

**Cruise Report**  
**FRV Solea 815**  
**02.12. – 18.12.2022**

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 51 fish species and 45 invertebrate species were detected in the 61 carried out hauls with the bottom trawl. The fish were dominated by species whiting, haddock, dab, herring, sprat, plaice and grey gurnad. The catch of invertebrates consisted mainly of starfish, swimming crabs and squids.

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### Verteiler:

Schiffsführung FFS „Solea“  
BA für Landwirtschaft und Ernährung (BLE) Fischereiforschung  
BM für Ernährung und Landwirtschaft (BMEL), Ref. 614  
BA für Seeschifffahrt und Hydrographie (BSH), Hamburg  
Deutscher Angelfischerverband e.V.  
Deutsche Fischfang-Union, Cuxhaven  
Deutscher Fischereiverband Hamburg  
Doggerbank Seefischerei GmbH, Bremerhaven  
Erzeugergemeinschaft der Deutschen Krabbenfischer GmbH  
Euro-Baltic Mukran  
GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel  
Kutter- und Küstenfisch Sassnitz

LA für Landwirtschaft, Lebensmittels. und Fischerei (LALLF)  
LFA für Landwirtschaft und Fischerei MV (LFA)  
Landesverband der Kutter- u. Küstenfischer MV e.V.  
Leibniz-Institut für Ostseeforschung Warnemünde  
Thünen-Institut - Institut für Fischereiökologie  
Thünen-Institut - Institut für Seefischerei  
Thünen-Institut - Institut für Ostseefischerei  
Thünen-Institut - Pressestelle, Dr. Welling  
Thünen-Institut - Präsidialbüro  
Thünen-Institut - Reiseplanung Forschungsschiffe, Dr. Rohlf  
Fahrtteilnehmer\*innen

## **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 afternoon of 2<sup>nd</sup> December. FMS Solea left Cuxhaven at about 10:30 a.m. on 3<sup>rd</sup> December. The research work started on the same day southeast of Helgoland. During the following three days the stations west and north of Helgoland could be worked on before Cuxhaven was visited for a night as shelter from a storm. This opportunity was used for the change of a crew member. In the afternoon of 7<sup>th</sup> December the harbour was left again and the research work off East Frisian islands was continued. In the following week it was possible to work the stations up to the extreme northwest of the German EEZ. On 14<sup>th</sup> December Helgoland was approached overnight before a storm. The work in the area could be continued already the following afternoon. In the afternoon of 17<sup>th</sup> December the last haul of the voyage was hoisted. The survey was finished the same evening in Cuxhaven. The return journey to Bremerhaven took place the next day.

## **Results (Fig. 2 – 10)**

A total of 61 half an hour and valid hauls were made using the "cod hopper" demersal trawl. At all 61 stations salinity and temperature were measured.

The species composition distribution showed the usual geographic pattern with Whiting, haddock and dab as the most frequent fish, followed by herring, sprat, plaice and grey gurnad. 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.

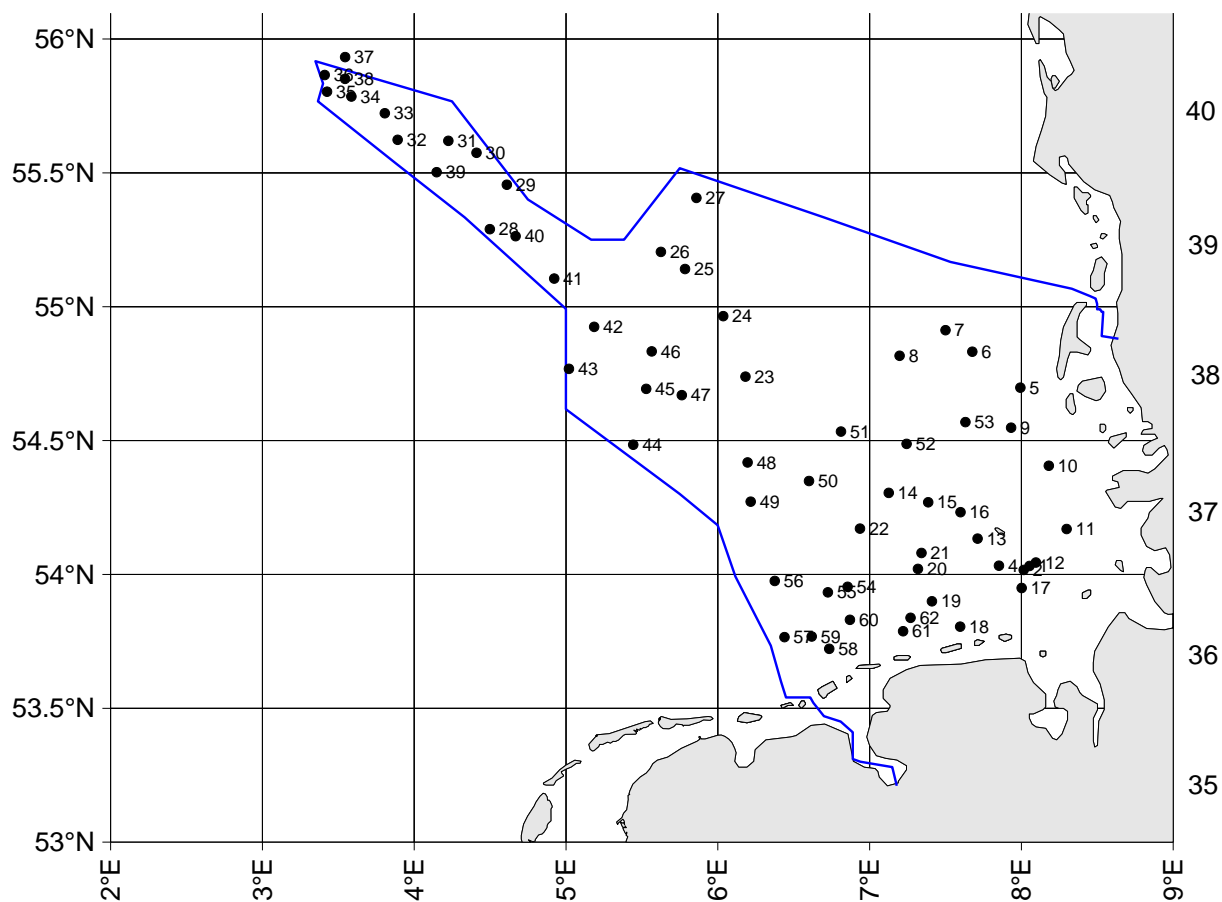
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### **Participants:**

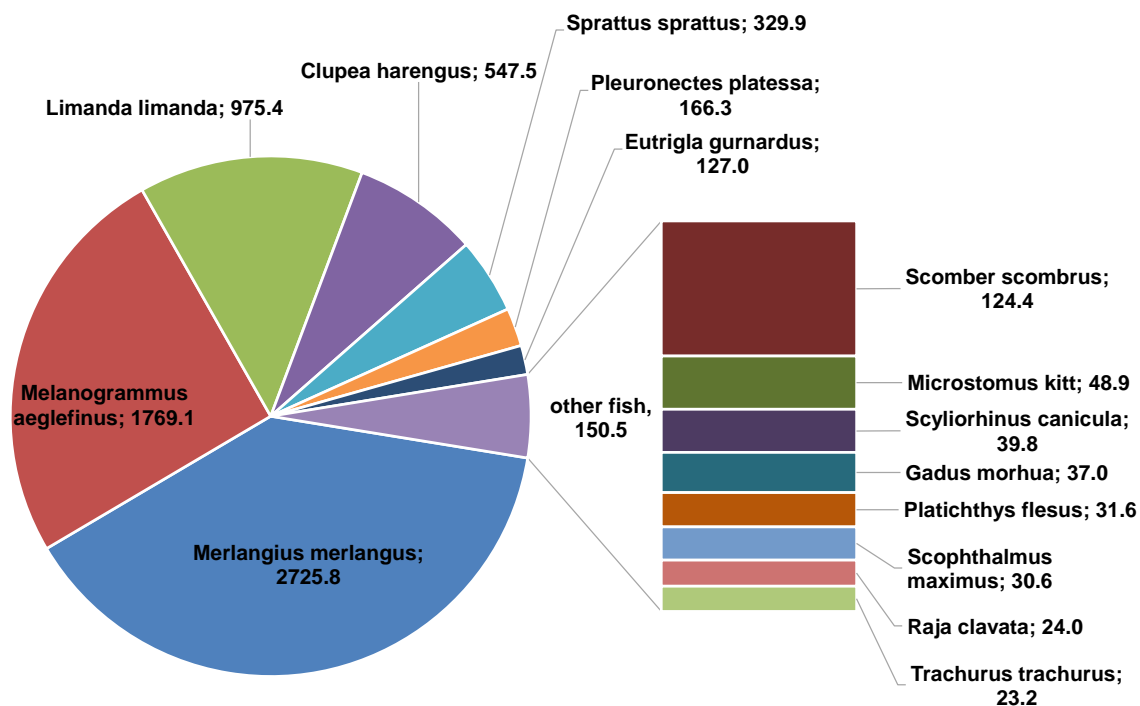
<b>Name</b>	<b>Institution</b>
Kay Panten	TI-SF
Jana Bäger	TI-SF
Annika Brüger	TI-SF
Felix Bügler	TI-SF
Marsha Dechant	TI-SF
Karin Krüger	TI-SF
Simon Wieser	TI-SF



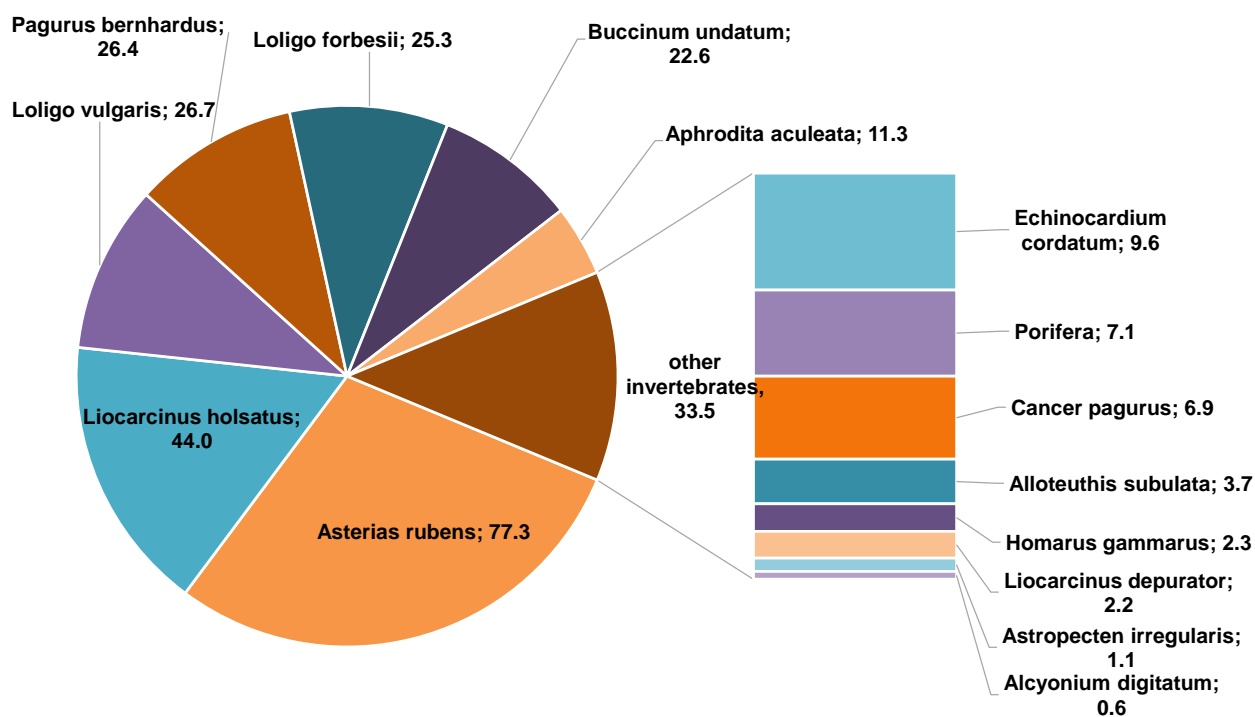
Dipl.-Biol. K. Panten



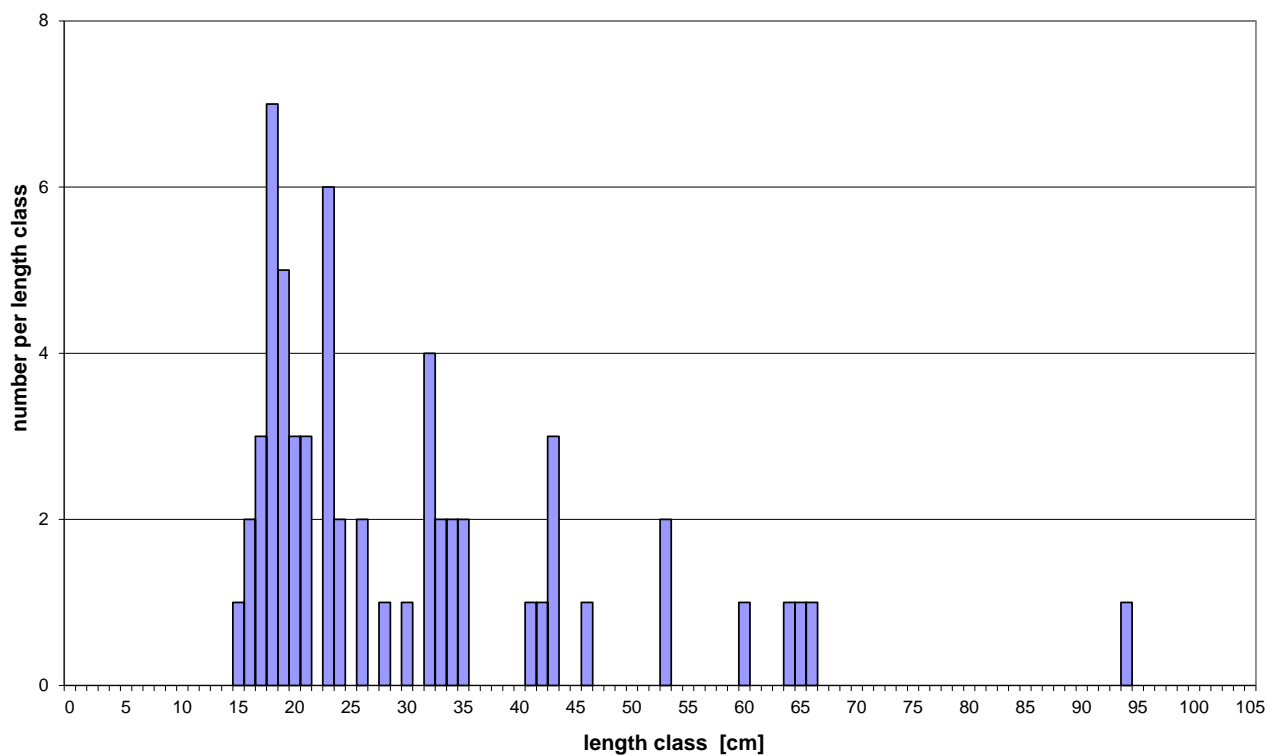
**Fig. 1: "Solea", Cruise no. 815 , Haul positions and area of investigation**



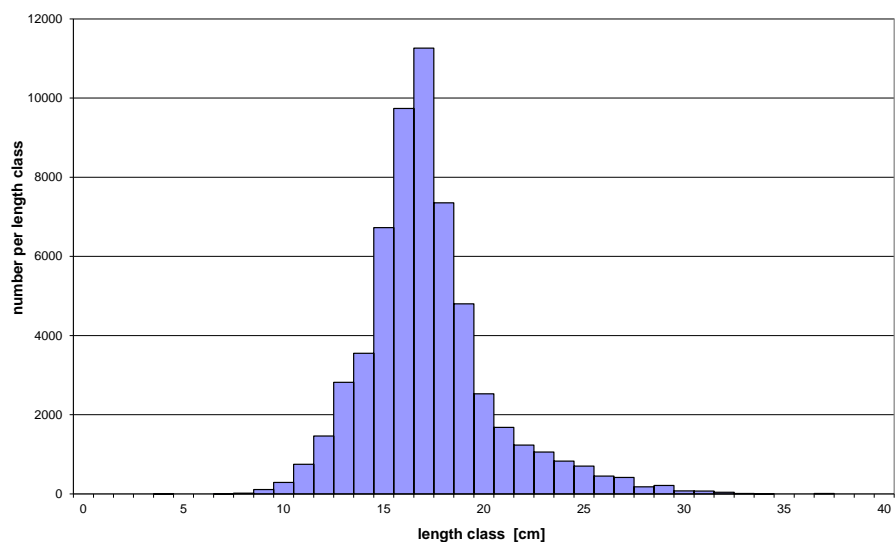
**Fig. 2: Catch composition with the 15 most fish species caught in kg**



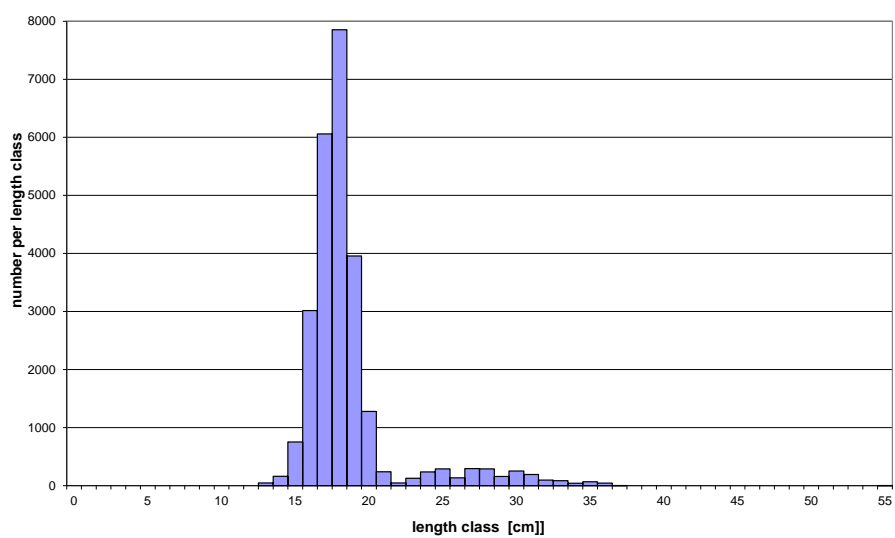
**Fig. 3: Catch composition with the 15 most invertebrates caught in kg**



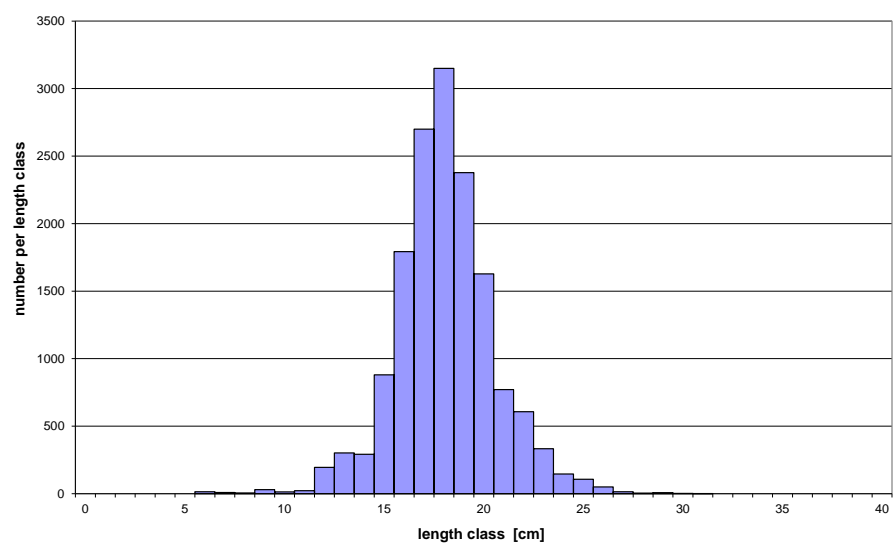
**Fig. 4: Length distribution of cod (*Gadus morhua*)**



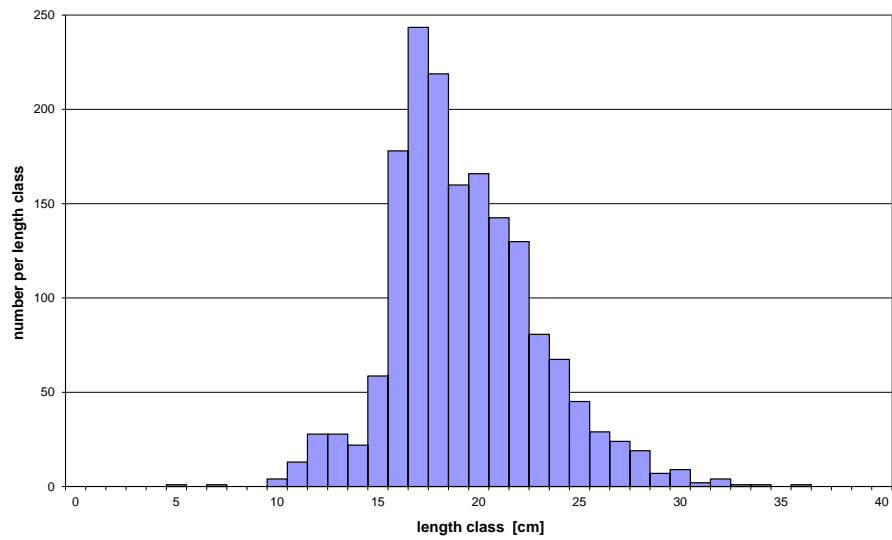
**Fig. 5: Length distribution of whiting (*Merlangius merlangus*)**



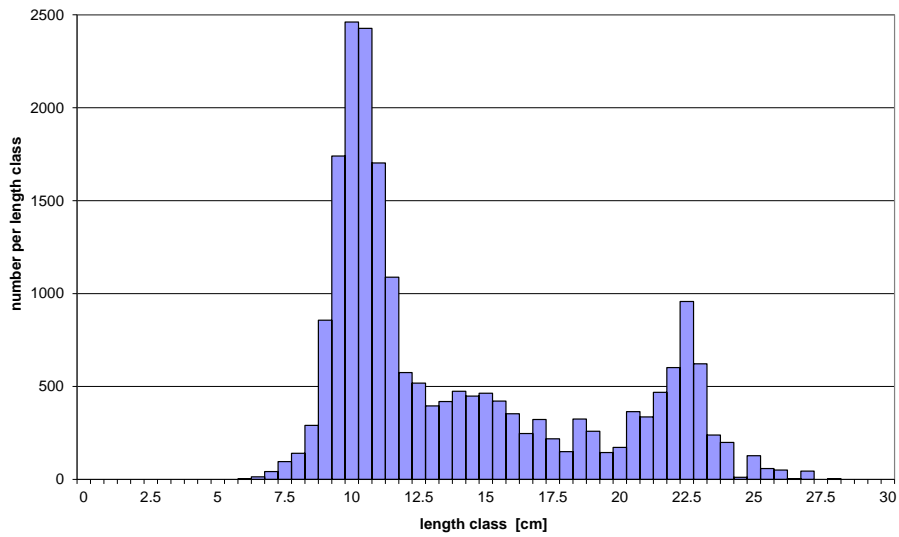
**Fig. 6: Length distribution of haddock (*Melanogrammus aeglefinus*)**



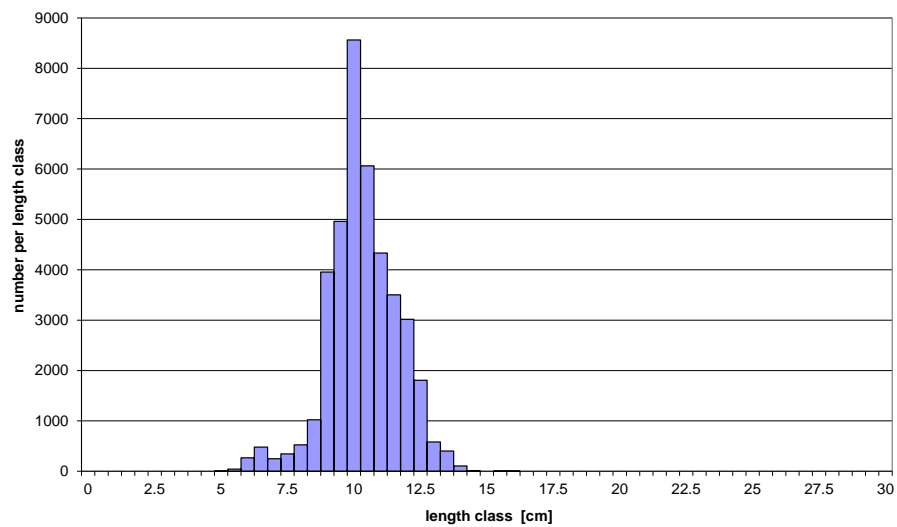
**Fig. 7: Length distribution of dab (*Limanda limanda*)**



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



**Fig. 9: Length distribution of herring (*Clupea harengus*)**



**Fig. 10: Length distribution of sprat (*Sprattus sprattus*)**