

Nebraska Ag Climate Update

December 13, 2013

State Summary

The story for our weather recently has been the frigid cold temperatures. Air temperatures were below 0°F with wind chills 20 to 30°F below zero for many parts of Nebraska. The first 10 days of December had average temperatures 6-9°F below normal in the southeast and more than 15°F below normal in the northwest. We are accustomed to having extreme temperature fluctuations in November (*Table 1*) and early December, but the latest stretch of cold weather has tested our hardiness. *Table 2* shows the record maximum and minimum temperatures in December for locations in Nebraska and around the nation. As you can tell, Nebraska has some of the more extreme temperature ranges.

On the precipitation side, many parts of Nebraska saw below normal precipitation through November and didn't see significant moisture until last week's snowfall blanketed much of the state. The series of winter storms to start the month dropped snowfall on most of the continental U.S., including 4-5" in Hastings, 9-10" in Scottsbluff, 1-2" in North Platte, 11-12" in Valentine, and 5-6" in Lincoln (*Figure 1*).

Winter Manure Applications

Winter applications of manure are not recommended, but you may need to do so because of limited storage, time restrictions, or an early fall freeze. Here are a few tips for best management practices for winter applications:

- Apply manure on level ground to minimize runoff.
- Do not apply on snow due to the potential loss with snow melt.
- Avoid liquid applications on frozen ground.
- Try to avoid any late winter applications.

Table 1: Review of November 2013 Nebraska

Temperature and Precipitation Data

Site (West to East)	Avg High Temp (°F)	Avg Low Temp (°F)	Avg Temp (°F)	Departure from Normal Temp (°F)	Highest Temp in Nov. (°F)	Lowest Temp in Nov. (°F)	Total Monthly Precip. (in)	Departure from Normal Precip. (in)	Total Snowfall (in)
Scottsbluff	51.4	21.5	36.5	0.7	69	-10	0.85	0.19	4.9
North Platte	50.2	21.3	35.7	0.1	68	7	0.51	-0.13	3.1
McCook	53.7	24.6	39.2	1.0	71	10	0.48	-0.47	*
Valentine	49.0	20.2	34.6	0.2	67	-8	0.52	-0.13	5.8
Broken Bow	48.1	20.9	34.5	-1.3	66	4	0.41	-0.54	*
Kearney	49.9	25.2	37.5	0.5	63	9	0.62	-0.40	*
Hastings	49.9	25.1	37.5	-1.2	64	7	1.00	-0.29	0.4
Norfolk	48.3	23.8	36.1	-0.3	64	5	0.83	-0.54	0.9
Lincoln	50.0	23.5	36.7	-2.2	64	6	1.22	-0.21	0.2
Falls City	50.7	27.3	39.0	-0.2	73	10	0.98	-0.98	*

Preliminary monthly data from National Weather Service Observation Stations

* Indicates missing or unknown data

Table 2: Record Maximum and Minimum Temperatures for December

	Max Temp °F	Min Temp °F		Max Temp °F	Min Temp °F
Nebraska	72	-42	Nationwide	72	3
Alliance	72	-42	Cleveland, OH	72	3
Valentine	76	-39	Casper, WY	58	-17
Imperial	79	-34	Minneapolis, MN	68	-29
Holdrege	80	-29	Denver, CO	72	-19
Broken Bow	77	-30	St. Louis, MO	75	-16
Aurora	78	-28	Fargo, ND	57	-32
Hartington	72	-33	Billings, MT	75	-41
Ashland	72	-27	Ft. Lauderdale, FL	89	34
Falls City	75	-25			

*Data source: NOAA Regional Climate Centers—Date ranges vary among sites

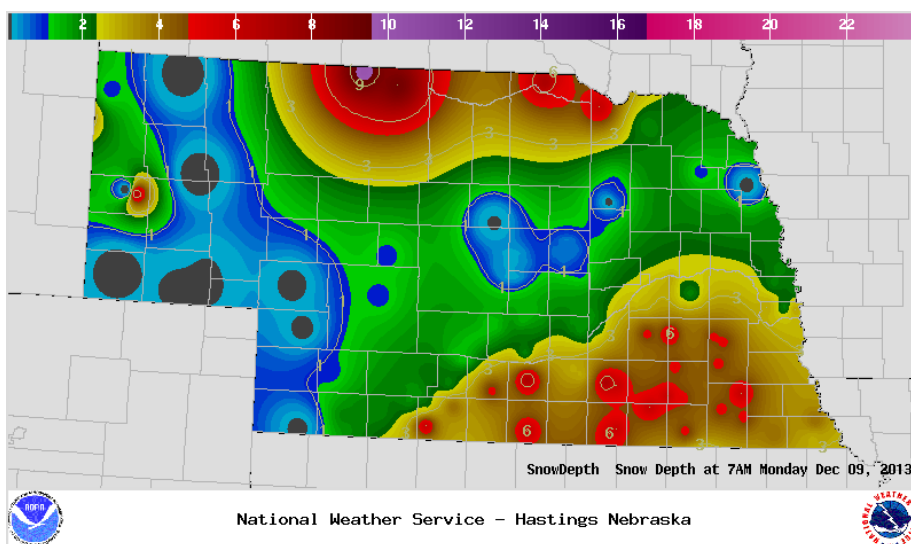


Figure 1: The map above shows the estimated snow depth in Nebraska as of 7:00 am on Monday, December 9th. This map is using experimental data and is not official.

Know how. Know now.



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All of these issues may increase your chance of contamination of water bodies and increase nutrient loss. It is also important to make sure that you are following all guidelines and best management practices in Title 130 from the Nebraska Department of Environmental Quality. For more manure management information, visit manure.unl.edu.

Looking Ahead

The forecast for the next couple weeks is positive if you are not a fan of bitter cold temperatures. A ridge will build over the southwest part of the U.S.,

bringing above normal temperatures to the desert southwest and up into Nebraska for the next 5-7 days. The strong trough that has been dominating our weather the last couple weeks will shift farther north, which will allow some of the warm temperatures to work our way; however, this trough is not going far and may bring cold temperatures right back down from Canada during the week of Christmas. For December 17-25, most of Nebraska has increased odds for above normal precipitation. A system is expected to move through the end of next week, which may bring in some more snowfall. The snow cover over the area, and any future snow, will also play a role in daily temperatures. The depth of snow and timing of the snow melt will hinder the predictability of the temperature forecast. All of this said, the temperature forecasts could have large swings one direction or another. Looking farther out, the 1 month and 3 month temperature and precipitation outlooks still do not give us much confidence. The ENSO neutral conditions are still limiting the long-term predictability, thus keeping the outlooks shortened to only a couple weeks.

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Table 3: Historical Temperature and Precipitation Data for Christmas Day in Nebraska

	Avg. Max Temp °F	Avg. Min Temp °F	Highest Temp °F	Lowest Temp °F	Snowfall >=1 inch	Snow cover >= 1 inch
Alliance	38.8	13.2	62	-14	9%	23%
Ainsworth	36.4	14.2	65	-21	10%	45%
West Point	32.3	12.5	58	-20	12%	22%
Broken Bow	37.4	12.1	67	-24	4%	31%
Ashland	34.9	14.7	59	-20	7%	23%
Imperial	41.5	14.8	67	-11	8%	29%
Hastings	36.6	15.2	62	-13	10%	34%
Falls City	37.4	17.3	66	-18	6%	21%

* Data from National Weather Service Observation Stations (date ranges vary by location)

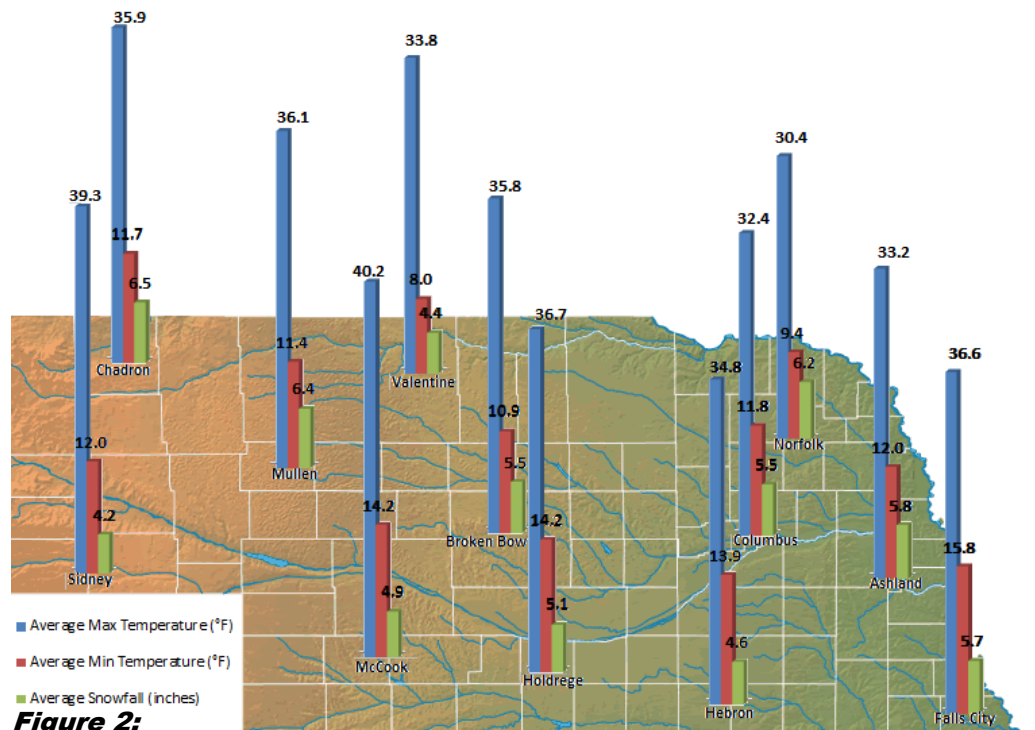


Figure 2: Long-term January Averages for 12 sites in Nebraska

Average maximum temperature, minimum temperature, and snowfall from ~1893 to present. Data from High Plains Regional Climate Center

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