

R1/12

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FRV *Scotia*

Cruise 0602S

REPORT

9-23 April 2002

Personnel

I M Gibb (SIC)
J Dunn
N S Collie
F M Gibb
H E Fraser
G Holland
S Halewood

Gear

ARIES, dual Methot, CTD, ADCP, dual bongo, 1m plankton net, Water sampling bottles

Out-turn Days per Project: MF0463 - 15 days

Objectives

1. To investigate the spatial, temporal and vertical distribution of sandeel larvae using plankton and hydrographic sampling techniques.
2. To conduct a hydrographic survey along a transect offshore of Stonehaven.
3. To collect samples of sandeel larvae for age determination.

Area: IVa, IVb (Western)

Narrative

Scotia sailed from Aberdeen at 1000 hours on Tuesday 9 April and proceeded to the southern limit of the survey area to the first sampling station at 55°45'N, 01°45'W. The survey area from 55°30'N to 59°30'N and 00°30'E was subsequently surveyed in a northerly direction, using both the dual Methot and ARIES plankton samplers. The Methot net was deployed twice at each sample station, the first deployment sampled the 0-20 m and 0-40 m depth strata and the second sampled between 0-40 m and 40 m-bottom. ARIES samples were initially conducted as an oblique tow, but then subsequently held within 25 m depth bandings for five minutes to increase the volume of water sampled. One CTD deployment was made at each Methot station. ADCP and EK500 data were collected throughout the survey. Thermosalinograph data was not collected due to network problems.

A 13- hour dedicated transect at the Wee/Marr Bank (56°15'N, 02°10' - 01°25'W) was conducted to collect further ADCP data on 11 April. At least six passes were made at approximately 12-13 knots over the bank within the allocated time. Excellent weather conditions facilitated the completion of the first survey of the area at 1200 hours on 16 April. *Scotia* then steamed south to conduct the second ADCP transect off Stonehaven (56°59'N, 02°02' - 01°26'W), and to sample the Stonehaven hydrographic line. The Stonehaven line was completed late evening on 17 April, after which *Scotia* steamed back to the southern limit of the sampling area to conduct the repeat survey. Work continued over the next five days with successful deployments of ARIES, CTD and the Methot net before *Scotia* proceeded south once more to conduct the third and final ADCP transect off Stonehaven. Sampling was completed at 1730 hours and the ship set course for Aberdeen docking at 1930 hours on Tuesday 23 April. *Scotia* was unloaded the following morning.

Results

Sandeel abundance

A total of 157 methot and 26 ARIES deployments were successfully completed. All the methot samples were picked twice for sandeel larvae. From these samples a total of 203,682 larvae were extracted and preserved in 4% formalin for length frequency analysis. Sandeel larvae samples for age determination were collected from the 0-40 m methot deployment, and preserved in ethanol. Larval condition in ARIES samples was found to be generally poor, and the last six sample stations have been left for further analysis back at the laboratory. Sandeel larvae abundances from the Methot net ranged from 0-21.5 larvae/m³ (see Fig. 1). Abundances from ARIES samples ranged from 0-9.76 larvae/m³, with one station recording 41.9 and 48.9 larvae/m³ from mean depths of 25.4 and 6.68 m respectively.

Stonehaven transect

At seven pre-selected locations the Seabird CTD sampler and the dual Bongo net were deployed using a vertical dip. Water samples were collected for salinity, nutrient and phytoplankton analysis. The 1 m plankton net was deployed using an oblique tow at all stations. The transect was completed in eight hours.

I M Gibb
1 May 2002

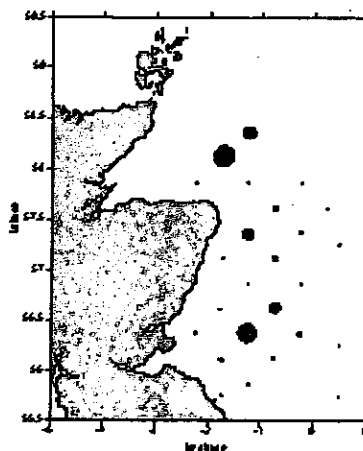
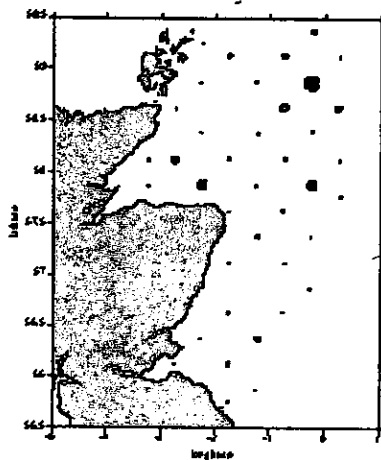
Seen in draft: Peter Ramsay, Master

Sandeel abundance (No's/m³) - Dual Methot

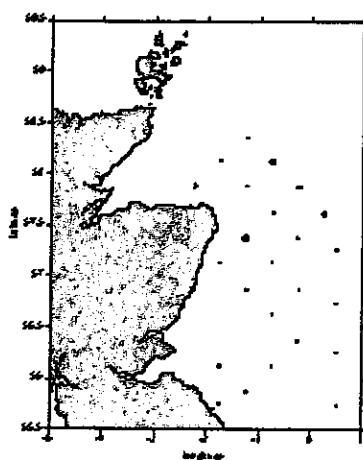
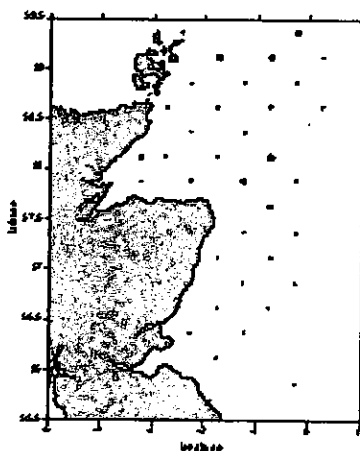
PART ONE

PART TWO

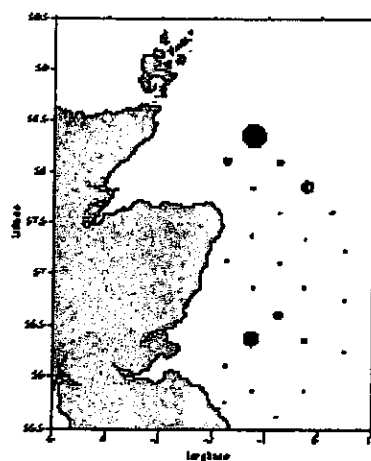
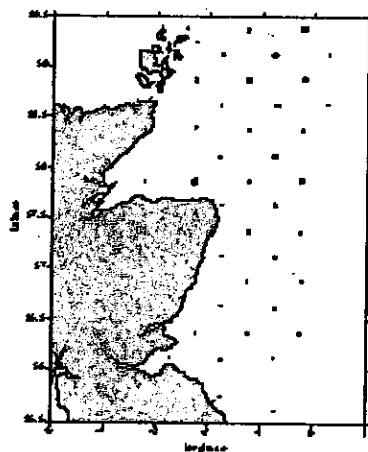
net 1, 0-20m



net 2, 20-40m



net 3, 0-40m



net 4, 40-bottom

