

# Cruise Report - FRV *Scotia*, Cruise 1706S

Not to be cited without prior reference to the laboratory

31 October -13 November 2006

## Personnel

1	P G Fernandes	(In Charge)
2	K Coull	
3	I Gibb	
4	P Kunzlik	
5	M Stewart	
6	C Shand	
7	H Dobby	
8	S Keltz	
9	C Laurensen	NAFC
10	I Gatt	(SFF representative)

## Objectives

1. To undertake a nationally co-ordinated demersal trawling survey of anglerfish on the Rockall Plateau.
2. To tag anglerfish with data storage tags and return them to the sea.
3. To conduct trials of lighting and camera viewing angles at various altitudes from the seabed using the TV sled.
4. To obtain temperature and salinity profiles at each trawling station.

**Out-turn days per project:** MF0353 – 14 days

## Narrative

Scotia was significantly delayed from departing Aberdeen harbour due to extreme weather and finally departed at 2355 on Wednesday 1 November, 38 hours behind schedule. A scientific meeting was held with all scientific staff on the afternoon of Thursday 2 November during the long passage to Rockall. Tests of the TV cable and trawl wire were conducted at the shelf edge en route to Rockall. Scotia arrived at the site of the first trawl sample at 1850 on Friday 3 November. In accordance with the FRS' Code of practice for surveys within sensitive deep-water habitats, the site was examined with the TV drop frame to ensure that no coral were present prior to trawling. The substrate consisted of sand and so the first trawl haul sample was taken shortly afterwards, at 2015 on Friday 3 November. Scotia then proceeded with the survey, taking samples as planned. On the evening of Friday 3 November, further inspections were made with the TV drop frame of four sample sites to the north east of Rockall, within those areas proposed as possible for closure to protect coral<sup>1</sup>. All of these inspections indicated that no coral was present in these areas. On another occasion, where a sample (station 10) was located within a proposed closed area, the TV drop frame could not be deployed due to poor weather: in this case the site was moved to the nearest point outside the closed area. This poor weather caused some delay and two stations were omitted in the south western area as a result. On the evenings and early hours of Wednesday 8 November and Thursday 9 November special trawl hauls were taken

<sup>1</sup> See International Council for the Exploration of the Sea (ICES) Report of the ICES Advisory Committee on Fishery Management, Advisory Committee on the Marine Environment and Advisory Committee on Ecosystems, 2005. ICES Advice. Volumes 1 - 11. 1,403 pp.

on Byron Bank on the west of Rockall plateau to catch anglerfish for tagging. Poor weather (Beaufort Force 9) was encountered on the evening of Thursday 9 November and this was predicted to continue such that the survey was abandoned on Friday 10 November. Poor weather prevented the last seven trawl samples being taken and the vessel was forced to return to the Moray Firth for shelter. Some work with the TV drop frame and TV sled was possible on the morning of Sunday 12 November in the Southern Trench of the Moray Firth. The master then received news of berthing difficulties which meant that the TV work had to be cut short and the vessel was required to return to Aberdeen half a day ahead of schedule. The vessel returned to Aberdeen on the afternoon of Sunday 12 November.

## Results

### 1. Trawling

A total of 38 trawl hauls were taken (Hauls 516-553). Of the 40 survey samples 29 were successfully completed; the remaining samples could not be taken due to bad weather. Nine trawl hauls were used to catch live anglerfish for tagging purposes. Most of the hauls were of the required one hour duration, with the exception of the tagging hauls (15 mins) and hauls 519 (station 1), 525 (station 12) and 532 (station 21) which were 30 and 40 minutes long respectively. The latter hauls were shorter due to the net coming fast.

The Scanmar gear measurement system was used to monitor wing spread, door spread, trawl depth (to a limit of 625 m), trawl height off the seabed, and distance covered during each haul. The bottom contact sensor failed to work on any occasion.

A total of 394 anglerfish were sampled for length, weight, gutted weight and maturity; otoliths and lures were taken for ageing: all of these were *Lophius piscatorius*. The tail flesh of 30 anglerfish were frozen to be taken back to the laboratory for later examination for parasitic worms. The total weight of anglerfish was 1182 kg. Other fish caught included 5344 haddock, 16 saithe, 3 whiting and 426 megrim.

Biological samples were also taken from the following deep water species: length, sex, maturity, weight & gutted weight were taken for: leaf scale gulper shark (2); *Centroscymnus crepidater* (8); and *Aphanopus carbo* (62); length, sex and maturity for: *Coryphaenoides rupestris* (82); and *Deania calcea* (79); length and sex for velvet belly shark (350).

### 2. Tagging

A total of 14 anglerfish were tagged with data storage tags and then carefully returned to their environment at Byrony Bank on the west of the Rockall Plateau. A further six anglerfish were tagged with standard 'T' tags.

### 3. TV operation

The TV drop frame was deployed for a short period (several minutes) at each station located within any area designated for coral protection. The five observations made in the north east of the Rockall plateau indicated that no coral was present at any of these. Poor weather prevented any more samples being taken until the last day. On the last day TV operations were proving successful until they were cut short by a requirement to berth in Aberdeen ahead of schedule.

### 4. Hydrography & acoustics

The net mounted CTD was deployed on the trawl at each station and worked successfully on all of the 29 hauls. The ships thermosalinograph was operated throughout the cruise. A total of 27 water samples were taken to calibrate the thermosalinograph. The ship's EK60

echosounder was operated continuously throughout the cruise and data were collected on all four frequencies.

## **Conclusions**

Overall, when one considers the poor weather encountered, the cruise was reasonably successful: 29 of the 40 stations trawl stations were sampled, providing over 390 anglerfish; Additional biological data were collected for six deepwater fish species. The sampling trawl worked very well, although the wing ends were often damaged due to the floats breaking through the smaller meshes on the net drum. No bottom contact data were collected due to damage of the single collection probe prior to arrival (the device was working during passage). Other gear measurement data were mostly good, although on occasion the door sensors failed to register, and the depth unit provided would only read to 625 m. CTD data were collected at all stations and 14 data storage tags deployed on anglerfish. Poor weather prevented deployment of the TV apparatus on most occasions, although when it was needed most, it was used to check for presence of coral prior to trawling. Thanks are due to both the crew of the FRV Scotia and the scientific staff for a successful cruise, despite very poor weather.

P.G. Fernandes

Scientist in charge  
12 November 2006

As seen in draft

Norman Paddle  
Master, FRV Scotia