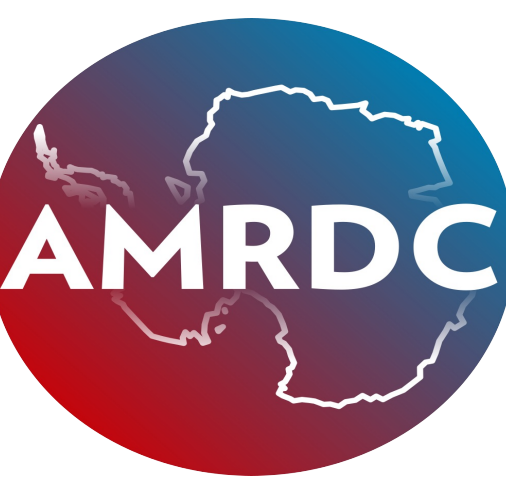




# Marble Point Antarctica: A Climatology



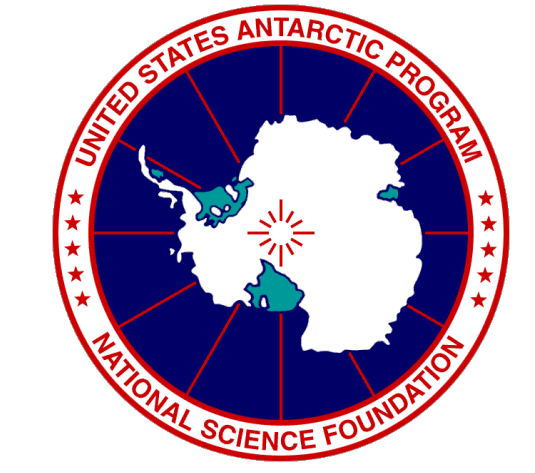
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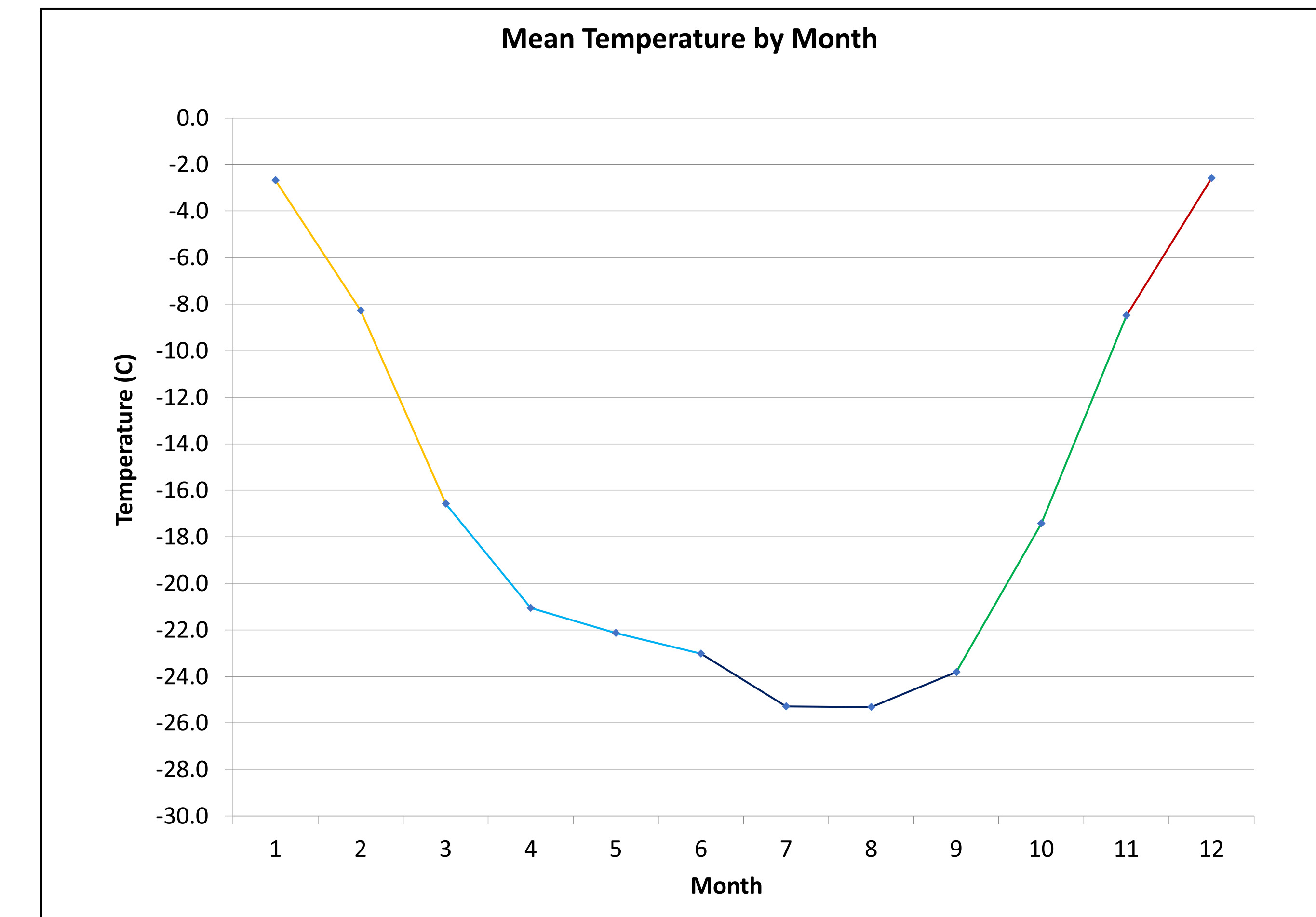
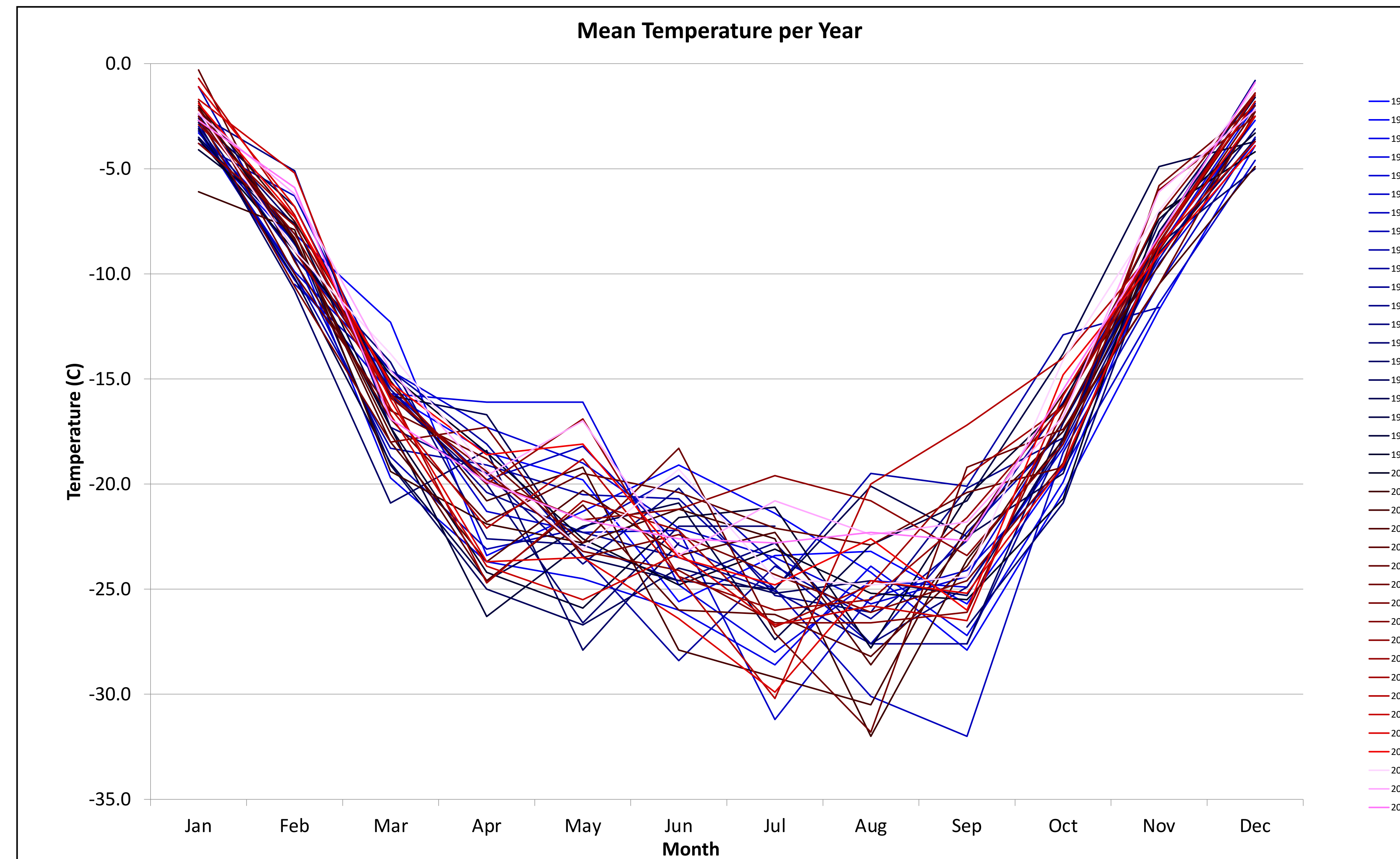
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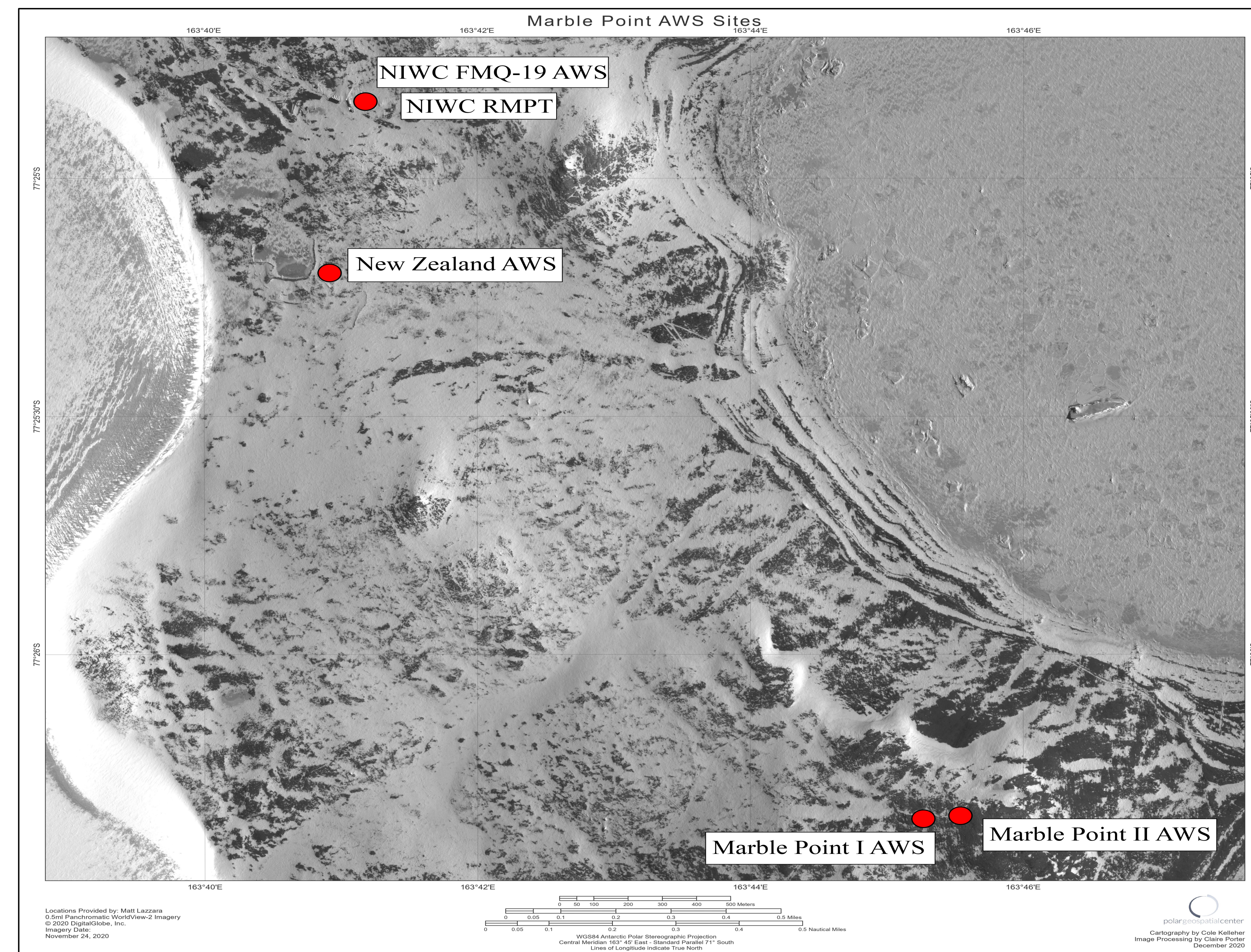
## Introduction

- The Antarctic Meteorological Research and Data Center seeks to analyze the collected data to produce a climatology of the area.
- The station has been utilized as a helicopter fueling site for decades.
- During this time, several Automatic Weather Stations (AWS) have been placed near the station to monitor the weather and climate and to support air operations.
- Initial findings show this location appears to be warming from the years 1980-2020.
- After consideration of mean temperatures, a new classification of seasons has been adopted breaking up the traditional four seasons into five.

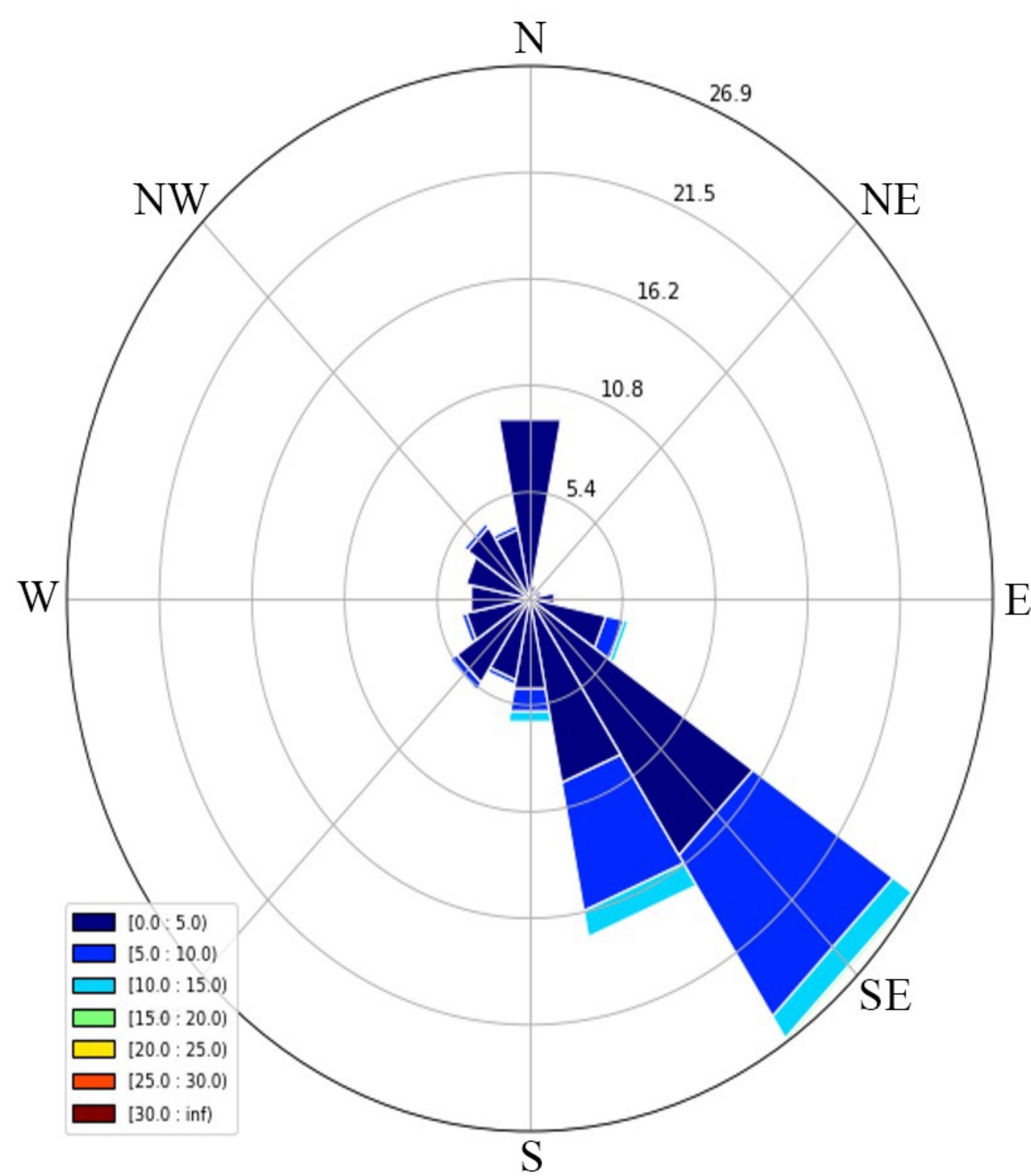


The mean temperature for each month averaged from 1980 to 2020. Each color represents a season: Autumn (Yellow), First Winter (Light Blue), Second Winter (Dark Blue), Spring (Green), Summer (Red).

The monthly mean temperature for each year from 1980 (Blue) to 2020 (Red).



**References**  
 Lazzara, M.A., G.A. Weidner, L.M. Keller, J.E. Thom, J.J. Cassano, 2012: Antarctic automatic weather station program: 30 years of polar observations. *Bull. Amer. Meteor. Soc.*, 93, 1519-1537, doi:10.1175/BAMS-D-11-00015.1.  
 Costanza, C.A., Lazzara, M.A., Keller, L.M., & Cassano, J.J. (2016). The surface climatology of the Ross Ice Shelf Antarctica. *International Journal of Climatology*, 36, 4929 - 4941.



A wind rose average from 1980-2020 at Marble Point, Antarctica. The wind direction is primarily from the southeast coming from the Ross Ice Shelf region.

Extremes		Date
Maximum Temperature	9.1°C	1/11/2002
Minimum Temperature	-45.6°C	7/17/2010
Maximum Wind Speed	40.4 m/s	6/10/2004
Maximum Pressure	1017.5 mb	7/24/2007
Minimum Pressure	928.9 mb	7/19/1993

## Impacts

- A climatology for Marble Point Station is important as it will be used by multiple organizations to support research within the McMurdo Sound region including United States Antarctic Program forecasters, helicopter pilots, US Air Force personnel, research scientists, etc.

## Future Work

- We plan to do statistical significance testing on the observed potential warming and to do more comparisons between the different AWS at Marble Point.

## Acknowledgements

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