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Charter of MV "Sunbeam" LK 335

Report

28 July - 2 August, 4-9 August 1986

Personnel

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Objectives

- 1 To carry out a bottom trawl survey to determine the distribution of 1-group and older sandeels (Ammodytes marinus) around Shetland.
- 2 To determine day/night effects on the age-structure of A. marinus buried in the sediment.
- 3 To collect biological and environmental data on sandeels and sandeel fishing grounds.

Narrative

Scientific personnel travelled to Shetland on Sunday 27 July joining "Sunbeam" early the following morning. Over 28 July - 2 August all recognised inshore grounds were sampled. For each trawl haul sandeel length distributions were recorded, otoliths taken and the stomach contents of all length categories of other fish species caught were examined for the presence of sandeels. For each dredge haul the number of sandeels caught and their length distribution were recorded. Staff left the boat late on 2 August rejoining it early on 4 August after a mid-trip break. Replicate samples were taken over 4-9 August and, in addition, plankton samples were taken from each ground fished along with stomach samples from A. marinus.

Results

1 Trawl Survey

A total of 37 trawl hauls were made with all grounds being sampled at least twice. Hauls were of variable duration depending on the ground fished but were generally around 20-25 minutes. Catches of A. marinus varied between zero (Balta) and 6.75 tonnes (South Foula) with varying, but low, by-catches (averaging 1 basket of mixed white fish). Average catch rates per ground are shown in Figure 1 for a standardised trawl haul of 30 minutes. The age distributions of sandeels caught by trawling on the various grounds is shown in Figure 2 from which it can be seen that 0-group dominated the catch from the south-eastern grounds and at Foula. A total of 1678 A. marinus otoliths were taken.

2 Dredge Hauls

At least one daytime dredge haul was made on each fishing ground and, in addition,

a series of replicate dredge hauls were made during the day and at night on 4 grounds. Up to 815 A. marinus were taken in a single dredge haul with sandeels being taken from the sediment both during daylight and after dark. The results await further analysis. A total of 49 dredge hauls were made.

3 Biological and Environmental Data

- i For each trawl haul the stomachs of up to 10 fish per 10 cm length group of each by-catch species were examined and the numbers and state of digestion of all A. marinus present were recorded; 1653 stomachs were examined and sandeel remains found in 525 of them, 15 of the 20 by-catch species being found to have fed to some extent on A. marinus.
- ii The stomachs of 10 A. marinus and a metre-net plankton sample were taken from each ground fished, preserved in 70% alcohol and returned to the Laboratory for examination.
- iii No water temperatures or salinity samples were taken due to the non-availability of sampling gear.

General

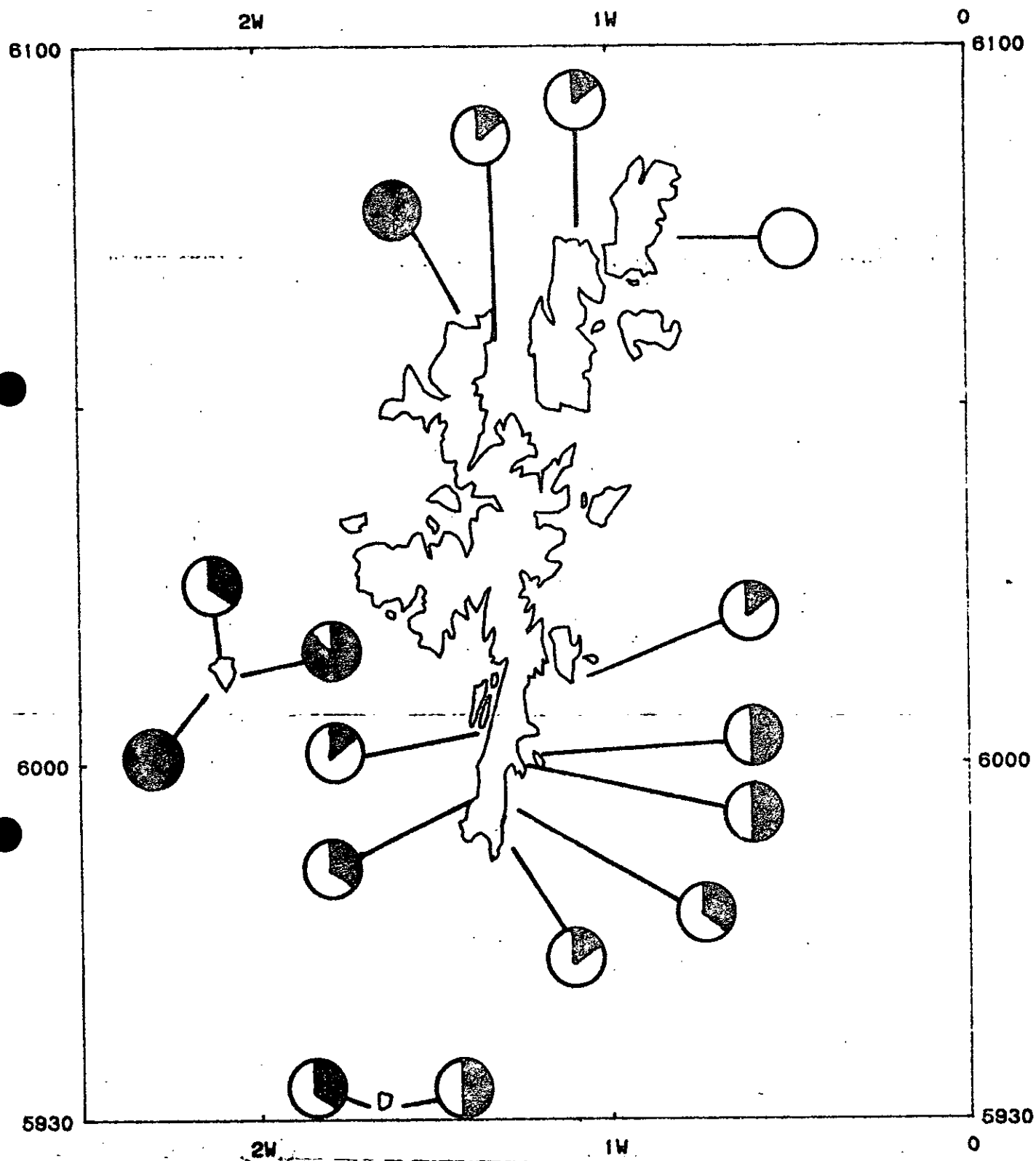
Due to the closure of the fish reduction plant at Bressay it was not possible to carry out any sandeel tag recovery efficiency experiments.

No landings were made in the course of the charter.

P A Kunzlik
23 September 1986

Fig. 1

A. marinus - catch-rates



Key to catch-rates
(tonnes / 30 mins.)

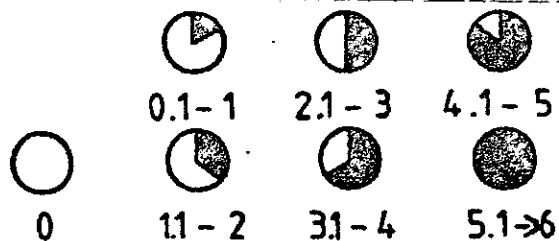


Fig. 2
A. marinus - age distribution (%)

