

Henryk Arctowski

Institute of Biochemistry and Biophysics Polish Academy of Sciences

69°95'86.0"S 58°28'39.9"W

Type: Station

Operational period: Year-round

Location

The Henryk Arctowski Polish Antarctic station is located on the western shore of Admiralty Bay on King George Island (South Shetland Islands, Antarctic Peninsula) in an ice-free oasis of more than 4.2 km². The area is restricted by Ezcurra Inlet and the central part of the Admiralty Bay in the north and east, and by glaciers of Warszawa Icefield System in the west and south. Admiralty Bay opens widely into the Bransfield Strait. The surrounding areas differ in height, exceeding 600 m a.s.l. in the northern and north-western part. It is situated within Antarctic Specially Managed Area (ASMA) 1 Admiralty Bay. ASPA 128 Western Shore of Admiralty Bay is located approximately 700 m to the east of the station. The Polish National Antarctic Program also operates two refuges: at Paradise Cove (within ASPA 128) and at Cape Lion's Rump (50 m outside the border of ASPA 151). The other year-round scientific station, Comandante Ferraz Antarctic station (Brazil), is approximately 10 km away, on the eastern shore of Admiralty Bay.

Biodiversity and natural environment

King George Island is situated in Maritime Antarctic, with prevailing western atmospheric circulation, from which the station is sheltered by the dome of the Arctowski Glacier (more than 650 m). The non-glaciated oasis of Point Thomas, where the station is located, forms a specific, milder topoclimate. Flora of the area is represented by more than three hundred species of lichens, around sixty species of mosses and numerous algae, as well as two species of native vascular plants (*Deschampsia antarctica* and *Colobanthus quitensis*). Twenty-four species of birds and six species of pinnipeds have been registered, but only fourteen species of birds and three species of pinnipeds breed here. The Admiralty Bay shelf benthic community is characterized by high species richness and high assemblage diversity. A unique site, Napier Rock, situated at the entrance of the Admiralty Bay, supports especially rich and highly diverse benthic invertebrate fauna. Fish are represented by fifteen species of Nototheniidae.

CLIMATE	
Climate zone	Maritime Antarctica
Permafrost	None
Mean annual wind speed (km/h)	24
Max wind speed (km/h)	223
Dominant wind direction	SW
Sea Ice Break Up	
Snow free period	January, February, December
Total annual precipitation (mm)	505.7
Precipitation type	Snow and Rain
Mean annual temperature (°C)	-1.6
Mean temperature in February (°C)	2.3
Mean temperature in July (°C)	-6.6
ENVIRONMENT	
Region	Antarctic Peninsula
Antarctic Environmental Domain: G – Antarctic Peninsula offshore island geologic	
Antarctic Conservation Biogeographic Region: 3 North-west Antarctic Peninsula	
Altitude of facility (m)	2
Type of surface facility built on	Ice-free ground
Long term monitoring	Yes
Waste management	Yes
Hazard(ous) management	Yes
Fuel spill response capability	Yes



History and facilities

The Henryk Arctowski Polish Antarctic station is a year-round, medium-sized station, which was established in 1977 as a base for scientific research and associated logistic operations of the Polish National Antarctic Program. Until 2012, the station was operated by the Department of Antarctic Biology Polish Academy of Sciences (PAS), which provided logistical and technical support for the station and was responsible for the scientific management of the station. In 2012, both the station and the Department of Antarctic Biology PAS were incorporated into the Institute of Biochemistry and Biophysics PAS, one of the leading Polish scientific institutions. Most of the buildings were built in 1977. In 1998, parts of the main building and the biological laboratory were reconstructed. In 2007, two laboratory buildings were merged, reducing energy expenditure for heating and shortening utility lines. For additional information please visit www.arctowski.aq.

General research and databases

The scope of scientific research conducted at the Henryk Arctowski station includes microbiology, biology, ecology, climatology and Earth sciences. Long-term monitoring programs exist for ecology, meteorology and glaciology. New methods using fixed-wing Unmanned Aerial Vehicles to collect geospatial environmental data are being developed. Microbial collection of more than five-hundred strains of Antarctic microorganisms collected in the vicinity of the station are maintained in the Institute of Biochemistry and Biophysics PAS for research on bioremediation and cold-adaptation. Research on non-native species and the pathways of their dissemination on King George Island is conducted. Year-long programs to monitor breeding and non-breeding bird and pinniped species in the vicinity of the station and in ASPA 128 has been conducted over the past forty years. International collaboration forms a key part of the Polish Antarctic Program.

Features in the facility area

Bird colonies, Coast, Fjord, Hill, Ice cap or glacier, Ice tongue, Melt streams, Moraine, Nunatak, Other Biological, Rock, Sea, Seal colonies, Shoreline, Snow, Tundra.

Main science disciplines

Climatology, Ecology, Environmental sciences, Geodesy, Geology, Geomorphology, Geophysics, Glaciology, Hydrology, Mapping, Marine biology, Microbiology, Oceanography, Terrestrial biology.



Photo: DimaSzik

FACILITIES INFRASTRUCTURE	
Area under roof (m ²)	1800
Area scientific laboratories (m ²)	200
Type of scientific laboratories: Biology, Chemistry, Geophysics	
Conference room (capacity)	
Logistic area (m ²)	1000
Number of beds	40
Showers	Yes
Laundry facilities	Yes
Power supply type	Fossil fuel, Renewable
Power supply (V)	220
Power supply (hours per day)	24
Hydroponics facilities	No
Number of staff on station (peak/summer season)	14
Number of scientists on station (peak/summer season)	26
Number of staff on station (off peak/winter season)	8
Number of scientists on station (off peak/winter season)	8
Max number of personnel at a time (staff, scientists and others)	40
Specific device/Scientific equipment:	
Scientific services possible:	
Long-term monitoring/observations:	
MEDICAL FACILITIES	Yes
Area of medical facility (m ²)	10
Staff with basic medical training or doctor (Summer)	1
Staff with basic medical training or doctor (Winter)	1
Capability: Basic	
Equipment:	
Distance to hospital (km)	1500
Closest emergency facility in Antarctica (km)	40
Closest emergency facility external (km)	
Medical research capabilities	No
Medical screening requirements	Yes
VEHICLES AT FACILITY	
Sea transportation:	
Land transportation:	
WORKSHOP FACILITIES	
Mechanical, Metal workshop, Wood workshop	
COMMUNICATIONS	
Computer, E-mail, Fax, Internet, Printer, Satellite phone, Scanner, Telephone, VHF	
TRANSPORT AND FREIGHT	
Access	Air, Sea
Transport to facility: Helicopter, Ship	
Number of airstrips	0
Length (m) of longest runway	
Width (m) of longest runway	
Number of flight visits per year	0
Period of flight visits per year:	
Helipad	Yes
Number of ship visits per year	
Period of ship visits per year: January, February, March, November, December	
Ship landing facilities: None	