November 2013 Climate Summary for Southwest Lower Michigan

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Overview

November ended up being cooler than normal with near normal precipitation. Snowfall was above normal near the lake shore with below normal amounts inland.

The main highlights of the month included a late season severe weather outbreak on the 17th and the first significant snowfall of the season for the lake shore communities on Thanksgiving Day. On the 17th, a very deep low pressure system moved through the Great Lakes region, bringing unseasonably warm air and moisture to the area. Temperatures started the day in the 50s and 60s. Thunderstorms developed west of the state during the afternoon hours and raced eastward. A squall line formed which produced wind gusts in the 50 to 60 mph range, but also helped spawn some tornadoes.

The entire southwest portion of the state of Michigan was placed in either a moderate or high risk for severe weather by the Storm Prediction Center, a rarity for our area and even more so for November. Destructive storms moved through during the afternoon hours and produced widespread wind damage as well as a few EF-0 tornadoes. The tornadoes were determined to have touched down in far eastern Muskegon County, southern Newaygo County, and possibly into Mecosta, Clare, and Isabella counties. In addition, emergency management in Ingham County determined a brief tornado touched down in Leslie. The tornadoes produced some extensive tree damage as well as minor structural damage. Straight-line wind damage was reported in the Mattawan area as well as other areas impacted by the squall line. Strong winds developed later that night in association with pressure gradient force, producing wind gusts over 60 mph across portions of West Michigan and knocking out power to tens of thousands.

Cold arctic air dominated the final week of the month, helping generate snowfall by Thanksgiving. The region received widespread 1 to 3 inches with the lake shore receiving far more, in some cases 5 to 8 inches. This made for a White Thanksgiving and a record-breaking one at Muskegon, with 6.5 inches falling on the snowiest Thanksgiving recorded.

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Table 1. Reported temperature, precipitation, and snowfall amounts for November 2013 at primary climate stations in Southwest Lower Michigan.

Location		Average Temperature (°F)	Precipitation (inches)	Snowfall (inches)
Grand Rapids	Observed	37.8	3.75	2.2
	Normal	40.1	3.51	6.8
	Above/Below Normal	- 2.3	+ 0.24	- 4.6
Lansing	Observed	36.7	2.13	0.7
	Normal	39.6	2.78	3.4
	Above/Below Normal	- 2.9	- 0.65	- 2.7
Muskegon	Observed	39.3	3.39	8.9
	Normal	40.2	3.36	6.0
	Above/Below Normal	- 0.9	+ 0.03	+ 2.9

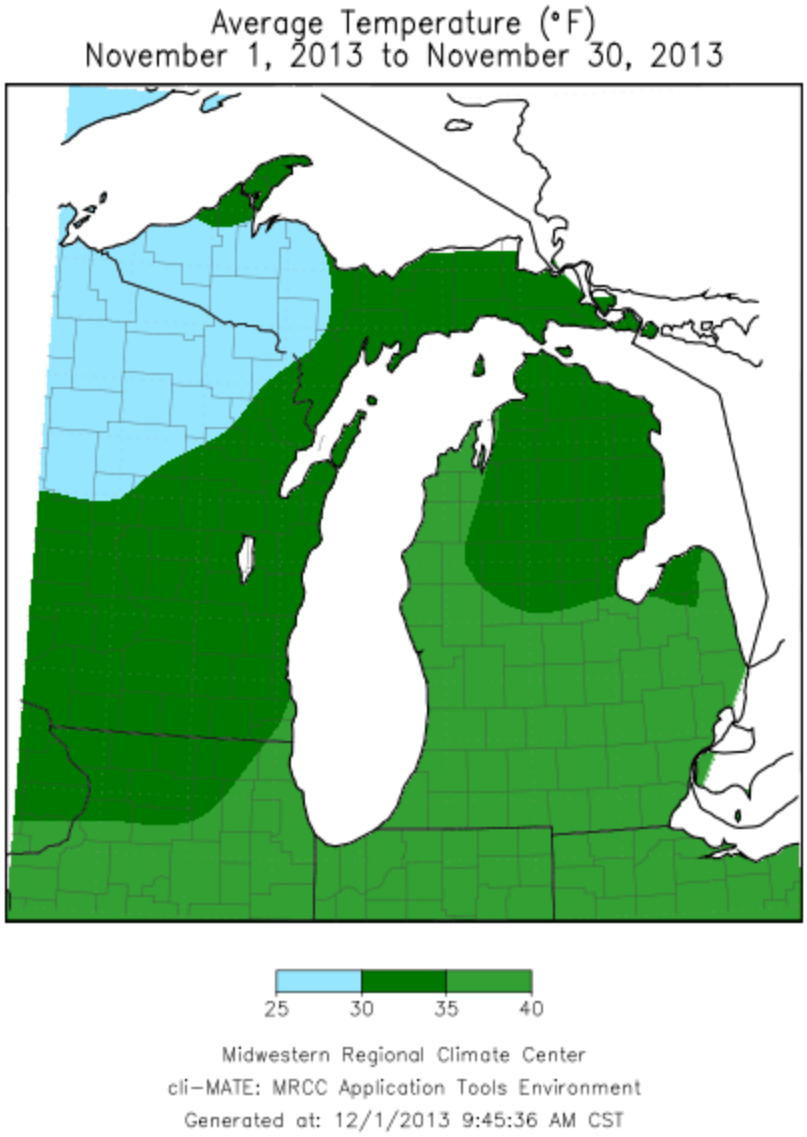

Figure 1. Average temperature (°F) for November 2013.

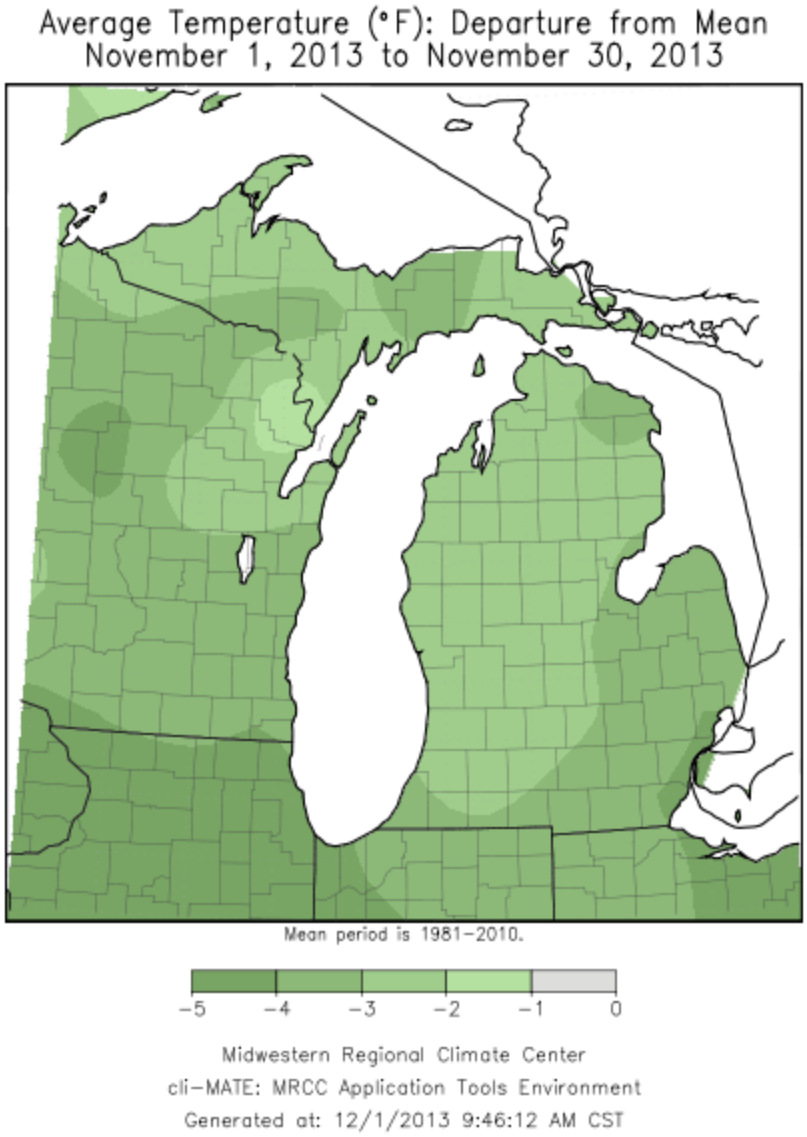

Figure 2. Average temperature departure (°F) for November 2013.

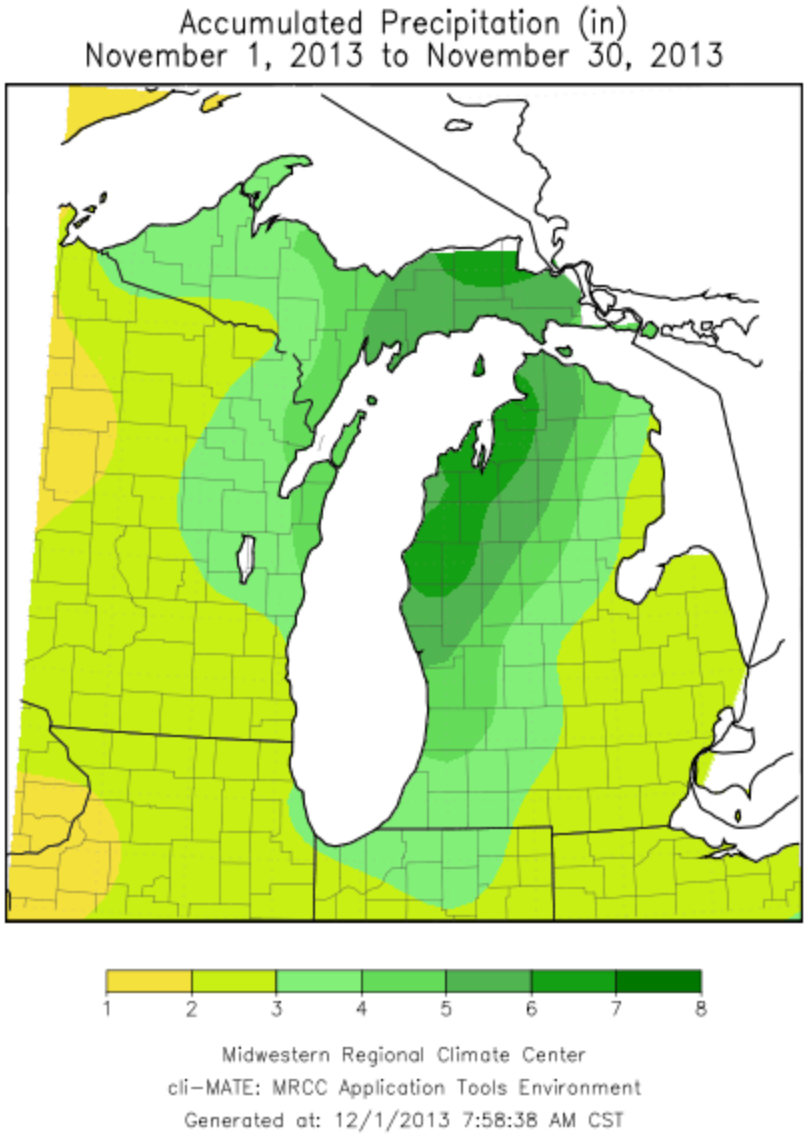

Figure 3. Total precipitation (in inches) for November 2013.

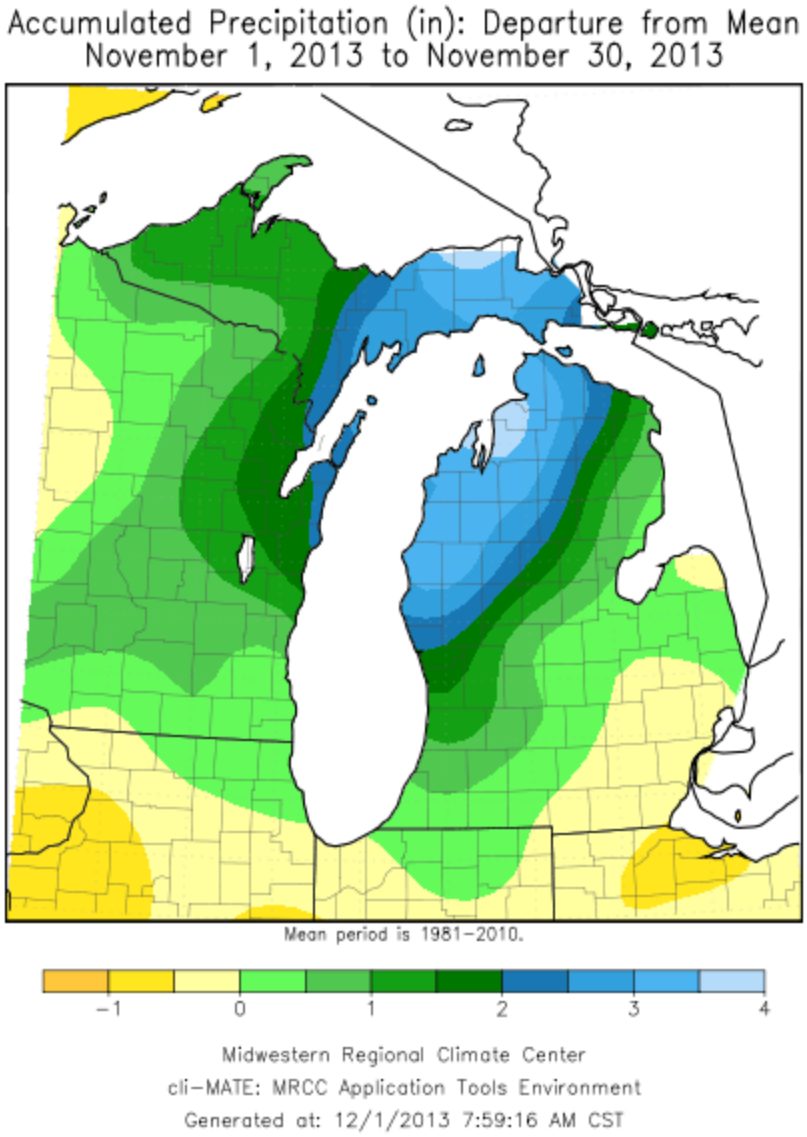

Figure 4. Accumulated precipitation departure (in inches) for November 2013.

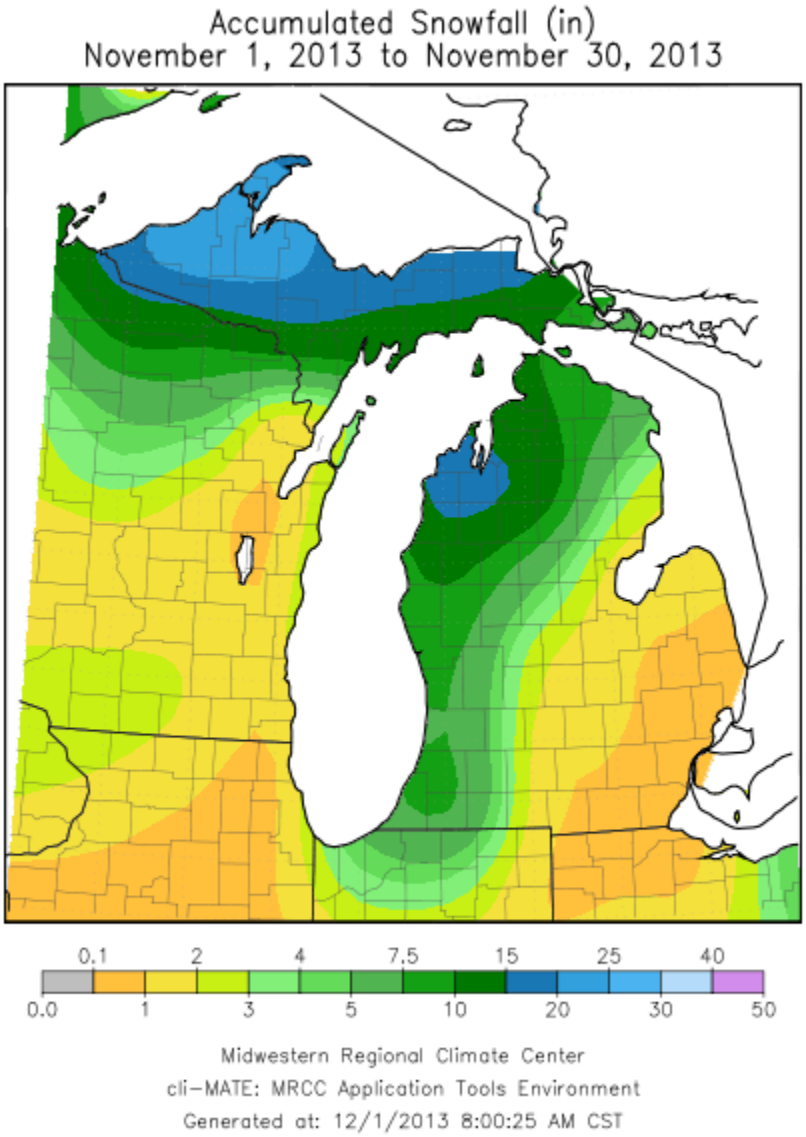

Figure 5. Total snowfall (in inches) for November 2013.

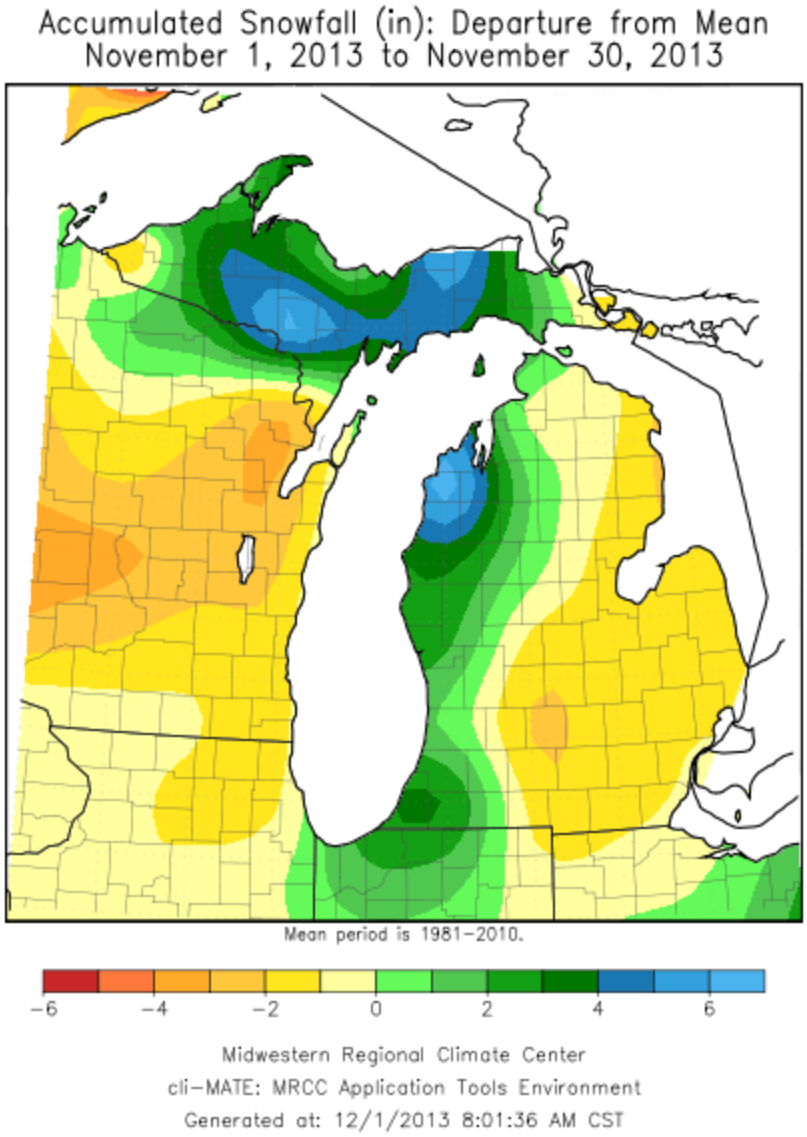

Figure 6. Accumulated snowfall departure (in inches) for November 2013.