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FRV *Scotia*

Cruise 1605S

**REPORT**

4-12 November 2005

**Personnel**

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|---|---|
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**Objectives**

1. To undertake a nationally co-ordinated demersal trawling survey of anglerfish in the northern North Sea.

2. To carry out comparative trawling with the FRV *Minerva*.

3. To determine the density of anglerfish from visual counts using the TV sled.

4. To tag anglerfish with data storage tags and return them to the sea.

5. To determine the level of infection of parasitic worms in anglerfish.

6. To obtain temperature and salinity profiles at each trawling station.

**Out-turn days per project:** MF0353 – 9 days

**Narrative**

*Scotia* departed Aberdeen harbour at 1100 on Friday 4 November. A scientific meeting was held with all scientific staff shortly after departure. Tests of the TV cable were conducted in the Southern Trench en route to the first sample location. The first trawl sample was taken at 2115 in the Pentland Skerries. The vessel then steamed to the north east to rendezvous with the MFV *Minerva* to conduct a comparative fishing exercise. Two successful intercalibration trawls were conducted on the morning of Saturday 5 November. *Scotia* then proceeded with the trawl survey in the northern North Sea. Trawl samples were taken as planned. Where weather permitted visual counts were made of monkfish with the TV sled. Data storage tags were attached to several anglerfish on Sunday 6 November. *Scotia*

entered Norwegian waters in the evening of Monday 7 November. Poor weather (Beaufort Force 10) was encountered on Tuesday 8 November which prevented work being carried out for most of the day. Trawling resumed at 2039 later that day and continued successfully until the evening of Thursday 10 November. Further tagging work was carried out in the early hours of Friday 11 November, after which the weather deteriorated significantly. Poor weather prevented the last trawl sample being taken and the vessel was forced to shelter off Fraserburgh on Friday evening. The vessel returned to Aberdeen the following morning of Saturday 12 November.

## Results

### Trawling

A total of 26 trawl hauls were taken (Hauls 458-483). Of the 18 survey samples16 were successfully completed; two samples could not be taken due to bad weather. Eight trawl hauls were used to catch live monkfish for tagging purposes. Two intercalibration hauls were carried out with the MFV *Minerva*. A total of 320 anglerfish were sampled for length, weight and maturity; otoliths and lures were taken for ageing. Of these, 312 were *Lophius piscatorius* and eight were *Lophius budegassa*. The intestines and tail flesh of each anglerfish were frozen to be taken back to the laboratory for later examination for parasitic worms. The total weight of anglerfish was 538 kg. Other fish caught included 3938 haddock (2387 kg), 1760 saithe (2304 kg), 398 whiting (167 kg), 356 cod (503 kg), and 328 megrim (137 kg).

The Scanmar gear measurement system was used to monitor wing spread, door spread and distance covered during each haul. The bottom contact sensor worked on 16 of the 18 survey and intercalibration samples.

### Tagging

A total of 24 anglerfish were tagged with data storage tags and then carefully returned to their environment at two locations (12 at East Pobie Bank and 12 at Forties Bank). A further 13 anglerfish were tagged with standard ‘T’ tags.

### TV operation

The TV sled was deployed at five stations for half an hour at each station. Poor weather prevented any more samples being taken. It became apparent after the first few deployments that the field of view between the sled legs was too small and so the camera angle was adjusted to accommodate a wider viewing angle. Only one anglerfish was observed with the TV sled, however, valuable information on the substrate type was gained.

### Hydrography

The net mounted CTD was deployed on the trawl at each station and worked successfully on 16 of the 18 hauls. Two vertical CTD casts were taken in association with the tagging exercises. The ships thermosalinograph was operated throughout the cruise, although the Zendec system failed towards the end. A total of 12 water samples were taken to calibrate the thermosalinograph.

## Conclusions

Overall the cruise was successful, with 16 of the 18 stations sampled, providing over 300 anglerfish and all 18 data storage tags deployed. The new sampling trawl worked very well and was rarely damaged. The poor weather prevented deployment of the TV apparatus on

many occasions, but even when it was deployed it is clear that a larger sampling area needs to be covered for visual counts of anglerfish. Appropriate adaptations to the TV system will need to be made if it is to be used in subsequent cruises. Thanks are due to both the crew of the FRV *Scotia* and the scientific staff for a successful cruise, despite the poor weather.

P G Fernandes
17 November 2005

As seen in draft: A McLeod, OIC for FRV *Scotia*