

**Cruise 757. ‚SOLEA‘**  
**Report**  
**30.11. – 18.12.2018**

**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 54 fish species and 42 invertebrate species were detected in the 68 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 swimming crabs, starfish and whelks.

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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)**

With southwestern wind of strength 6-7 FRV "Solea" left the port of Cuxhaven in the afternoon of 30<sup>th</sup> November with direction Borkum. In the following two days the stations could be fished in the south of the German EEZ before a storm forced one and a half days stay in Helgoland. After returning to the investigation area the stations north of Helgoland could be processed. Then Helgoland had to be called again for four days as a safe harbour. When the storm had abated, it was possible to work on the remaining stations with changing winds. The survey ended on the morning of 18 December in Cuxhaven. The return journey to Bremerhaven took place on the same day.

## **Results (Fig. 2 – 10)**

A total of 68 half an hour and valid hauls were made using the "cod hopper" demersal trawl. At all 68 stations salinity and temperature were measured. The species composition distribution showed the usual geographic pattern with dab and sprat as the most frequent fish, followed by grey gurnad, plaice, herring and whiting. 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 whelks.

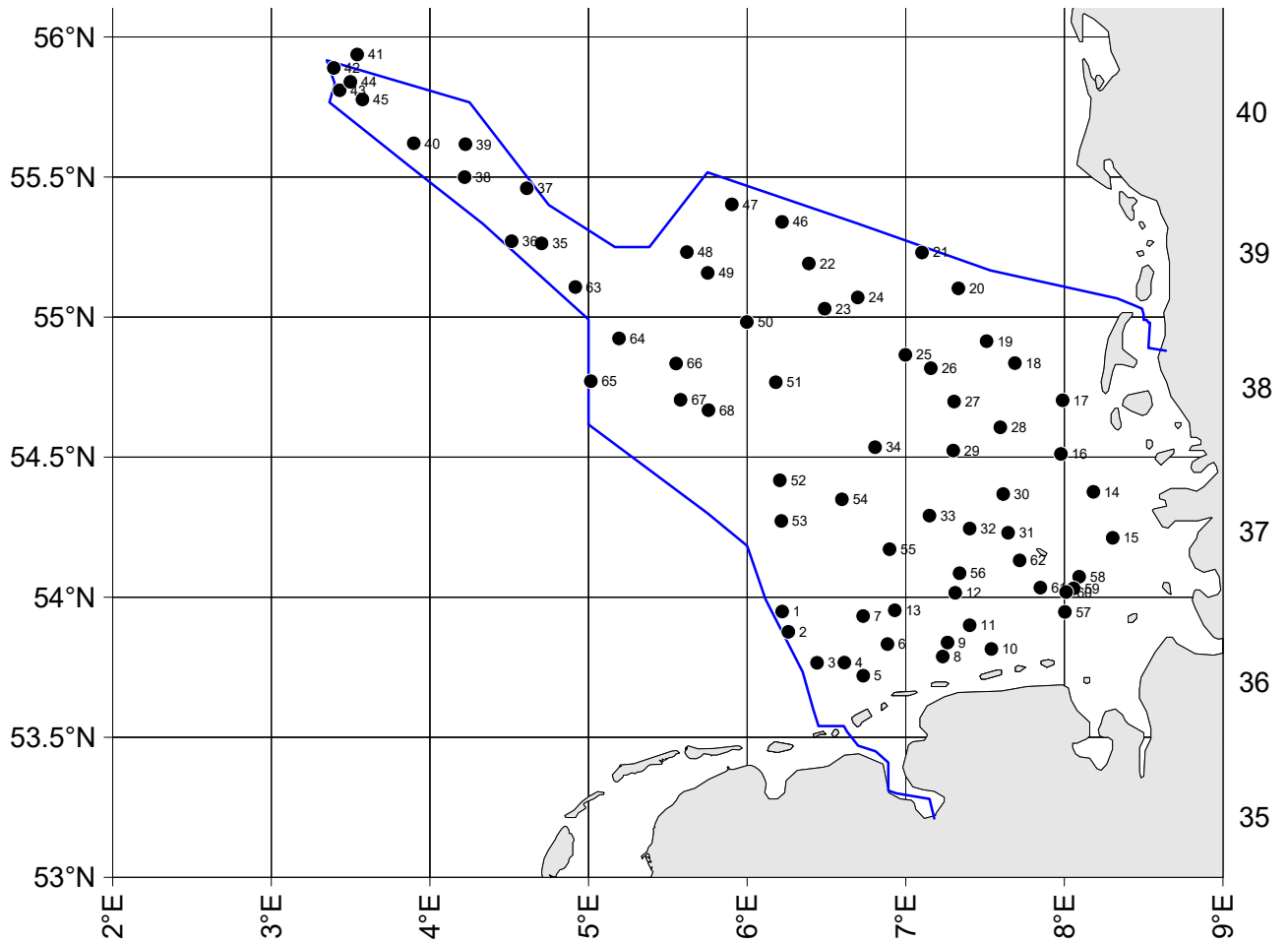
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### **Participants:**

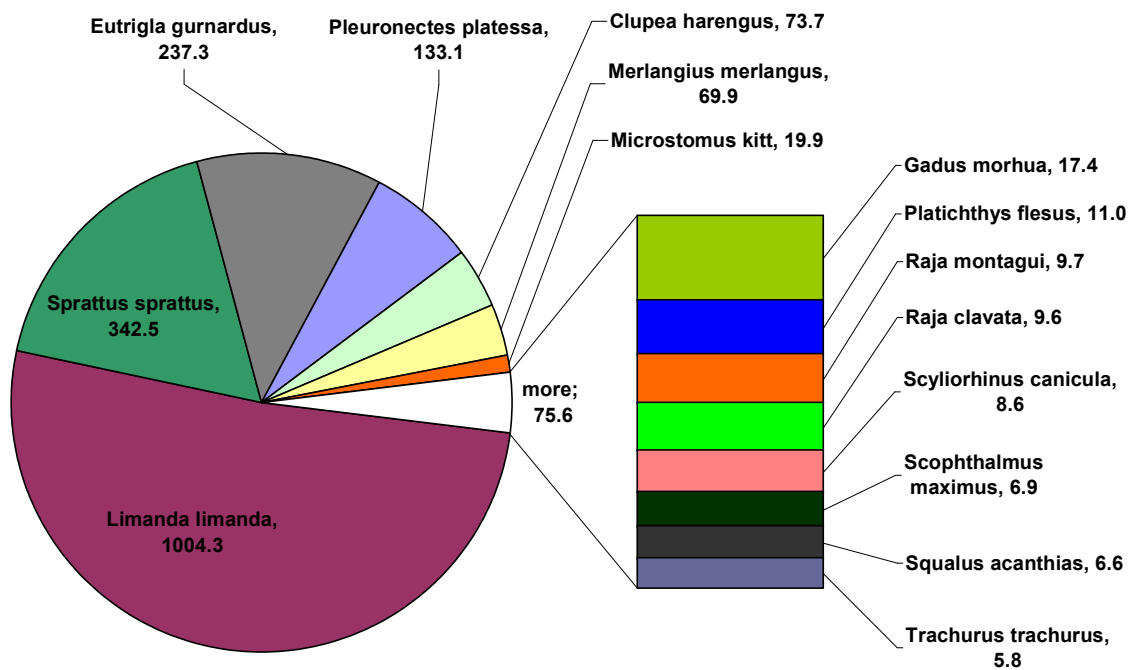
<b>Name</b>	<b>Institution</b>
Kay Panten	TI-SF
Friedericke Beussel	TI-SF
Karin Krüger	TI-SF
Dimitri Schuschkow	TI-SF
Erik Sulanke	TI-SF
Finn Werner	TI-SF
Simon Wieser	TI-SF



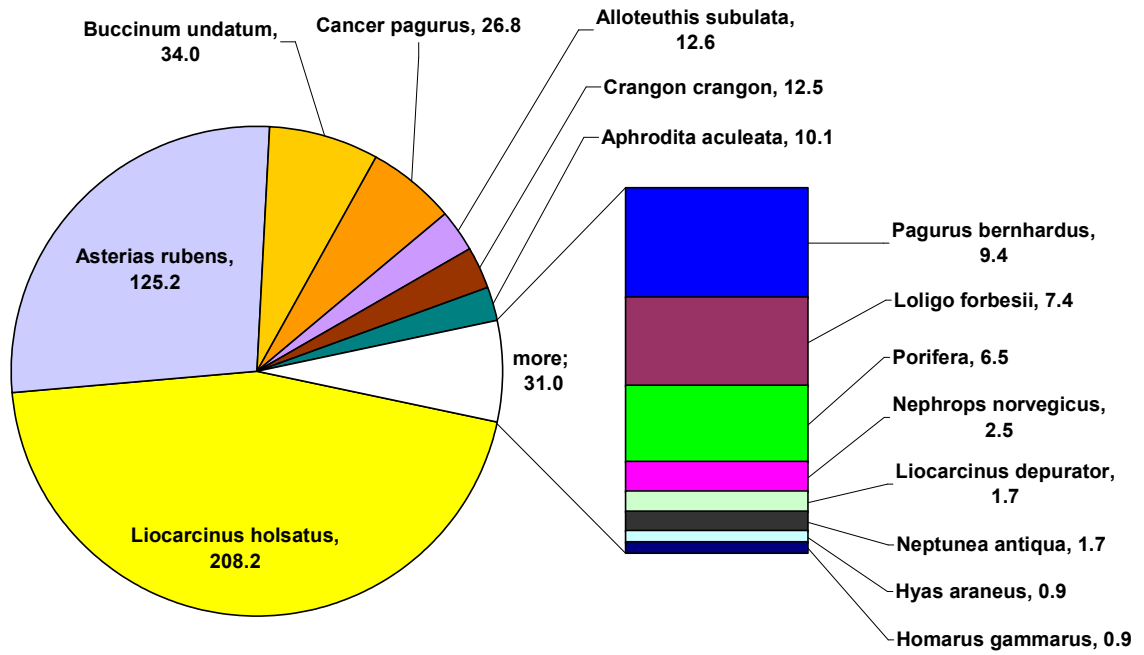
Dipl.-Biol. K. Panten



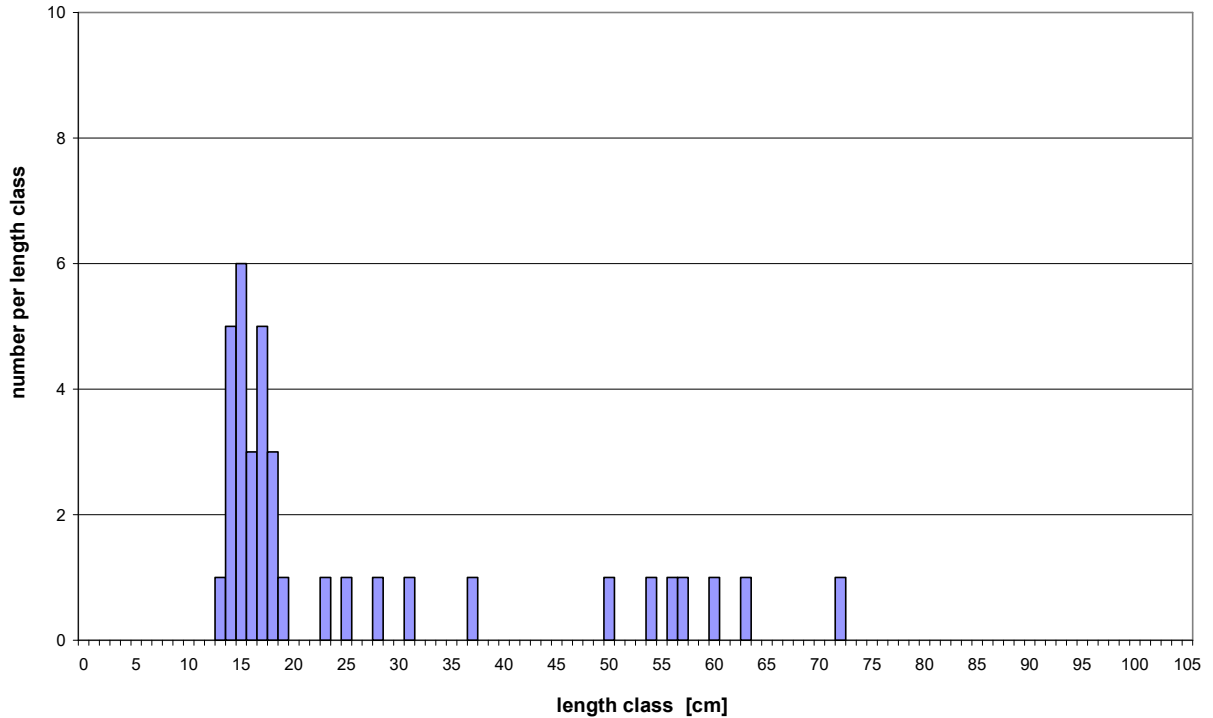
**Fig. 1: "Solea", Cruise no. 757 , Haul positions and area of investigation**



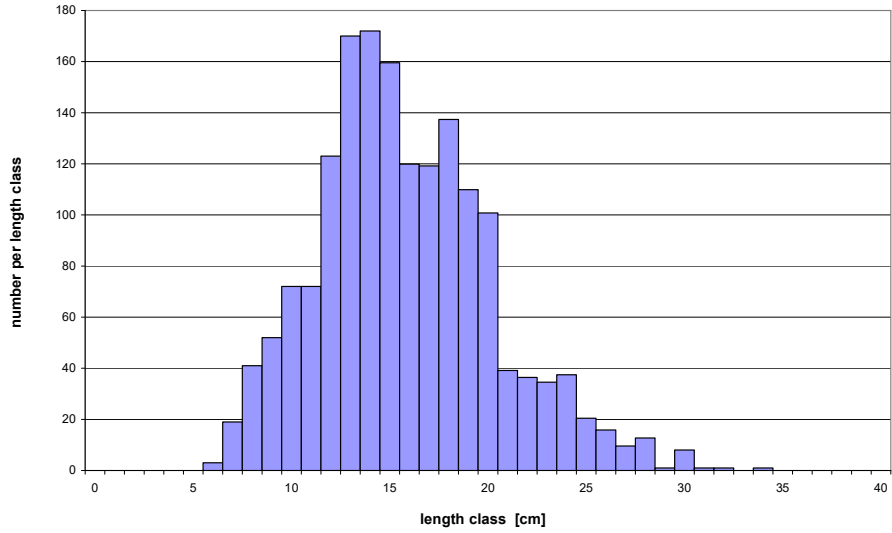
**Fig. 2: Catch composition with the 15 most fish species caught in kg**



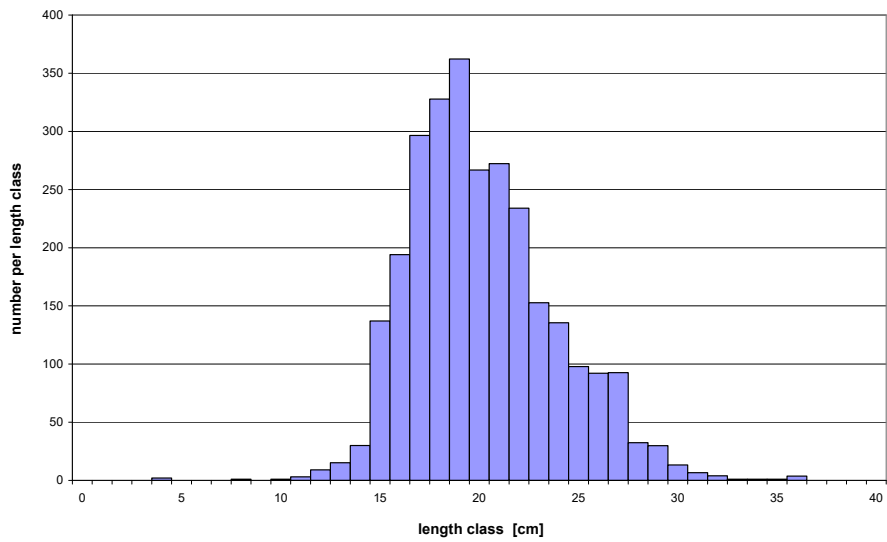
**Fig. 3: Catch composition with the 15 most invertebrates caught in kg**



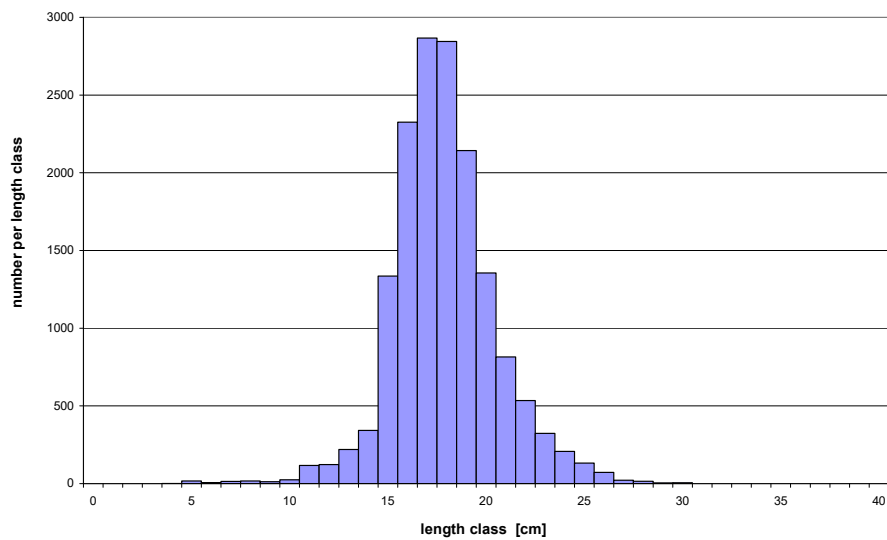
**Fig. 4: Length distribution of cod (*Gadus morhua*)**



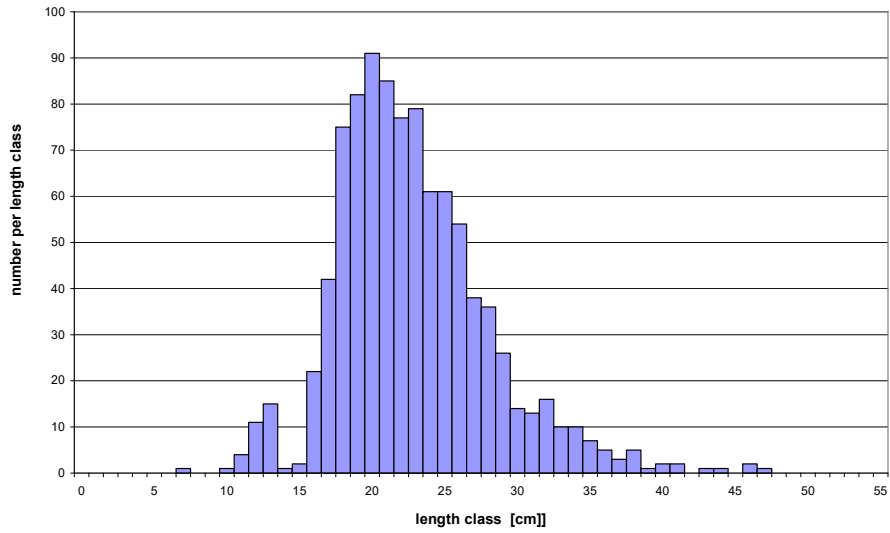
**Fig. 5: Length distribution of whiting (*Merlangius merlangus*)**



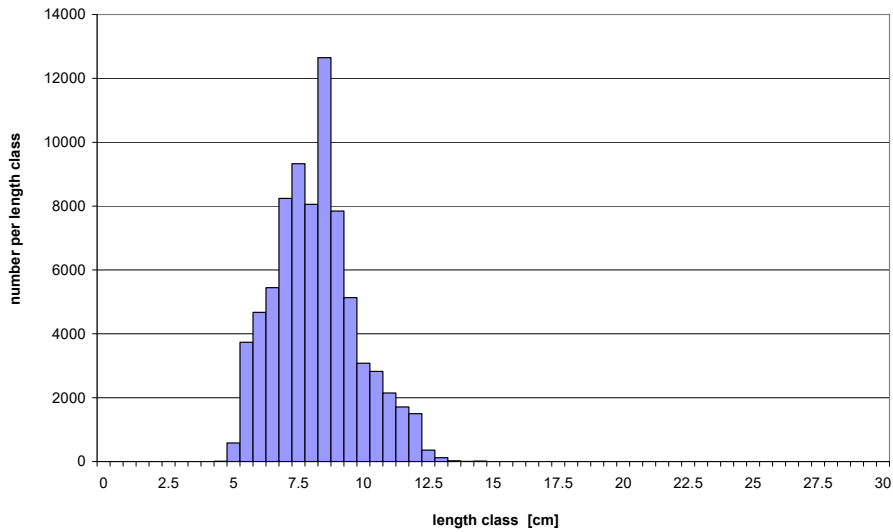
**Fig. 6: Length distribution of grey gurnad (*Eutrigla gurnadus*)**



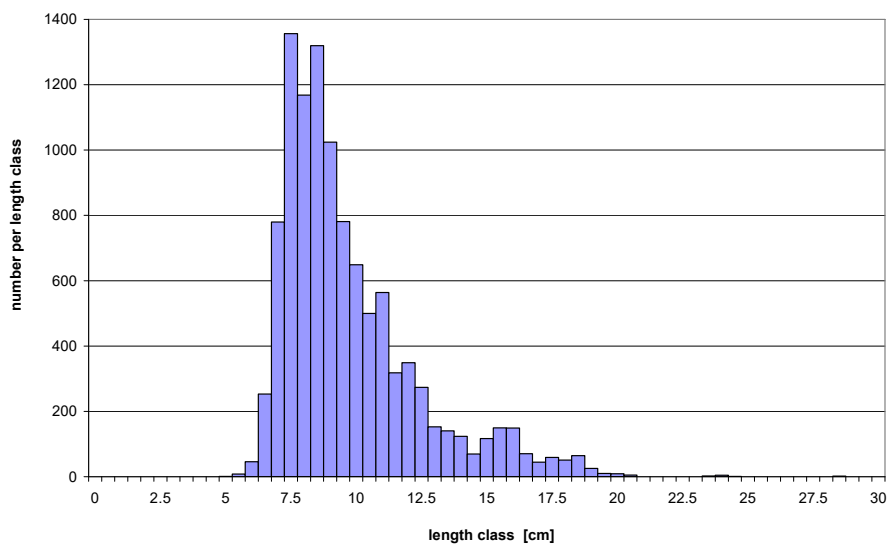
**Fig. 7: Length distribution of dab (*Limanda limanda*)**



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



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



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