



# Updates from Poland

ASSW 2020

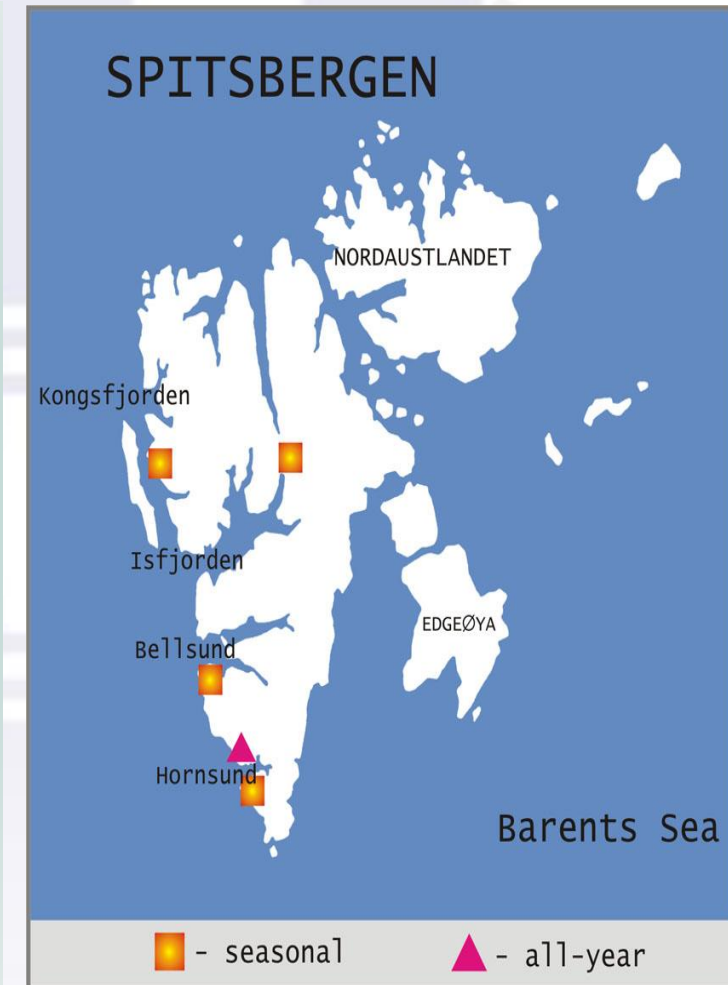
FARO Annual Meeting (30 March 2020)

Presented by Piotr Glowacki



# Current Polish infrastructure in the Arctic

- **Polish Polar Station in Hornsund at Svalbard**  
*(operating all year round since 1978)*
- **Research vessel OCEANIA**  
*(operating around Svalbard seas June-August since 1987)*
- **Scientific-Training vessel HORYZONT II**  
*(operating in Svalbard seas June-September since 2000)*
- **Adam Mickiewicz University Polar Station in Petuniabukta**  
*(seasonal station June-September since 2015)*
- **Nicolaus Copernicus University Polar Station in Kaffioyra**  
*(seasonal station May-September since 1975)*
- **University of Wroclaw Polar Station BARANOWKA**  
*(seasonal station May-October since 1971)*



# Polish infrastructure in the Arctic in the National Polish Roadmap for Research Infrastructure

After evaluation in 2020, ***Polish Multidisciplinary Laboratory for Polar Research*** is nominated to the National Polish Roadmap for Research Infrastructures.

Perspective for the future:

- Priority for the new investment plans to the better quality of polar infrastructure.
- Long term financial support for the running cost to Polish Polar Station in Hornsund.
- Long term financial support for the running cost to research vessel OCEANIA.
- Special financial support for access to Svalbard Integrated Arctic Earth Observing System.

Special support to investment plan:

- **HYDRA** – instrumentation for comprehensive research and monitoring of glacio-marine basin and changes of the coastal zone in polar regions.
- **CRYODYN** – instrumentation for comprehensive research on the structure and dynamics of the cryosphere and polar catchments.
- **CLIMEV** – instrumentation for studying the dynamics of changes in the atmosphere in the polar regions.





# RECENT ACTIVITY AND INITIATIVES

## *Polish Polar Station Hornsund*

The current equipment, infrastructure and living conditions at the Hornsund Polish Polar Station render it a model European research platform combining the advantages of a logistics base for continuous observations (with wide-ranging field observation capabilities, including the operation of instruments located on remote glaciers) with those of a scientific facility housing several labs.

Year-round scientific research in the following fields is now conducted at the Hornsund Polish Polar Station:

- **Meteorology**
- **Seismology**
- **Earth magnetism**
- **Ionospheric research**
- **Glaciology**
- **Atmospheric physics and optics**
- **Environmental research**



Apart from the research conducted as part of the Station's year-round research plan, in the spring and summer various groups of scientists pursuing their own scientific projects, conduct research – including in the fields of biology, geology, geodesy, geomorphology, glaciology and oceanology – in the Hornsund region. They then use the logistical and scientific facilities of the Station.

- The Polish Polar Station in Hornsund also participates in numerous scientific projects, both Polish and international.

# RECENT ACTIVITY AND INITIATIVES

## *Polish Polar Station Hornsund*

### **International access in 2019:**

- 55 scientists (20 institutions) from 8 countries used 1088 person-days

### **Support for transportation on the expedition vessel in 2019:**

- 32 people and his equipment

### **Access to the Station between 2016-2018:**

- 194 scientists (including 35 from abroad) representing 21 institutions from 7 countries (3526 person-days)

### **Special transnational access for:**

- INTERACT
- SIOS



### **Costs for maintaining Hornsund Station:**

• crew salary	356 k€
• Fuel	107 k€
• Food	86 k€
• technical equipment	130 k€
• services and repair	275 k€
• expedition vessel	210 k€
• others	82 k€
• indirect costs	275 k€

**Total** **1521 k€**



# ACCES to the POLISH POLAR STATION HORNSUND

<https://hornsund.igf.edu.pl/news2/>



[About the Station](#)

[Cameras](#)

[Weather](#)

[News](#)

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*Category Archives: news*

**Information on the level of participation in the cost of use of the Station's facilities and the expedition vessel in 2020**

□ 14 February 2020   [news](#)

**ANNOUNCEMENT ABOUT APPLICATIONS FOR ACCOMMODATION AT THE POLISH POLAR STATION HORNSUND AND FOR ACCESS TO THE EXPEDITION VESSEL TO SVALBARD IN 2020**

□ 9 October 2019   [Bez kategorii](#)

**Preliminary sailing plan to Svalbard in 2020**

□ 9 October 2019   [Bez kategorii](#)

**Application form for accommodation and use of facilities at the Polish Polar Station Hornsund**

□ 15 January 2019   [news](#)

**Application form for access to the expedition vessel for transport of people**

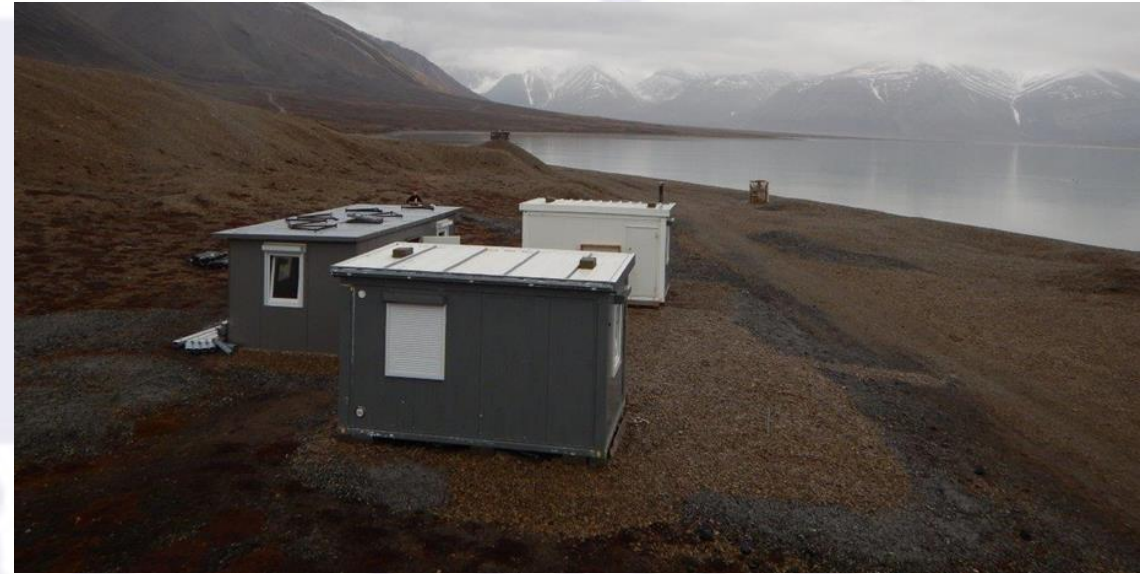
□ 15 January 2019   [news](#)

# RECENT ACTIVITY AND INITIATIVES

## *Petuniabukta*

### **AMUPS - Billefjorden**

The AMU station consists of two 10 m<sup>2</sup> bedroom barracks for 10 people and one kitchen/livingroom/laboratory facility (18 m<sup>2</sup>). Between them, during the summer, a tent hall (40 m<sup>2</sup>) is raised. Electricity is from fossil fuel generator (230 V) and solar panels (12 V). Supplies to the station (equipment, food and fuel) are brought from Poland at the beginning of summer. The station is located on the western coast of Petunia Bay, north-easternmost part of Isfjorden, central Spitsbergen west coast largest fiord, built at the foot of Pyramiden mountain, 2 m a.s.l., 50 m from the shoreline.



The most convenient way to access Longyearbyen is by airplane from Norway. Ship cruises to Pyramiden are in the morning and in the afternoon. Finally to get to the station from the pier in Pyramiden it takes up to one hour walking or the transportation is organized on zodiac, prior to earlier arrangement. In the case of the transportation of larger amount of cargo, shipping from Poland is possible about the beginning of June. Zodiac boats are used for transportation within the fiord. On land only walking is allowed.



# RECENT ACTIVITY AND INITIATIVES

## *Petuniabukta*

### AMUPS - Billefjorden

Since 2020, the Station has become part of the INTERACT III program that enables access for researchers from abroad to AMU research infrastructure. An additional call for applications for the use of the Station in this year's summer season is underway until March 31.

In addition, the Station has a rich and long-term experience in international cooperation. Especially with scientists from Czech Republic, Great Britain, the Netherlands and Norway.

AMU Station is a university unit and is not subsidized from the central (national) budget. The only support option for international access is through the INTERACT program.



Station occupancy expected for 2020 and in previous years:

2020 - expected 49 people (750 guest days) - situation uncertain because of COVID-19

2019 - 48 people (705 guest days)

2018 - 31 people (618 guest days)

2017 - 23 people (750 guest days)

2016 - 21 people (586 guest days)



# RECENT ACTIVITY AND INITIATIVES

## *Kafioyra (Oscar II Land)*

The station consists of 32 m<sup>2</sup> of floor space downstairs and 24 upstairs. There is the main room, a workshop, a bedroom, two mezzanine sleeping areas, and a fully equipped kitchen and lab, and an extra bedroom for 6 persons. There are also additional storage areas, another lab, a bathhouse, a lavatory, and garages for boats and motors. Now, the total useable floor space of all rooms and outbuildings is more than 100 m<sup>2</sup>. The station is furnished with all the necessary technical equipment, such as generator sets, photovoltaic cells, and motorboats and others. There is enough safety equipment to provide the necessary protection while working on glaciers or on water. This includes radio and satellite communication equipment, and appropriate firearms to be able to respond to potential threats from polar bears.

Number of visitors and guests per year 15-20 persons



There is an international airport in Longyearbyen with scheduled connections to mainland Norway. From there to the station ship transport is possible during summer (about 4-12 hours). There is also possible to get to Ny-Ålesund, and from this settlement to the station by boat or snowmobiles during spring. From Longyearbyen an air shuttle service normally twice a week connects Longyearbyen with Ny-Ålesund.

# RECENT ACTIVITY AND INITIATIVES

## *Baranowka (Wedel Jarlsberg Land)*

Seasonal station from May to October for 8 people (maximum 11) as a starting point for field research, it allows you to stay in good condition, equipped with basic household appliances, aggregate, photovoltaic installation, UHF radio for communication with Polish Polar Station Hornsund, no internet access.

Provision: food, fuel (wood for the stove, 11 kg gas bottles, propane-butane gas for the gas stove, engine oil, fuel to the gasoline aggregate, the team take from the Hornsund).

A number of visitors and guests in 2019:

- 4 scientists (201 person/days)
- 36 tourists from yachts



Access to Baranowka:

From Longyearbyen - sailing by yacht or speed-boat to Hyttevika and walk 5 km to Baranowka.

From Longyearbyen by vessel to Polish Polar Station in Hornsund, walk 16 km to Baranówka or in the zodiac to Hyttevika and walk 5 km to Baranowka

In the spring by snowmobile from PSP Hornsund to Baranowka



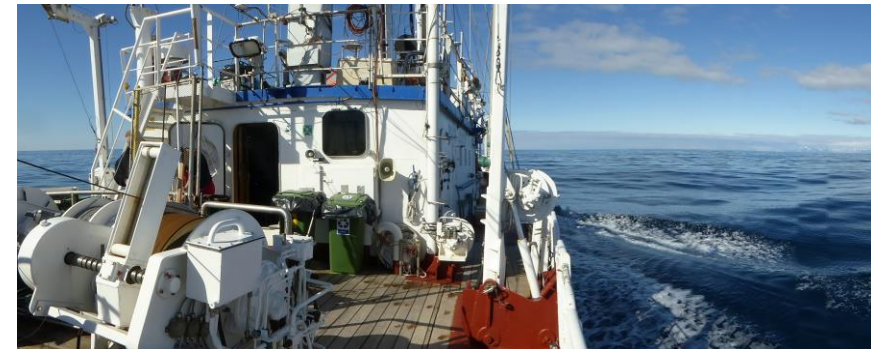
# RECENT ACTIVITY AND INITIATIVES

## *s/y OCEANIA*



- The long-term **AREX** observational program and annual cruises carried out in the Nordic Seas and the European Arctic since 1987 by the Institute of Oceanology PAS in Sopot (IO PAN) with the research vessel Oceania, constitute the main part of Polish activities in the Arctic marine areas.
- AREX campaigns are focused on multidisciplinary observations including physical oceanography, air-ocean interactions, ocean biogeochemistry and ecology to study the changes of abiotic and biotic Arctic environment.

Dimensions: 48.9 m / 9.0 m / 3.9 m  
Displacement: 370 T  
Main engine: Diesel, 600 kW MTU



# ACTIVITY AND INITIATIVES s/y OCEANIA

## *Arex 2019*

During **AREX2019 (12.06.2019 – 30.08.2019)** expedition oceanographic measurements contributed to several IO PAN statutory research areas and national and international research projects, including:

- ARGO-Poland
- Euro-Argo Research Infrastructure Sustainability and Enhancement EA-RISE (H20202)
- Integrated Arctic Observations System INTAROS (H2020)
- Seabird Populations SEAPOP II
- Future Arctic Algae Blooms and their role in the context of climate change FAABulous
- Arctic benthic ecosystems under change: the impact of deglaciation and boreal species transportation by macroplastic Adamant
- Interannual variability of properties and distribution of deep and intermediate water in the Nordic Seas DWINS
- Impact of Atlantic Water variability and atmospheric circulation on the changing sea ice cover in the European Arctic ATAC-ICE
- The development of deep convection in the Greenland Sea since the last glaciation BaSEAf
- The influence of Atlantic Water on the taxonomic and functional structure of zooplankton in Arctic fjords: the spatial, temporal and inter-summer aspect Tax4Fun
- Changes in the structure and functioning of pelagic ecosystems affected by water darkening due to glacier/river runoff in the fjords of European Arctic CoastDark
- The Holocene history of the Greenland Gyre Wir, Arctic benthos functioning response to climate warming induced changes in warm water advection and food supply AbeFun
- The ecological plasticity of the keystone Arctic zooplankton species ecoPlast
- Kwas
- Assemble Plus
- Ocean Acidification
- HIDEA.



# ACTIVITY AND INITIATIVES s/y OCEANIA

## *Arex 2019*



s/y OCEANIA working 240 days at sea a year, around 90 is in the Arctic or nearly 30%.

Financial support by Government for Oceania yearly is ca 1 500 k€

### High-level overview of existing infrastructure

- The **AREX 2019** lasted 70 days in the Arctic region. Vessel was occupied by 12-14 persons of scientific crew and 12 persons of navigational crew. It gives about 1750 persons-days in Arctic during AREX2019 expedition.
- Expedition AREX 2019 was divided into five legs. Exchanges of the scientific crew took a place in Tromsø (Norway) and three times in Longyearbyen (Svalbard).
- Two persons from Italy (students of Milan University) participated in Leg I,
- one student of Milan University in Leg II and Leg III
- one PhD student from Klaipeda University in Leg IV
- one student from Milan University in Leg V
- Exploitation r/v Oceania is financed by the Polish Academy of Sciences through a grant awarded to IOPAN.

# RECENT ACTIVITY AND INITIATIVES

## *s/t HORYZONT II on Svalbard in 2020*



First trip (8 June – 30 June)  
at Svalbard 16 - 22 June

16 crew  
20 students  
20 members from expeditions

Second trip (24 August - 15 September)  
at Svalbard 1 - 7 September

16 crew  
20 students  
20 members from expedition



# THANK YOU FOR YOUR ATTENTION



Foto: Tomasz Łęcarski