Federal Research Institute for Rural Areas,

Forestry and Fisheries

Thünen-Institute of Sea Fisheries

Palmaille 9, 22767 Hamburg Telephone +4940 38905-108 Telefax +4940 38905-263 30.01.2017 Az.:Pa./v.S/3680

Cruise 729. ‚SOLEA'

Report

01.12. – 16.12.2016

1. 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 53 fish species and 42 invertebrate species were detected in the 69 carried out hauls with the bottom trawl. The fish were dominated by species whiting, dab, grey gurnad, plaice, herring and sprat. The catch of invertebrates consisted mainly of starfish, swimming crabs and squids.

Verteiler:
Thünen-Institut für Seefischerei
Saßnitzer Seefischerei e. G.
DFFU

per E-Mail:
BMELV, Ref. 614
BMELV, Ref. 613
Bundesanstalt für Landwirtschaft und Ernährung, Hamburg
Schiffsführung FFS "Solea"
Präsidialbüro (Michael Welling)
Verwaltung Hamburg
Thünen-Institut für Fischereiökologie
Thünen-Institut für Ostseefischerei Rostock
FIZ-Fischerei
Thünen-Institut - PR
MRI - BFEL HH, FB Fischqualität
Dr. Rohlf/SF - Reiseplanung Forschungsschiffe
Fahrtteilnehmer
Bundesamt für Seeschifffahrt und Hydrographie, Hamburg
Mecklenburger Hochseefischerei GmbH, Rostock
Doggerbank Seefischerei GmbH, Bremerhaven
Deutscher Fischerei - Verband e. V., Hamburg
Leibniz-Institut für Meereswissenschaften IFM-GEOMAR
H. Cammann-Oehne, BSH
Deutscher Hochseefischerei-Verband e.V.

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)

With western wind of strength 7 FRV "Solea" left the port of Cuxhaven in the afternoon of 1st December. The night was spent in the shelter of Helgoland. In the following six days the stations could be fished in the middle of the German EEZ as well as in the area of the Doggerbank in good weather conditions before a storm forced two days to stay in Helgoland. After returning to the investigation area all remaining stations could be processed. Due to the good weather conditions the trip was completed five days earlier in the morning of the 16th of December in Cuxhaven. The return trip to Hamburg took place the same day.

Results (Fig. 2 – 10)

A total of 69 half an hour and valid hauls were made using the "cod hopper" demersal trawl. At all 69 stations salinity and temperature were measured.
The species composition distribution showed the usual geographic pattern with whiting and dab as the most frequent fish, followed by grey gurnad, plaice, herring and sprat. Cod was present only in small amounts and quantities. More southern species such as anchovy were not represented. The catch of invertebrates consisted mainly of starfish, swimming crabs and squids.

Participants:

Name	**Institution**
Kay Panten	TI-SF
Stephan Durst	Senckenberg
Thomas Kehlert	TI-SF
Karin Krüger	TI-SF
Christine Petersen-Frey	TI-SF
Dimitri Schuschkow	TI-SF
Thilo Weddehage	TI-SF

K. Panten

Dipl.-Biol. K. Panten

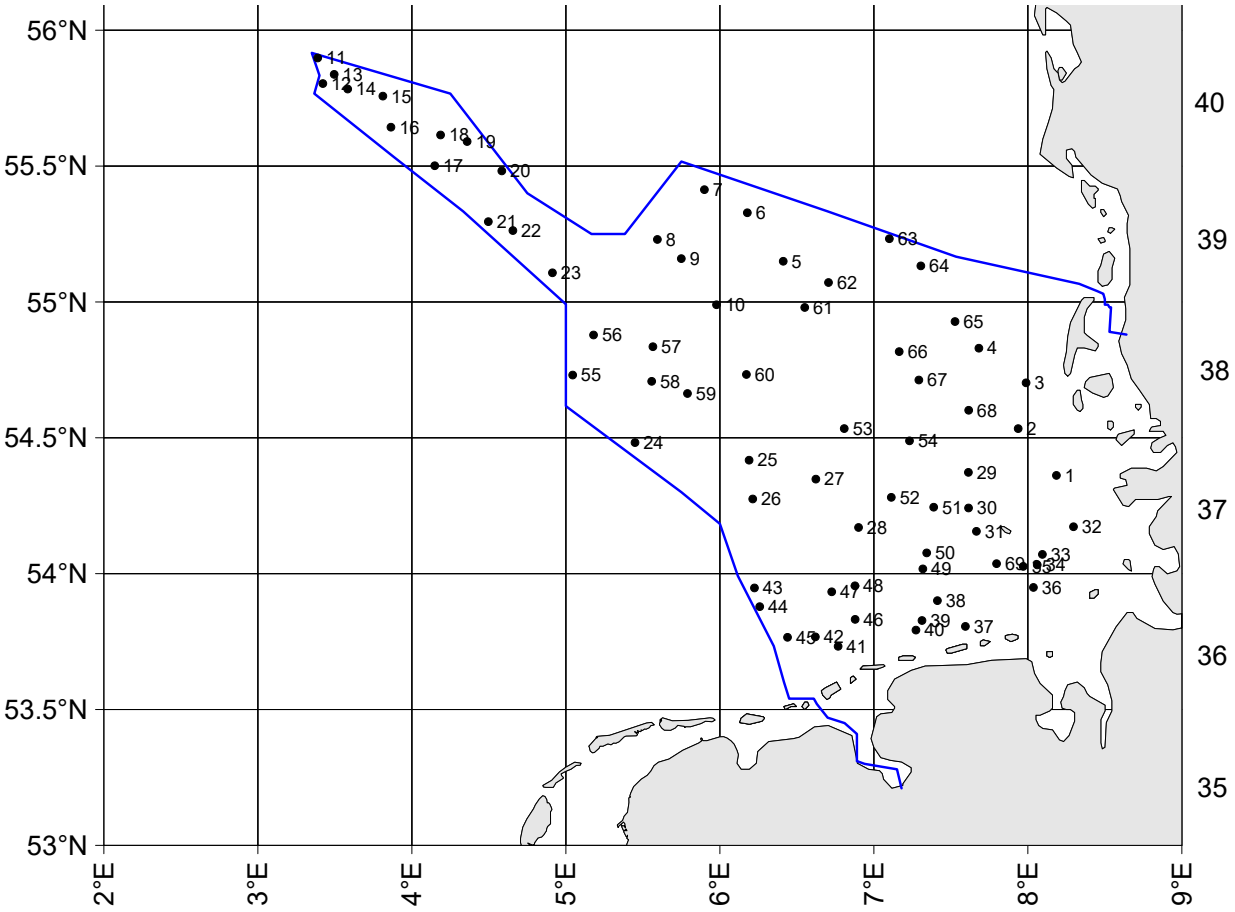

Fig. 1: "Solea", Cruise no. 729 , Haul positions and area of investigation

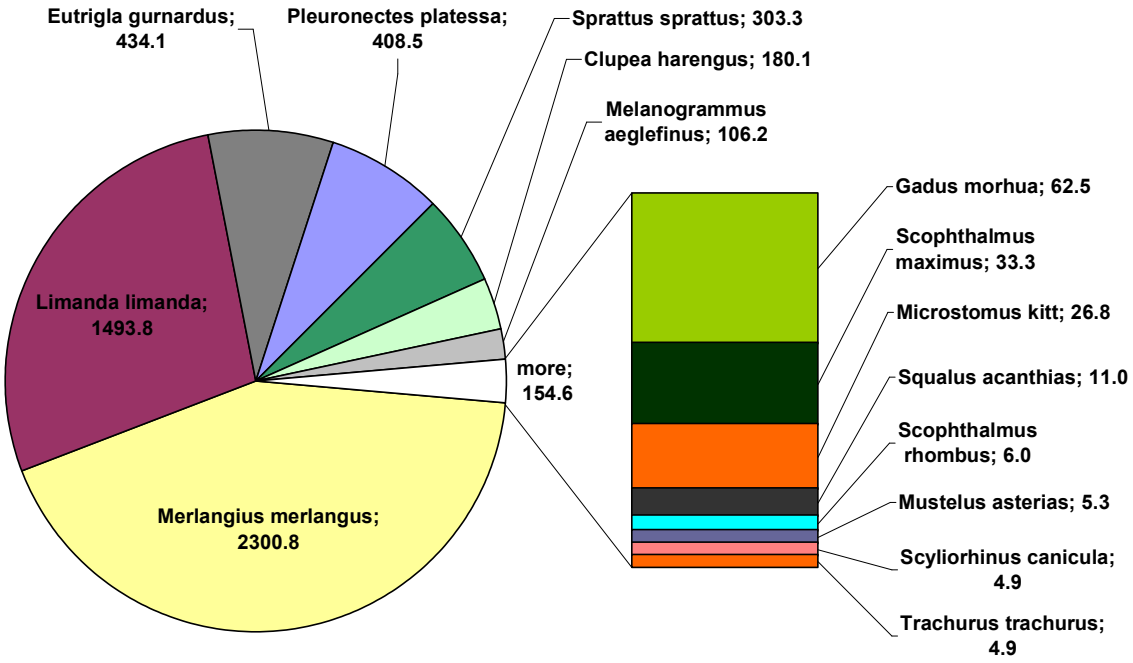

Fig. 2: Catch composition with the 15 most fish species caught in kg

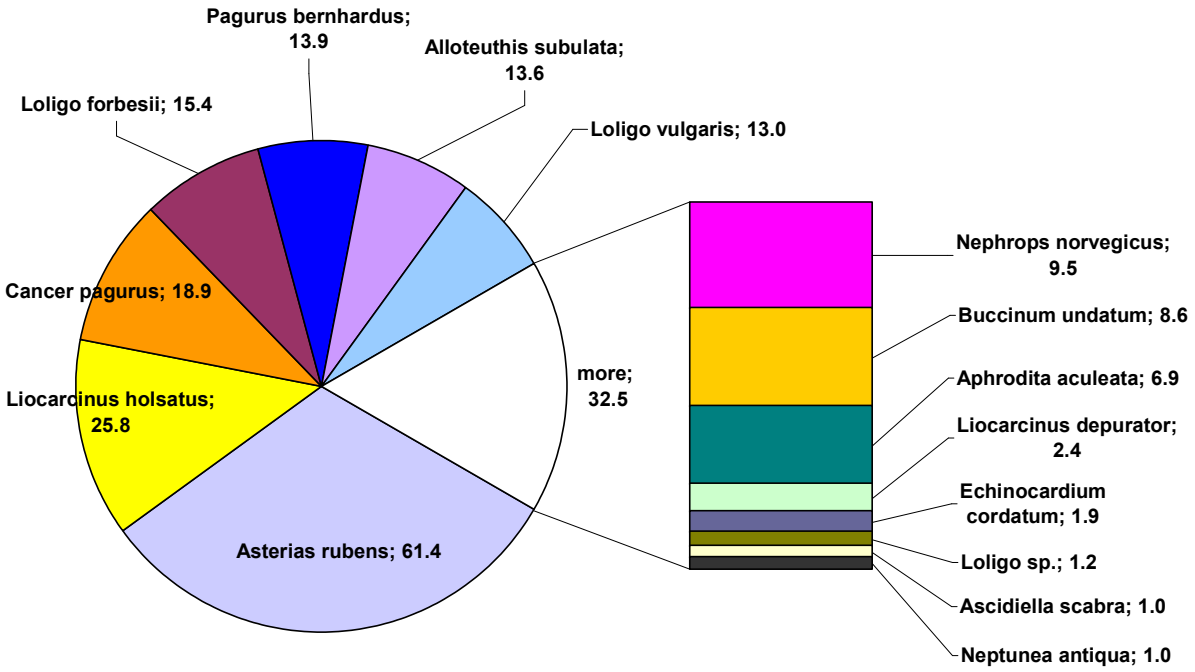

Fig. 3: Catch composition with the 15 most invertebrates caught in kg

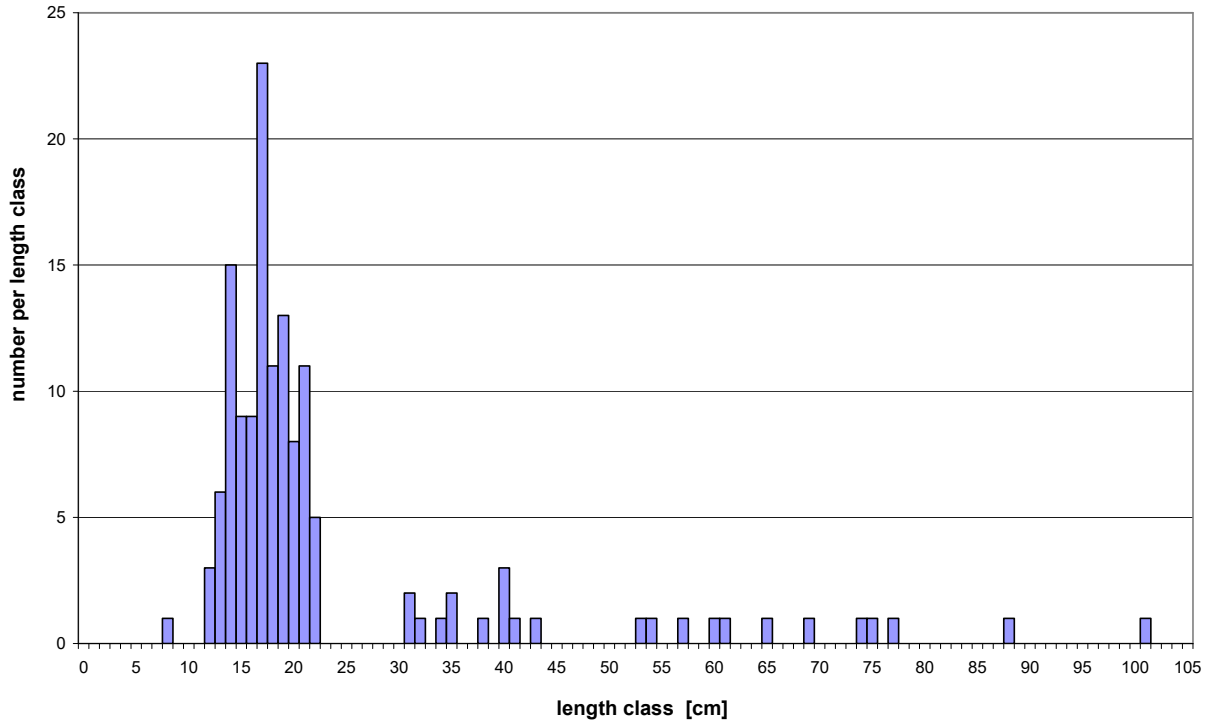

Fig. 4: Length distribution of cod (*Gadus morhua*)

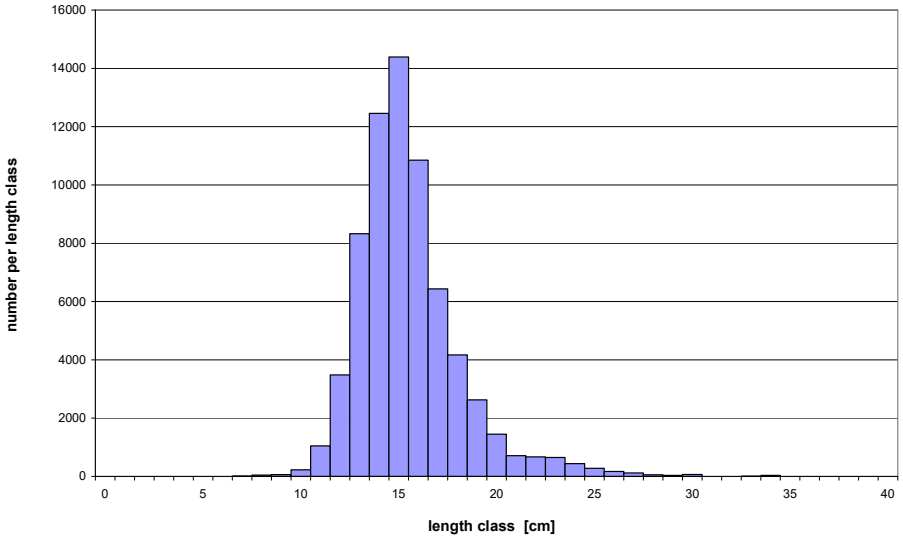

Fig. 5: Length distribution of whiting (*Merlangius merlangus*)

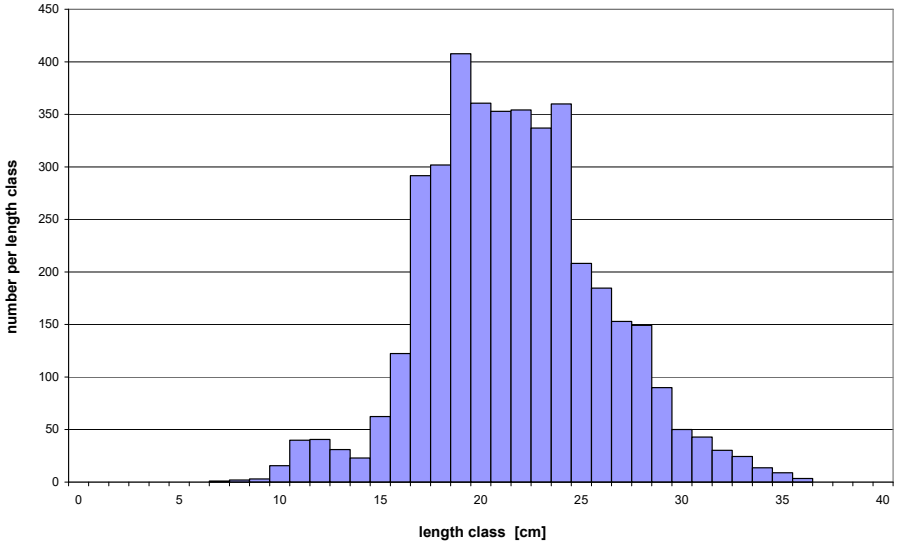

Fig. 6: Length distribution of grey gurnad (*Eutrigla gurnadus*)

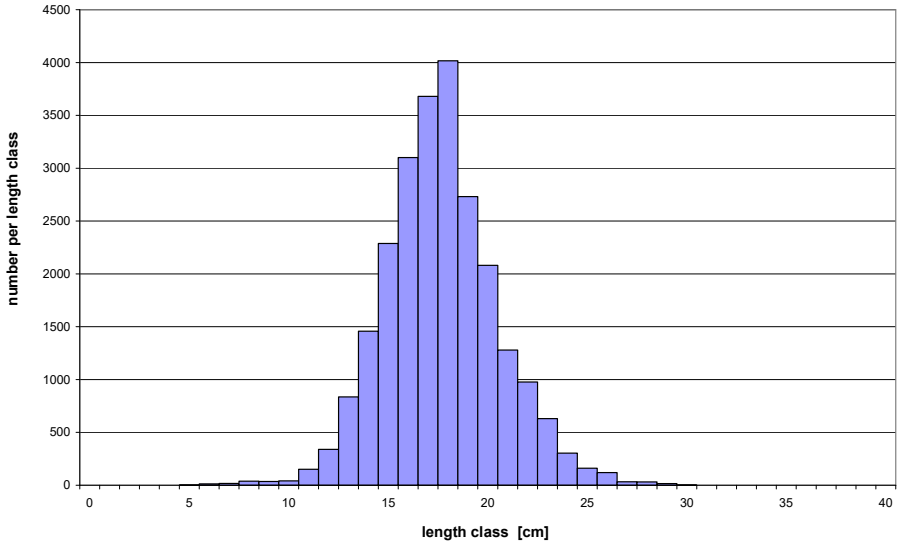

Fig. 7: Length distribution of dab (*Limanda limanda*)

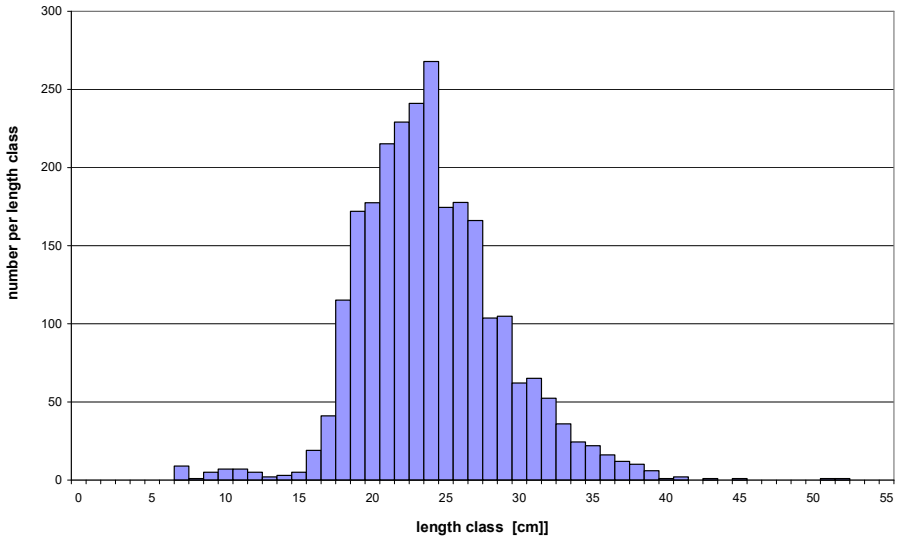

Fig. 8: Length distribution of plaice (*Pleuronectes platessa*)

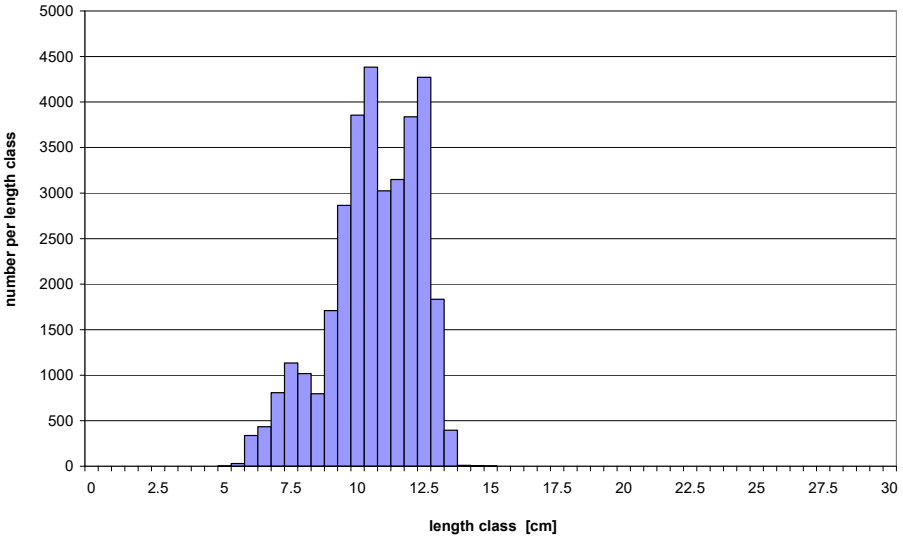

Fig. 9: Length distribution of sprat (*Sprattus sprattus*)

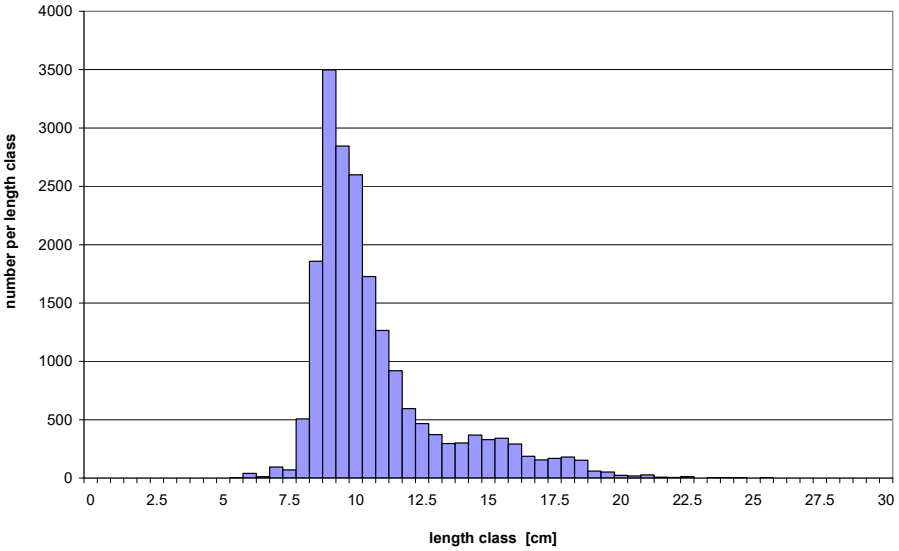

Fig. 10: Length distribution of herring (*Clupea harengus*)