

Cruise Report

H/S Dana - Cruise 01/2019. IBTS Q1 2019

03.– 22.01.2019

Scientist in charge: Dr. M. H. F. Kloppmann

Objectives:

The International Bottom Trawl Survey (IBTS) is an internationally coordinated ICES program. The survey aims to provide ICES assessment and science groups with consistent and standardized data for examining spatial and temporal changes in (a) the distribution and relative abundance of fish and fish assemblages; and (b) of the biological parameters of commercial fish species for stock assessment purposes.

The main objectives are to:

- To determine the distribution and relative abundance of pre-recruits of the main commercial species with a view of deriving recruitment indices;
- To monitor changes in the stocks of commercial fish species independently of commercial fisheries data;
- To monitor the distribution and relative abundance of all fish species and selected invertebrates;
- To collect data for the determination of biological parameters for selected species;
- To collect hydrographical and environmental information;
- To determine the abundance and distribution of late herring larvae.

Verteiler:

TI - Seefischerei

per E-Mail:

BMEL, Ref. 614

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Bundesanstalt für Landwirtschaft und Ernährung, Hamburg

Schiffsführung FFS "Walther Herwig III"

Präsidialbüro (Michael Welling)

Personalreferat Braunschweig

TI - Fischereiökologie

TI - Ostseefischerei Rostock

FIZ-Fischerei

TI - 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.

DFFU

Methods:

- Trawl hauls in allocated ICES statistical rectangles by means of the ICES standard bottom trawl GOV during daytime, one haul per rectangle
- Plankton hauls with a standardized 2 m midwater ring trawl (MIK) to a maximum depth of 100 m during nighttime, two hauls per rectangle.
- One CTD cast per each rectangle with a Seabird SBE 911 for hydrographical data
- Water bottle samples per each rectangle for microzooplankton sampling, and conductivity sensor calibration

Itinerary:

03.01.2019 (12:30)	Embarkation of cruise participants
03.01.2019 (16:00)	Depart Esbjerg, Denmark
04.01.2019 (08:00)	Start sampling in central North Sea
08.01.2019 (07:00)	Dock and shelter in Esbjerg from a passing storm
09.01.2019 (16:00)	Depart Esbjerg, Denmark
09.01.2019 (21:00)	Resume sampling in southeastern North Sea
13.01.2019 (08:00)	Dock and shelter in Hirtshals from a passing storm
15.01.2019 (02:00)	Depart Hirtshals, Denmark
15.01.2019 (19:00)	Resume sampling in southeastern and central North Sea
22.01.2019 (10:30)	Finish sampling, start journey to home port
22.01.2019 (20:30)	Dock Hirtshals
23.01.2019 (08:30)	Disembarkation of cruise participants, end of cruise.

Results:

The German IBTS Q1 participation was originally planned to be carried out with the German FRV Walther Herwig III for 33 days between 24 January and 25 February 2019. However, due to persisting problems, the ship wasn't available for the desired time and the survey had to be carried out with the Danish RV DANA. Due to other obligations with the same survey, RV DANA was only available for 22 days and it was decided to swap major parts of the originally planned survey area with that of Denmark. Consequently, instead of the previously planned 66 rectangles, three of which twice, chiefly in the northern North Sea, it was agreed that the German participation in the 2019 IBTS Q1 should cover only 34 rectangles, 14 of which twice, chiefly in the eastern and central North Sea (see attached map).

Due to two unplanned port calls because of unfavorable weather, RV DANA was able to complete only 44 of the desired 48 fishing stations and 48 of the 96 desired MIK stations (Fig 1).

Standardized total catches of the GOV hauls were between 2 and 391 kg per 30 min trawling time, on average about 97 kg, which is slightly more than last year but still quite low. However, it has to be considered that the German survey wasn't carried out in its standard area of the northern North Sea where catches tend to be higher and of a differing species composition – more large gadoids compared to mostly clupeoids, which were caught during this survey in the eastern and central North Sea.

Except for sprat, mackerel and Norway pout, recruitment indices of the major target species cod, haddock, whiting, and herring (1-ringers – the 2016 yearclass) were low (Table 1).

The MIK herring larvae (0-ringer) index of 51.6 indicated a lower recruitment situation in herring for the 2018 yearclass when compared to the stronger 2017 yearclass. Herring larvae appeared in moderate to high quantities only in the western part of the North Sea, in 3 rectangles of the Southern Bight and in the Skagerrak. In the eastern part of the North Sea, the potential nurseries, abundance of large herring larvae was very low, and virtually no larvae occurred in the German Bight.

Water temperatures were between < 6.5 and > 8.0 °C and in most cases > 7.5 °C. Even though the surveyed area as well as survey time different substantially from that of last year, those temperatures indicate at somewhat higher winter temperatures in the North Sea. The water column was always thermally well mixed.

For further details and results of the complete survey with participations from France, the Netherlands, Denmark, Scotland, Sweden, Norway, and Germany, please refer to the CSR (cruise summary report) site of BSH http://seadata.bsh.de/csr/retrieve/sdn2_index.html as well as to the respective North Sea chapter of this year's IBTSWG report.

Tab.1: IBT-Survey: Comparison of abundance indices (n/h) of 2018 (final), 2019 (preliminary) with the long term mean, 1980 - 2018 (catches of all participating nations):

	final 2018	prelim. 2019	1980- 2018
cod	0.9	2.1	7
haddock	47.1	183	501
whiting	114.7	208	447
Norway pout	1161.5	3671	2902
herring	777.9	1546	1988
sprat	3185.2	3858	1311
mackerel	145.4	110	108

source: IBTSWG, DATRAS March/April 2019

Participants

Dr. Matthias Kloppmann (scientist in charge)	Thuener Institute of Sea Fisheries (TI-SF)
Andrij Martynenko	TI-SF
Gitta Hemken	TI-SF
Annika Elsheimer	TI-SF
Serra Örey	TI-SF
Anika Brunsch (until 12.01.19)	TI-SF
Simon Wieser	TI-SF
Sakis Kroupis	TI-SF
Sergej Schachray	TI-SF

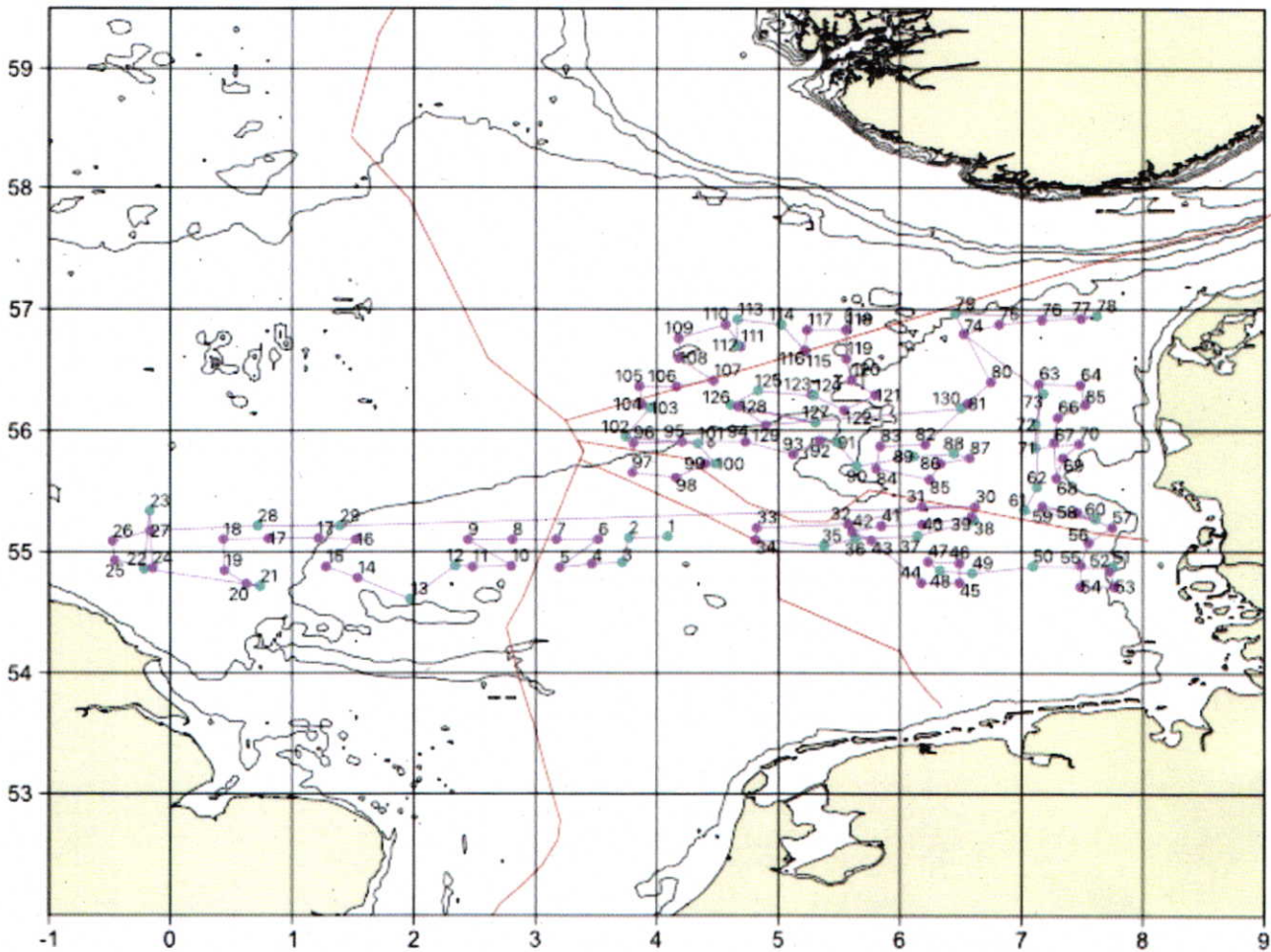


Fig. 1: GOV-hauls, CTD- and MIK-Stations of RV DANA cruise 1-2019. Blue dots: combined CTD and GOV-trawl stations, purple dots: MIK stations. The purple line indicates the traveled routes between stations.