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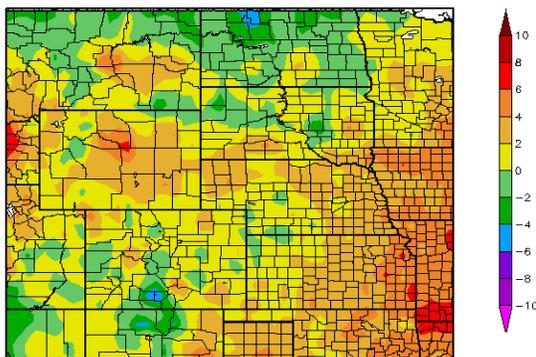
Farm near Tea, South Dakota - Photo by Joseph Brum  
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# December 2012 Climate Summary

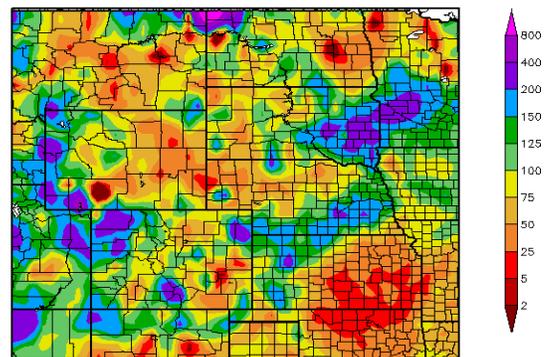
## Region Breakdown

December 2012 average temperatures were within 2.0 degrees F (1.1 degrees C) of normal for most of the High Plains Region. Warmer areas included the eastern halves of Nebraska and Kansas, as well as central Wyoming, southern South Dakota, and the panhandle of Nebraska. Monthly average temperatures were generally 2.0-4.0 degrees F (1.1-2.2 degrees C) above normal in those areas, with a few areas ranging from 4.0-8.0 degrees F (2.2-4.4 degrees C) above normal. These temperatures were not record breaking. Cooler areas of the Region included northern North Dakota and south-central Colorado where average temperatures were 2.0-6.0 degrees F (1.1-3.3 degrees C) below normal. Although these temperatures were not low enough to break records, there were some locations that squeezed their way into the top 10 list. Alamosa, Colorado had its 10th coolest December with an average temperature of 11.6 degrees F (-11.3 degrees C), which was 6.3 degrees F (3.5 degrees C) below normal. The record of 5.1 degrees F (-14.9 degrees C) was set in 1991 (period of record 1906-2012). Even though December temperatures were below normal, 2012 ended as one of the warmest years on record in Alamosa. With an average temperature of 43.2 degrees F (6.2 degrees C), Alamosa had its 7th warmest year on record. The warmest year occurred in 1934 with an average temperature of 44.5 degrees F (6.9 degrees C).

Departure from Normal Temperature (F)  
12/1/2012 - 12/31/2012



Percent of Normal Precipitation (%)  
12/1/2012 - 12/31/2012



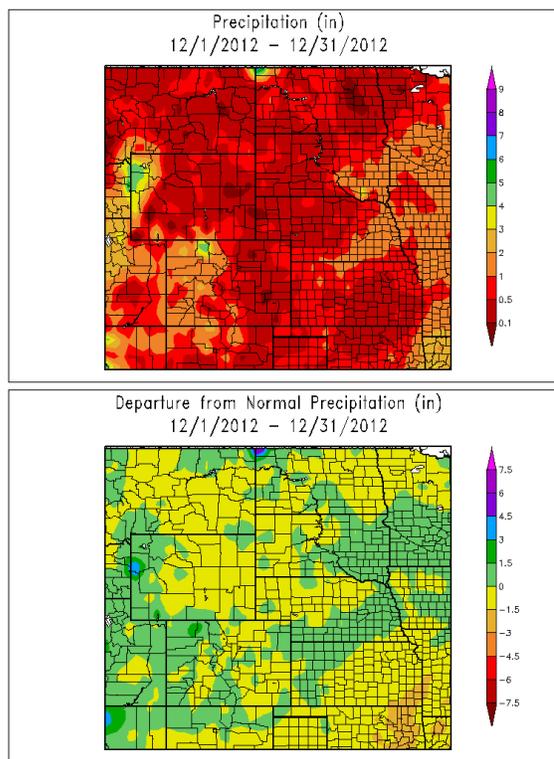
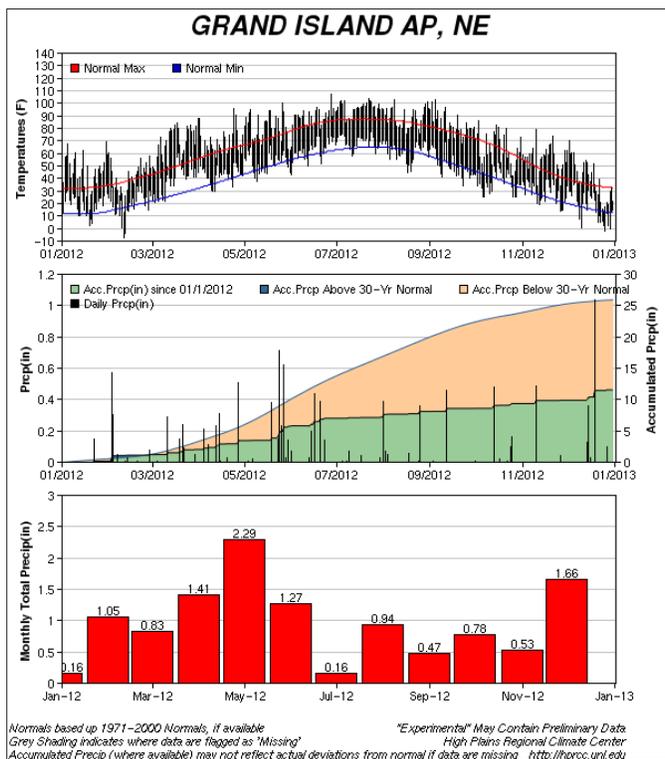
Departure from 1981-2010 Normal Average Temperature (left) and Percent of Normal Precipitation (right) for December 2012 in the High Plains Region. Maps produced by High Plains Regional Climate Center. Available at: <http://hprcc.unl.edu/maps/current>

# Precipitation Summary

There were several storm systems that passed through the High Plains Region this month bringing much needed precipitation. Areas that received above normal precipitation included western portions of Wyoming and Colorado, a swath from eastern Colorado into northern Kansas and up through eastern Nebraska, and also eastern South Dakota. These areas generally received at least 150 percent of normal precipitation and localized areas received upwards of 400 percent of normal precipitation. The most significant storm systems to affect the Region occurred December 8-9, December 19-20, and December 31. The December 8-9 blizzard affected eastern South Dakota bringing localized heavy snow of up to 8.0-14.0 inches (20.0-36.0 cm) and high winds of 40-55 mph (64-89 km/h). This blizzard closed portions of I-29 and I-90. The December 19-20 blizzard brought heavy snow and high winds to much of Nebraska and northern Kansas. This blizzard caused many challenges to travelers as white out conditions closed many roads throughout both states and portions of I-80 in Nebraska. Finally, a New Year's Eve winter storm blanketed Kansas with snow, the heaviest of which fell in the western part of the state with 6.0-10.0 inches (15-25 cm). Although there was above normal precipitation in many areas of the Region this month, it was not enough to improve the ongoing drought.

The highlighted station this month was Grand Island, Nebraska which received 9.5 inches (24 cm) of snow and 1.66 inches (42 mm) of liquid equivalent precipitation. This precipitation amount ranked as the 13th wettest December on record (period of record 1895-2012). What was interesting about December's precipitation total was that it was the highest precipitation total in one month since May.

Although there were many areas which received above normal precipitation, there were also large areas of the Region which did not receive much precipitation this month, including a large area of southeastern Kansas, eastern North Dakota, and eastern Wyoming. These areas received less than 50 percent of normal precipitation. Meanwhile, much of southeastern Kansas received less than 25 percent of normal precipitation.



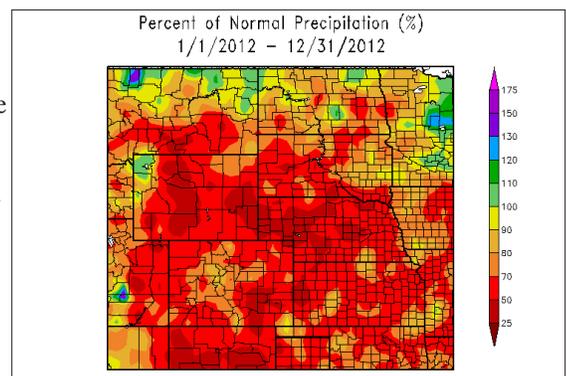
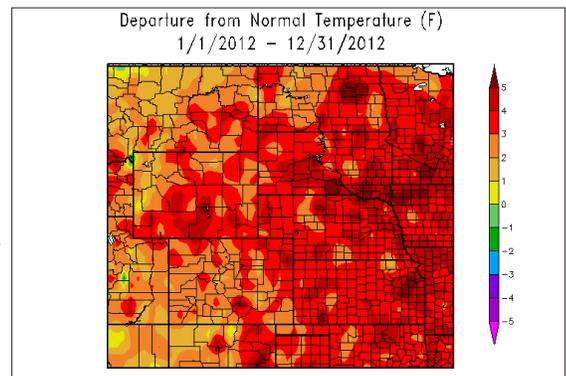
Above: Maximum, minimum, and normal temperatures, accumulated precipitation, and monthly total precipitation for Grand Island, NE over the past year (top left). Total precipitation (inches) (top right) and Departure from Normal Precipitation (inches) (bottom right) for December 2012 in the High Plains Region. These maps are produced by HPRCC and can be found on the Current Climate Summary Maps page at: <http://hprcc.unl.edu/maps/current>.

## Brief Year in Review - Climate of 2012

2012 was a warm and dry year for the High Plains Region. Every single station in the Region had average annual temperatures which were above normal. The majority of the Region had average temperatures which were 3.0-5.0 degrees F (1.7-2.8 degrees C) above normal, while some pockets of eastern North Dakota, southern South Dakota, and eastern Kansas had average temperatures greater than 5.0 degrees F (2.8 degrees C) above normal. Thousands of records were broken this year, including many all-time record highs. Ultimately, the unusually warm temperatures caused many stations in each state to have their warmest year on record!

The lack of precipitation was also major factor this year. The majority of the Region had annual precipitation totals which were less than 70 percent of normal. While areas of Kansas and Colorado saw their second year of drought, the lack of precipitation coupled with warm temperatures caused the rest of the Region to slip into drought. By the end of 2012, nearly 27 percent of the Region was in the exceptional drought (D4) designation. Impacts from the drought were felt across the Region in many different sectors ranging from agriculture to tourism, and transportation to water resources. Specific impacts included crop damage and failure, low river levels, and even fish kills. In addition, wildfires were a major issue in the summer, especially in Colorado, Wyoming, Nebraska, and South Dakota. The drought even contributed to the formation of a large dust storm in October in western areas of the Region, closing many local roads and interstates.

Although the drought was the big story this year, there were a few significant severe weather events to highlight. The first tornadoes to ever be reported in February in Nebraska occurred. At least 50 tornadoes were confirmed in Nebraska and Kansas on April 14th, the most active severe weather day of the year in the Region. Finally, the second highest altitude tornado on record occurred near Mt. Evans in Colorado on July 28th.



Above: Departure from Normal Temperature (F) (top) and Percent of Normal Precipitation (bottom) for 2012 in the High Plains Region. These maps are produced by HPRCC and can be found on the Current Climate Summary Maps page at: <http://hprcc.unl.edu/maps/current>.

## 2012 Records - Highlights

Annual Records			
Temperature in degrees F / Precipitation in inches			
Warmest	Average Temperature	Old Record / Year	Period of Record
Colorado Springs, CO	53.0	52.5 / 1934	1894-2012
Topeka, KS	59.9	58.7 / 1938	1887-2012
Valentine, NE	52.1	51.2 / 1934	1889-2012
Fargo, ND	46.4	tied / 1987	1881-2012
Rapid City, SD	50.5	49.7 / 2006*	1942-2012
Cheyenne, WY	49.1	48.3 / 1981*	1872-2012
Driest	Precipitation	Old Record / Year	Period of Record
Grand Island, NE	11.55	12.01 / 1940	1895-2012
Scottsbluff, NE	6.99	7.70 / 1964	1893-2012

All Data are Preliminary and Subject to Change.

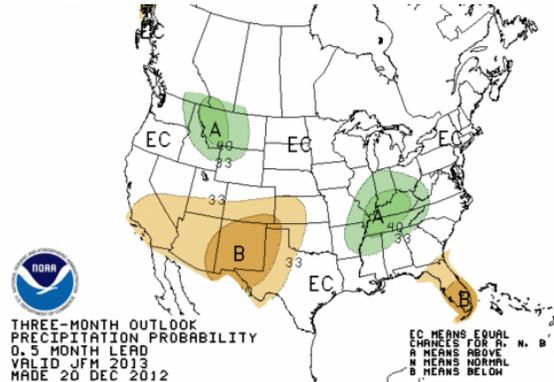
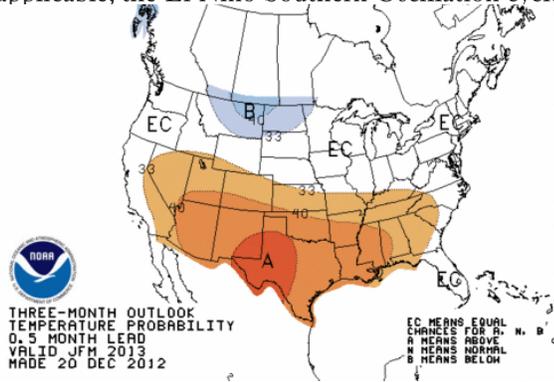
\* indicates multiple records, latest date is listed

Source: National Weather Service Cooperative Observation Network Data

The High Plains Regional Climate Center is one of the Regional Climate Centers, and is involved in the Applied Climate Information System (ACIS) development and management effort. Data found throughout this publication were derived using products built on the ACIS framework.

# Climate Outlook

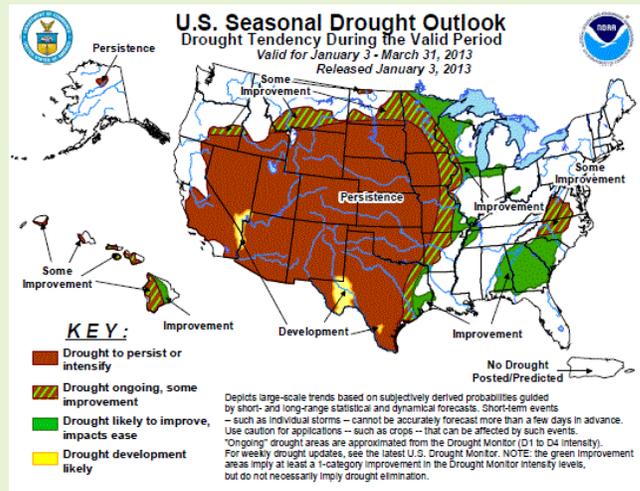
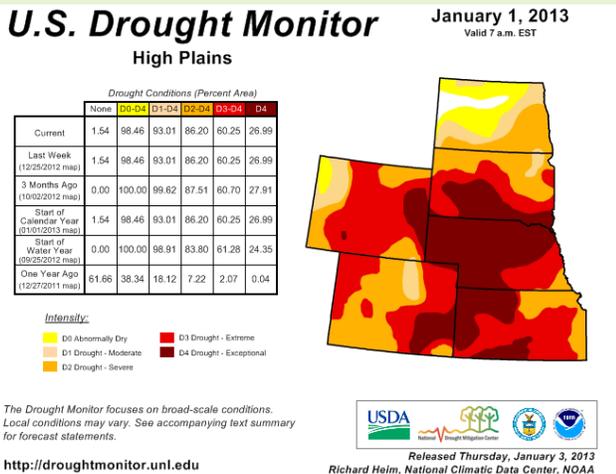
ENSO-neutral conditions are present and likely to continue into Spring 2013. For the next three months, the temperature outlook indicates a higher probability of above normal temperatures for most of Colorado and Kansas, southwestern Wyoming, and the far southwestern corner of Nebraska. A higher probability of below normal temperatures exists for much of North Dakota and the northwestern corner of South Dakota. The precipitation outlook indicates a higher probability of above normal precipitation for the northwestern part of Wyoming. A higher probability of below normal precipitation exists for the southern half of Colorado and the western half of Kansas. Equal chances of above, near, or below normal temperatures and precipitation exist for the rest of the High Plains Region. The seasonal outlooks combine the effects of long-term trends, soil moisture, and when applicable, the El Niño Southern Oscillation cycle (ENSO).



Above: 3-Month Outlook Maps Courtesy the NOAA Climate Prediction Center - <http://www.cpc.ncep.noaa.gov>  
(left) The Three-Month Temperature Probability Outlook, (right) The Three-Month Precipitation Probability Outlook

## Drought Watch

According to the U.S. Drought Monitor, widespread drought continued. Although much of the Region received rain and snow over the past month, this precipitation was only enough to stave off further deterioration of the drought. Overall, about 93 percent of the Region was still in moderate (D1) to exceptional (D4) drought. This was down slightly from the end of last month when 94 percent of the Region was in D1-D4. There were slight improvements in west-central North Dakota where a small section of abnormally dry conditions (D0) were erased and in southwestern Wyoming where a small section of extreme drought (D3) was downgraded to severe drought (D2). Drought conditions worsened slightly in Colorado and other areas of Wyoming. In Wyoming, D3 filled in the central part of the state and a small section of D4 developed in the southwest. In Colorado, D2 expanded in the north, and D3 and D4 conditions expanded slightly in the south. According to the U.S. Seasonal Drought Outlook released January 1st, drought conditions were expected to improve in North Dakota and far northwestern Wyoming. Drought was expected to persist elsewhere through March 2013.



The U.S. Drought Monitor is produced as a joint effort of the U.S. Department of Agriculture (USDA), National Drought Mitigation Center, U.S. Department of Commerce and the National Oceanic and Atmospheric Administration (NOAA). Real-time data provided through ACIS from the Regional Climate Centers are often used by the agencies involved in the U.S. Drought Monitor when determining the area and intensity of drought conditions, although the product itself is not produced by HPRCC. For current Drought Monitor information, please see: <http://droughtmonitor.unl.edu/>  
 Portions of this Drought Watch are courtesy the Drought Monitor Text Discussion found on the Drought Monitor webpage.

## State Summaries

Colorado	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Akron Washington County Airport	41.1	16.9	29.0	0.7	66	12/02	-5	12/26	0.16	-0.24	40
Alamosa San Luis Airport	31.7	-8.5	11.6	-6.3	57	12/02	-27	12/21	0.81	0.46	231
Colorado Springs Municipal Airport	44.6	17.3	30.9	1.1	67	12/05	-3	12/10	0.26	-0.08	76
Grand Junction Walker Field Airport	35.9	16.0	26.0	-2.5	59	12/01	-5	12/22	1.06	0.47	180
Pueblo Memorial Airport	46.3	13.2	29.7	-0.4	71	12/05	-8	12/10	0.30	-0.08	79

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	43.4	21.9	32.6	2.6	68	12/02	3	12/26+	0.93	0.08	109
Dodge City Regional Airport	47.0	21.5	34.2	1.4	71	12/02	1	12/26	0.87	0.03	104
Goodland Renner Field	43.6	14.1	28.9	-1.0	69	12/01	-10	12/26	0.57	0.11	124
Topeka Municipal Airport	46.9	25.7	36.3	4.3	74	12/03	8	12/26	0.79	-0.56	59
Wichita Mid-Continent Airport	49.3	25.7	37.5	3.7	72	12/03	7	12/29	0.34	-0.86	28

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	40.4	9.7	25.0	0.6	69	12/02	-15	12/26	0.16	-0.36	31
Grand Island Airport	39.6	17.4	28.5	1.8	70	12/02	-2	12/26	1.66	1.03	263
Lincoln Municipal Airport	39.5	16.3	27.9	1.1	68	12/02	-1	12/26	1.50	0.55	158
Norfolk Karl Stefan Airfield	37.1	15.7	26.4	2.1	64	12/02	-3	12/29	1.13	0.38	151
North Platte Regional Airport	40.7	9.6	25.1	-0.3	71	12/01	-9	12/10	0.37	-0.04	90
Omaha Eppley Airport	38.7	19.7	29.2	3.2	62	12/03	-1	12/26	1.85	0.81	178
Valentine Miller Field	39.3	14.4	26.9	3.1	68	12/02	-6	12/10	0.29	-0.08	78

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismark Municipal Airport	24.0	6.6	15.3	-0.9	51	12/03	-18	12/24	0.63	0.14	129
Fargo International Airport	22.5	6.9	14.7	0.6	50	12/03+	-13	12/25	0.37	-0.46	45
Grand Forks International Airport	19.0	5.2	12.1	0.6	44	12/03	-13	12/10	0.31	-0.30	51
Theodore Roosevelt Airport	26.8	8.2	17.5	-0.4	61	12/02	-12	12/24	0.26	0.02	108
Williston International Airport	22.5	4.3	13.4	-0.5	46	12/02	-20	12/26	0.57	-0.05	92

All Data are Preliminary and Subject to Change. + indicates multiple dates, latest date listed.

Source: National Weather Service Cooperative Observation Network Data

Data are retrieved through the Applied Climate Information System (ACIS).

These data are available for the entire period of record through the CLIMOD system. For more information please see <http://hprcc.unl.edu/services>.

## December 2012 Climate Summary

South Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Aberdeen Regional Airport	25.1	5.8	15.4	-0.3	56	12/02	-17	12/10	0.75	0.23	144
Huron Regional Airport	28.8	11.1	20.0	0.8	60	12/02	-10	12/25+	1.12	0.60	215
Pierre Regional Airport	30.0	12.3	21.1	-0.6	67	12/02	-11	12/10	0.65	0.10	118
Rapid City Regional Airport	37.6	12.3	24.9	0.0	65	12/02	-7	12/28+	0.25	-0.17	60
Sioux Falls Joe Foss Field Airport	31.5	11.6	21.6	2.4	61	12/02	-7	12/10	1.31	0.62	190

Wyoming	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Casper Natrona County International AP	37.2	15.6	26.4	2.6	57	12/05	-11	12/31	0.39	-0.10	80
Cheyenne Municipal Airport	38.5	16.1	27.3	-0.4	61	12/05	-4	12/25	0.57	0.08	116
Lander Hunt Field Airport	34.9	12.4	23.7	3.0	62	12/02	-10	12/31	0.40	-0.18	69
Laramie Regional Airport	31.6	10.5	20.7	-0.4	58	12/02	-13	12/31	0.21	-0.11	66
Rawlins Municipal Airport	32.2	14.6	23.4	1.9	51	12/02+	-7	12/31	0.18	-0.25	42
Sheridan County Airport	35.0	12.6	23.8	0.9	63	12/02	-5	12/25	0.50	-0.06	89

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## State Spotlight - Kansas

Mary Knapp - State Climatologist  
Kansas State Climate Office, Kansas State University

**KANSAS STATE**  
**UNIVERSITY**

### Roller Coaster to end the Year

The warm start to December gave way to winter-like weather as we ended the year. December temperatures averaged above normal across the state, with the warmest conditions in the southern and eastern divisions. December preliminary state-wide average temperature was 34 F, which is 9.2 degrees above normal. There were 35 new record daily highs and 26 records that were tied. There were also 22 daily records for high minimum temperatures, and 12 record high minimums that were tied. Still, cold weather was present. There were 22 daily record low minimum temperatures set and 12 tied. In addition, there were 22 record low daily maximum temperatures set and 8 tied. All divisions saw low temperatures dip into the single digits, with the Western, North Central, and Central divisions dropping below zero for the lowest readings. State-wide, December averaged 38th warmest since 1895. This dropped the annual average temperature from the warmest (in November) to the 17th warmest. The warmest year on record was 1934, with a January-December average of 59.9 F. The highest temperature was 81 F at Healy on the 15th. The coldest reading was -13 F at Brewster 4W on the 26th. The warmest December was recorded in 1957, when the average temperature was 38.9 F. The coldest December on record occurred in 1983, when the average temperature was 15.9 F.

Preliminary statewide average precipitation was 0.52 inches, which was 59% of normal. This makes it the 9th driest December since 1895. In contrast to November, both the Northwest and the West Central divisions averaged above normal for the month. The Northwest division averaged 0.76 inches, which was 125% of normal. The divisional average for the year is only 11.98 inches which is just 51% of normal. The West Central averaged 0.74 inches for December, which was 112% of normal for the month. That brought the annual average to 12.08 inches, or 54% of normal. Southwest averaged 0.68 inches for December, which was 91% of normal. That brought their annual total to 14.26 inches, which was 61% of normal. The South Central division had the lowest precipitation in December, with a divisional average of 0.23 inches, or 18% of normal. The Southeast fared only a little better, with an average of 0.38 inches for 19% of normal. Only 7 days in December averaged greater than a trace of precipitation. Four of those days saw state-wide average precipitation of only a hundredth of an inch. Greatest precipitation occurred on the 15th, when the average was 0.27 inches. 0.99 inches was reported at Gove (NWS) and 1.05 inches reported at Larned 2.9 WSW (CoCoRaHS). Greatest monthly totals for December were 1.37 inches at Gove (NWS), and 1.61 inches at Norton 0.4 N (CoCoRaHS). Snow was a large component of the moisture in December. Greatest daily snowfall was 7.5 inches for both networks on the 31st: at Concordia Airport (NWS) and Ulysses 6.6 WNW (CoCoRaHS).

The latest Drought Monitor shows that extreme drought now covers 79.4% of the state, with nearly 36% of the state in exceptional drought. Normal precipitation in December is low, so even the areas with above normal moisture in December have not seen improvement. The latest Drought Outlook indicates drought conditions are expected to continue through March. The El Niño/Southern Oscillation (ENSO) is expected to remain neutral through the winter. That means the signal for increased winter precipitation will also be weaker. The jet stream is expected to shift northward. For January, chances are equally likely for precipitation to be above or below normal state-wide. The temperature outlook calls for above normal temperatures state-wide. This does not indicate how much warmer conditions might be, and does not exclude the possibility of significant cold weather in the period.

For more information about the Kansas State Climate Office: <http://www.ksre.ksu.edu/wdl/>

The KSU's AWDN is a part of the High Plains Automated Weather Data Network (AWDN). Data are available through KSU or HPRCC.

Departure from Normal Temperature (F)  
12/1/2012 - 12/31/2012

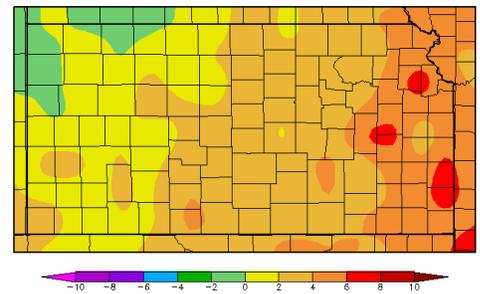


Figure 1. December 2012 departure from average temperatures across Kansas (High Plains Regional Climate Center)

Percent of Normal Precipitation (%)  
12/1/2012 - 12/31/2012

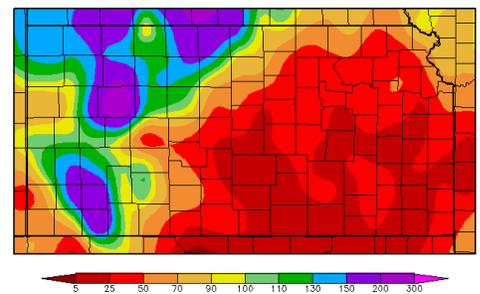


Figure 2. December 2012 percent of normal precipitation across Kansas (High Plains Regional Climate Center)

## State Spotlight - North Dakota

F. Adnan Akyüz - State Climatologist, Barb Mullins - Assistant to the State Climatologist  
North Dakota State Climate Office, North Dakota State University



### Precipitation:

The High Plains Regional Climate Center (HPRCC) percent of normal precipitation was above normal in the far northwest and parts of the south central with below normal primarily in the east and far southwest (Figure 1, HPRCC). HPRCC total precipitation amounts were less than an inch across the state with amounts of less than a half inch in the east and southwest. A snow storm from the 7th through the 10th produced a three day snowfall total of 1 to 8 inches. Eight inches fell at St. Anthony and Watford City. Seven inches fell at Havana. The U.S. Drought Monitor December 25th report listed 88.91% of the state as having anywhere from Abnormally Dry (D0) through Severe Drought (D2). The Severe Drought (D2) was reported for 30.51% of the state with 11.09% of the state having no drought conditions.

### Temperature:

NDAWN December average air temperatures ranged from ~6 °F in the far north to ~20 °F in the southwest. Departure from normal average air temperatures ranged from near normal to 4 °F below normal (Figure 2, NDAWN Center). The 1st through the 6th of December had average air temperatures near and above normal. Temperatures fell sharply to below normal from the 7th through the 13th when temperatures rebounded to near normal. The near normal temperatures held through the middle of the month then fell sharply again to below normal for the holidays.

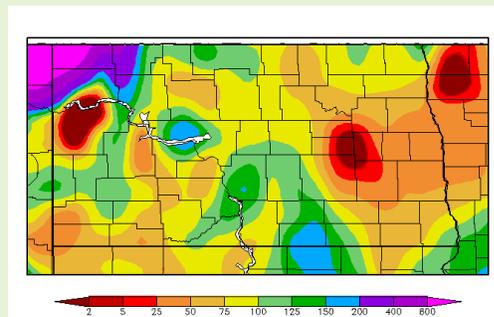


Figure 1. Percent of Normal Precipitation in December 2012 for North Dakota (High Plains Regional Climate Center)

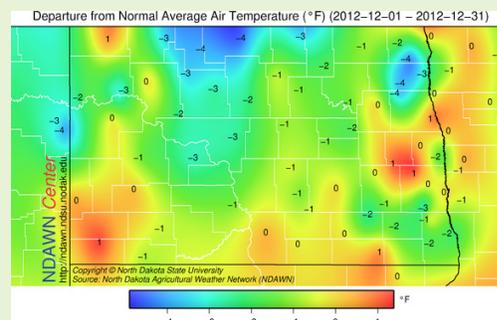


Figure 2. Temperature Departure from Normal in December 2012 for North Dakota (North Dakota State Climate Office)

## State Spotlight - South Dakota

**Dennis Todey - State Climatologist**  
**Laura Edwards, Gibril Vandy, and Douglas Todey**  
**South Dakota State Climate Office, South Dakota State University**



### Summary

The month began warm and relatively dry statewide. Colder temperatures and a blizzard over much of the eastern 2/3 of the state changed surface conditions on 8-10 December. Additional precipitation events increased snow cover across eastern parts of the state. Western areas continued quite dry. Temperatures cooled through much of the latter part of the month. Temperatures remained quite moderate considering the snow cover over most of the state. Southern areas were relatively warmer.

The precipitation did little to change drought conditions in the state. The impacts from the drought are much less severe and generally unchanging over most of the state.

### Temperature

Temperatures across the state for the month of December ranged from the upper teens in the northeast to upper 20s F in the southwest. Several stations across southern parts of the state reached the low 70s early in the month. The highest temperature for the month was at White River on 2 December. All stations fell below 0 F with most northern parts of the state falling into the teens below 0 F. Hoover reached the coldest at -22 F on 28 December.

This arrangement is fairly typical for December temperatures as cold outbreaks hit the eastern part of the state more than west. Most of the state was above average for the month. Areas south of I-90 ranged from 2-5 F above average. Most of the rest of the state was within a few degrees of average (Fig. 1).

### Precipitation

Total precipitation amounts across the state were heaviest in the east and much lower across the west. Most locations east-river received at least an inch for the month. A few locations were close to 2" for the month. Less than half an inch was more common in the west. Several snow events and one rain event in the southeast contributed to the total.

Precipitation was well above average in the southeast from 0.5 to nearly an inch above. Most locations west-river were below average. Average precipitation in December in the state is not large. Thus, large negative deviations are not likely.

Despite the additional precipitation, drought conditions in the state did not improve significantly. The additional precipitation compared to the longer term deficits did not make a dent in the serious precipitation deficits for the month. The additional snow did little to help soil moisture deficits which are one of the largest issues in the drought currently. The current US Drought Monitor Map still showed nearly 2/3 of the state in D3-D4 drought conditions.

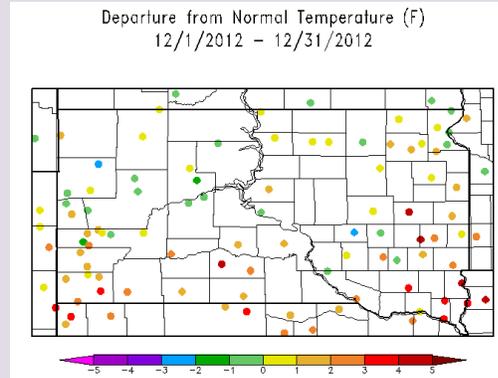


Figure 1. December 2012 departure from average temperatures across South Dakota (High Plains Regional Climate Center)

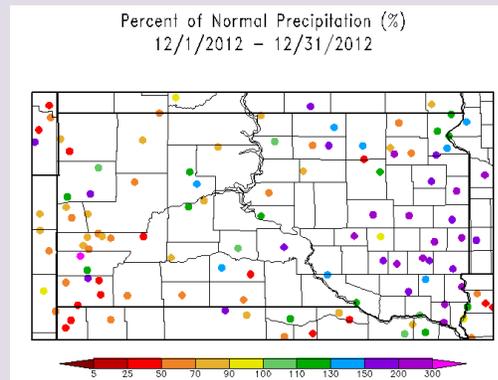


Figure 2. December 2012 percent of normal precipitation across South Dakota (High Plains Regional Climate Center)

# State Spotlight - South Dakota

**Dennis Todey - State Climatologist**  
**Laura Edwards, Gibril Vandy, and Douglas Todey**  
**South Dakota State Climate Office, South Dakota State University**



### **Agricultural Impacts**

There were no major changes to agricultural impacts in the state. Soils did not freeze well until later in the month. The rainfall event in the southeast in the middle of the month helped soil moisture deficits slightly. Most of the rest of the state saw little change in soil moisture.

Surface water continues to be very limited across the state because of drought conditions and freezing temperatures.

Snow conditions have created tougher conditions for cattle. Snowfall totals have not been excessive at this point. Some melting and refreezing have kept the snow from blowing as much. This has been a benefit for cattle and feedlot producers.

### **Water Impacts**

Lakes on the Missouri River system have come in to play again. Downstream states have called on the USACE to maintain flows from the reservoirs to keep Missouri River water flowing into the Mississippi for barge traffic. The USACE have maintained winter and drought management flows maintaining water in the reservoirs.

Most river gauges are ice-affected. Anecdotally, streams are clearly low, even for winter in many places reflecting the long-term issue with dry conditions extending back to last fall.

### **Fire Conditions**

With general snow cover there have been no fire issues.

## State Spotlight - Wyoming

**Tony Bergantino - Assistant State Climatologist**  
**Wyoming State Climate Office, University of Wyoming**



### Snowpack

Percent of median snowpack in Wyoming increased or roughly held its own for the most part at the end of December compared to the beginning of the month. The largest gains were in the south and east while the northwest remained largely unchanged with a few small changes up and down. The Lower Green, Little Snake, Upper North Platte, and Belle Fourche increased by quite a few percent, though when comparing end of November to end of December absolute values, a small change can result in a modest increase in percent compared to the Median. While there were increases, the Big Horn and Tongue River Basins in the north are still below normal at 89% and 71% of their medians respectively. The southern basins of the Little Snake and Upper North Platte are around 80% to 90% of median While improved, the east, comprised of the South Platte, Laramie, Belle Fourche, and Cheyenne River Basins are still only at 60% to 75% of median. At this time of the year, though, 100% of median for the Cheyenne River Basin would amount to only a little over 3 inches snow water equivalent. The basin with the lowest percentage is the Lower North Platte which stands at 29%

### Precipitation

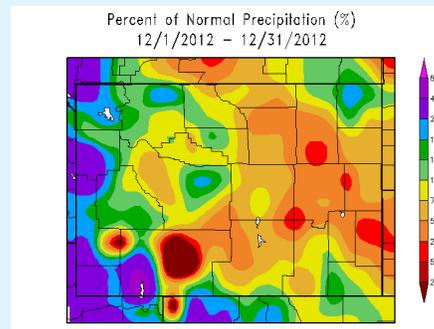
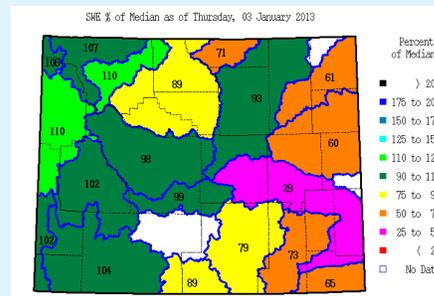
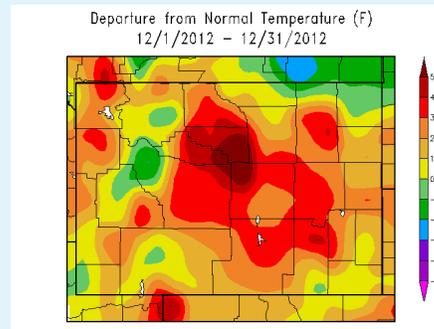
Precipitation was fairly mixed throughout the state in December. With a few exceptions, the eastern half of the state was generally around 75% of Normal or less with about a quarter of the stations being under 50% of their Normals. This was an improvement from November, though, at least as far as how much precipitation was received compared to Normal. The southwest which was, for the most part, quite dry in November saw improvement in December. With the continued exception of the Rock Springs area, most stations in the western counties (Teton, Lincoln, Sublette, and Uinta) and Sweetwater County were at or well above Normal. Big Horn and Washakie counties, which received well above normal precipitation in November, were somewhat drier in December although still at or just a bit below Normal.

### Temperature

The above-Normal temperatures seen in November continued in many parts of the state during December although not to the same extent. Unlike November, there were a few stations experiencing average temperatures up to 2°F below Normal. Another handful of stations were up to 1°F below their Normal. On the other end, though, areas such as parts of Washakie, Hot Springs, and Fremont counties were upwards of 5°F above the Normal. The cooler temperatures for December resulted from the latter part of the month being well below Normal thanks in part to a persistent snow cover over most of the state. This cold is expected to continue into the first part 2013. There were some areas of improvement in the drought status in December. D0 in the northwest was expanded to cover most of Teton county. D3 was pulled back from northwest Uinta County and out of southern Lincoln County so that only a small swath remains in extreme eastern Lincoln County. Unfortunately there was also some degradation. D4 was added to a small area in central Sweetwater County. There was no improvement in the D4 in the east and the two areas of D3 were merged to now include the southern half of Johnson County, all of Natrona and Converse counties, all but extreme southeast Carbon County, and almost the northern half of Albany County. This expansion left almost two-thirds of Wyoming in D3 or D4.

This report was prepared by the Wyoming State Climate Office, which is part of the Wyoming Water Resources Data System at the University of Wyoming.

More information can be found at: <http://www.wrds.uwyo.edu> and [http://www.wrds.uwyo.edu/sco/climate\\_office.html](http://www.wrds.uwyo.edu/sco/climate_office.html). Special thanks to the National Weather Service's Riverton and Cheyenne Offices, the NRCS Casper Office, the Cheyenne US Geological Survey Office, and Wyoming CoCoRaHS observers for supplying much of the data and information used in this report.



Above: (top) December 2012 precipitation as a percentage of historical averages (vs. 1981-2010 normals). Courtesy HPRCC.

(middle) End of December snow water equivalent as a percentage of historical averages (vs. 1981-2010 normals). Courtesy of the NRCS National Water and Climate Center, map by Wyoming State Climate Office.

(bottom) Mean December 2012 temperatures from historical averages (vs. 1981-2010 normals) for Wyoming. Courtesy HPRCC.

# About the High Plains Regional Climate Center

The High Plains Regional Climate Center (HPRCC) operates out of the University of Nebraska - Lincoln (UNL) in Lincoln, Nebraska. As one of 6 regional climate centers throughout the nation, HPRCC works closely with other organizations such as the National Climatic Data Center (NCDC), Local and Regional National Weather Service (NWS) Offices, and other climate services organizations such as the National Drought Mitigation Center (also located at UNL) to provide climate data services and specialized climate products.

## For More Information Online

High Plains Regional Climate Center: <http://hprcc.unl.edu>

High Plains Regional Climate Services: <http://hprcc.unl.edu/services>

CLIMOD: <http://climod.unl.edu>

Regional Climate Centers and ACIS: <http://www.rcc-acis.org>

National Weather Service: <http://www.weather.gov>

National Climatic Data Center: <http://ncdc.noaa.gov>

University of Nebraska - Lincoln: <http://www.unl.edu>

National Drought Mitigation Center: <http://drought.unl.edu>

Climate Prediction Center: <http://www.cpc.noaa.gov>

NOAA Storm Prediction Center: <http://www.spc.noaa.gov>



Photo of the Nebraska Sandhills by Bill Sorensen - Senior Programmer - HPRCC

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