Federal Research Institute for Rural Areas, Forestry and Fisherie

Thünen-Institute of Sea Fisheries

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Cruise Report
FRV Solea 786
02.12. – 20.12.2020

Cruise Leader: Kay Panten

Summary

The purpose of this trip was again the qualitative and quantitative recording of the demersal fish fauna in the German Exclusive Economic Zone (EEZ) of the North Sea. In conjunction with the results of investigations of the benthic invertebrate fauna of other research institutes possible changes due to increasing industrialization (wind farms, sand and gravel extraction) are to be detected. The entire EEZ was divided into different ecological zones and covered with a fixed station network. Since the investigation began in 2004, an annual exchange between the beam trawl and bottom trawl maintained. This year the investigations were therefore carried out again with the bottom trawl.
A total of 49 fish species and 43 invertebrate species were detected in the 63 carried out hauls with the bottom trawl. The fish were dominated by species dab, sprat, grey gurnad, plaice, herring and whiting. The catch of invertebrates consisted mainly of starfish, swimming crabs and whelks.

Verteiler:
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Deutscher Hochseefischerei-Verband e.V.
DFFU

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Präsidialbüro (Michael Welling)
Personalreferat Braunschweig
TI - Fischereiökologie
TI - Ostseefischerei Rostock
FIZ-Fischerei
TI - PR
MRI - BFEL HH, FB Fischqualität

Dr. Rohlf/SF - Reiseplanung Forschungsschiffe
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Objectives

1. Monitoring of the demersal fish fauna in the German EEZ
2. Distribution of temperature and salinity in the area of investigation

Narrative (Fig. 1)

Due to the crew's test on COVID-19 on the day of departure and the waiting time for the results, the scientific crew did not board the ship until the late afternoon of 3rd December. FMS Solea left Cuxhaven on 4th December at around 12:00 p.m. The research work began on the same day southeast of Helgoland. During the following three days, the stations west and north of Helgoland could be fished before Helgoland was used as a safe harbour for one night before a storm. In the early morning of 8th December the harbour was left again and the research work continued in a north-westerly direction. In the morning of 10th December the wind freshened up so much that the research had to be stopped after two hauls in the far north-west of the German EEZ. In the last week of the survey it was possible to work on another 35 stations with changing winds. On the morning of 18th December, the last haul of the voyage was finished. The survey was completed in the early afternoon of 19th December at the Fassmer shipyard in Berne. The return journey to Bremerhaven took place the next day.

Results (Fig. 2 – 10)

A total of 63 half an hour and valid hauls were made using the "cod hopper" demersal trawl. At all 63 stations salinity and temperature were measured.
The species composition distribution showed the usual geographic pattern with Whiting, dab and haddock as the most frequent fish, followed by sprat, grey gurnad, herring and plaice. Cod was present only in small amounts and quantities. More southern species such as anchovy were sporadically represented. The catch of invertebrates consisted mainly of starfish, swimming crabs and whelks.

Participants:

Name	**Institution**
Kay Panten	TI-SF
Jana Bäger	TI-SF
Karin Krüger	TI-SF
Sandra Krüger	TI-SF
Sophie Lanners	TI-SF

Dipl.-Biol. K. Panten

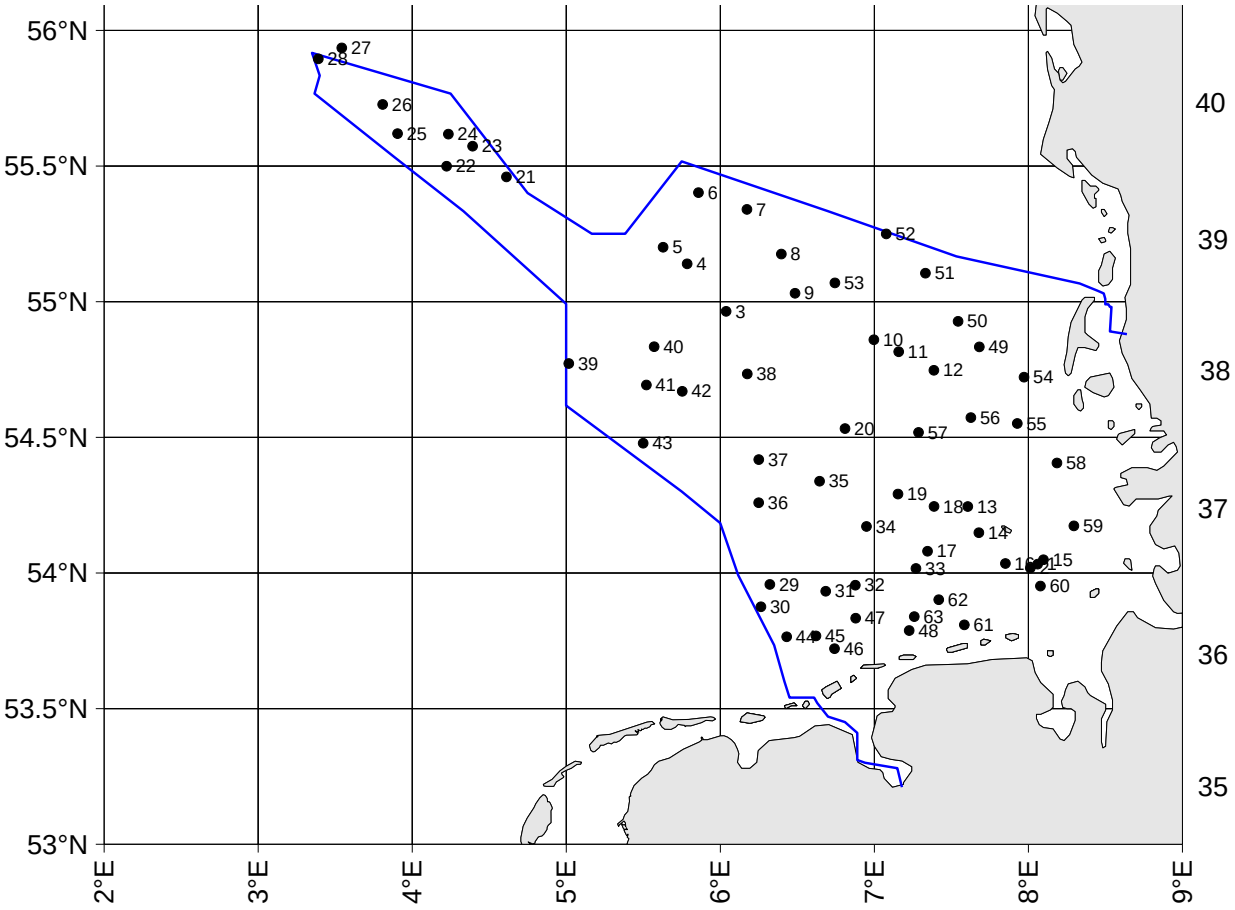

Fig. 1: "Solea", Cruise no. 786 , Haul positions and area of investigation

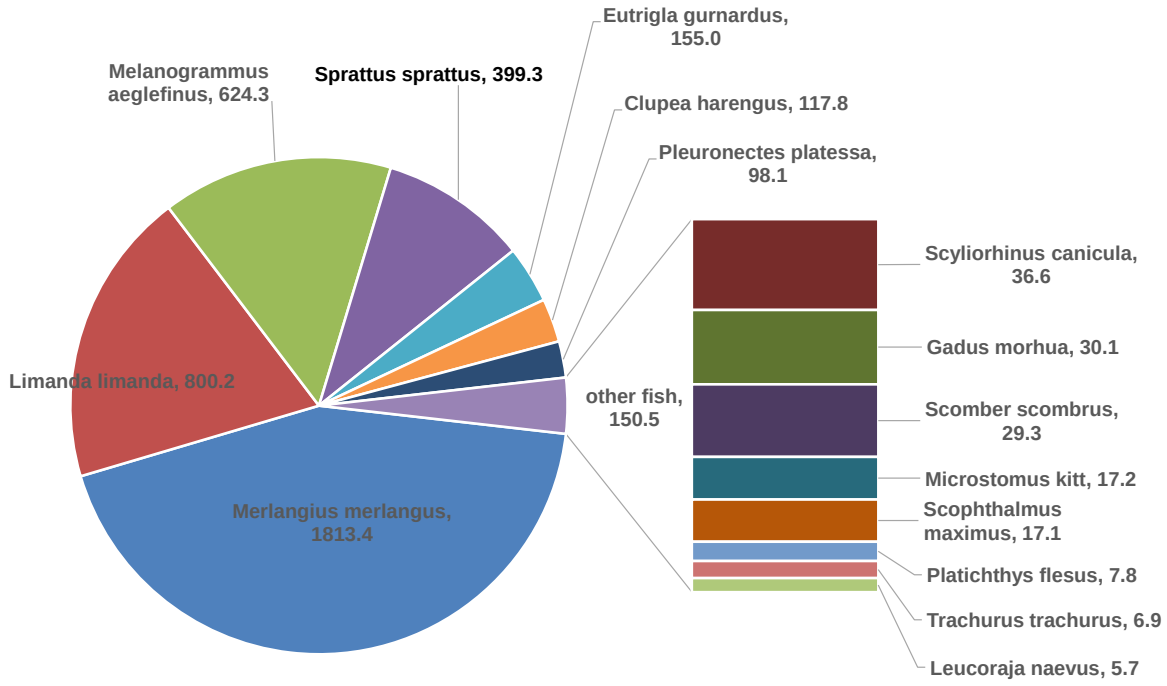

Fig. 2: Catch composition with the 15 most fish species caught in kg

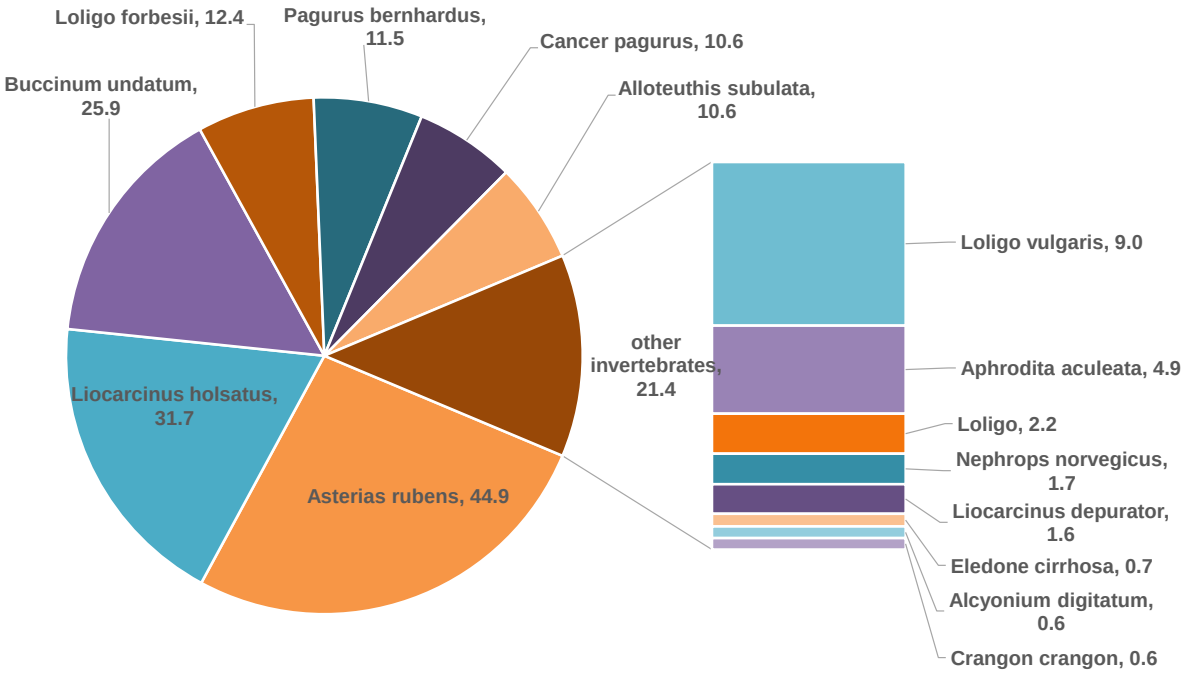

Fig. 3: Catch composition with the 15 most invertebrates caught in kg

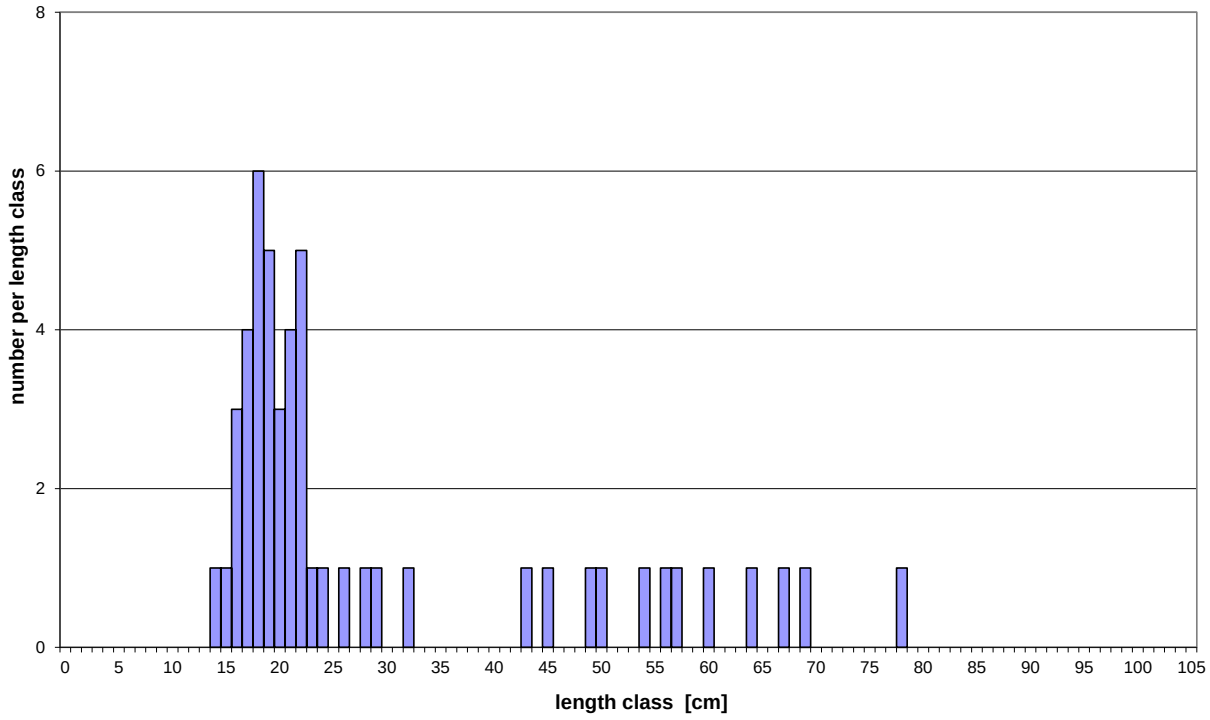

Fig. 4: Length distribution of cod (*Gadus morhua*)

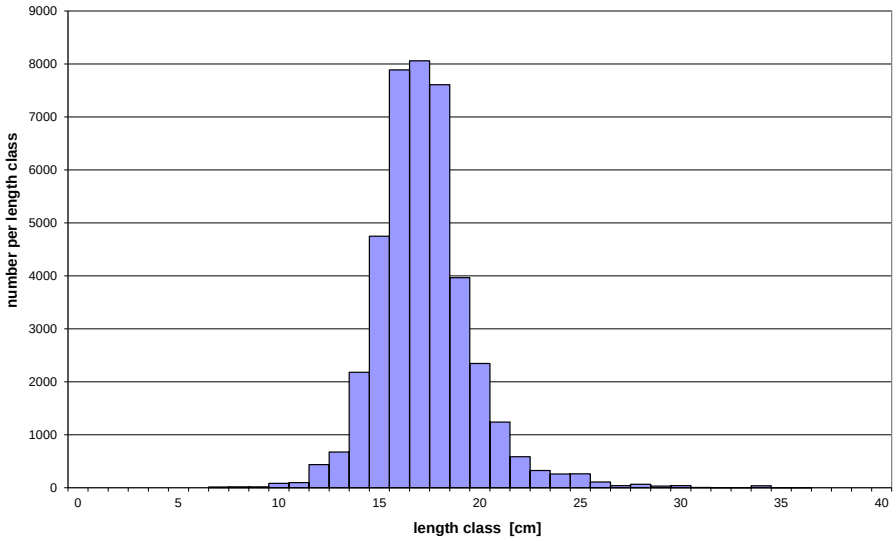

Fig. 5: Length distribution of whiting (*Merlangius merlangus*)

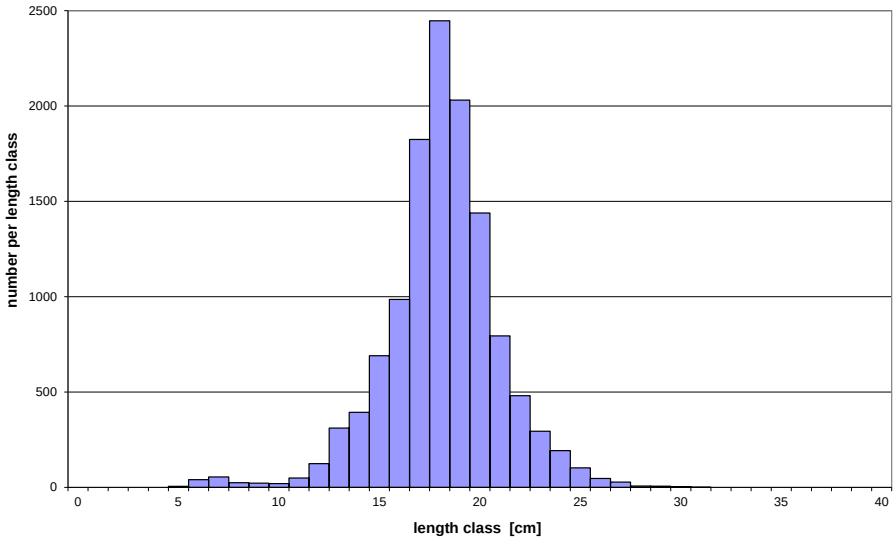

Fig. 6: Length distribution of dab (*Limanda limanda*)

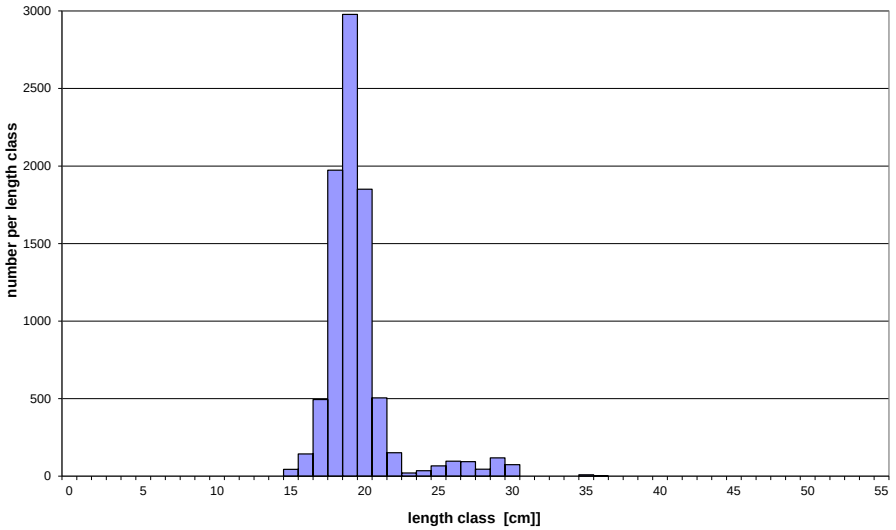

Fig. 7: Length distribution of haddock (*Melanogrammus aeglefinus*)

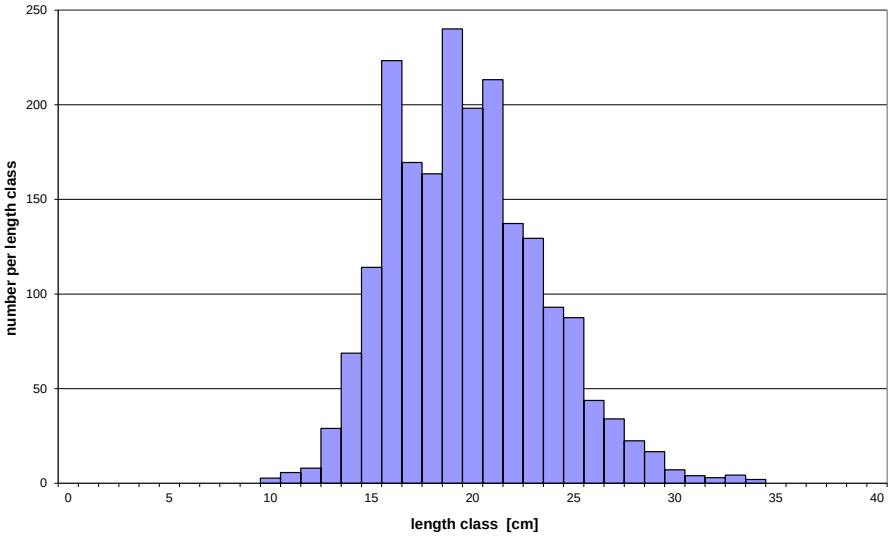

Fig. 8: Length distribution of grey gurnad (*Eutrigla gurnadus*)

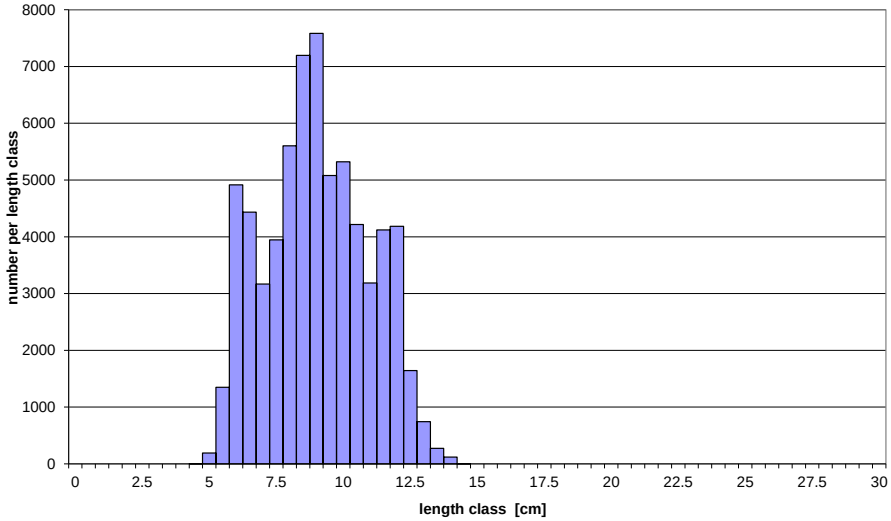

Fig. 9: Length distribution of sprat (*Sprattus sprattus*)

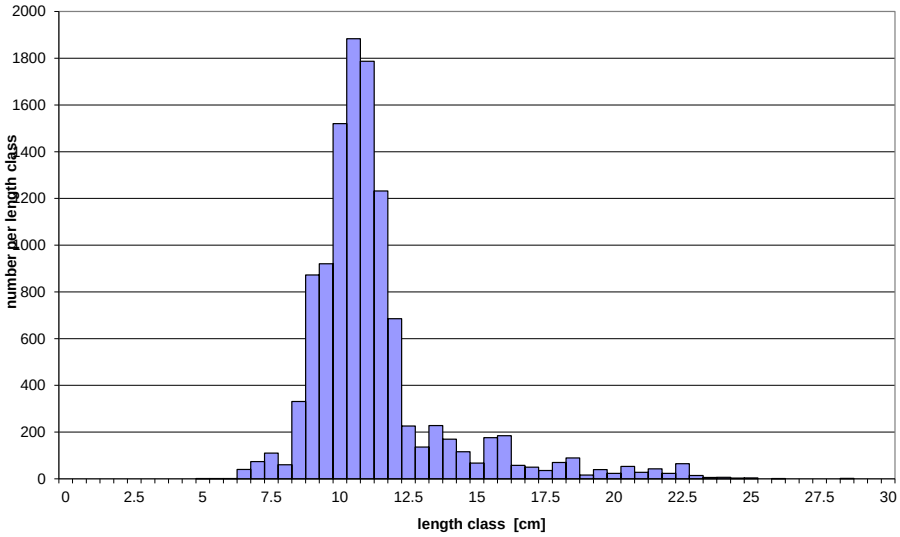

Fig. 10: Length distribution of herring (*Clupea harengus*)