

CRUISE REPORT

R/V *Johan Hjort*, 9.06.07

Survey 2007206: 14 May-9 June 2007. Start/end point: Bergen, Norway

Personnel

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(cruise leader)

Objectives:

1. To carry out mackerel/horse mackerel egg survey (ICES Triennial Survey), on the western shelf edge west of UK and Ireland between 49°30N and 55°N.
2. To collect fish samples from trawling for fecundity and atresia assessment, and for DNA.

Narrative

When crossing the North Sea, from Bergen to the investigation area, one trawl haul was carried out to collect North Sea herring for maturity investigations. The survey was hampered by bad weather 17-19 May, and by a UK military missile exercise! We escaped and visited Galway 22-24 May for exchanging crew.

Results

A total of 138 plankton stations and 11 trawl stations, including the one in the North Sea, were carried out during the cruise. The plankton samples were collected by a Gulf VII (open frame) plankton sampler equipped with 0.5 mm net and the Promonitor system for measuring depth and volume filtered water. The sampler was operated according to the sampling protocol; double oblique hauls from 0-200m or to 5-10 m above bottom. Particularly in parts of the area south of 52°N we experienced problems with clogging due to gelatinous plankton. The net had to be thoroughly rinsed with fresh water. Temperature and salinity data were collected at all stations with a CTD applied from 0-500m or to 5 m above the bottom. The Scottish vessel MFV *Unity* worked partly during the same period in the area north of 55°N. We worked 13 stations along 59°15N and two stations along 58° 15 N in cooperation with this vessel (Figures 1-2).

All plankton samples were sorted for fish eggs during the survey, and mackerel and horse mackerel eggs were staged according the sampling protocol. The distribution of mackerel eggs (Figure 1) was observed to be wider in the western area than in previous surveys. This pattern continued across most of the area, with high egg abundances being found well west of the shelf break. It seems the western limit of the egg distribution was well covered except for a few transects where eggs were still observed at the most western stations, but in relatively low numbers.

A few horse mackerel eggs were observed in the most northern transect, but the highest densities were observed south of 53° N (Figure 2).

All the trawl hauls were carried out in the sea surface using a trawl specially designed for catching salmon smolts. The trawl locations were based on the planned adult sampling protocol provided by ICES (WGMEGS). Mackerel and horse mackerel were caught in six of the hauls. Ovary samples were collected for fecundity and atresia assessment. Information on age, length, sex, maturity, total weight, gutted weight, and liver weight was also collected from each

sample. In addition DNA samples were collected from 100 mackerel and 50 mackerel were frozen for parasitological studies. The numbers of the different samples are shown below:

| Tr. St | 263 | | 254 | | 262 | | 256 | | 260 | | 258 | | Total number | |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------------|-------|
| Position | 53.51N | 11.40W | 52.45N | 12.00W | 52.36N | 11.15W | 51.45N | 12.13W | 49.45N | 8.20W | 49.45N | 12.48W | Mak | Hmack |
| | Mak | Hmack | Mak | Hmack | Mak | Hmack | Mak | Hmack | Mak | Hmack | Mak | Hmack | Mak | Hmack |
| Fecundity | 0 | 0 | 10 | 0 | 24 | 0 | 9 | 5 | 15 | 10 | 0 | 11 | 58 | 26 |
| Atresia | 10 | 0 | 10 | 0 | 25 | 0 | 10 | 0 | 15 | 0 | 0 | 0 | 70 | 0 |
| DNA | 50 | 0 | 3 | 0 | 19 | 0 | 16 | 0 | 12 | 0 | 0 | 0 | 100 | 0 |
| Parasites | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 |

The data will be further analysed at IMR and the results will be reported to ICES, i.e. WGMHMSA and WGMEGS meeting in September 2007 and in April 2008 respectively.

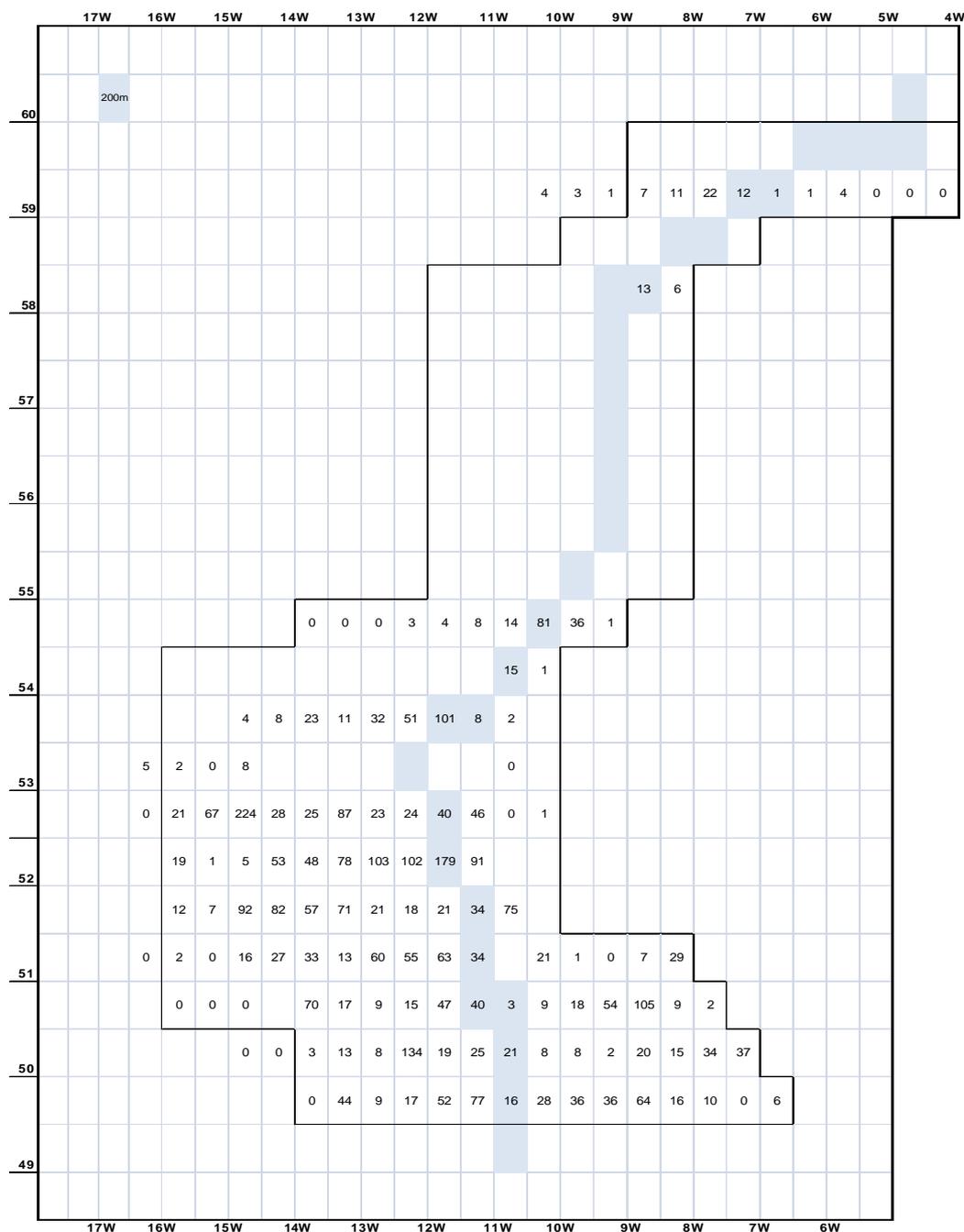


Figure 2 Number of mackerel eggs spawned per day per m²

