

Report on the MAR-ECO investigations during the redfish survey by the M/V “Smolensk” (Russia) in the Irminger sea, May-June 2003

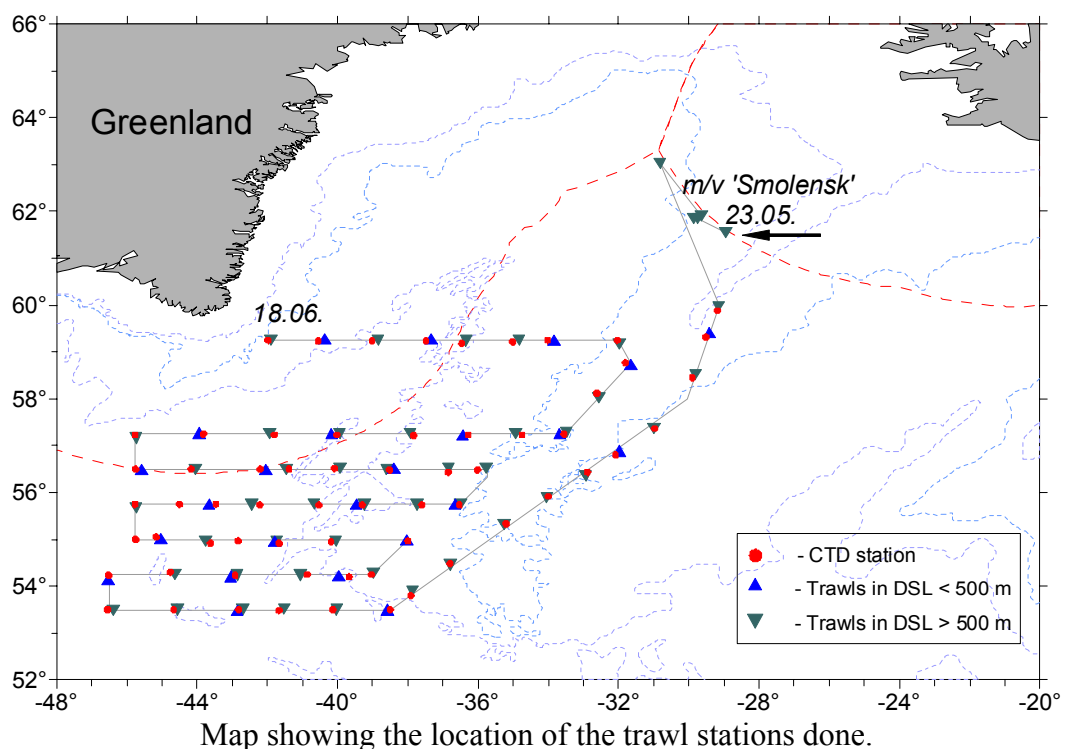


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From 23 May to 18 June 2003 scientists of Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO) took part in the International Trawl-Acoustic Survey on redfish in the Irminger Sea. The main goal of the research cruise of m/v “Smolensk” was to estimate pelagic redfish (*Sebastes mentella*) stock. Data on biology and oceanography were taken both within oceanic pelagic depth and adjacent waters along northern part of the Mid-Atlantic Ridge (MAR). This information was used to describe the status of the redfish population and its habitat.

The investigations under the MAR-ECO project were conducted during the main survey. The whole survey area can be considered as MAR-ECO area. The eastern trawls were located over Mid-Atlantic Ridge and the other trawls in adjacent waters.



Map showing the location of the trawl stations done.

The most attention was paid to examination of pelagic and nekton community (jellyfish, shrimp, cephalopods and fish) composition as well as on trophic interrelations of fish species, their distribution and environmental researches. Plankton sampling and some observations of marine mammals were also done.



Scientific team (not all members).

A multidisciplinary team consisted of eleven scientists including physical oceanographers, ichthyologists, parasitologists and hydroacoustic people.

The data collected will be used to define differences between pelagic nekton community composition over the Reykjanes Ridge and the Irminger Sea, to evaluate the diet peculiarities of the most abundant fish species and to map both possible prey species and competitor species (shrimp, cephalopods and jellyfish) distribution. The oceanographic data on water temperature and salinity will allow to find relationships between environmental physical factors and live resources distribution patterns.



Training in the dealing with oceanographic station



For sampling research midwater trawl, plankton net, CTD and echo sounder at different frequencies were used. The observations were similar at all stations and included data on oceanography, zooplankton, fishes, shrimps, cephalopods and jellyfish.

More details:

Results of cruise m/v 'Smolensk' in the Irminger Sea in May-June 2003

Zooplankton: The zooplankton was sampled with the plankton net (gauze №140, diameter of the entrance hole 50 cm) that was towed together with the research trawl. The zooplankton samples were preserved in 4% neutralised formalin.

Nekton: A research midwater 125 mm trawl (50X50 m opening) with cod-end lined with 16 mm mesh net was used to sample pelagic fish, cephalopods and large zooplankton. Fish caught were identified to species onboard. Nekton organisms (jellyfish, shrimps, cephalopods and fish) were examined for their total number and weight, and length composition. Sex and maturity stages of fish were determined as well as fish otoliths were sampled too. To identify the diet composition, the stomach content of the most abundant fish species were analysed onboard. Besides a number of frozen samples (15-25 specimens of each numerous species) were also taken throughout the survey area for further laboratory analysis.



Lophodolos haplocaulus



Lynophryne breviparvata



Unidentified shrimp



Unidentified Crustacean



Unidentified squid with big eyes



Leptostomias haplocaulus



Victor Mamylov – the leader of acoustic group

Acoustic measurements: A 38 kHz Simrad EK500 split-beam echo sounder and integrator were used for the acoustic data collection. Post-processing systems were used for scrutinising the echograms. Mean integrated values of redfish and macro-plankton per 1 nm were recorded. The acoustic assessment and estimation by "trawl method" were used to calculate abundance of fish both above and below 500 m depth.

Our cruise data by comparing the results with those from other MAR-ECO cruises will be able to assess if the animal community and its trophic structure varies both from north to south and from west to east.



Minke whale observes our MAR-ECO researches



A pretty small jellyfish