



EXPLOSIVE CYCLONES ON THE ANTARCTIC COAST (EXCANC)

The “Explosive Cyclones on the Antarctic Coast” (EXCANC) project summarizes the monitoring of 13 research stations located on the coast of Antarctica that regularly collect weather data such as temperature, pressure, wind speed, etc. Our research is to identify the weather bombs, as they are popularly known, that reach these stations and catalog them with the intention of establishing a unique database of this type of phenomenon in Antarctica. We are currently able to monitor approximately 55% of the Antarctic coast, with a goal of reaching at least 80%.

MORE ABOUT THE THEME

WHAT ARE EXPLOSIVE CYCLONES OR BOMB CYCLONES?

These are extratropical cyclones whose pressure variation registers a decrease of at least 24 hPa in 24 h.

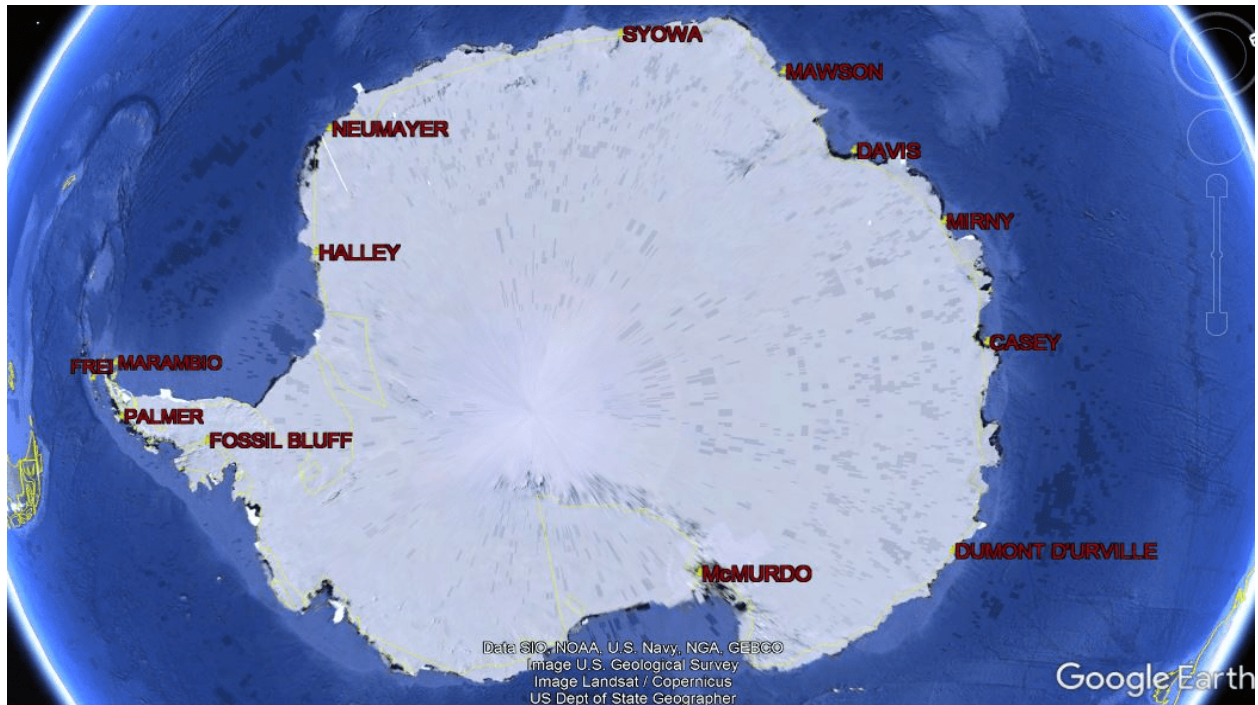
WHAT IS THE BERGERON SCALE?

Bergeron is the name of the scale that classifies this type of cyclones, considering the variation “B” of the pressure in 24h. “B” is determined by dividing the pressure variation over the last 24 hours by 24.

Classification	Bergeron Scale	Intensity
B1	1 a 1.2	Weak
B2	1.3 a 1.8	Moderate
B3	>1.8	Strong

HOW IS THE MONITORING OF EXPLOSIVE CYCLONES ON THE COAST OF THE ANTARCTIC CONDUCTED?

Monitoring is done using data from the 12 main meteorological stations located on the Antarctic coast.



Station	Country responsible	Synop Code	Latitude	Longitute
Frei	CHILE	89056	62.42 °S	58.88 °W
Palmer	USA	89061	64.77 °S	64.08°W
Dumont Durville	FRANCE	89642	66.67 °S	140.02 °E
Halley	UK	89022	75.5 °S	26.65 °W
Marambio	ARGENTINA	89055	64.23 °S	56.72 °W
Mc Murdo	USA	89664	77.85 °S	166.67 °E
Casey	AUSTRALIA	89611	66.28 °S	110.52 °E
Neumayer	GERMANY	89002	70.62 °S	8.37 °W
Syowa	JAPAN	89532	69 °S	39.58 °E
Mirny	RUSSIA	89592	66.55 °S	93.02 °E
Mawson	AUSTRALIA	89564	67.6 °S	62.87 °E
Davis	AUSTRALIA	89571	68.57 °S	77.95 °E
<u>Fossil Bluff</u>	UK	89065	71.19°S	68.17°W

Tabel 1. Reference stations for monitoring of explosive cyclones on the Antarctic coast.

HOW HAVE EXPLOSIVE CYCLONES REACTED TO CYCLES OF CLIMATIC VARIATIONS?

In the north of the Antarctic Peninsula there has been an increase in the number of explosive cyclones during the last 18 years, even with the trend of falling temperatures during the same period. More research on this topic is needed.

IN ADDITION TO THE NORTHERN ANTARCTIC PENINSULA HAS ANY OTHER REGION BEEN SHOWING AN INCREASE IN EXPLOSIVE CYCLONE CASES?

The World Environmental Conservancy (WEC) is a pioneer in the monitoring, research, and analysis of explosive cyclones; we intend to extend the study of explosive cyclones to the entire Antarctic continent. One of our objectives is to identify if the increase in explosive cyclones is happening in other parts of the Antarctic.

TEAM:

