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FRV *Clupea*

REPORT

Cruise 1294C

10 June - 29 June 1994

Personnel

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Objectives

1. To investigate the distribution of pelagic phase juvenile gadoids in the northern North Sea.
2. To collect samples of haddock for otolith and molecular studies.
3. To collect samples of sandeels for molecular studies.
4. To collect live specimens of juvenile haddock for aquarium studies.
5. To collect a sample of seawater for radio-caesium monitoring.

Out turn days per project: 20 days GCI1

Narrative

The scientific crew boarded *Clupea* at Fraserburgh at 1030 on 10 June. The Methot frame was found to be damaged (missing left tow hook) and this problem could not be rectified before a suitable departure time that day. Consequently, departure was delayed until 0400 on 11 June. Sampling began at 0600 on 11 June at a station just east from Fraserburgh. The following stations extended to the north east up into the Norwegian Deeps and then westwards to Shetland. Sampling consisted of a one hour stepped trawl with a pelagic trawl (PT 154) with a CTD dip at each station prior to trawling to identify the position of the thermocline. In addition, a 30 minute oblique tow with a Methot net was carried out at eight of the stations. The distribution of fish was also examined during each gear deployment using an echosounder and 200 KHz transducer. During the first half of the cruise 21 stations were sampled to the east of 2°W. *Clupea* landed at Lerwick for the half landing on the evening of 18 June. A short echosounding survey of the south of Shetland sandeel grounds was carried out on 20 June, and this survey included a trawl tow at Mousa Sound and two dredge samples from Mousa Sound and near Colsay respectively. Gadoid sampling recommenced on 21 June and a further 19 stations between Shetland and Fraserburgh were sampled. Between two and four stations were

sampled per day, with the exception of 22 June when bad weather made it necessary to seek shelter at Loch Eriboll. Problems were encountered with the Archimedes navigation system during the cruise, but no data was lost. Deployment of the Methot frame also proved difficult owing to poor sea conditions throughout much of the cruise and the limited space at the ship's stern. Nevertheless, the programme and two additional trawl tows for live fish and specimens were successfully completed earlier than planned. *Clupea* docked at Fraserburgh at 0400 on 29 June.

Results

1. Pelagic 0-group cod, haddock and whiting were widely distributed throughout the survey area. As usual the highest densities of haddock were to the North of 59°N and east of 1°W, although the centre of distribution was further east than that generally found in International Young Gadoid Surveys (1969-1988). Echosounder deployments during trawl tows suggested that most gadoid shoals occurred above the thermocline. In comparison with 0-group haddock abundance estimates from International Young Gadoid Surveys (reviewed by Holden, 1981), the geometric mean abundance of haddock in 1994 was close to the mid point of the 1972-78 range.
2. Over a 1000 0-group haddock were frozen from 25 of the stations for later otolith analysis. Samples of 0-group cod were also collected from stations where they were particularly abundant. Haddock from each of the two regions: near mainland Scotland and the Bergen Bank, were sampled for DNA analysis. Tissue samples from a 100 fish per region were fixed in ethanol for this analysis.
3. 0-Group sandeels caught in trawl hauls were generally smaller (35-70 mm TL) than those found in previous young gadoid surveys. Samples of 1+ sandeels were collected from three ICES stats squares: 44E8, 48F0 and 46E6 for molecular studies. samples of sandeels were also collected at two Shetland sandeel grounds for post *Braer* oil spill studies.
4. Attempts to catch live haddock from routine hauls were largely unsuccessful and even a dedicated short tow in the upper part of the water column provided few healthy specimens.
5. A radiocaesium sample was collected during passage through the Pentland Firth.

P J Wright

7 July 1994

Seen in draft: A Simpson

CLUPEA 1294C 0 GROUP GADOID SURVEY

