

METEOROLOGY

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Palmer Station is Station 89061 in the World Meteorological Organization (WMO) Worldwide Network. Automated surface synoptic observations are made 8 times each day and emailed to the National Atmospheric and Oceanographic Administration (NOAA) for entry into the Global Telecommunication System (GTS).

The Palmer Automatic Weather Station (PAWS) is a collection of sensors, computers, and software that records the meteorological data and generates synoptic reports. PAWS began recording data in September of 2015. It was a replacement for the Palmer Meteorological Observing System (PalMOS) that was taken down in November 2017. The PAWS sensors and data acquisition hardware are located on a ridge in the backyard at -64.774130° -64.047440° at an elevation of 38.3 meters above sea level using the World Geodetic System-84. In addition to the synoptic and METAR reporting, PAWS also archives the current conditions at one-minute intervals and displays both raw data and graphs of the sensor data on our local intranet.

The Research Associate acts as Chief Weather Observer on station, measuring, compiling and distributing all meteorological data. Snow accumulation is physically observed by taking an average of five accumulation stakes found near the PAWS system. All weather data is archived locally and forwarded to the University of Wisconsin on the first day of each month for archiving and further distribution. The system operated normally this month.

One minute weather data is archived on the AMRC website:

<http://amrc.ssec.wisc.edu/data/ftp/pub/palmer/>.

Palmer Monthly Met summary for December, 2023

Temperature
Average: .6 °C / 33 °F
Maximum: 4.9 °C / 40.82 °F on 18 Dec 09:45
Minimum: -2.7 °C / 27.14 °F on 4 Dec 03:50
Air Pressure
Average: 981.9 mb
Maximum: 997.2 mb on 17 Dec 19:15
Minimum: 963.7 mb on 13 Dec 11:50
Wind
Average: 8 knots / 9.3 mph
Peak (5 Sec Gust): 45 knots / 52 mph on 9 Dec 21:57 from NNE (14 deg)
Prevailing Direction for Month: SW
Surface
Total Rainfall: 40.6 mm / 1.6 in

Total Snowfall: 8 cm / 3.1 in

Greatest Depth at Snow Stake: 111.2 cm / 43.4 in

WMO Sea Ice Observation: 6-10 bergs, bergy bits, growlers, brash ice

Average Sea Surface Temperature: 0.53 °C / 33 °F

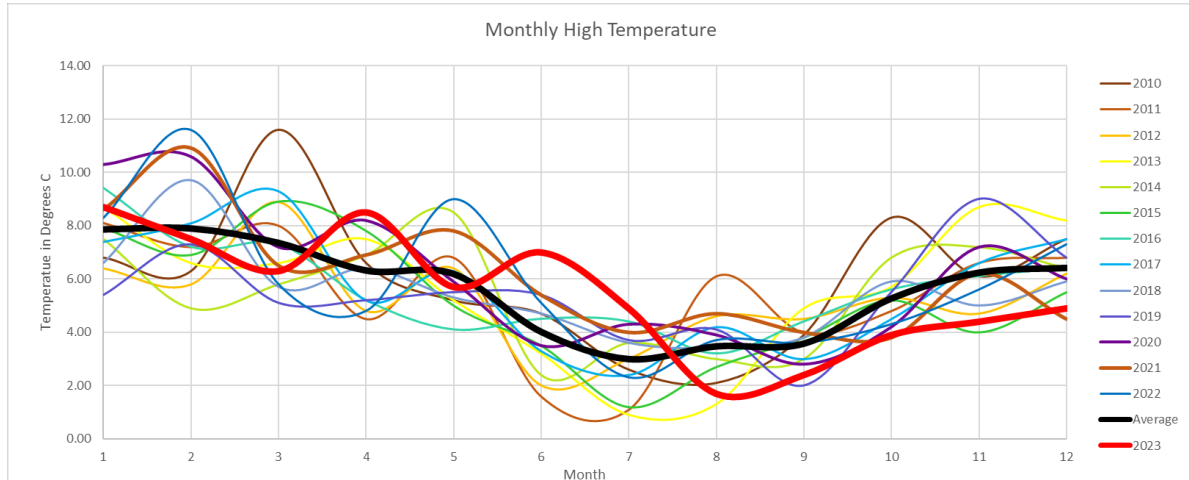


Figure 22- Monthly High Temperature (highest 1 minute for the month) for 2023 (in red) compared to the last 12 years. Data extracted from the PAWS system and historical archives. *Figure credit: Palmer Station Research Associates.*

The monthly high temperatures were lower during the second half of the year. The monthly average temperatures were either average or slightly below average. 2023 saw more than average precipitation, but less than the previous two-year period, which were both, record breaking wet years.

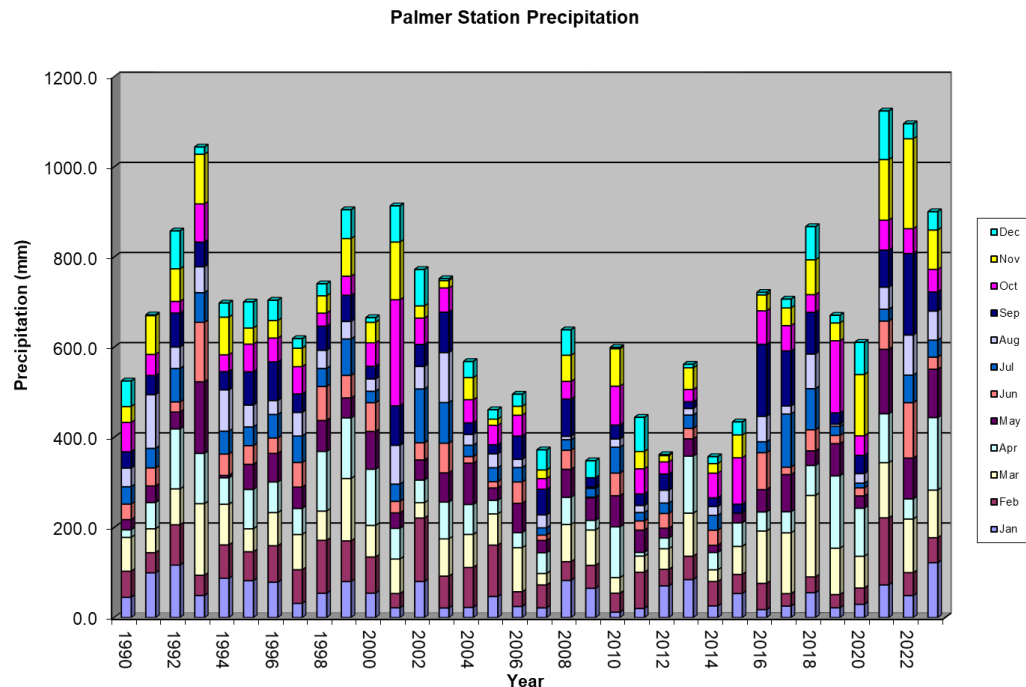


Figure 23- Melted Equivalent Precipitation from the Backyard rain gauge since 1990 in millimeters. Data extracted from the PAWS system and historical archives. *Figure credit: Palmer Station Research Associates.*