

R1/12

Not to be cited without prior reference to the Laboratory

Cruise 1492S

REPORT

22 October-11 November 1992

Personnel

J Hislop	PSO (in charge)
A Robb	HSO
Ms M Bell	SO
Mrs J McMillan	ASO
Sra I Afonso Dias	PhD Student - Aberdeen University
J Cannon	Visitor (22-30 October)

Fishing Gear

Modified Aberdeen 48 ft trawl	BT101
Modified GOV trawl	BT137

Objectives

1. To survey the distribution and abundance of anglerfishes and megrims on the edge of the continental shelf between Shetland and the Outer Hebrides.
2. To collect basic biological information on anglerfishes and megrims.
3. To quantify the proportions of other commercial species (particularly cod, haddock, whiting and saithe) in the catches.
4. To investigate the availability of species of potential commercial importance in deep water.

Narrative

Scotia left Aberdeen at 1500 on 22 October and began work west of Fair Isle on the following day. Having made several hauls in the vicinity of Foula, *Scotia* proceeded in a southwesterly direction, working along the edge of the continental shelf between latitudes 61°00'N and 58°30'N. Immediately before and after the half-landing (Stornoway 30 October) hauls were made in the north Minch. *Scotia* then worked west of St Kilda and the Flannan Isles. After devoting two days (6 and 7 November) to trawling in deeper water (350, 500 and 750 m), the basic survey programme was resumed. The last haul was taken aboard at 1300 on 10 November and *Scotia* returned to Aberdeen, docking at 0600 on 11 November.

Results

Sixty five hauls were made during the cruise, 61 with the 48 ft trawl and four with the GOV trawl. Gear damage was considerable; the GOV trawl was torn on three of the four occasions on which it was used and there were eight invalid hauls with the 48 ft trawl. In the majority of the latter instances, damage to the net was slight but the cod-end was holed and most of the catch had escaped. Many of these tows were repeats of those made in 1990, when damage to the net was minimal, and it is hard to understand why so many problems were encountered during the present cruise.

In general, catch rates of anglerfishes were markedly lower than in the first survey in November 1990. The difference was particularly noticeable in the north Minch, where much smaller numbers of small anglerfishes (<30 cm) were caught than in 1990. However, catch rates of large fish (>80 cm) were only approximately 50% of the previous level, over the whole area.

Apart from a small number of specimens preserved whole for morphometric investigations, all anglerfishes were worked up at sea. They were measured (total length, "tail" length), weighed (total weight, gutted weight, liver weight, gonad weight, "tail" weight) and otoliths and ilicia were collected for age determination in the laboratory. In most cases, anglerfish stomach contents were identified, weight and measured at sea but a small number were preserved for analysis in the laboratory. In addition, the state of sexual maturity was assessed, on the basis of macroscopic criteria, and a representative collection of gonads was preserved in 10% buffered formaldehyde solution for histological studies. Whereas many ripe males (ie individuals with free-flowing milt) were captured, clearly visible intra-ovarian eggs were seen in only a few females, all of which were large individuals.

Catch rates of megrims were also lower than in 1980. Virtually all specimens were *Lepidorhombus whiaffiagnis*, although a few *L. boscii* were caught in deep water (>350 m). More than 650 megrims were weighed at sea and their state of maturity recorded.

The deep water fishing exercise was only partially successful, owing to damage to the trawl. However, the distribution of *L. piscatorius* was found to extend to at least 750 m (three individuals caught west of St Kilda) and quantities of Roundnosed grenadier, *Coryphaenoides rupestris* and Black scabbard, *Aphanopus carbo*, were caught west of St Kilda and northwest of Sulisker. No Orange roughy, *Hoplostethus atlanticus* were caught (radio contact with a French vessel indicated that at the time the French fleet was exploiting this species well to the south of the survey area, near Porcupine Bank).

J R G Hislop

21 January 1993

SCOTIA CRUISE 14/92

