Semiquantitative invertebrate benthic data from the Barents Sea Ecosystem Survey collected with a bottom trawl onboard three Norwegian Research vessels during Aug.-Sep. 2023.

Citation: IMR 2025, Semiquantitative invertebrate benthic data from the Ecosystem Survey collected in 2023 with bottom Campelen trawl. DOI: 10.21335/NMDC-433011585

Keywords: Benthos, bottom trawl, invertebrates, Barents Sea

This benthos data set from the Barents Sea 2023 covers 175 trawl stations and taxonomic identified by 2 shifts (one person) on each of the three involved research vessels (R/V) and made up nine different taxonomists/technicians in 2023. **This dataset therefore represents a non-standardized dataset between stations** because trawl distance varies between stations, and the skills and qualities vary among the taxonomists/technicians involved.

In the Barents Sea, three R/Vs: G.O. Sars (GS), Johan Hjort (JH) and Kronprin Haakon (KH) used a Campelen 1800 bottom trawl to harvest fish and invertebrate benthos from the seabed. In addition, the trawl also harvested organisms entering the trawl when it is lowered or heaved. R/V "GS" operated in the period 20 August – 14 September 2023, R/V "JH" operated 25 August – 29 September 2024 while "KH" operated in the period 18-30 September 2023.

The Campelen bottom trawl was standardized across the three R/Vs by a rigging of a rock-hopper ground gear and by being towed on double warps. The mesh size was 80 mm (stretched) in the front and 16–22 mm in the cod end. The horizontal opening was 11.7 m, and the vertical opening 4 –5 m. The trawl configuration and bottom contact was monitored remotely by SCANMAR trawl sensors.

The standard procedure for all three research vessels is to tow after the trawl had contacted the bottom with towing speed of 3 knots (this varied from 2.8 - 3.6 knots), equivalent to a towing distance of approximately 0.75 nautical miles (this varied from 0,4-2.2 nautical miles).

The trawl catch was sorted into fish and invertebrate benthos onboard the three R/Vs. In this dataset we present the invertebrate benthos (hereafter called benthos) not the fish catch, and all data registrations represent a single trawl, hence not standardized across trawls or research vessels.

Each benthos taxon is identified to closest possible taxa from the best skills of the taxonomist/technician. The use of standardized taxonomic literature onboard is introduced with annual three-day obligatory coursing for the involved taxonomists/technicians.
After identification the taxa are counted and weighed (i.e., biomass is wet mass) onboard the ship. The count of individuals per solitary species/taxa in the trawl (Number of

ind._Total_trawl) and the wet-weight of the individuals per species/taxa in the trawl (Biomass (g wetweight)_Total_trawl) were recorded (colonial species were only wet-weight). We consider the abundance and wet weight as "***semiquantitative***" because the trawl catch is constantly sieved through the mesh while tawed on the seabed, hauled through the water, entering the ship and finally the ship laboratory.

Table 1. The measures provided in the benthos raw-data excel file with explanations for the Station data and the Biological data 2023.

Station data

Serie number	Unique station code of the year
Ship	The ship name
Station_code	Shipname-year-serie number
Date_start	Dato and year start
Time_start	Time o clock
NNstart	Latitude at trawl start
EEstart	Longitude at trawl start
NNfinish	Latitude at end of trawl haul
EEfinish	Longitude at end of trawl haul
Depth_trawl_start	Water depth (m) at trawl start
Depth_trawl_finish	Water depth (m) at trawl stop
DD	Mean water depth (m) of trawl haul
Trawl	Trawl-type
Distance_calc_nm	Length of trawl haul (nm) on the seafloor
Speed	Ship speed through water in knots

Biological data

Serie number	Unique station code of the year
Code_Expert	The code of the expert/technician doing the species identification
Phylum_WORMS	Phylum in accordance to WORMS
Class_WORMS	Class in accordance to WORMS
Order_WORMS	Order in accordance to WORMS
Family_WORMS	Family in accordance to WORMS
ScientificName_WORMS	Scientific Name in accordance to WORMS
Authority_WORMS	Authority in accordance to WORMS
DATE_update_WORMS	Dato for when downloaded from WORMS
AphiaID_WORMS	AphiaID in accordance to WORMS
Number of ind._Total_trawl	Approximate number of individuals taken by the trawl
Biomass (g wetweight)_Total_trawl	Approximate gram wet weight taken by the trawl

WORMS: https://www.marinespecies.org/aphia.php