



19th Conference of the IHO Hydrographic Commission on Antarctica

National Report (POLAND)

Agenda item 07.2A

HCA-19, Venice, Italy (hybrid), 16 – 18 April 2024



- Poland, IHO Member State since 1926, represented by the Hydrographic Office of the Polish Navy;
- Poland ratified the Antarctic Treaty on 8 June 1961 with Consultative status since 29 July 1977;
- Henryk Arctowski Polish Antarctic Station, established on 26 February 1977 (managed by the Institute of Biochemistry and Biophysics of the Polish Academy of Sciences);
- HCA Letter No. 05/2022 (13 December 2022) inviting to HCA IHO Member States, having the status of Consultative and non-Consultative Parties to the Antarctic Treaty;
- the official signature of the HCA Statute during the 3rd Session of the Assembly in May 2023.



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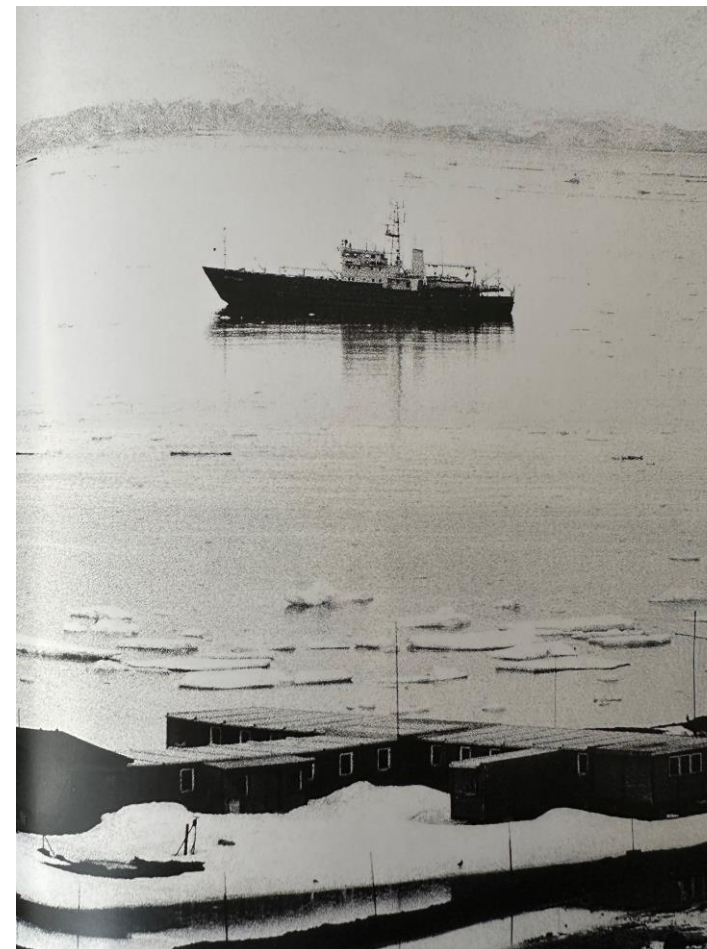
The Polish Antarctic expeditions supported by the hydrographic ships

➤ 1980 ORP Kopernik



➤ 1990 ORP Heweliusz

➤ 1990/1991 ORP Arctowski



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Photograph from Ian Camern, *Antarctica: The Last Continent*, ©2003 Topham Pictuepoint/TopFoto /Forum, source: culture.pl

Polish Antarctic Station's patron, **Henryk Arctowski**, a remarkable Polish geophysicist and geographer, was one of the first Poles who reached the Antarctic at the end of the 19th century.

The first ever bathymetric measurements in the South Shetland region to the west of Livingston Island, were made by Arctowski during Belgica's Expedition in years 1898/99.

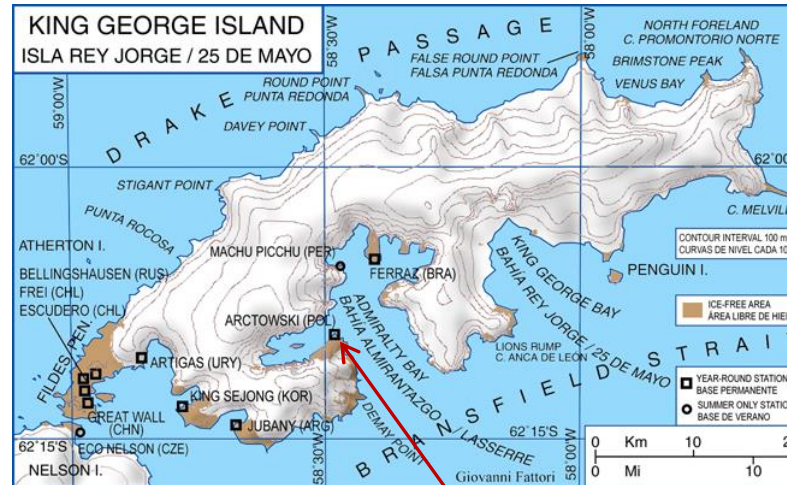
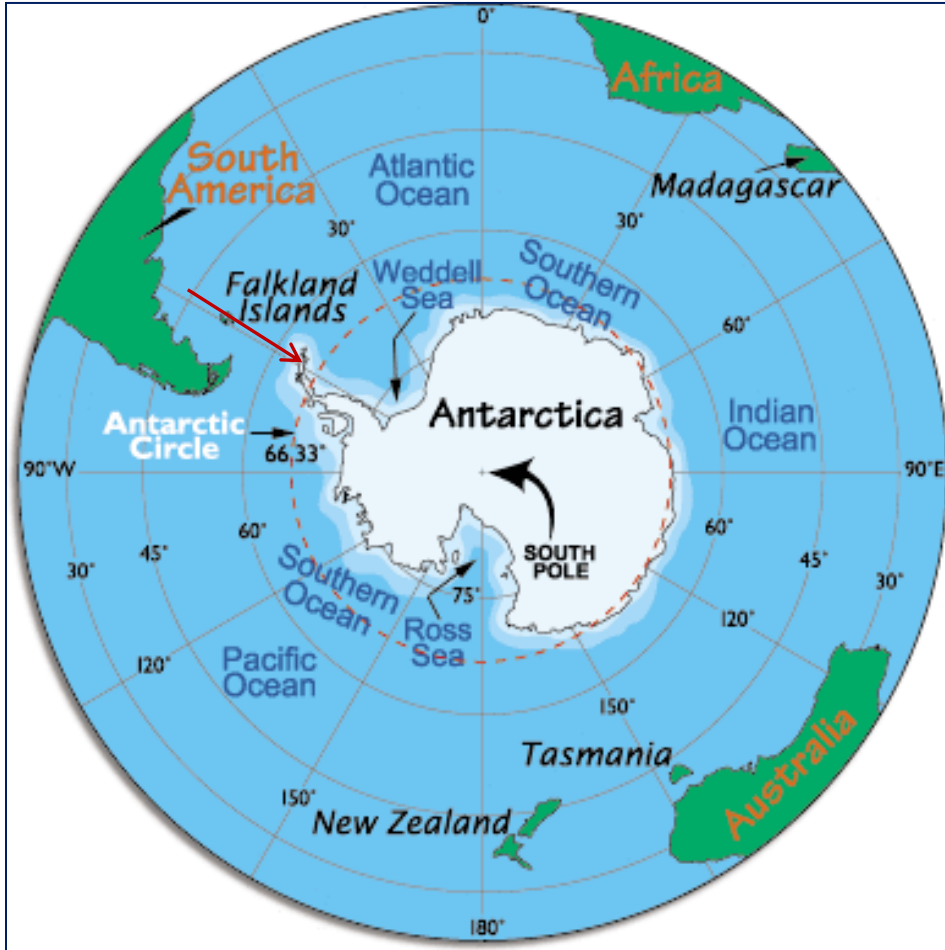


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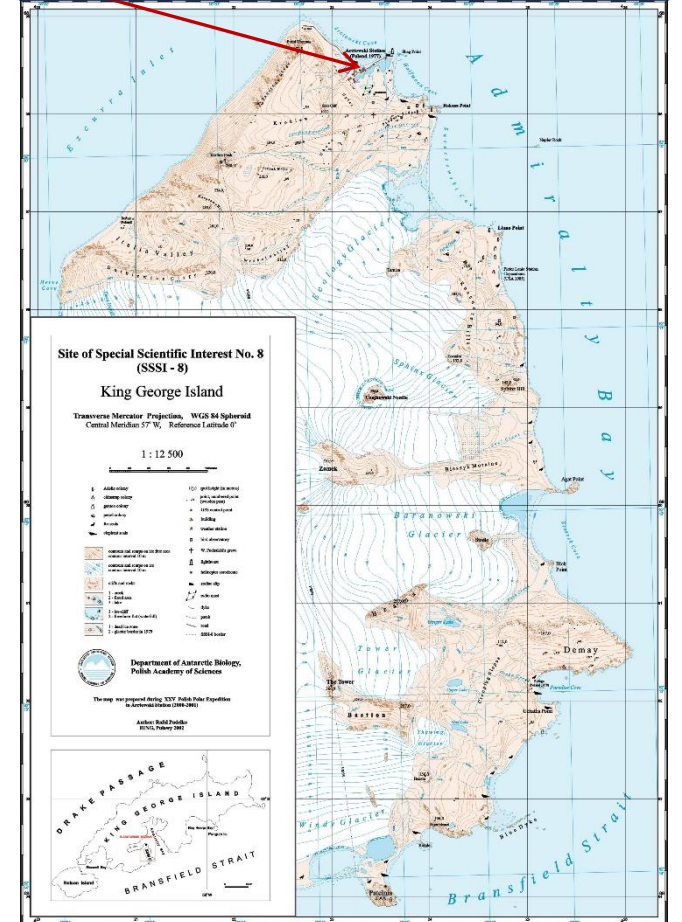
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Henryk Arctowski Polish Antarctic
Station location: **King George
Island, South Shetland, Antarctic.**



Station **works permanently all year
round** with a crew of 15-20 (summer)
– 10 (winter).





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Selected scientific projects conducted using the Station's infrastructure

- **biology**
 - parasites of penguins in breeding colonies;
 - investigation of local plants species: *Deschampsia antarctica* and *Colobanthus quitensis*.
- **ecology**
 - assessing plant species vulnerability to climate change;
 - terrestrial and marine bioinvasions: *Poa annua*, *Trichocera maculipennis*;
 - analysis of the chemical composition of precipitation on the Western Shore of the Admiralty Bay.
- **glaciology**
 - investigation of sediment-rich glacial meltwater plumes;
 - the glacier runoff dynamics during the period of local weather changes in the region;
 - quantitative assessment of sediment transport from glaciers of South Shetland.



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Selected monitoring programmes carried out using the Station's infrastructure

- **ecological:** observations of birds (southern giant petrels, antarctic shag) and pinnipeds (including use of UAV);
- **glaciological:** rate of calving of local glaciers (with use of camera network);
- **hydrological:** uses only remote solutions such as CTD-, baro- and cera-diver sensors;
- **meteorological:** 4 automatic weather stations (AWS) realize measurements: air temperature and humidity, wind speed and direction, total solar radiation;
- **marine:** making of depth profiles (CTD probe), measurement of flow velocity in the water column (ADCP probe) during different tidal phases, measurement of the variability of water properties in the Admiralty Bay area;
- **ionospheric** monitoring based on GNSS signals;
- monitoring of the **seismic** activity;
- Investigation on the occurrence of **Cyclic Volatile Methylsiloxanes (cVMS)** in air, soil, vegetation and aquatic biota in the Antarctica.



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International collaboration partners in the field of science

- Instituto Antártico Chileno (INACH), Chile;
- Chilean Universities: de La Frontera (UFRO), Bio-Bio, Concepción;
- University of Córdoba – Institute for Animal Diversity and Ecology, Argentina;
- University of Oslo, Norway;
- Gdańsk University of Technology, Poland;
- Polish Geological Institute - National Research Institute, Poland;
- Institute of Oceanology of Polish Academy of Sciences, Poland;
- Alfred Wegener Institute, Helmholtz-Centre for Polar and Marine Research, Germany;
- National Antarctic Scientific Center, Ukraine.



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H. Arctowski Polish Antarctic Station: a step into the future

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The Station's infrastructure is currently undergoing a comprehensive redevelopment process.

The investment process includes key infrastructure modules such as:

- functional **main building** of the Station with modern laboratories and social amenities
- **technical facilities**
- **garage halls**
- **fuel system**
- **energy system**
- **water and sewage system**

Coming soon





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International collaboration partners in the field of logistics

International Hydrographic Organization

PAST

PRESENT

FUTURE



Archiwum: ANDY ORLOWSKI

r/v Profesor Siedlecki



r/v Noosfera

**former RRS James Clark Ross
National Antarctic Scientific
Center of Ukraine**

**Polish polar research
and transport vessel**

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