

## **METEOROLOGY**

Mike Carmody, Principal Investigator, United States Antarctic Program

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).

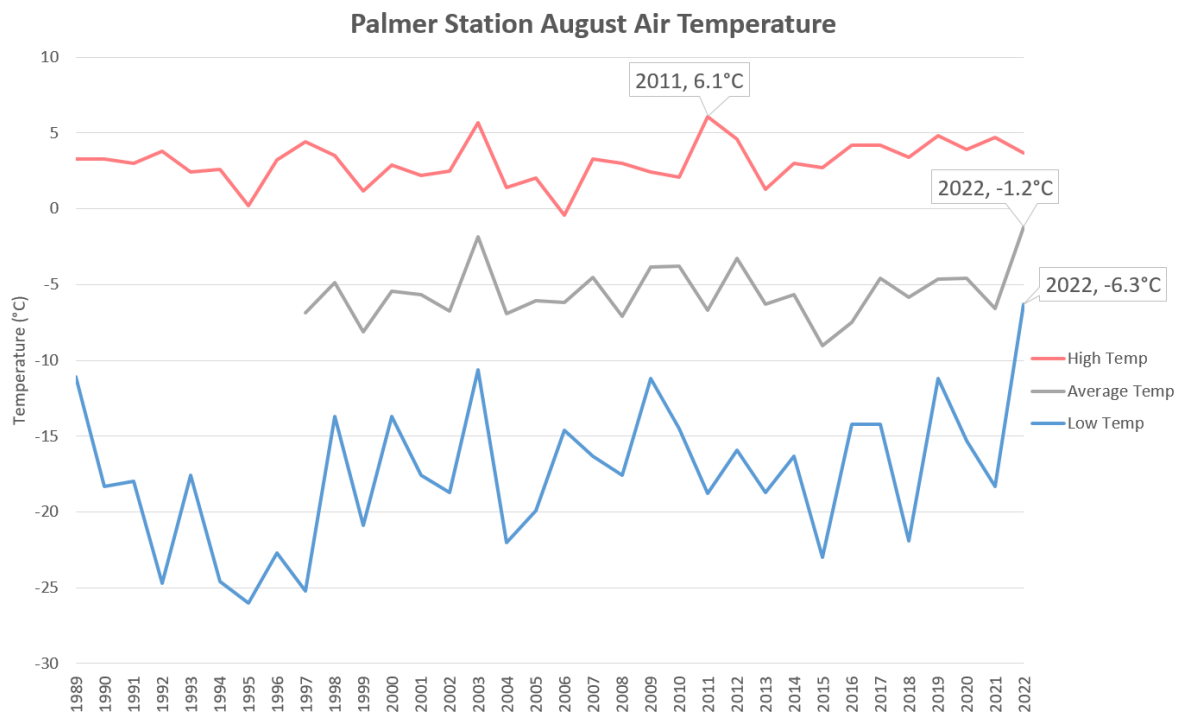
The Palmer Automatic Weather Station (PAWS) is a collection of sensors, computers, and software that records the meteorological data and generates synoptic reports. PAWS began recording data in September of 2015. It was a replacement for the Palmer Meteorological Observing System (PalMOS) that was taken 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 once per month to the University of Wisconsin on the first day of each month for archiving and further distribution.

The local weather station (PAWS) operated well throughout the month. All three remote AWS sites require maintenance so their functionality this season were sporadic at best. One minute weather data is archived on the AMRC website: <http://amrc.ssec.wisc.edu/data/ftp/pub/palmer/>.

## Monthly Weather Synopsis

August 2022 was the warmest August on record (1997 – present), with an average temperature of  $-1.2^{\circ}\text{C}$  /  $29.9^{\circ}\text{F}$ . In addition, August's minimum temperature of  $-6.3^{\circ}\text{C}$  /  $20.7^{\circ}\text{F}$  was the highest on record (1989 – present). The sea surface temperature also broke an August record (2015 – present), with an average temperature of  $-1.3^{\circ}\text{C}$  /  $29.7^{\circ}\text{F}$ .



**Figure 10.** Palmer Station August air temperature data, 1989-present.

August was also stormier than usual, with 89 mm of melted precipitation, 73 cm of snowfall, and an average wind speed of 17 knots.

## Palmer Monthly Met Summary for August 2022

<b>Temperature</b>
<b>Average:</b> -1.2 °C / 29.9 °F
<b>Maximum:</b> 3.7 °C / 38.66 °F on 31 Aug 01:45
<b>Minimum:</b> -6.3 °C / 20.66 °F on 26 Aug 12:35
<b>Air Pressure</b>
<b>Average:</b> 986.9 mb
<b>Maximum:</b> 1015 mb on 4 Aug 10:03
<b>Minimum:</b> 949.2 mb on 25 Aug 03:23
<b>Wind</b>
<b>Average:</b> 17.4 knots / 20 mph
<b>Peak (5 Sec Gust):</b> 65 knots / 75 mph on 21 Aug 21:26 from NNE (12 deg)
<b>Prevailing Direction for Month:</b> NE
<b>Surface</b>
<b>Total Rainfall:</b> 88.9 mm / 3.5 in
<b>Total Snowfall:</b> 73 cm / 28.5 in
<b>Greatest Depth at Snow Stake:</b> 110.8 cm / 43.2 in
<b>WMO Sea Ice Observation:</b> 6-10 bergs, bergy bits, growlers, grease, shuga, pancake ice, and brash ice
<b>Average Sea Surface Temperature:</b> -1.3 °C / 29.7 °F