 degrees F (11.33 degrees C) in Louisiana, 49.30 degrees F (9.61 degrees C) in Mississippi, 40.20 degrees F (4.56 degrees C) in Oklahoma, 43.30 degrees F (6.28 degrees C) in Tennessee and 49.20 degrees F (9.56 degrees C) in Texas. All state value temperature rankings fell within the two middle quartiles of the normal distribution as based on the 1895-2011 period of record.

- With the exception of central and northern Arkansas, northern Tennessee and north eastern Oklahoma, the month of February was a dry month for the Southern Region. The driest areas of the region included much of southern and south western Texas, where most stations received less than a quarter of the monthly normal precipitation total. In central Louisiana and southern Mississippi, the majority of stations reported precipitation totals that ranged between 25 and 50 percent of normal. Similar conditions were also observed throughout parts of central Texas and north western Oklahoma. The wettest area of the region included much of north central Arkansas where stations reported between 150 and 400 percent of normal precipitation. On February 9-10, 2011, many areas of Oklahoma received heavy snowfall accumulations. Accumulations varied from few a few inches to over two feet in the north eastern portions of the state. For instance, the station at Spavinaw, Oklahoma received 27 inches (685.80 mm) of snowfall in a 24 hour period. The state-wide average precipitation totals for the month were as follows: 4.17 inches (105.92 mm) in Arkansas, 2.04 inches (51.82 mm) in Louisiana, 2.14 inches (54.36 mm) in Mississippi, 1.35 inches (34.29 mm) in Oklahoma, 3.66 inches (92.96 mm) in Tennessee and 0.66 inches (16.76 mm) in Texas. For Louisiana, it was the eighth driest February on record (1895-2011), while for Mississippi, it was the fourth driest on record (1895-2011). Another rank worth mentioning was in Texas, which experienced its seventeenth driest February on record (1895-2011).

- Drier than normal conditions throughout most of the Southern Region has led to an expansion of drought in many areas. Most notably, there was an expansion of extreme drought in central and northern Louisiana and in eastern Texas. South western Texas also experienced a slight expansion of extreme drought. On February 1, 2011, only 6.59 percent of the Southern Region was experiencing extreme drought. One month later, on March 1, 2011, that number has increased to 10.76 percent. In Mississippi, the entire state is now classified in moderate drought or worse. In fact, almost three quarters of the Southern Region is now in moderate drought or worse, compared to 58.97 percent of the region the previous month.

- On the first day of the month, two tornadoes were reported. One occurred in Rusk County, Texas where two homes were damaged. The other occurred in Sabine Parish, Louisiana. Minor home damage was indicated. On this day there were also several

wind reports throughout central Louisiana, southern Mississippi. Damage from the strong winds was mostly restricted to tree and power line damage.

- On the twenty-fourth of the month, several tornadoes were reported over an area that includes western Tennessee, northern Mississippi, central Arkansas, eastern Arkansas and northern Louisiana. In Lonoke County, Arkansas, a large metal building had two doors blown in. There was also widespread damage reported to trees and power lines. A mobile home was destroyed, and grain bins were pulled off the concrete in Decatur County, Tennessee. In Davidson County, Tennessee, substantial structural damage was reported to homes in the Percy Priest Lake Area. Strong winds in Webster Parish, Louisiana led to one reported injury. The injury was the result of a tree falling on a truck.

- On the twenty-eighth of the month, several tornadoes were reported across south central Tennessee and central Mississippi. In Moore County, Tennessee, one person was killed and four others were injured. In Franklin County, Tennessee, one tornado-related death was reported. Strong winds in Polk County, Tennessee caused one fatality when a tree fell on a mobile home.

- On February 9 to 10, 2011, A winter storm produced heavy snowfall accumulations and freezing temperatures throughout the state of Oklahoma. Snowfall accumulations varied from a few inches to over two feet (609.56 mm) of snow. The snowfall resulted in school and road closures and an extension of a state of emergency that was initially issued earlier in the month. In terms of temperatures, many stations reported record low temperatures that ranged from -20 degrees F (-28.89 degrees C) to -31 degrees F (-35 degrees C). The latter was reported at the Oklahoma University Mesonet station in Nowata, Oklahoma. Another example of the extreme temperatures were at the Ralston and Bartlesville stations, which reported temperatures of -29 degrees F (-33.89 degrees C) and -28 degrees F (-33.33 degrees C), respectively.

For more information, please go to the Southern Regional Climate Center Home Page.

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

- Temperatures were below to well below normal throughout the entire West except for a small region from northeast Nevada to northern Utah and a few other isolated pockets. The month began with record setting cold from Montana to New Mexico. A stretch of mild weather prevailed for a week mid month before another very cold episode the final week. Many locations in the region were up to 5 degrees F (2.8 C) below normal while some locations in Montana were 10 degrees F (5.8 C) below normal for the month. Some cities in Southern California recorded their coldest February in over 30 years. Santa Barbara CA had their third coldest February on record dating back 70 years. Great Falls, MT, measured their coldest February in 22 years. Some cities in the southwest recorded their lowest all time February temperatures early in the month (see below).

- Precipitation was below normal for most of the west except for isolated pockets in the intermountain region. Great Falls' extreme month continued with their second wettest and most snowy February in 119 years and third all time snowiest month. The only other record setting precipitation occurred in the far north where Fairbanks, AK, measured their second wettest and second snowiest February on record. Barrow also had their third wettest and second snowiest February ever.

- Thanks to a stormy second half of the month mountain snowpack was mostly above normal on March 1st except for some areas of the Southwest and the Pacific Northwest, although the precipitation totals in the higher elevations of the Northwest are actually above normal.

- The extreme cold that settled in the Southwest during the first few days of the month set numerous records and caused widespread damage. It was estimated that in El Paso, TX, over 15,000 pipes broke with damage at over $50 million. Albuquerque recorded their lowest February maximum temperature (and second lowest ever) with 9 F (-12.8 C) on the 2nd. In addition, the minimum of -7 F (-21.7 C) was the second coldest February temperature on record. In Douglas, AZ, a minimum of 0 F (-17.8 C) on the 4th set an all time February mark and was only the third time in history the city has reached 0 F (-17.8 C). The lows at Tucson, AZ of 18 F (-7.8 C) on the 3rd and 4th were not only their coldest February temperature on record but only 2 degrees F (1.1 C) away from their all time low. Roswell, NM, hit -11 F (-23.9 C) on the 4th, which was the coldest February temperature since 1933 and coldest for any month since 1966. Laramie, WY, hit a new February low of -39 F (-39.4 C) on the 2nd as well, in a record dating back to 1948. Roughly 32,000 residents in New Mexico and 14,000 in Arizona had no natural gas on the 4th due to shortages brought on by the extreme cold.

- A cold and powerful system affected nearly the entire west. The Seattle area had up to 3 inches (7.6 cm) of snow on the 23rd with wind chills in Montana as low as -50 F (-45.5 C) on the 25th. Cut Bank, MT, fell to -35 F (-37.3 C) on the 25th, the coldest temperature ever recorded for so late in the season. This system produced rare snow in Tucson, AZ, and the hills of the San Francisco Bay Area in California.

- Strong offshore winds produced wind gusts of near 95 mph near Valdez, AK, causing flying debris to shatter car windows and siding being blow off buildings. The Port of Valdez was closed on the 27th as oil tankers had to be held in protected areas of the Prince William Sound. At Thompson Pass 100 mph winds produced blizzard conditions that forced the closure of the Richardson Highway, the only road out of or into Valdez.

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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