

February 2007 Climate Narrative for Southwest Lower Michigan

Overview

February 2007 will be remembered as being the snowiest February since official records began in 1904 for Grand Rapids and one of the coldest Februaries across much of Southwest Lower Michigan. Table 1 summarizes recorded temperature, precipitation, and snowfall for the three official climate sites in Southwest Lower Michigan. It should be noted that 35.5 inches of snow was reported in February of 1900, but this is not part of the official period of record and is therefore not included.

Table 1. Temperature, precipitation, and snowfall amounts for February 2007.

Location		Temperature (degrees F)	Precipitation (inches)	Snowfall (inches)
Grand Rapids	<i>Reported</i>	18.6	1.98	33.6
	<i>Normal</i>	25.0	1.54	12.2
	<i>Departure</i>	-6.4	+0.44	+21.4
Lansing	<i>Reported</i>	17.2	0.47	7.6
	<i>Normal</i>	24.0	1.45	10.6
	<i>Departure</i>	-6.8	-0.98	-3.0
Muskegon	<i>Reported</i>	20.5	1.45	27.5
	<i>Normal</i>	25.4	1.58	18.3
	<i>Departure</i>	-4.9	-0.13	+9.2

February of 2007 was the coldest since 1979 at Grand Rapids and Lansing and the coldest since 1994 at Muskegon. It was in the top twenty on the list of the coldest Februaries in over 100 years of official records at Grand Rapids, Lansing and Muskegon.

Precipitation for the month was above normal at Grand Rapids, well below normal at Lansing, and just below normal for Muskegon.

Aside from the record snowfall at Grand Rapids, snow totals were below normal at Lansing and above normal at Muskegon.

Temperatures

Temperatures averaged at least ten to twenty degrees below normal through the first two and a half weeks of the month (Fig. 1-Fig. 3). The coldest weather occurred during the first week of February. Temperatures on Sunday, February 4th were bitterly cold with a maximum temperature of only 4 degrees at Muskegon. Skies that night cleared across the area from Grand Rapids to Lansing, allowing temperatures to plunge to the coldest readings of the winter on the morning of the 5th, when Grand Rapids fell to 12 below zero and some locations went down to 20 below zero.

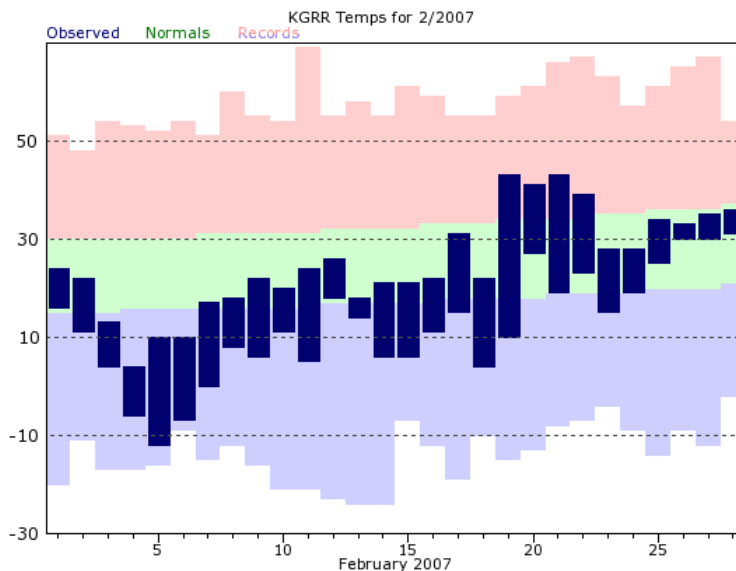


Fig. 1. Grand Rapids daily temperatures for February 2007. Dark blue bars represent the temperature range recorded for each day. The green area represents the normal range of temperatures. The upper (lower) bound of the pink (blue) shaded area represents the record maximum (minimum) temperature for that day.

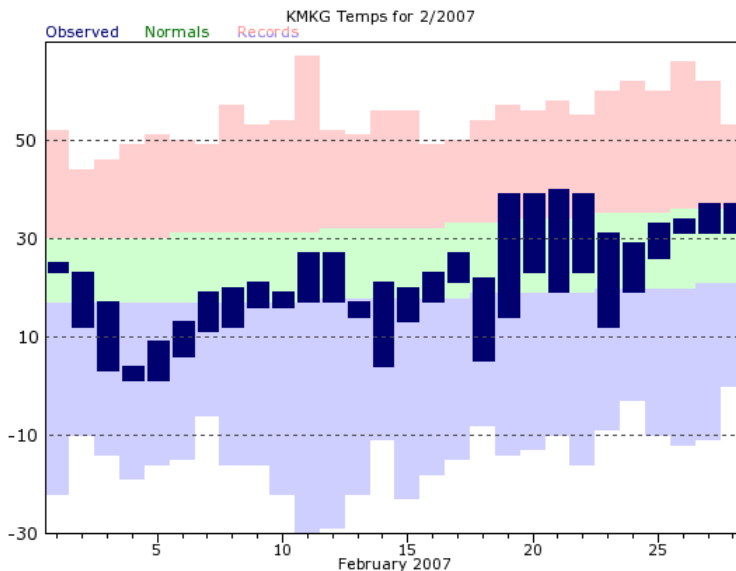


Fig. 2. As in Fig. 1, except for Muskegon.

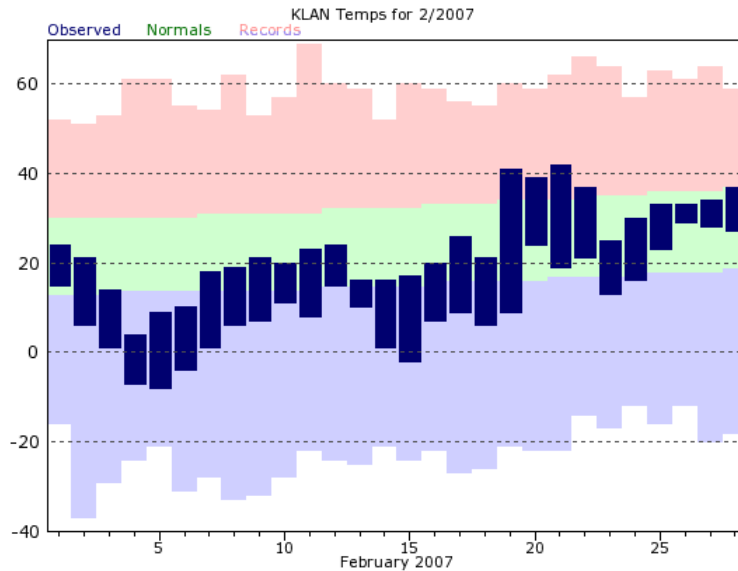
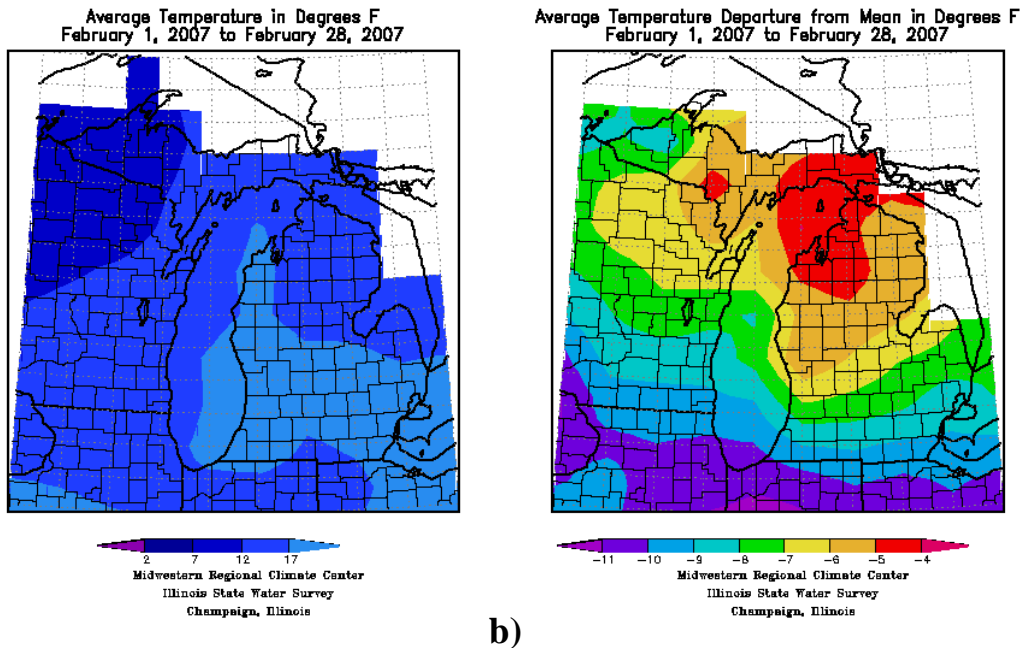


Fig. 3. As in Fig. 1, except for Lansing.

Temperatures finally began to moderate to near normal levels on the 19th and then averaged near to slightly above normal through the remainder of the month.

Across the rest of Southwest Lower Michigan, average temperatures were relatively uniform

Fig. 4). The coldest departures from normal were over the far south.



a)

b)

Fig. 4. Western Great Lakes average daily temperature (a) and departure from normal (b) for February 2007 (courtesy of the Midwestern Regional Climate Center).

Precipitation

February radar and gauge-estimated precipitation totals exceeded 5 inches in spots just west and southwest of Grand Rapids (Fig. 5a). This was due to early February winter storms (Figs. 7 and 8) and other lake effect snowfall events that occurred later in the month with northwest winds in the lower atmosphere (not shown). Consequently, precipitation was above normal from Grand Rapids to Lake Michigan (Fig. 5b). For the rest of Southwest Lower Michigan, precipitation totals were close to normal or even slightly below normal. This is reflected in the precipitation totals at Lansing (Table 1).

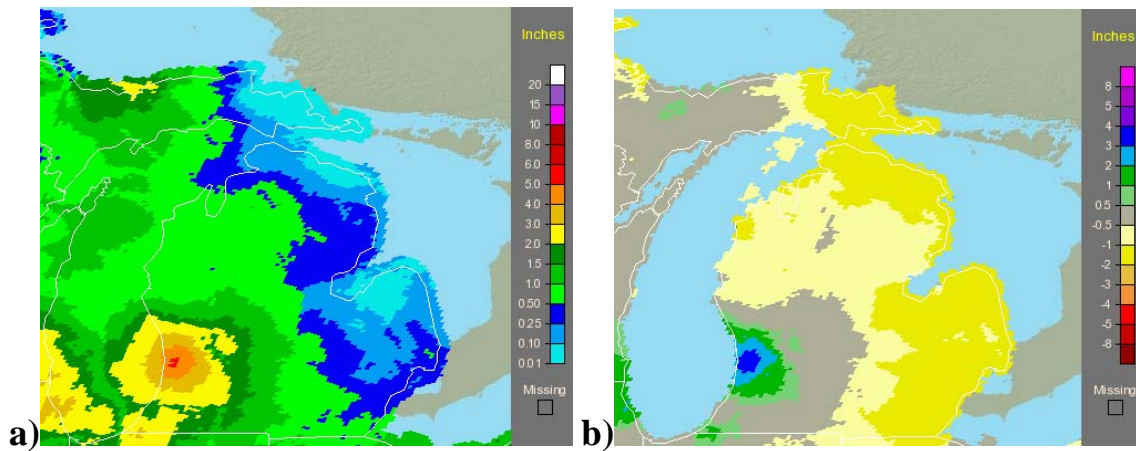


Fig. 5. Western Great Lakes total precipitation (a) and departure from normal (b) in inches for February 2007.

Snowfall

As suggested by Table 1, February snowfall totals decreased from west to east (Fig. 6a). Snowfall was well above normal to the west and somewhat below normal to the east (Fig. 6b).

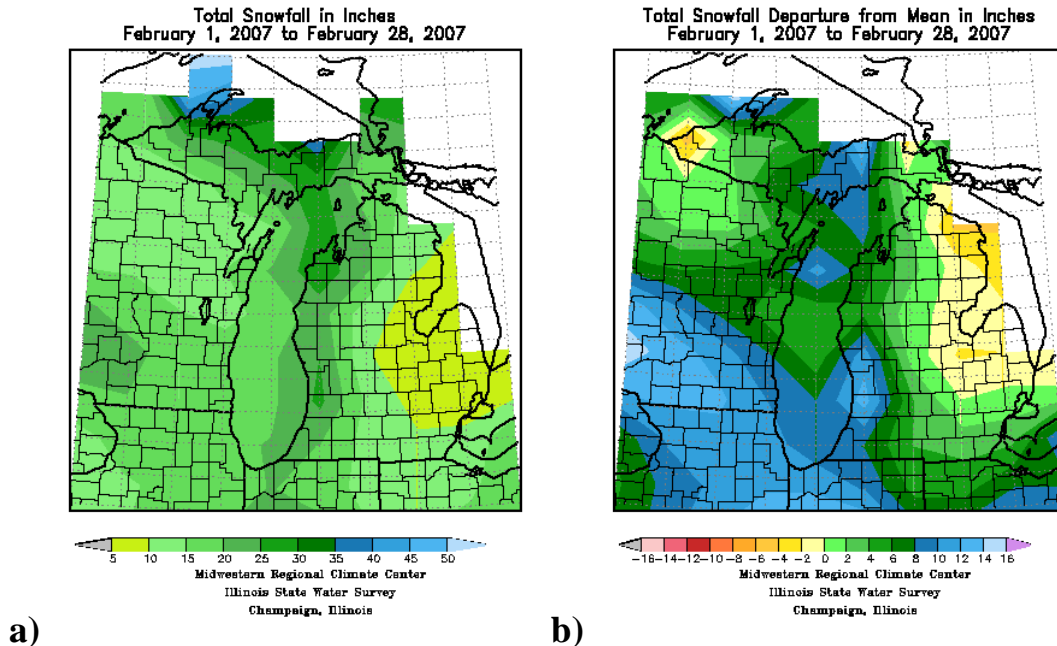


Fig. 6. Western Great Lakes total snowfall (a) and departure from normal (b) for February 2007 (courtesy of the Midwestern Regional Climate Center).

Lake effect snow was common through the first 18 days of the month as arctic air prevailed. Blizzard conditions arrived with the arctic onslaught on February 3rd and almost a foot of snow fell at Grand Rapids that day (Fig. 7). Due to extensive snowfall from an earlier storm that ended on February 1st (Fig. 8), snow depths just west of Grand Rapids exceeded 20 inches in some locations by the 4th.

From February 4th to the 18th, snow depths typically ranged from 3 to 6 inches around Lansing and Jackson to around a foot from Grand Rapids to Kalamazoo. Farther west near Lake Michigan, snow depths of one to two feet were typical from Ludington to South Haven.

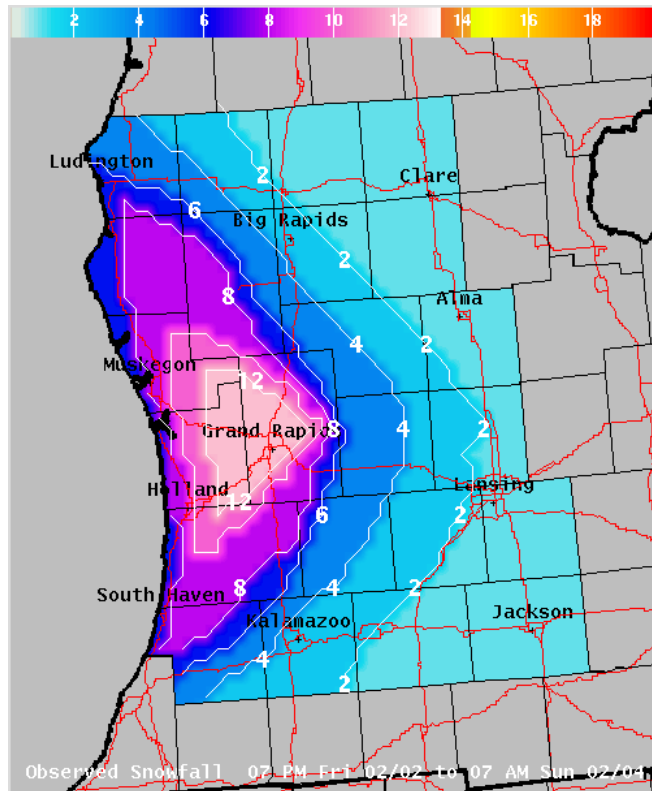


Fig. 7. Estimated snowfall totals from 7 PM on February 2nd through 7 AM on February 4th.

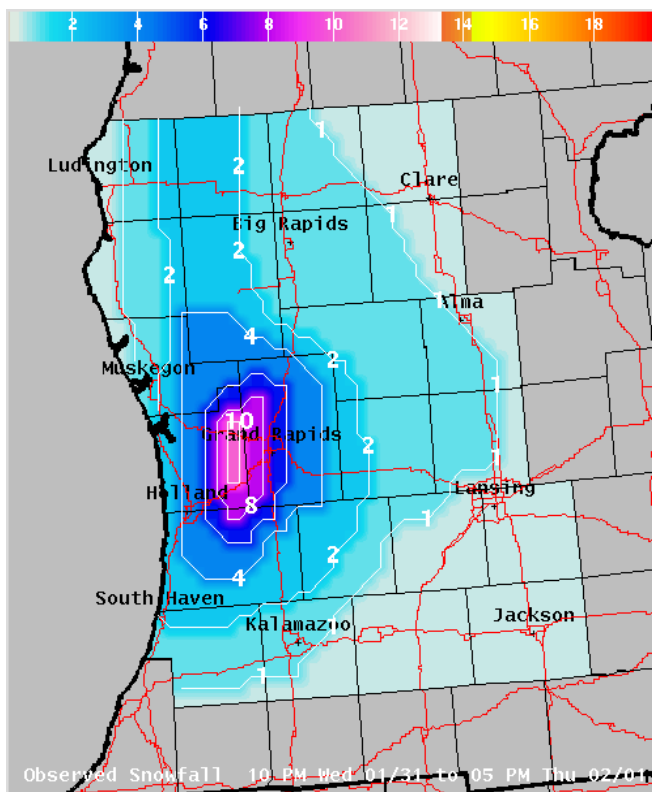


Fig. 8. Estimated snowfall totals from 10 PM January 31st to 5 PM February 1st.

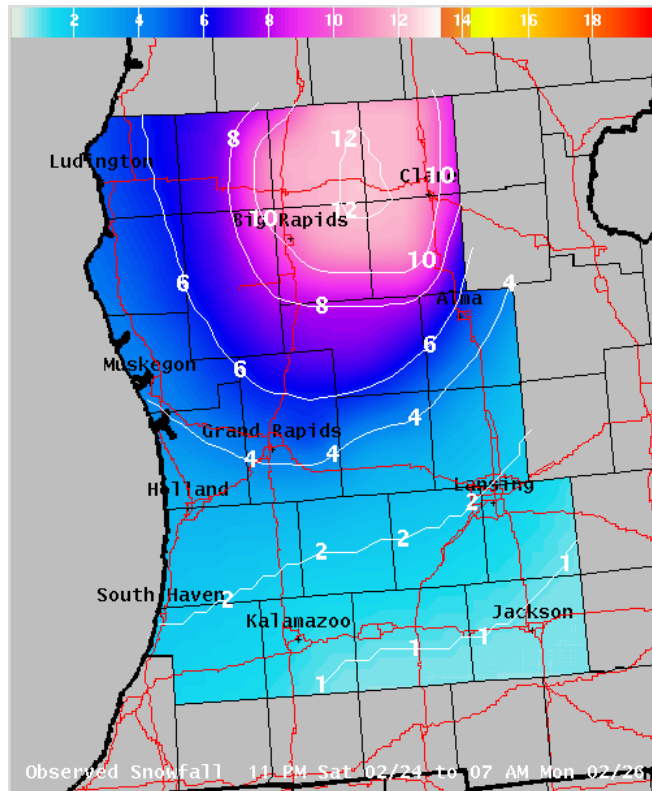


Fig. 9. Estimated snowfall totals from 11 PM February 24th to 7 AM February 26th.

Warmer temperatures after the 18th brought an end to the lake effect snow. However, two significant winter storms brought heavy snow and mixed precipitation across Southwest Lower Michigan. Sleet and ice fell on the 25th south of Grand Rapids while up to a foot of snow fell to the north (Fig. 9). Another storm arrived on the night of the 28th, which caused February to end with snow and sleet falling across the region - a fitting end to a record-setting month.