

Piotr GŁOWACKI & Jacek JANIA





Modernization of Polish facilities for Arctic research

FARO Meeting, Montreal, Canada 21 April 2012



Polish Multidisciplinary Laboratory for Polar Research

- A goal for creating the PolarPOL Laboratory is to combine technical and organizational ability for running inter-disciplinary research and observations within natural phenomena taking place in Arctic environment.
- The Laboratory is going to strengthen the Polish contribution to creating worldwide network for research and monitoring of land and marine environments in polar zones which are crucial for understanding the dynamics of environmental changes all over the globe (global warming and raising sea levels especially).





Polish Polar Station at Hornsund

Institute of Geophysics Polish Academy of Sciences Warszawa, Poland



Old Chemical and Biological Laboratory





New two separate laboratories chemical and biological





Every new laboratory has c. 7 m² and is equipped by cold and warm water





Equipped among other things:

- test-glas,
- volumetric analisis,
- pH meters
- conductometers,
- analytical balance,
- ion chromatograph

View to old room for winter crew





New room for winter crew

12 rooms every person has a separate room c. 7 m²





Polish Polar Station at Hornsund (Svalbard)

Facilities:

- ≻Single bedrooms 12 ≻Larger bedrooms – 7 (20 places for seasonal groups) Science laboratories – 10 **Kitchen** ➢Dining room ≻Common room **≻3 Bathrooms ≻6 Toilets** ➤Garage and workshop ≻15 Snow mobiles ≻2 Open boats **≻**3 Zodiacs ≻2 Caterpillars >Environmental pavilion
 - ≻3 Geophysical containers





s/y OCEANIA

Institute of Oceanology Polish Academy of Sciences Sopot, Poland



s/y "Oceania" after modernization:

- Main engine: Diesel, 600 kW MTU
- Sails: 280 m², electric setting
- Max. speed: 12 kts
- Endurance: 1 month
- Range: unlimited
 (except polar area in winter)
- Scientists: 14

(7 cabins, each 4 m2 plus 20 m² mess room)

• Laboratories: 50 m²



PHYSICAL MEASUREMENTS

- meteorological measurements,
- solar radiation,
- vertical wind gradients,
- aerosol concentration,
- vertical profiling.

COLLECTION OF SAMPLES

- atmospheric aerosols,
- water bottle measurements,
- phyto and zoo-plankton,
- sample fish trawls,
- underway bottom surface,
- sampling using grab samplers,
- near-bottom sediment cores,
- bird watching.



DECK EQUIPMENT:

- rotating stern frame, side frames,
- measuring booms, measuring balconies,
- deep (5000 m) and shallow lifts, net lifts, elevator trawl,
- hydraulic crane,
- weather stations,
- working inflatable's.



Old cottage usd by the Poznań University Petunia Bay (Spitsbergen - Dickson Land)

Adam Mickiewicz University Polar Station (AMPUS) Petuniabukta (Svalbard), N 78°42' E 016°36'



AMPUS facilities :

- every container has 10 m²
- place for accommodation to 6 persons
- place for work (laboratory) 5 m2
- store 5 m2





Thank you for your attention