

P17/15

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FRV *Scotia*

Cruise 1607S

REPORT

27 October -9 November 2007

Ports

Loading: Aberdeen, 25 October

Unloading: Aberdeen, 9 November

Personnel

P G Fernandes (In charge)
R Kynoch
I Gibb
P Kunzlik
N Collie
H Dobby
J Hunter
S Kinnear
C Laurensen (NAFC)
J Anderson (SFF Representative)

Objectives

1. To undertake a nationally coordinated demersal trawling survey of anglerfish on the Rockall Plateau.
2. To undertake counts of anglerfish using the new TV chariot.
3. To tag anglerfish with data storage tags and return them to the sea.
4. To obtain temperature and salinity profiles at each trawling station.

Out-turn days per project: MF0353 – 14 days

Narrative

Scotia departed Aberdeen harbour at 1100 on Saturday 27 October. A scientific meeting was held with all scientific staff on the afternoon of departure. After the long passage to Rockall, Scotia arrived at the site of the first trawl sample at 0815 on Monday 29 October. Scotia then proceeded with the survey, taking samples as planned. On the afternoon of that first day, inspections were made with the TV chariot of sample sites to the north east of Rockall, within those areas proposed as possible for closure to protect coral¹. This

¹ 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. Volume 1-11. 1,403 pp.

inspection indicated that no coral was present in the area. The survey then proceeded according to plan, shooting approximately four trawl hauls per day. During periods of darkness, the TV chariot was deployed, initially to familiarise the relevant staff and crew in its operation, and ultimately to obtain video footage of anglerfish and deep water coral. On the evening of Sunday 4 November special trawl hauls were taken on Byron Bank on the west of Rockall Plateau to catch anglerfish for tagging. Poor weather was then encountered causing some delays and making fishing operations on unknown grounds too risky: several stations were omitted in the north western area as a result. The weather deteriorated towards the end of the survey (reaching Beaufort Force 9) such that only two hauls were conducted on Monday 5 November. The continued poor weather did not allow for any further of the planned stations to be sampled in deep water and instead two additional samples were taken on the Rockall Bank. Finally, on the afternoon of Tuesday 6 November, the continued deterioration in the weather (predicted storm force) caused the survey to be abandoned and the vessel was forced to return to Aberdeen a day ahead of schedule. The vessel returned to Aberdeen on the morning of Thursday 8 November.

Results

1. Trawling

A total of 34 trawl hauls were taken (Hauls 437-470). Of the 40 surveys samples, 29 were successfully completed and an additional two hauls were taken in the relatively shallow water of the Rockall Bank; the remaining samples could not be taken due to bad weather. Three 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 haul 440 (station 4), 442 (station 6), 454 (station 18), 455 (station 19), 466 (station 30) and haul 468 (station 32), which were approximately 30 minutes long. The latter hauls were shorter due to the net coming fast: on two occasions probably due to encountering coral; and on the remaining four occasions due to the gear being buried in soft sediment.

The Scanmar gear measurement system was used to monitor wing spread, door spread, trawl depth, trawl height off seabed and distance covered during each haul. The portable Scanbas system failed on several occasions due to an unknown error, but gear measurement data for all hauls were recorded on the ship's bridge. The first bottom contact sensor failed after being flooded and was eventually replaced by a new sensor which required some engineering to fit it into the housing: a total of 12 hauls were monitored for bottom contact.

A total of 417 anglerfish were sampled for length, weight, gutted weight and maturity; otoliths and lures were taken for ageing: all of these were *Lophius piscatoris*. The total weight of anglerfish was 1337 kg. Other fish caught included 5199 haddock, 37 saithe, 3 cod and 615 megrim.

A number of specimens of large ling and grenadiers were frozen to be taken back to the laboratory for further examination.

2. Visual Survey

The TV chariot was deployed on most evenings, although initially most of the deployments were to practice deployment and safe control. Once some confidence was obtained in being able to "fly" the chariot it was deployed in and around the protected areas for coral to determine the comparative densities of anglerfish. A total of 18 tows were carried out, 8 of which were used to collect data on anglerfish density. The latter amounted to approximately 20 nautical miles within areas designated as coral, and 25 nautical miles outside the areas. This provided 15 hours of video footage during which a total of two anglerfish were seen

(one inside the protected area and one outside), although closer scrutiny of the data back in the laboratory may reveal more. Data on the speed and altitude of the vehicle were also collected to allow for the calculation of the sampled area back in the laboratory.

3. *Tagging*

A total of seven 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 fifteen anglerfish were tagged with standard 'T' tags.

4. *Hydrography & Acoustics*

The net mounted CTD was initially deployed on the trawl but failed shortly after recovery on the first day. A mini-logger was deployed thereafter to record the sea temperature on the trawl. The ship's thermosalinograph was operated throughout the cruise and a total of 16 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 (+2) of the 40 trawl stations were sampled, providing 417 anglerfish and 615 megrim. On initial inspection, the average catch rate of anglerfish was higher than in 2006, which bodes well for the estimate of abundance. The sampling trawl worked very well, although once again the wing ends were often damaged due to the floats breaking through the smaller meshes on the net drum. Bottom contact data were collected on some of the trawl hauls, despite damaging the initial sensor. Other gear measurement data were good. Temperature data were collected at most stations and 8 data storage tags were deployed on anglerfish. Despite some teething troubles with its stability, the TV chariot eventually provided some interesting data, particularly on the distribution of coral in the closed area in the north west of Rockall. 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
11 February 2008

As seen in draft
Norman Paddle
Master, FRV Scotia