

R1/3

IN CONFIDENCE - not to be quoted without prior reference to the Laboratory.

Charter of MR "Sunbeam" LK 335
5-10, 12-17 August 1985

NB

Report

Personnel

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Objectives

- 1 To carry out a bottom trawl survey on recognised sandeel grounds around Shetland.
- 2 To study the effects of tide and time of day on the availability and distribution of sandeels.
- 3 To collect data on the predators of sandeels.

Narrative

Scientific personnel travelled to Shetland on Sunday 4 August joining "Sunbeam" early the following morning. Over 5-10 August all recognised inshore grounds were sampled and for each haul sandeel length distributions were recorded, otoliths taken and the stomach contents of all length categories of other fish species present examined for the presence of sandeels. Replicate hauls were taken over 12-17 August after the half-landing in Lerwick. Surface and bottom temperatures and salinities were recorded once for each ground fished and the Sands Voe ground was sampled intensively over 2 complete tidal cycles on 9 and 16 August. Staff left "Sunbeam" on the evening of Saturday 17 August returning to Aberdeen the following day.

Results

1 Trawl Survey

A total of 58 hauls were made with all grounds being sampled at least twice. Hauls were of variable duration depending on the grounds but were generally around 20-25 minutes. Catch rates were also variable ranging from a single basket of mixed white fish to 6 tonnes of Ammodytes marinus, the variability being more pronounced between grounds rather than between replicate hauls on the same ground. Average catch rates per ground are shown in Figure 1 for a standardised trawl haul of 30 minutes.

The age distribution of sandeels on the various grounds is shown in Figure 2 and it can be seen that 0-group recruits predominated in the catch from grounds off the mainland whereas their presence was not so obvious around the islands to the north, west and south.

2 Tidal Effects

Eight hauls were made at 90 minute intervals throughout the day on both 9 and 16 August with low water and high water at noon on each day respectively. Results indicate some difference in catch rates due to both factors (state of tide and time of day) but await a fuller analysis.

3 Predators

For each haul the stomachs of up to 10 fish per 10 cm length group of each species caught were examined and the numbers and state of digestion of all A. marinus present were recorded. Evaluation of this work is currently underway.

4 General

Surface and bottom temperatures and salinities were measured for each ground sampled.

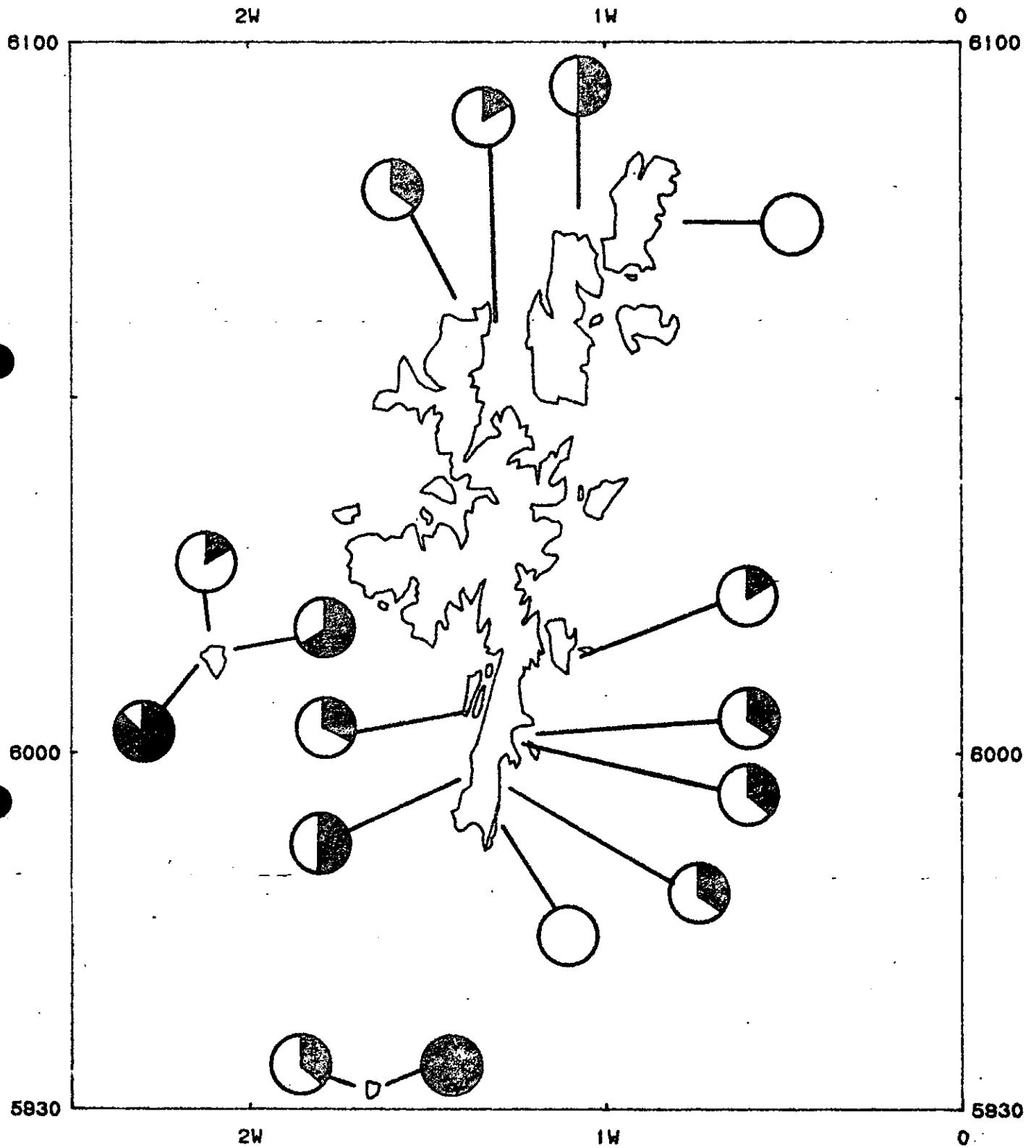
On both 7 and 14 August 50 tagged sandeels were introduced into the hoppers at the Bressay fish reduction plant as part of the sandeel tag recovery efficiency experiment and yielded returns of 90% and 86% respectively.

No landings were made in the course of the charter.

P A Kunzlik

15 January 1986

Fig. 1.
A. marinus - catch-rates



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

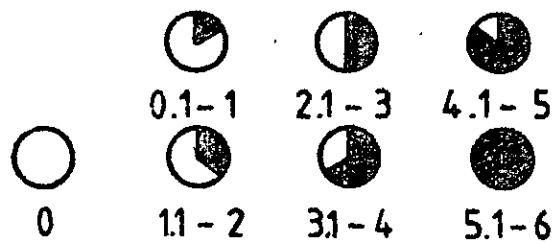
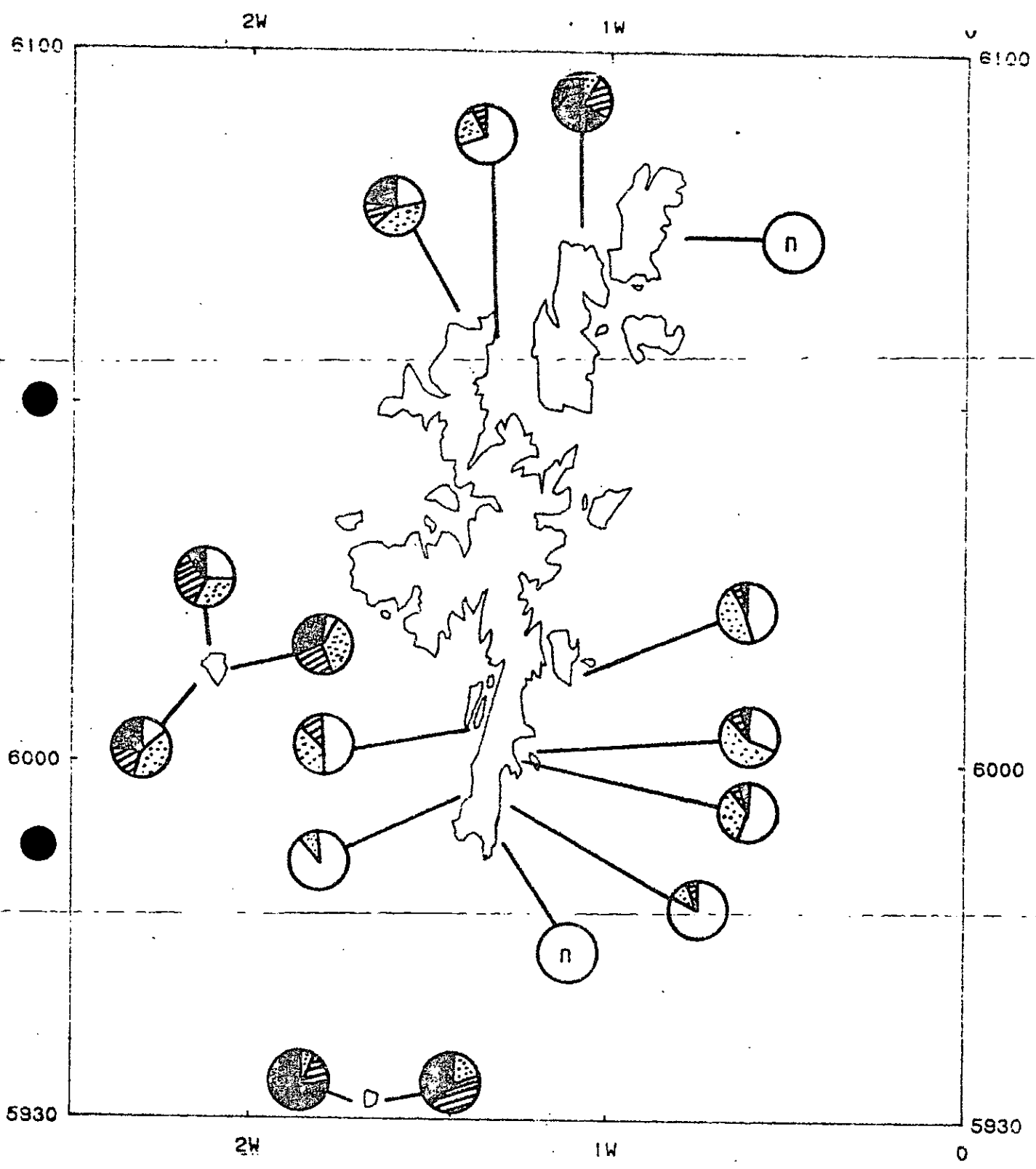
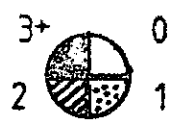


Fig. 2

A. marinus - age distribution (%)



Key to ages



n = no sandeels in catch