

## 8.2 Invertebrate biodiversity

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During the ecosystem survey 2013 (Russian research vessel «Vilnyus») 47 quantity grab-samples were taken from 10 stations on the transect «Kola meridian» (long term monitoring series since 1930).

### 8.2.1 Megabenthos bycatch in bottom trawls

According to the analysis of megabenthos bycatch in bottom trawls at the four participating vessels in ecosystem survey in 2013, 576 taxa of benthic invertebrates were identified, where 385 taxa were identified to the species level. The taxa belonged to 312 genera, 205 families, 87 orders, 30 classes and 15 phyla (Table 8.2.1.1). The highest number of taxa was recorded at R/V Helmer Hanssen (western and northern part of Svalbard), followed by R/V Vilnyus in the eastern part of the Barents Sea.

**Table 8.2.1.1 Amount of benthic taxa identified in the ecosystem survey 2013**

Taxon	«Vilnyus» Russian (east) Barents Sea	«G.O. Sars» Southern Barents Sea	«Helmer Hanssen» Svalbard W and N	«Johan Hjort» Northern Barents Sea
Phylum	13	12	15	14
Class	24	23	27	27
Order	64	67	79	68
Family	123	126	156	132
Genus	142	138	186	155
Species	180	167	240	203
Total taxa	290	238	313	277

Arthropoda had the highest number of taxa (132 taxa, i.e. 32% of the total number of taxa recorded by the trawling in the Barents Sea 2013, Figure 8.2.1.1), followed by Mollusca (123 taxa) and Echinodermata (76 taxa). The phyla Nemertini was presented by the lowest number of taxa (1 taxon). The most common species and taxa were *Sabinea septemcarinata*, *Ctenodiscus crispatus*, Porifera g. sp.

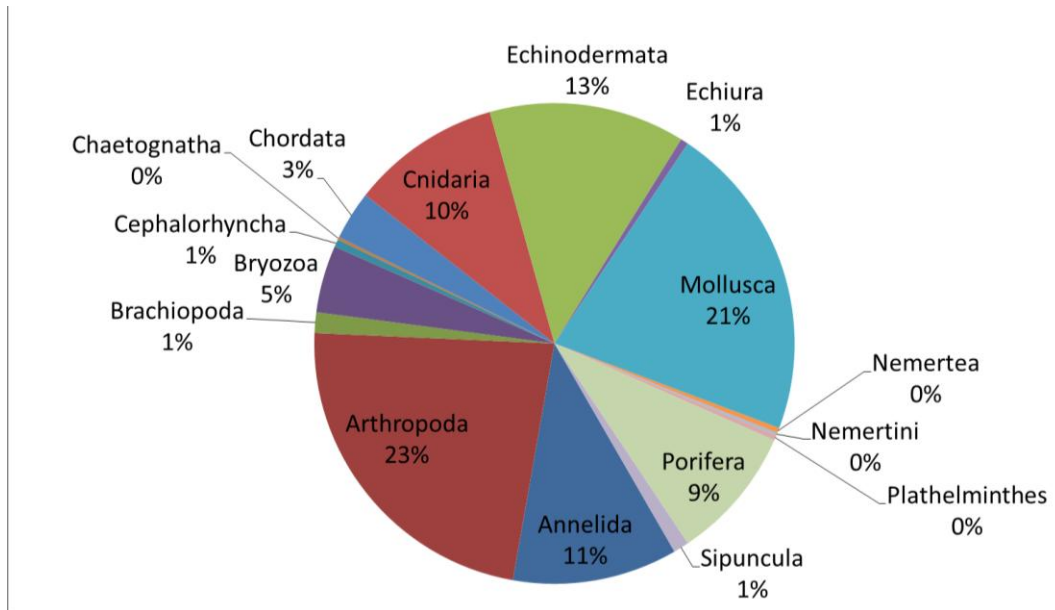


Figure 8.2.1.1 The contribution of taxa per invertebrate group in the bottom trawl by-catch by the data of ecosystem survey 2013 (%)

### Biodiversity (number of taxa)

The number of taxa in the trawl catches ranged from 3 to 66 with an average of  $25 \pm 1$  taxa. The highest number of taxa (60 taxa) was recorded north east of Svalbard/Spitsbergen (close to Kong Karls Land, south of Nordaustlandet) (Figure 8.2.1.2).

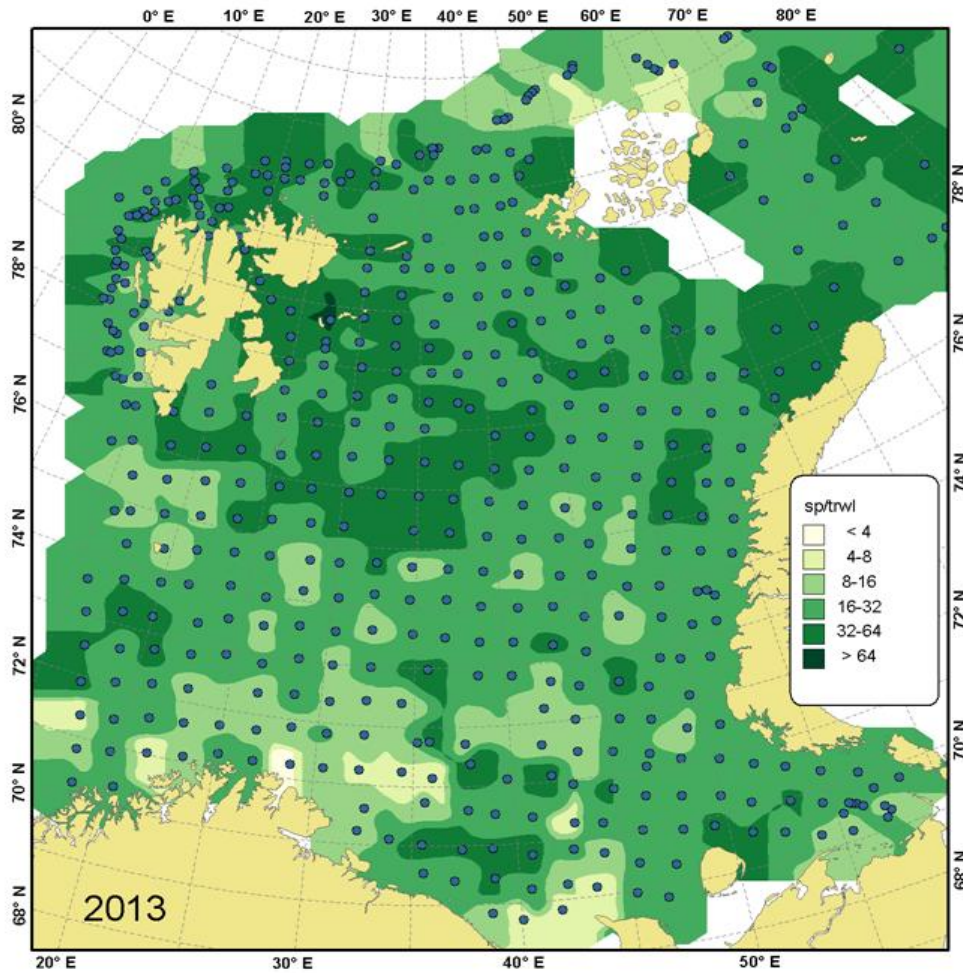


Figure 8.2.1.2 The number of taxa per nml in the Barents Sea in the ecosystem survey 2013

The area north of the Finmark coast and in the south-eastern part of the Barents Sea (The Kanin peninsula, Kolguev island) were characterized by low number of taxa (>4 taxa per trawl).

### Abundance (number of individuals)

Average number of invertebrate encountered in the by-catch, was  $4126 \pm 520$  individuals per mile trawling. Minimum catch was recorded on the vessel «Helmer Hanssen» in the north-eastern part of the archipelago of Spitsbergen/Svalbard, and was 8 individuals per mile of trawling.

Maximum catch was taken by the vessel «Johan Hjort» in the area of the Bear Island and counted 145 091 individuals and *Microcosmus glacialis* made up the largest part of these individuals (Figure 8.2.1.3).

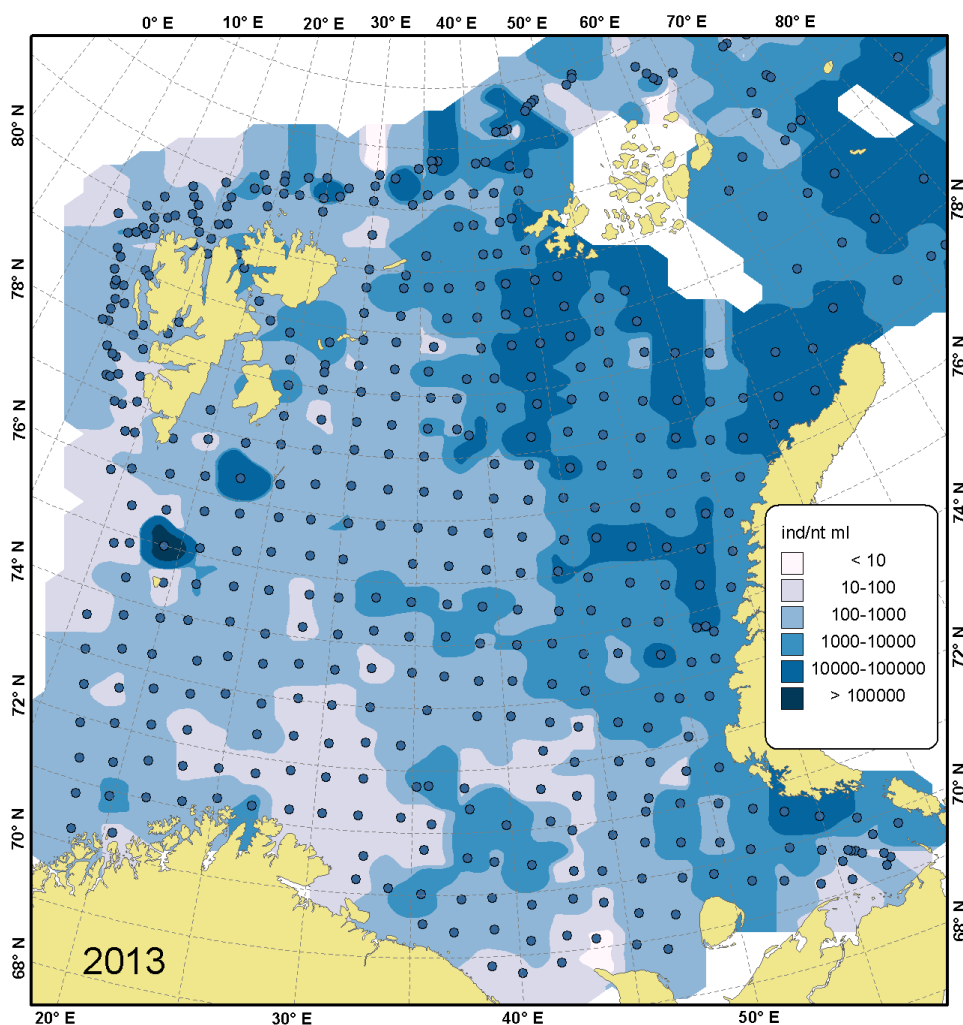


Figure 8.2.1.3 The extrapolated number of individuals of megabenthos in the Barents Sea in the ecosystem survey 2013

The largest areas with high abundance of megazoobenthos were noted in the north-eastern part of the Barents Sea. In the southern and the south-eastern areas a maximum of 100 individuals were recorded per mile of trawling.

## Biomass

Maximum catch of megabenthos (6.6 tons) was recorded north of Franz Josef Land, at the Svalbard Bank, and in the south western Barents Sea. The smallest catch (23.7 g) was recorded in the north-east of Spitsbergen on 1082 m depth (Figure 8.2.1.4). The average biomass of the Barents Sea megabenthos was  $71 \pm 19$  kg per mile of trawling.

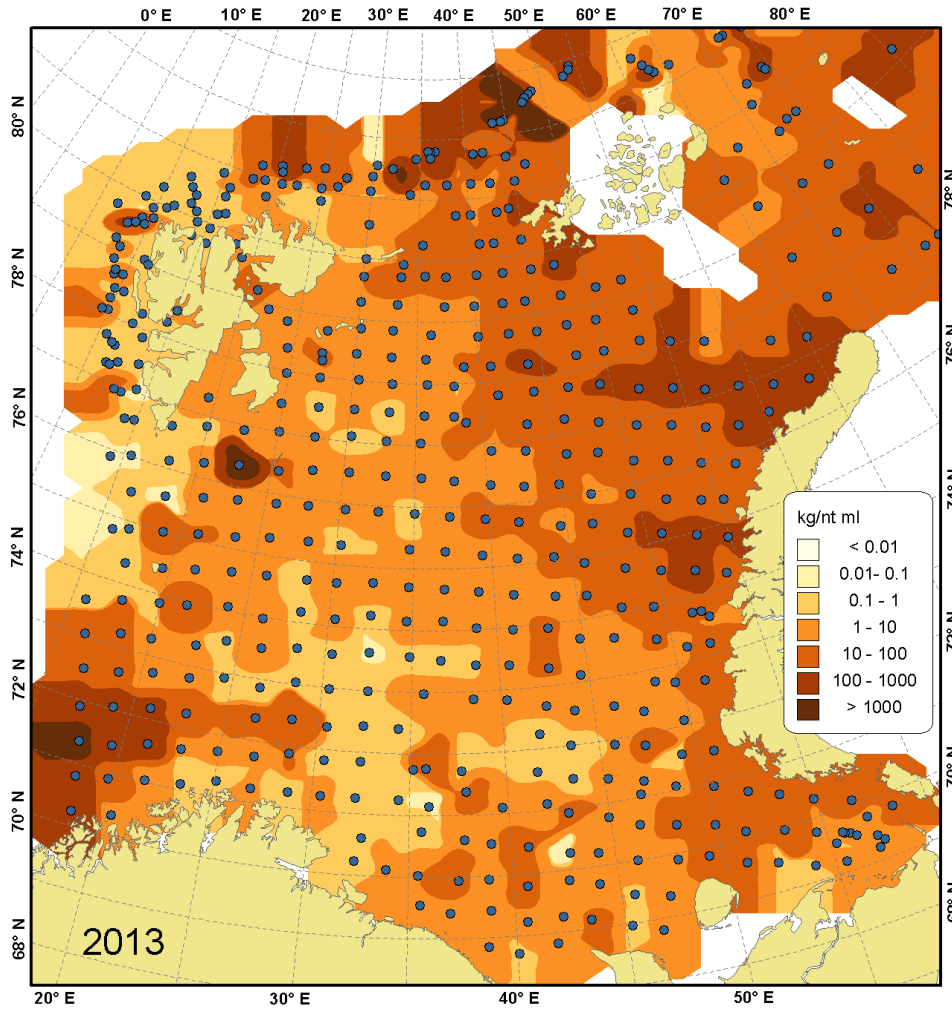


Figure 8.2.1.4 Biomass distribution of megabenthos in the Barents Sea in the ecosystem survey 2013

According to the ecosystem survey 2013, as well as the results of previous research, there is a tendency of increasing prevalence of Echinodermata (biomass by-catch) from south-west to north-eastern Barents Sea (Figure 8.2.1.5). Sponges dominated in biomass in the southwest Barents Sea and on the continental slope west and north of Svalbard and all the way east to Franz Josef Land. Sponges were mainly represented by the species of the genus *Geodia*. A high dominance of Mollusca (Buccinidae indet) was recorded in the area of the Hopen Island.

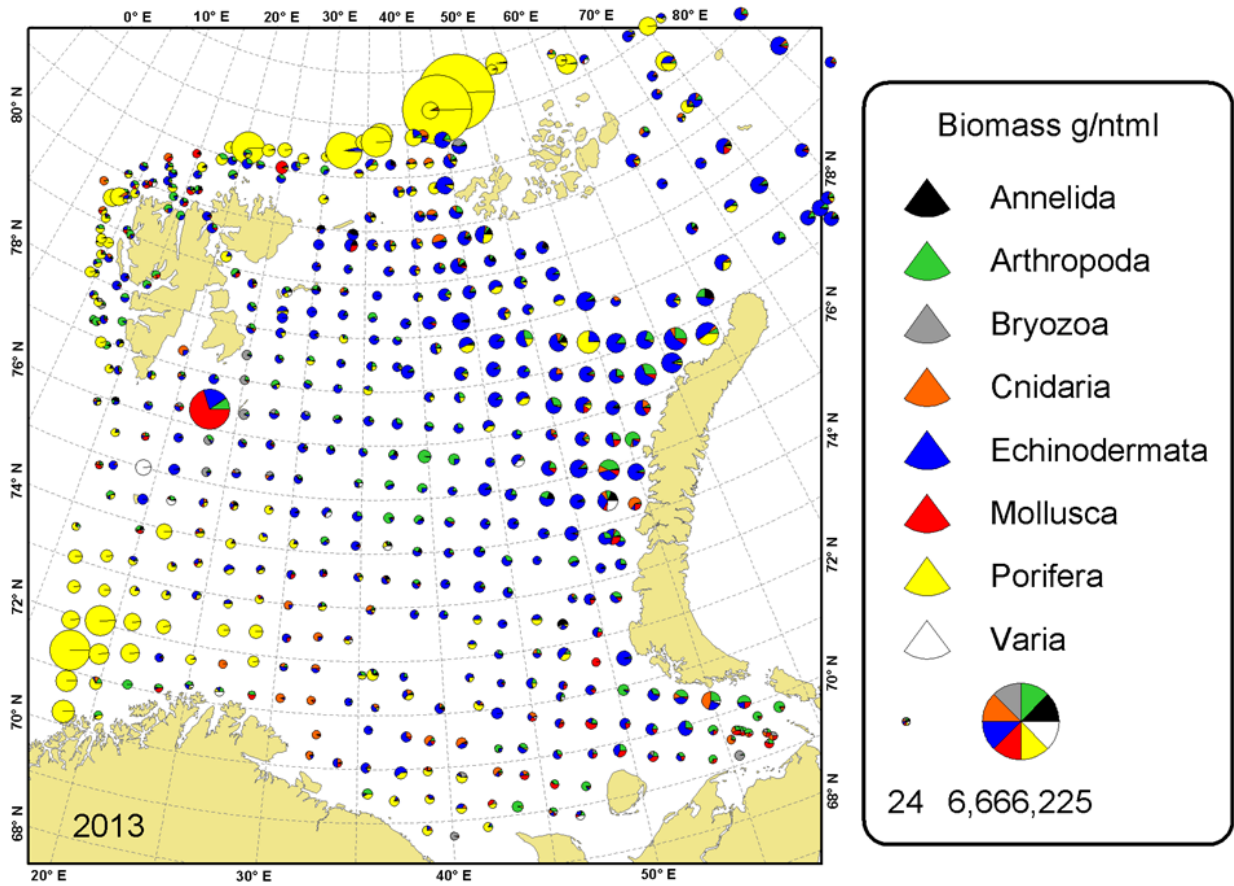


Figure 8.2.1.5 Biomass distribution of main taxonomic groups per station in the Barents Sea during the ecosystem survey 2013