

MONTHLY CLIMATE SUMMARY, FEBRUARY 2011
NIU WEATHER SERVICE: DE KALB, ILL.

Day	Record HI	Record LO	Average HI	Average LO	Obs. HI	Obs. LO	Obs. Avg.	CDD	HDD	GDD	Precip. (in)	Snowfall (in)
1	65	-18	32	15	24	19	22	0	43.5	0	0.17	3.0
2	47	-20	31	16	22	14	18	0	47	0	0.83	15.7
3	52	-23	30	16	20	-10	5	0	60	0	0.00	0.0
4	54	-18	29	13	12	-8	2	0	63	0	0.00	0.0
5	58	-20	27	11	23	3	13	0	52	0	0.00	0.0
6	55	-15	28	14	26	7	17	0	48.5	0	0.18	2.7
7	52	-16	30	14	31	15	23	0	42	0	0.01	T
8	56	-16	30	14	27	-3	12	0	53	0	T	T
9	59	-26	31	15	12	-3	5	0	60.5	0	0.00	0.0
10	55	-21	31	15	8	-13	-3	0	67.5	0	0.00	0.0
11	60	-15	30	15	14	-13	1	0	64.5	0	0.00	0.0
12	55	-21	31	13	29	8	19	0	46.5	0	0.01	T
13	59	-26	31	14	34	20	27	0	38	0	0.00	0.0
14	60	-12	32	16	42	29	36	0	29.5	0	0.00	0.0
15	64	-17	34	17	42	25	34	0	31.5	0	0.00	0.0
16	56	-14	32	17	37	25	31	0	34	0	0.06	0.0
17	57	-16	33	17	46	36	41	0	24	0	0.00	0.0
18	56	-21	34	19	51	33	42	0	23	0	T	0.0
19	66	-17	37	19	46	24	35	0	30	0	0.00	0.0
20	62	-25	38	23	39	24	32	0	33.5	0	0.03	0.0
21	65	-11	39	23	34	31	33	0	32.5	0	0.77	0.0
22	64	-13	38	23	31	23	27	0	38	0	0.07	0.6
23	69	-12	37	22	27	23	25	0	40	0	T	T
24	62	-11	37	21	33	25	29	0	36	0	0.15	0.1
25	66	-12	36	20	34	25	30	0	35.5	0	0.03	0.4
26	69	-11	37	20	34	19	27	0	38.5	0	0.08	0.7
27	68	-6	38	21	31	21	26	0	39	0	0.04	T
28	63	-5	37	21	31	22	27	0	38.5	0	0.22	0.0

Temperature

1981-2010 AVG. HI: 33.2 (F)
 1981-2010 AVG. LOW: 17.2 (F)
 1981-2010 AVG. TEMP: 25.2 (F)
 February 2011 AVG. HI: 30.0 (F)
 February 2011 AVG. LO: 15.0 (F)
 February 2011 AVG. TEMP: 22.5 (F)

Precipitation

February 2011 TOTAL: 2.65 in.
 February AVG: 1.55 in.
 February 2011 SNOW: 23.2 in.
 February SNOW AVG: 7.3 in.
 2011 liquid-eq. YEAR TO DATE: 3.50 in.
 liquid-eq. YEAR TO DATE AVG: 3.02 in.
 2010-11 Seasonal SNOW TO DATE: 48.2 in.
 Seasonal SNOW TO DATE AVG: 29.1 in.

Degree Days

COOLING: 2/11: 0
 1/11-NOW: 0
 HEATING: 2/11: 1189.5
 7/10-NOW: 5320.5
 GROWING: 2/11: 0
 1/11-NOW: 0

Discussion

February 2011 ended with a negative anomaly in temperature. The mean temperature was 22.5 degrees, 2.7 degrees below the historical (30-year, 1981-2010) average of 25.2 degrees. Temperatures were coldest from the beginning of the month through the 12th; during that period, the coldest temperature of the winter, -13 degrees, occurred on the morning of the 10th and was the coldest temperature recorded since January 2009. From the 13th until the 22nd, temperatures were above the historical average and allowed thawing conditions for the first time since late December. The first 40-degree temperature of the year (and since late December) was recorded on the 14th, and the first 50-degree temperature of the year (and since November) was recorded on the 18th. Temperatures were near the historical average for the last six days of the month.

The month began with a historic blizzard. A special summary of the blizzard is given on the next page. Otherwise, snowfall was relatively sparse through the month, with the largest additional snowfall totaling 2.7 in. recorded on the 6th. However, the monthly total snowfall of 23.2 in. was the second-greatest February total on record since 1896, trailing only February 1994's 26.4 in. Liquid equivalent precipitation totaled 2.65 in., 171 percent of the historical average, and 68 percent of that total was recorded in association with the blizzard or on the morning of the 21st.

Climatological winter 2010-2011 ended on 28 February. The mean temperature for the period was 19.1 degrees, which was some 3.2 degrees below the historical (30-year, 1971-2000) average of 22.3 degrees and ranked 16th coldest on record since 1896 (or colder than 86 percent of all winters). (December was coldest.) Snowfall totaled 48.2 in., which was 180 percent of the historical (30-year, 1971-2000) average of 26.8 inches and ranked fourth highest on record (after the totals recorded during the winters of 1978-79, 2007-08, and 2008-09) (or snowier than 97 percent of all winters). Liquid-equivalent precipitation totaled 4.82 in., which was 95 percent of the historical (30-year, 1971-2000) average and ranked 49th greatest on record (or wetter than 57 percent of all winters).

Phil Jagielo, Jeff Kilburg, Dan Neirman, Rob Niesen, and Jessica Troike—Cooperative Observers; Daniel J. Brouillette and Alecia Osborne—Co-Weather Director
 Special thanks are extended to Dan Neirman and Rob Niesen for taking intermediate snowfall observations during the historic blizzard on the 1st and 2nd.

This summary was prepared by Daniel J. Brouillette, 28 February 2011. Forecast Information (updated once daily at approx. 7:30 am): (815) 753-1623

Climate Website: <http://climate.niu.edu>

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Special Summary of the Historic 1-2 February 2011 ("Groundhog Day") Blizzard

An historic blizzard affected much of the United States and southeastern Canada in the first days of February. Its most severe effects were observed across northern Illinois, where up to two feet of snow were recorded in the Chicago area. The culprit was a strong storm system whose surface low pressure centre tracked across the Missouri Bootheel, southern Illinois, and into southern and central Indiana.

Snow began to fall in association with warm-air advection forcing during the early morning of the 1st, leaving 3.0 in. by 0700 local time. The snowfall took on a more squall-like character in association with lake-effect (from Lake Michigan) snow showers during the morning and midday of the 1st, while east-northeast winds increased steadily. By mid-afternoon, ground blizzard conditions began to develop, as winds reached approximately 40 MPH, temperatures dropped slightly, and visibilities dropped to ¼ mile at times. By late-afternoon, the deformation band began to progress into northern Illinois. Snow continued rather steadily through the evening and into the early hours of the 2nd. The heaviest snow occurred between 2000 and 0100 amid wind gusts up to 55 MPH and visibilities frequently not much greater than zero. Blizzard conditions began to subside by dawn on the 2nd.

The effects of the blizzard on society were substantial. Many motorists were stranded in their vehicles in rural areas of DeKalb and Kane counties, necessitating rescues by local snowmobile club members since emergency vehicles were unable to traverse roads that had snow drifts up to eight feet deep. All rural roads and interstates were closed to traffic until at least Wednesday morning; some state trunklines were not opened until late Thursday (and, even then, some were down to one lane due to the resilience of the snow drifts to conventional snow removal equipment), and some county and township trunklines were not easily passable for several days. A brief spike in gasoline prices was noted as were some shortages of food at local grocery stores. All campuses of Northern Illinois University were shut down on both the 2nd and 3rd.

Below is a table containing observations taken and recorded by Dan Neirman and Rob Niesen. The storm total snowfall was 18.7 in., which represented the second largest storm total accumulation on record since 1896 after the January 1967 blizzard's 19.1 in. The 15.7 in. recorded between 0700 on the 1st and 0700 on the 2nd represented the greatest 24-hour snowfall total on record. Snow depths reached 27 in. after the blizzard and another snowfall on the 6th, the third greatest on record after 28 in. and 29 in. were recorded on several different days in January and February 1979.

DATE AND TIME OF OBSERVATION	LIQUID EQUIVALENT SINCE LAST OBSN. (inches)	NEW SNOWFALL SINCE LAST OBSN. (inches)	SPECIAL REMARKS (of visibility, intensity of precipitation, observation methods, etc.)
1300, 1 Feb.	0.08	1.8	Lake-effect snow; much blowing and drifting of the snow; drifts up to 1 ft.
1900, 1 Feb.	0.17	2.7	Much blowing and drifting of snow; drifts over a foot; visibility 1/8 mile; totals estimated by averaging.
0100, 2 Feb.	0.40	7.8	Blizzard conditions; drifts over 2 ft.; totals estimated by averaging.
0700, 2 Feb.	0.18	3.4	+BLSN; drifts to 3 ft.; totals estimated by averaging.

