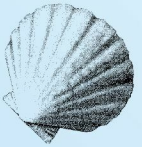
Of the approximately 2,500 marine macroorganisms that have been described in the Svalbard Archipelago, at least 600 have been noted in Hornsund. New species are being described as scientists study the less conspicuous and difficult taxa. When sampling methodology and habitat are compatible, the Hornsund marine benthos is not less diverse in comparison to temperate or even tropical sites. Some specific numbers regarding species richness at Hornsund are presented below:

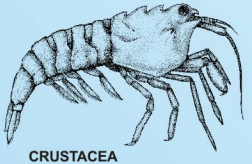
BRYOZOA
110 species



MOLLUSCA
92 species

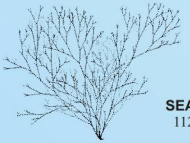
ECHINODERMATA
28 species

POLYCHAETA
89 species



CRUSTACEA
136 species

PISCES
17 species



SEAWEEDS
112 species

Other All Taxon Biodiversity Inventory Sites:
- Port-Cross Islands (PCI), France, http://www.portocrosparcnational.fr/
- Ushant-Molene Archipelago (UMA), France, http://www.univ-brest.fr/UEM/UMR6539/
- Faial-Pico Channel (FPC), Portugal, http://www.horta.uac.pt/species/
- Cabrera Archipelago (CAB) Spain, http://www.mma.es/parques/lared/carbera/
- Scilly Island (SCI), UK, http://www.scillyonline.co.uk/info.html#Trust

Web pages of selected research projects dealing with the area:

MARBEF, http://www.marbef/org/
MARBENA, http://www.vliz.be/marbena/
BIOSPHERE, http://www.iopan.gda.pl/projects/biosphere
BIODAFF, http://www.iopan.gda.pl/projects/biodaff

Selected references:

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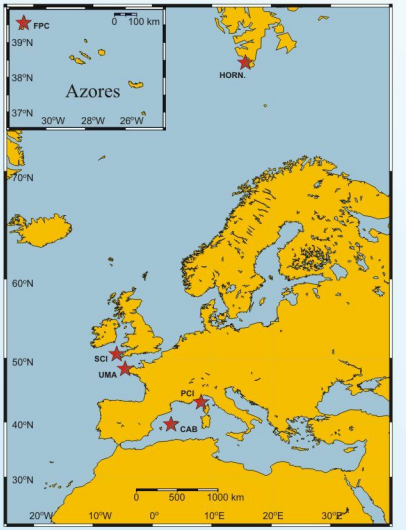
contact: Jan Marcin Węsławski, weslaw@iopan.gda.pl
http://www.iopan.gda.pl/projects/biodaff/

EUROPEAN BIODIVERSITY ATBI SITE

HORNSUND

Under auspices of MARBENA and MARBEF (ArctEco Project) programs of EU



All Taxon, Biodiversity Inventory Sites

NETWORK OF EXCELLENCE IN EUROPEAN MARINE BIODIVERSITY RESEARCH

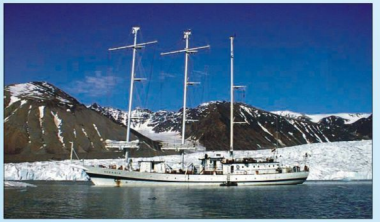
MarBEF

Coordinator Prof. Carlo H.R. Heip and Prof. Herman Hummel,

Netherlands Inst. for Ecology, Center for Estuarine and Coastal Ecology. 4401 NT Yerseke, The Netherlands
heip@cemo.nioo.knaw.nl
http://www.marbef.org

Hornsund, Spitsbergen Island, Svalbard Archipelago, (77°N, 15°E)

Selected for its pristine, undisturbed natural character, Hornsund is one of six European localities nominated for a complete inventory of marine flora and fauna. The fjord is exposed to both the relatively warm Atlantic waters of the West Spitsbergen Current and to the cold local waters of the Sorkapp Current. Ice cover varies annually, and usually lasts for seven months in the inner fjord. The site is important as an international research area on marine and terrestrial biota.



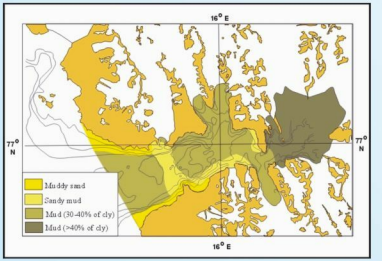
R/V OCEANIA CALLS HORNSUND EVERY JULY

The institutes involved in local biodiversity research are the Institute of Oceanology, Polish Academy of Sciences (IOPAS); the Institute of Oceanography and the Institute of Biology, University of Gdańsk; the Laboratory of Polar Biology, University of Łódź. Regular cooperation is maintained with the AKVAPLAN, Norsk Polarinstitutt, University Studies on Svalbard, Plymouth Marine Laboratory and the British Antarctic Survey.

POLISH POLAR STATION IN HORNSUND

The main field research facilities are operated by the Institute of Geophysics, Polish Academy of Sciences, which has maintained a permanent research station in Isbjornhamna since 1957 (http://hornsund.igf.edu.pl). The research vessel Oceania of IOPAS has called at Hornsund for one week every July since 1988 (http://iopan.gda.pl). The contact person at the Polish Polar Station in Hornsund is Dr. Piotr Głowacki, email: glowacki@igf.edu.pl

In nature, some species are more important than others. When these species form a living space or habitat for others, they are referred to as "structural species". In Hornsund, the species of key importance are kelp (*Laminaria*, *Alaria*), Bryozoa - bushy colonial animals, and mud worms that are able to build solid tubes (*Spiochaetopteros*, *Maldane*). Species of great importance also include those which are major prey items for others, such as Polar cod, krill, pelagic copepod crustaceans, and shrimps. A community, or assemblage, is a group of species that occurs together in a similar habitat. The main community on the Hornsund sea bed is comprised of clusters of polychaete worm and bivalve species associated with soft muddy bottoms.

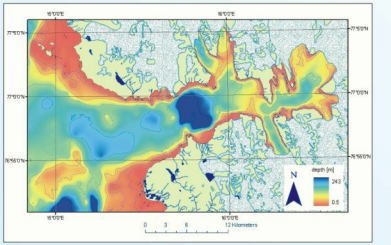


SEABED SEDIMENTS

There are eleven different benthic marine habitats in Hornsund. A habitat is a distinct complex of physical features of ground and water that form an easily distinguished entity used by different species that are adapted to live within it.

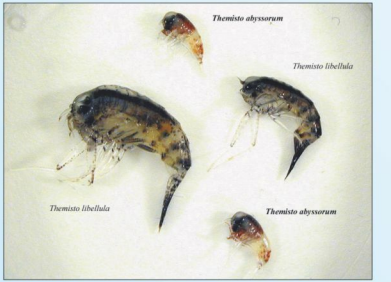
SOFT BOTTOM WITH ANEMONE AND POLYCHAETS

Hornsund covers an area of approximately 40,000 ha with depths reaching 350 m. The shores are mainly gravel beaches, metamorphic rocks, and ice cliffs. Although small rivers flow into the fjord, the majority of freshwater inflow comes from glaciers at an annual discharge of 1 km^3. The region is protected as the South Spitsbergen National Park and is the site of important breeding grounds for a number of bird species (the Bird Sanctuary at Dunoyanne, a number of major seabird colonies located along the fjord).



HORNSUND BATHYMETRY

A bioindicator is a species that, through its occurrence, provides complex and integrated information regarding the local environment. In Hornsund, the domination of Atlantic water plankters, *Calanus finmarchicus* and *Themisto abyssorum*, indicates that warm water flows in from the shelf, while the presence of *C. glacialis*, *T. libellula*, and ice amphipods, *Gammarus wilkitzkii*, indicates the occurrence of Arctic waters.



PELAGIC AMPHIPODS - KEY FOOD WEB SPECIES