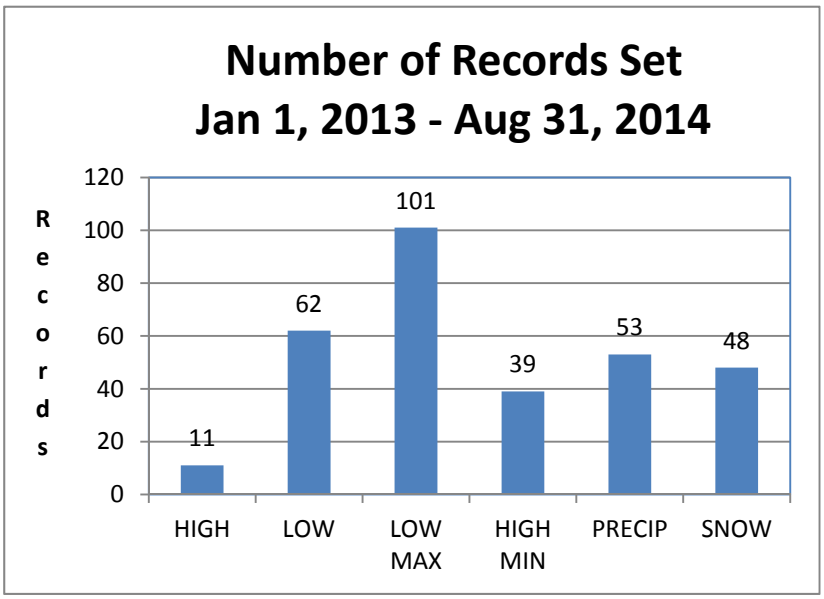
An Analysis of Daily Record Temperatures and Precipitation in Northeast Wisconsin

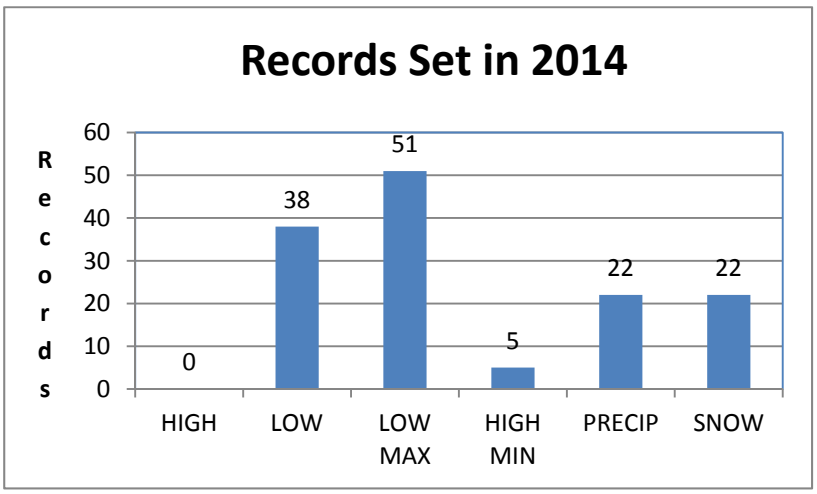
Only two and a half years ago, north-central and northeast Wisconsin experienced the warmest March and spring (2012) on record, eclipsing the previous records set in 1910. At some locations, March 2012 ended up warmer than April 2012, which had never happened before!

However, weather patterns inevitably go in cycles and since January 2013, northeast Wisconsin has been locked in a relatively cool pattern. To highlight this fact, let's examine all the records during the period from January 1, 2013 through August 31, 2014.

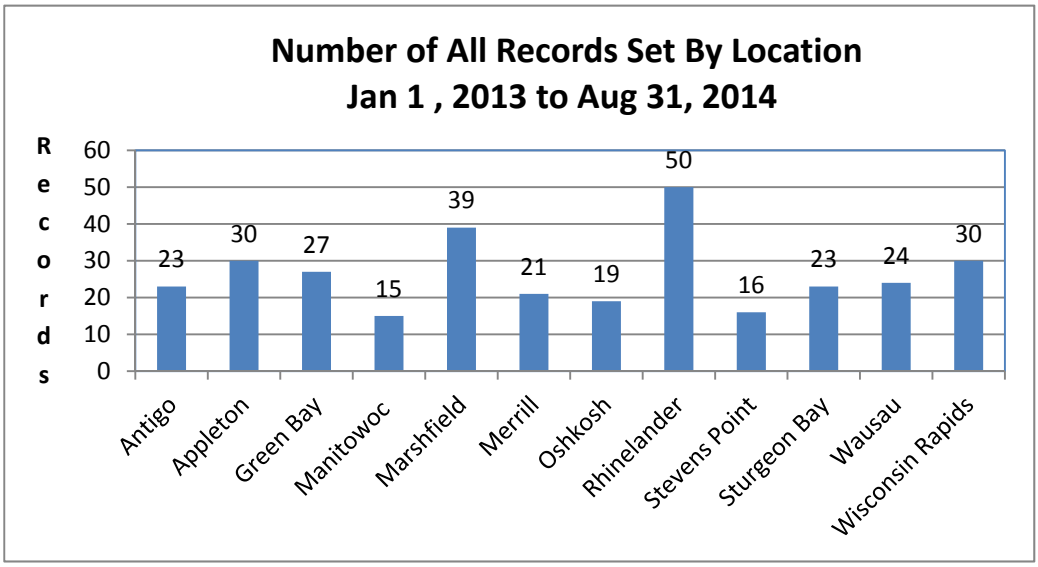
There were 314 records tied or broken at the following locations: Antigo, Appleton, Green Bay, Manitowoc, Marshfield, Merrill, Oshkosh, Rhinelander, Stevens Point, Sturgeon Bay, Wausau and Wisconsin Rapids. Of the 213 temperature records set, one hundred sixty-three (77%) of the records set were record low or record low maximum temperatures.



The cool pattern continued in 2014. Since the beginning of the year, eighty-nine of the ninety-four (95%) temperature records set were record low or record low maximum temperatures.

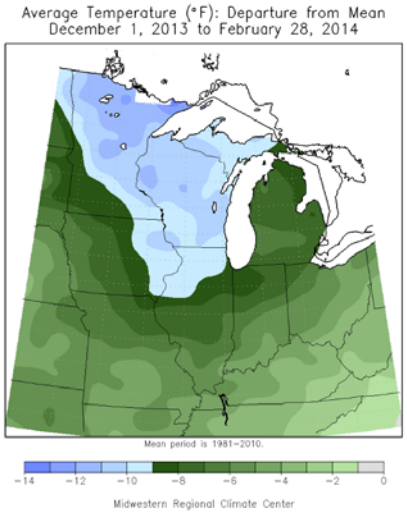


The greatest temperature departures from normal during the past winter through summer 2014 were across northern Wisconsin to the Northern Plains. The winter of 2013-14 was the coldest winter on record at Rhinelander (records date back to 1908), and 2nd coldest winter on record at Green Bay (records date back to 1886) and Wausau (records date back to 1895). Since January 1, 2013, Rhinelander has set 50 new daily records. The primary reason for the cold winter and spring was due to a persistent ridge across the western United States which allowed for a steady dose of Arctic air into Wisconsin. The combination of deep snow pack and the cool start to the spring allowed for a slower than normal retreat of the snow pack. In addition, there was record ice cover on Lake Michigan, and a record late breakup of the ice in early May on the waters of Green Bay as well as inland lakes.

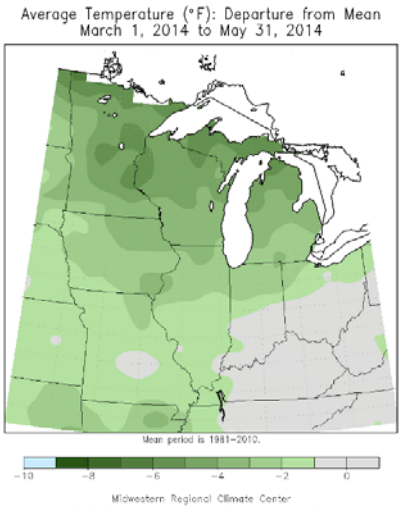


Temperature anomalies for the previous winter, spring and summer seasons courtesy of the Midwest Climate Center are shown below. A persistent cool pattern was noted across the region from the past winter into the summer.

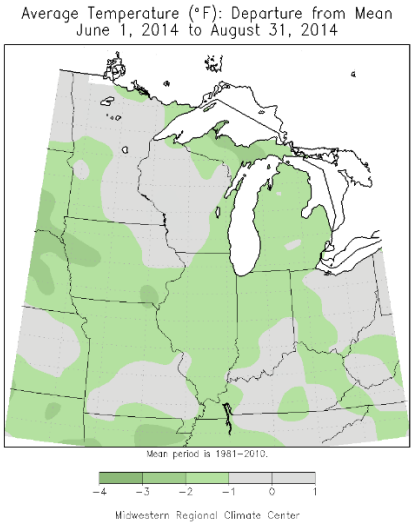
Winter 2013-14



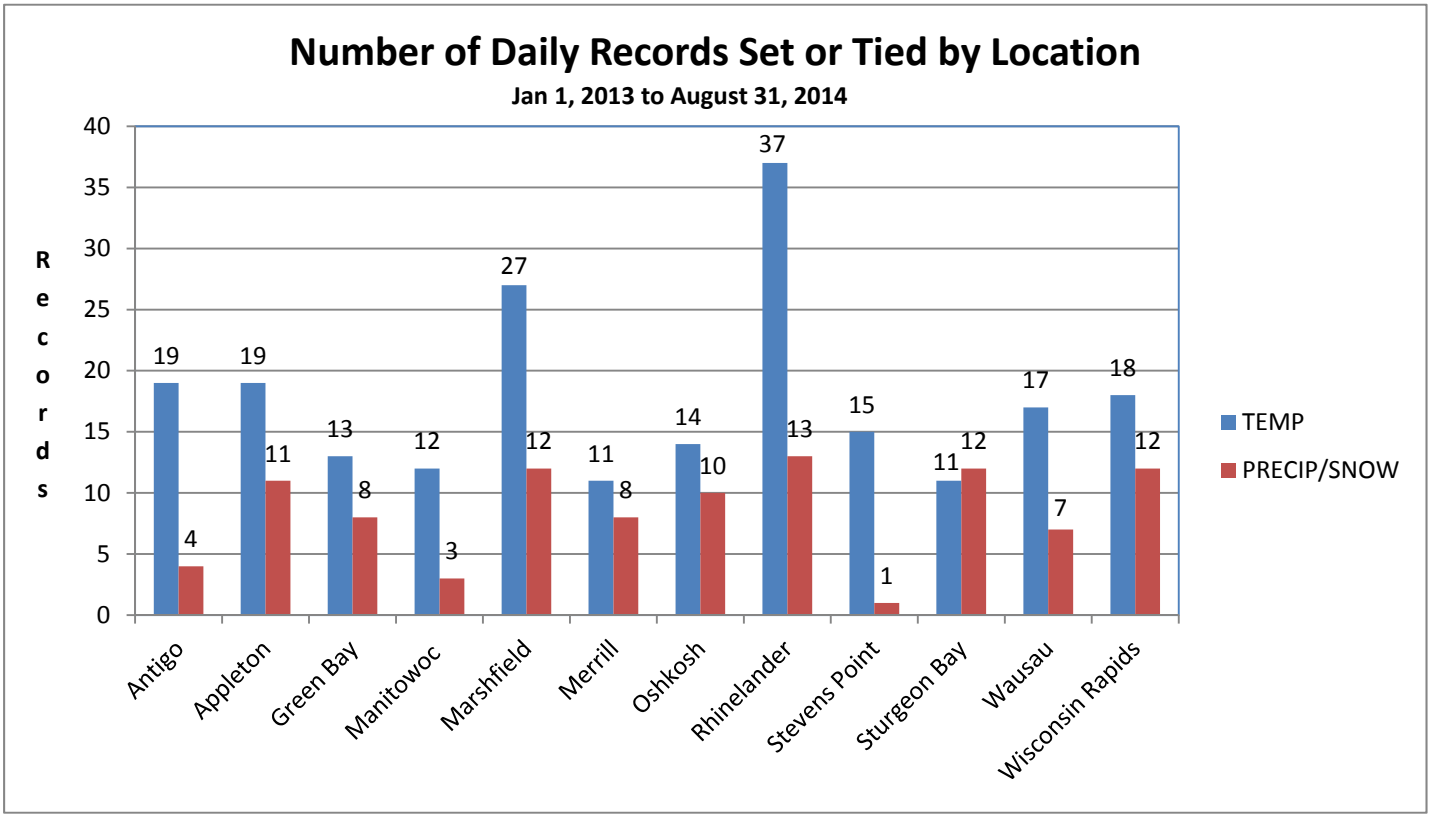
Spring 2014



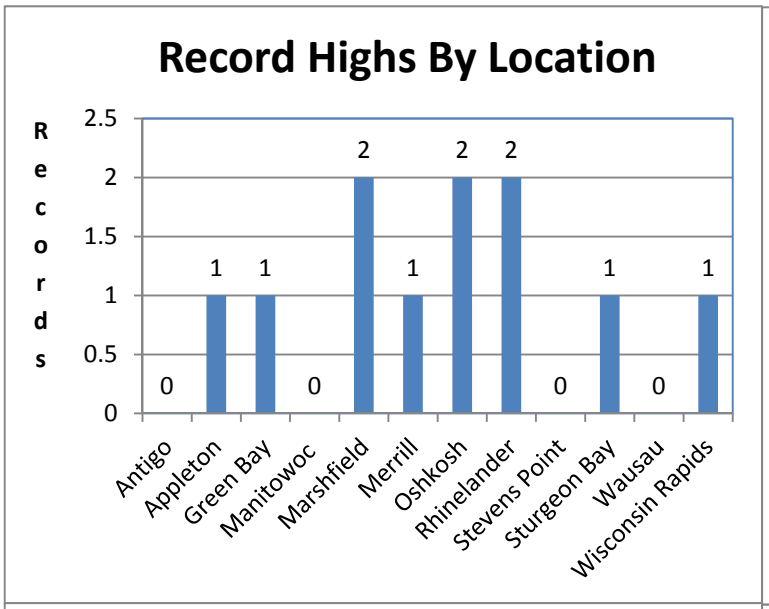
Summer of 2014

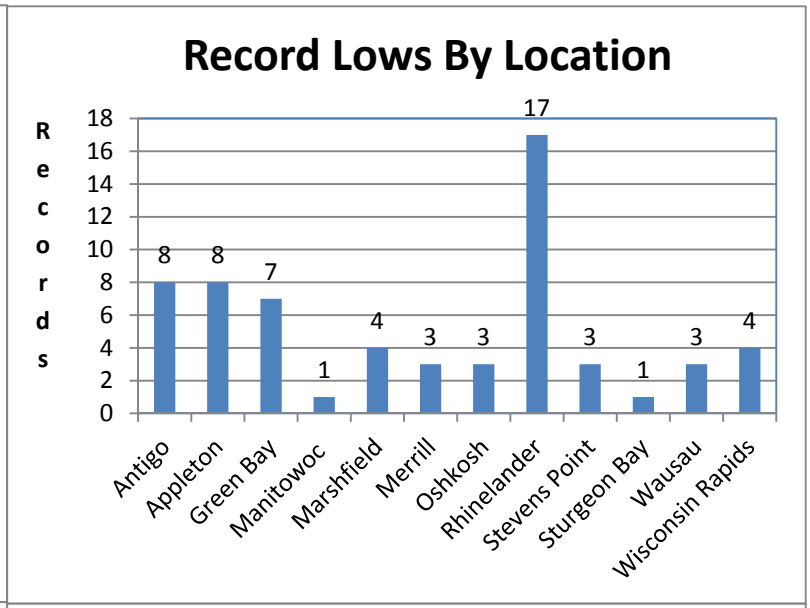


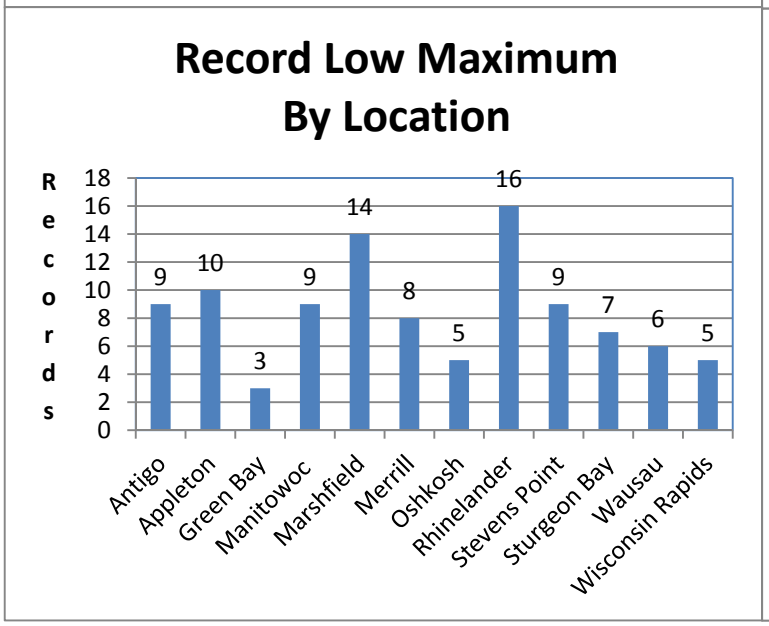
The chart below depicts all daily temperature and precipitation/snowfall records set or tied in this analysis. It should be noted that longer period of record stations like Green Bay, came close on several additional days with respect to setting daily record low or record low maximum temperatures this past winter.

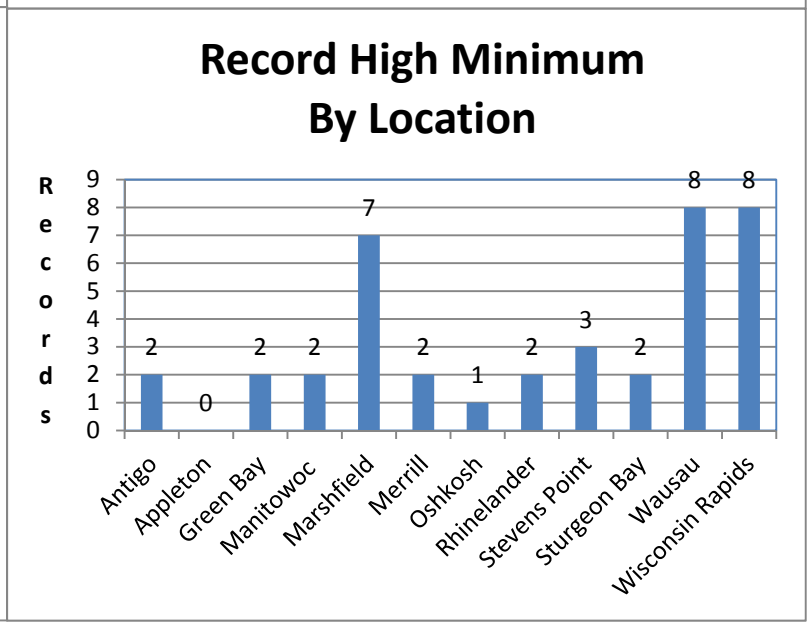
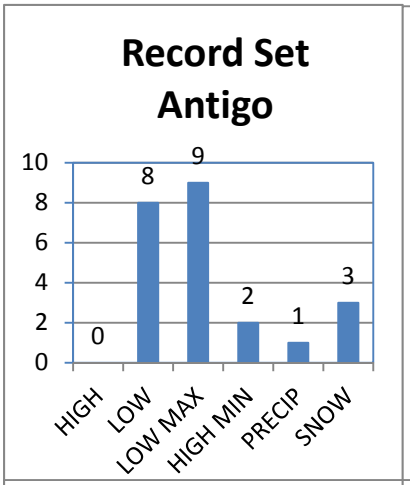
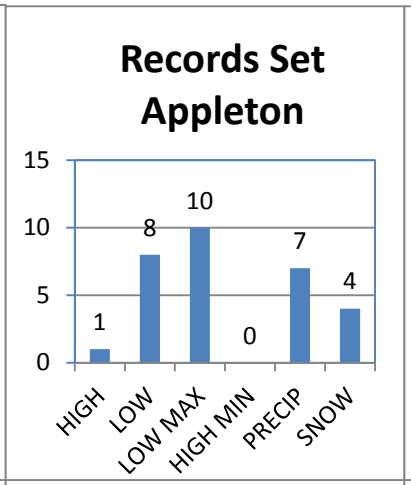
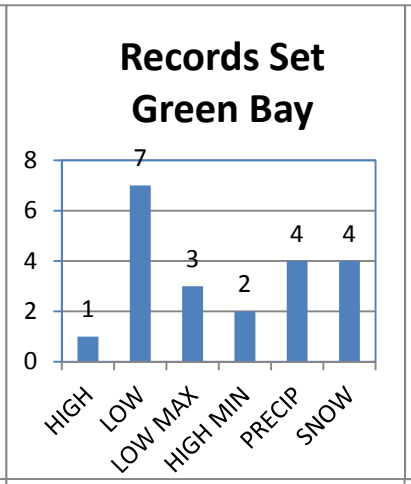
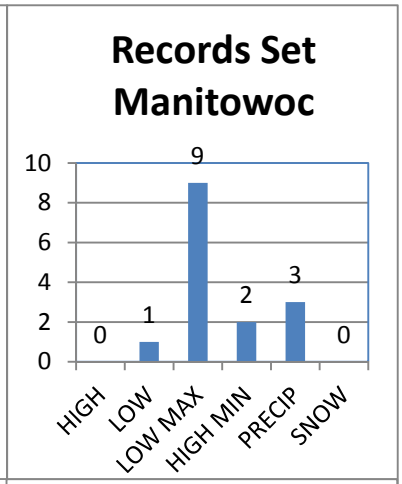
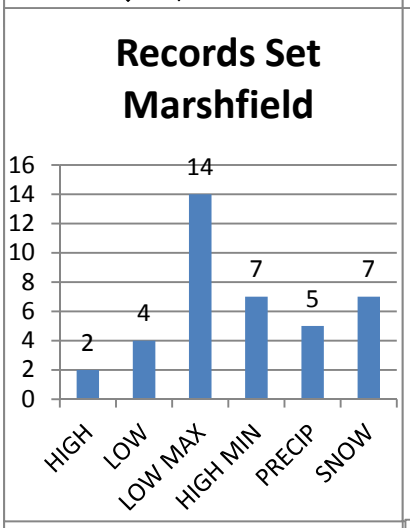
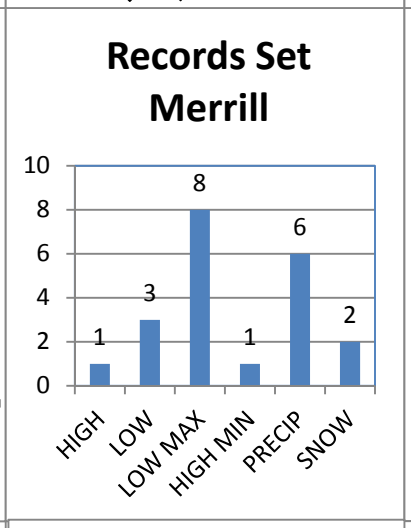
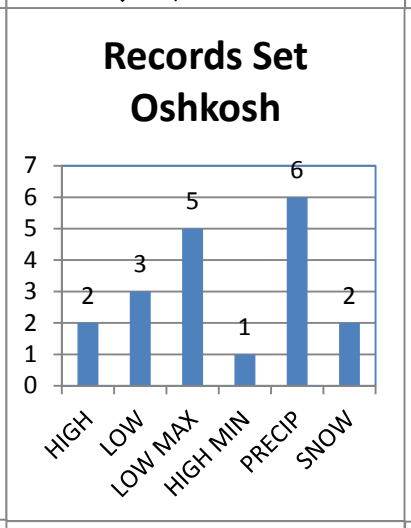
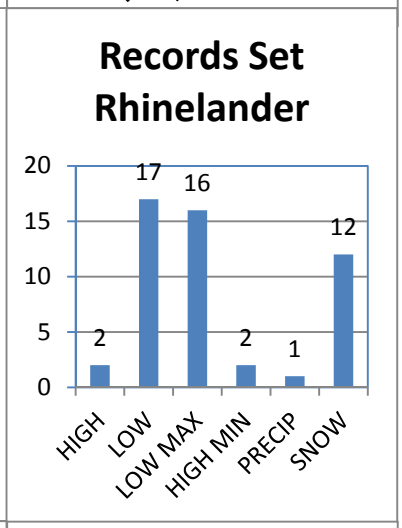
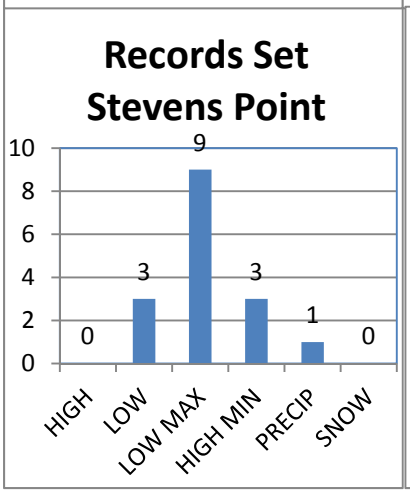
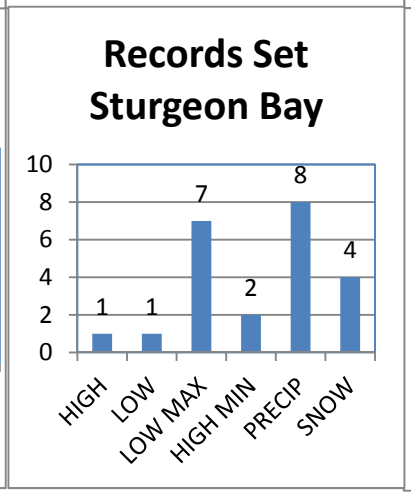
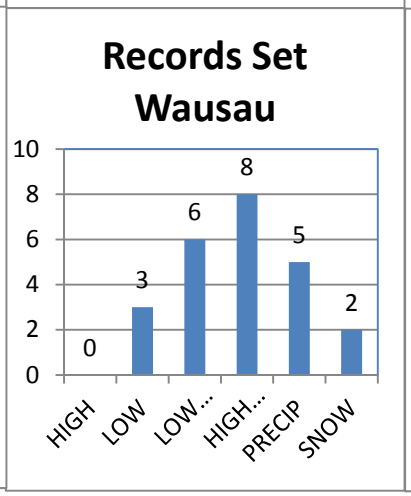
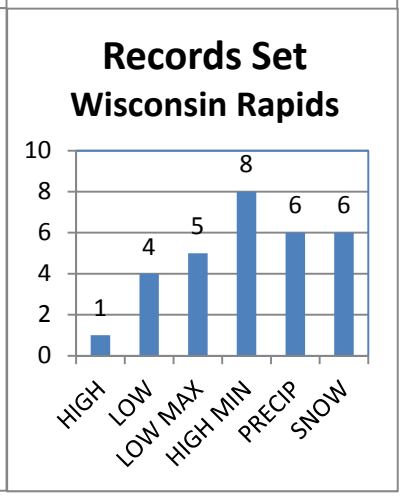


Records were broken down further category. Rhinelander established 17 new record lows during the period of analysis, more than twice the number at Antigo and Appleton. In addition to Rhinelander setting the most new record low maximum temperatures during the period, Marshfield recorded the second highest number. Despite the persistent cool pattern, a few record high minimum temperature records were set at locations away from Lake Michigan/Bay of Green Bay. Wausau, Marshfield, and Wisconsin Rapids established the most high minimum temperature records during the period. Most of the record high minimum temperatures were set during the summer months of 2013 and 2014.









Graph of All Records Set by Location
(Jan 1, 2013 - Aug 31, 2014)