

Report**FRV Walther Herwig III - Cruise 413. IBTS Q1 2018****22.01. – 23.02.2018**

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.

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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, as well as conductivity and oxygen sensor calibration

Itinerary:

22.01.2018 (10:30) Embarkation of cruise participants
23.01.2018 (14:00) Depart Bremerhaven
24.01.2018 Shelter in the vicinity of Norway from a passing storm
25.01.2018 (15:00) Start sampling in southeastern and central North Sea
27.-31.01.2018 Shelter in the vicinity of Helgoland from passing storms
01.02.2018 (17:00) Dock Bremerhaven for necessary repairs on the engine
03.02.2018 (14:00) Depart Bremerhaven
04.02.2018 (08:00) Continue sampling in southeastern and central North Sea
10.-11.02.2018 Shelter in Moray Firth from passing storms
12.02.2018 1 Haul close to Moray Firth, continue sheltering
13.-15.02.2018 Shelter in Moray Firth from passing storms
16.02.2018 (08:00) Continue sampling in northern and central North Sea
21.02.2018 (10:00) Curtail sampling, start journey to home port
22.02.2018 (18:00) Dock Bremerhaven
23.02.2018 (10:00) Disembarkation of cruise participants, end of cruise.

Results:

During almost the entire cruise, weather conditions were very unfavorable and did not allow for a complete coverage of the assigned rectangles. Furthermore, continuing problems with the engine interrupted the work several times and also made an unscheduled port call in the home port of Bremerhaven necessary. WALTHER HERWIG III was able to complete only 44 of the desired 74 fishing stations and 104 of the 148 desired MIK stations (Fig 1). In 2 rectangles, only 1 of the assigned 2 fishing stations could be completed due to legal fishing restrictions: A large oil and gas development area as well as sea cables and pipelines didn't permit fishing in those areas.

Standardized total catches of the GOV hauls were between 5 and 648 kg per 30 min trawling time, on average about 88 kg, which is very low compared to catches from previous surveys. Except for sprat and mackerel, recruitment indices of the major target species cod, haddock, whiting, Norway pout and herring (1-ringers – the 2016 yearclass) were low and in most cases among the lowest values of the time series (Table 1).

The MIK herring larvae (0-ringer) index of 101.4 indicated at a better recruitment situation in herring for the 2017 yearclass. This is among the higher MIK indices after the very strong 2000 yearclass. Herring larvae appeared in moderate to high quantities in a wide band across the central and southern North Sea and showed 2 distinct cores of higher abundances: one occurring east of the northern English coast and another in the German Bight. In the Kattegat and Skagerrak area, herring larvae remained relatively rare.

After a relatively cold winter, water temperatures were between 4.0 and 7.2 °C and in most cases < 7°C. 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 chapter 5.1 of this year's IBTSWG report.

Tab.1: IBT-Survey: Comparison of abundance indices (n/h) of 2017 (final), 2018 (preliminary) with the long term mean, 1980 - 2017 (catches of all participating nations):

	final 2017	prelim. 2018	1980- 2017
cod	9.4	0.9	7
haddock	218.5	34	513
whiting	612.9	216	456
Norway pout	4357.2	1941	2948
herring	2396.2	669	2020
sprat	3588.4	2998	1262
mackerel	551.3	158	107

source: IBTSWG, DATRAS March/April 2018

Participants

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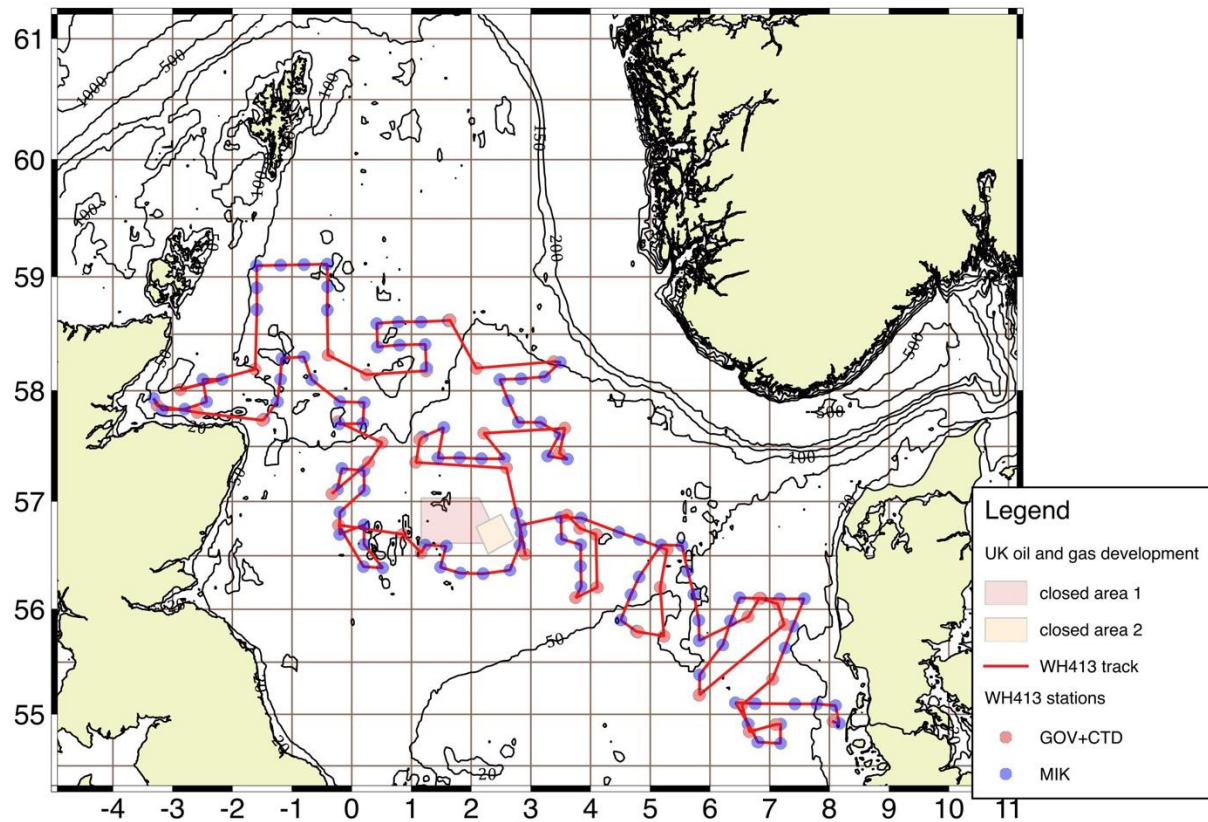


Fig. 1: GOV-hauls, CTD- and MIK-Stations of FFS WALTHER HERWIG III cruise 403. Red dots: combined CTD and GOV-trawl stations, blue dots: MIK stations. The red line indicates the traveled routes between stations.