R1/12

Not to be cited without prior reference to the Marine Scotland, Marine Laboratory, Aberdeen

FRV *Scotia*

Cruise 0609S

REPORT

27 April – 12 May 2009

Personnel

K A Coull
R Kynoch
N Collie
M Stewart
G Jones
R Catarino
L Ritchie
P MacDonald (NAFC Marine Centre)
D Duggan (Galway)
I Saunders (JNCC)
A Polson (SFF Representative)

Objectives

1. To undertake a nationally co-ordinated demersal trawling survey of anglerfish on the Rockall Plateau.

2. To undertake counts of anglerfish and determine coral density using the Seatronics TV chariot.

3. To undertake counts of anglerfish (using the Seatronics TV chariot) in two areas regarded as unsuitable for towing the fishing trawl.

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

Out-turn days per project: 16 days – MF01T

Narrative

Although *Scotia* was prepared for sailing at 1000 on 27 April, sailing was delayed until 1230 so that a transducer for the18Khz scientific sounder could be delivered to the vessel. On departing Aberdeen, *Scotia* proceeded to a location near Peterhead where a series of training and familiarization routines were carried out. On completion of these routines the vessel then headed for the north coast of Scotland where the Seatronics TV Chariot was deployed in an attempt to obtain counts of anglerfish. Due to poor visibility and rough terrain this exercise was

of limited value and the work was cut short with the vessel then heading for the trawling stations at Rockall.

Trawling commenced on the north end of Rockall Bank on the morning of 29 April with 3 hauls being completed during the day. A series of TV tows were carried out during the night in the coral area northwest of Rockall and, although visibility was not too good, several hours of video coverage was obtained. Four trawl stations were completed on 30 April but increasing weather conditions resulted in the cancellation of TV work. With severe weather conditions on the morning of 1 May, *Scotia* was unable to carry out any trawling work and dodged in a southerly direction until the weather eased on the morning of 2 May. After completing 4 trawl stations, the vessel then worked through the night carrying out further TV work in the coral area but with mixed results due to poor visibility and equipment malfunction. Over the next two days, *Scotia* completed 8 trawl stations in the south and southwest of the survey area but camera work was again restricted due to weather conditions. Favourable weather on 5 May allowed *Scotia* to complete 5 trawl stations on the southeast of Rockall Bank, and then work north on the western edge, covering several TV locations during the night. A further 4 stations southwest of Rockall were completed the next day before increasing weather conditions prevented any further work.

On the morning of 7 May, with severe weather conditions continuing, *Scotia* was required to standby a commercial fishing vessel which had become immobilized due to fouling her propeller. As weather conditions improved, *Scotia* was able to carry out work on nearby stations while still maintaining a support role for the vessel in difficulties. With the immobilized vessel under tow by another commercial vessel at 1700, *Scotia* was able to continue trawling on stations north and northeast of Rockall. With continuing improvement of weather conditions, 6 trawl stations were completed on 8 May with a series of TV tows also being done southeast of Rockall. This work proved more fruitful with visibility improving and several anglerfish being viewed. A further 4 trawl stations were completed on 9 May before *Scotia* departed Rockall at 1700 and headed for the TV locations south of St. Kilda.

A series of TV tows were carried out in the St. Kilda region but a combination of poor visibility and unsuitable ground type limited the video coverage to several short tows. On completing the TV survey work at 0200 on 11 May, the vessel then headed for Aberdeen. *Scotia* docked in Aberdeen on the morning of 12 May with unloading commencing at 0830.

Results

The trawl gear performed very well and a total of 42 of the planned 44 trawl stations were completed. Scanmar units were used throughout the cruise to monitor headline height, wing spread, door spread, net depth and haul duration with data logged for each of the 42 hauls. A bottom contact sensor was attached to the trawl to provide information relating to the actual time of contact between net and seabed. This system proved to be effective with data logged for 41 of the 42 hauls completed. A microcat seacat (CTD) was attached to the net on each haul but initial software difficulties resulted in no data being collected during the first 2 hauls. Data was successfully recorded in the remaining 40 hauls sampled. Additionally, a data storage tag was attached to the net for each haul to record temperature and depth. The output from the data storage tag will be archived along with the hydrographic data.

A total of 780 anglerfish were caught with the total live weight being 2619 kilograms. The number caught and weight caught (standardised to an hour) at each trawl location are shown in Figure 1 and Figure 2 respectively. The distribution of anglerfish, as expected, was very similar

to the 2008 survey with the better catches being in the south east area of the plateau, in the depth range 190 – 260 metres.

A total of 1421 megrim, weighing 380 kilograms was achieved for the cruise. This is down on the 2008 total of 1693 megrim (including Four-spot megrim) but indications are that the distribution patterns are similar. Additional biological data was collected from 410 megrim and 459 Four-spot megrim to supplement coverage for the DCF (Data Collection Framework) requirements. Length frequency data was also recorded for cod, haddock, whiting, saithe and *nephrops* from each haul, where encountered.

Camera Visual Survey

Due to rough weather conditions it was only possible to conduct the Visual Camera Survey in 7 of the 15 days planed. During the days of Survey with the exception of one day, the visibility at the bottom was very poor, forcing us to retrieve the sledge and move on to another station. Technical problems also influenced the time surveyed, nevertheless 13 haul were conducted (Table 1) allowing us to Capture about 26 hours of sea bed film that will allows us to complete part of the objectives for this survey. Estimate the abundance of anglerfish and Coral in two areas North West Rockall; and the Empress of Britain Bank. Estimate the abundance of anglerfish in two areas en route to and from Rockall and examine areas of interest to the JNCC.

Table 1: Summary of Camera Deployment

Area Surveyed	Latitude	Longitude	Duration (Hours)
North West Rockall	58º 02.36N	14º 03.27W	4.01
North West Rockall	58º 03.54N	13º 45.70W	3.5
North West Rockall	56º 18.49N	14º 05.96W	1
North West Rockall	56º 19.66N	15º 30.35W	2
North West Rockall	57º 14.48N	14º 43.12W	6.50
Empress of Britain Bank	56º 20.17N	15º 33.22W	0.36
Empress of Britain Bank	56º 09.90N	15º 19.60W	1.06
Empress of Britain Bank	56º 24.80N	15º 49.47W	0.22
JNCC Interest Area	56º 46.49N	13º 46.44W	4.2
Saint Kilda	57º 37.50N	08º 21.41W	0.87
Saint Kilda	57º 37.11N	08º 10.94W	1.01
Saint Kilda	57º 58.11N	07º 38.41W	1.51
Pentland Firth	59º 01.42N	04º 39.18W	0.26

Temperature and salinity data were collected during each trawl by attaching a Microcat SBE37 to the headline. The ship's thermosalinigraph was used throughout the cruise to monitor surface temperature and salinity.

All data relating to Scanmar sensors, bottom contact sensors and CTD will be downloaded to a Marine Scotland computer on return to the laboratory.

K A Coull
12 May 2009

Seen in Draft: Captain Andy Somerton, OIC, *Scotia*

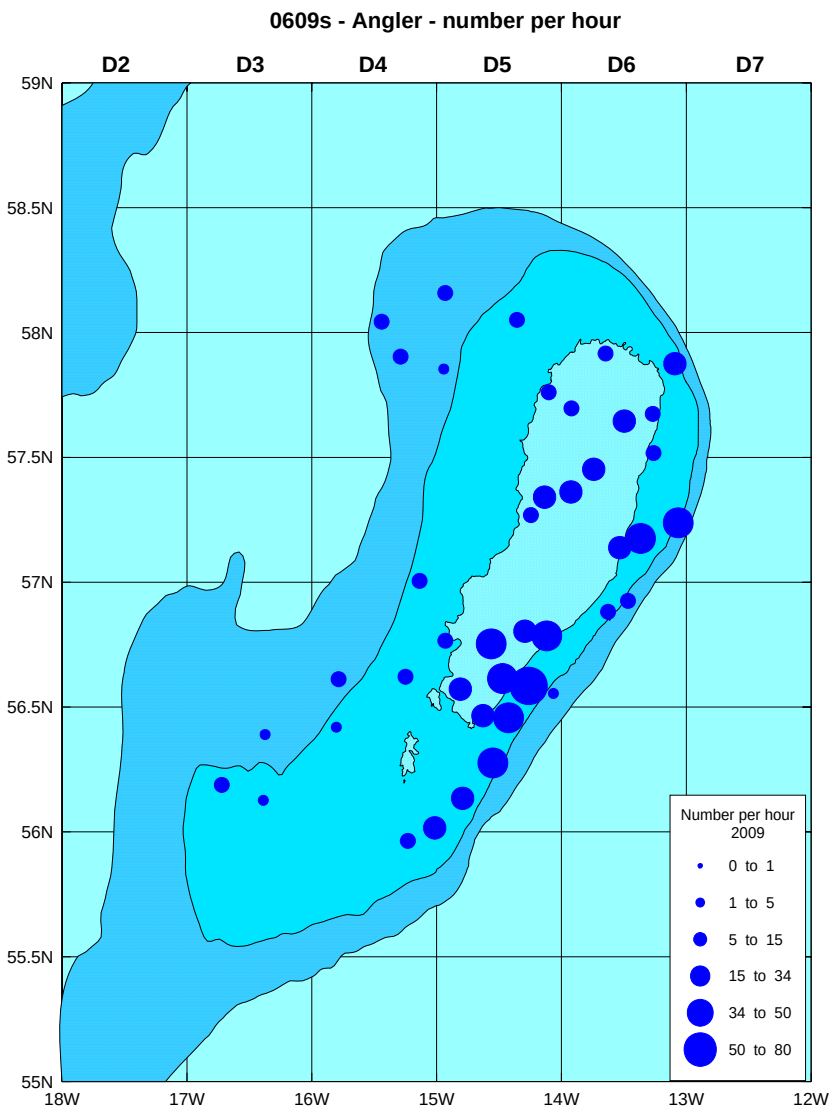


Figure 1

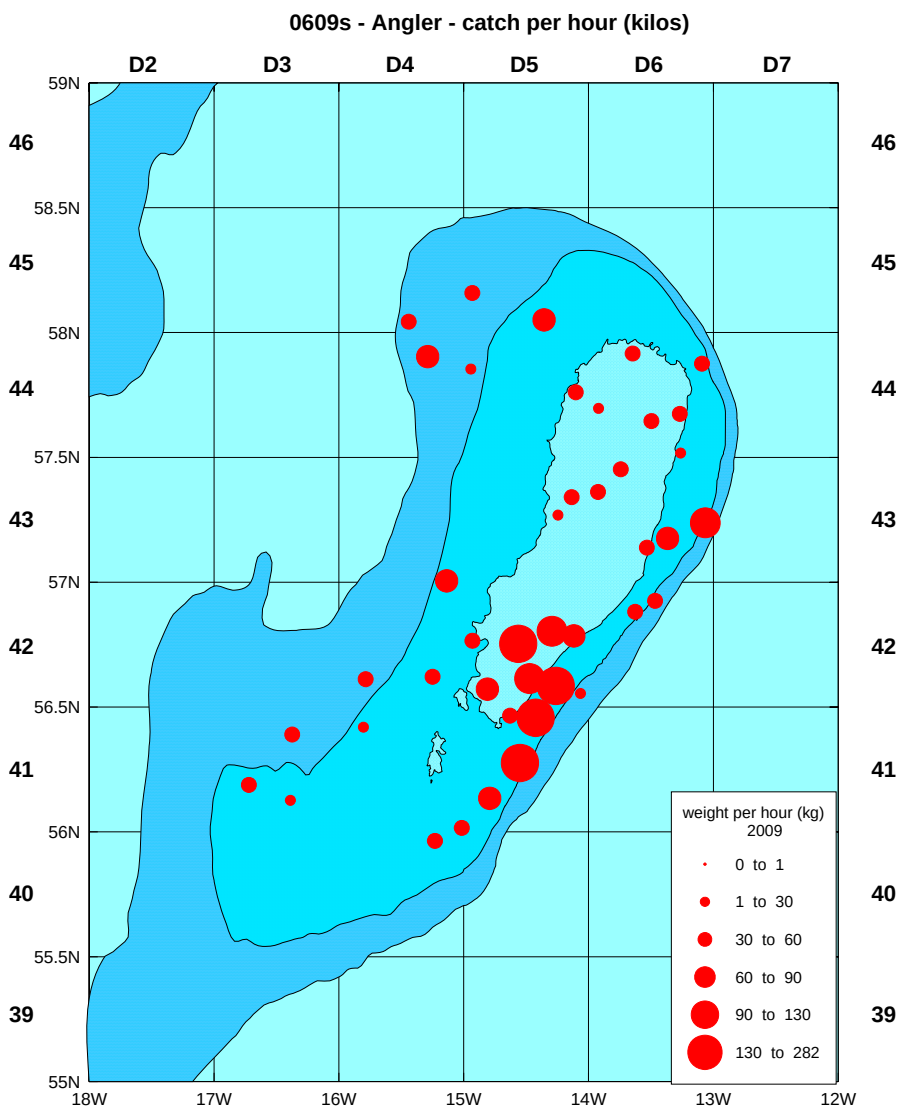
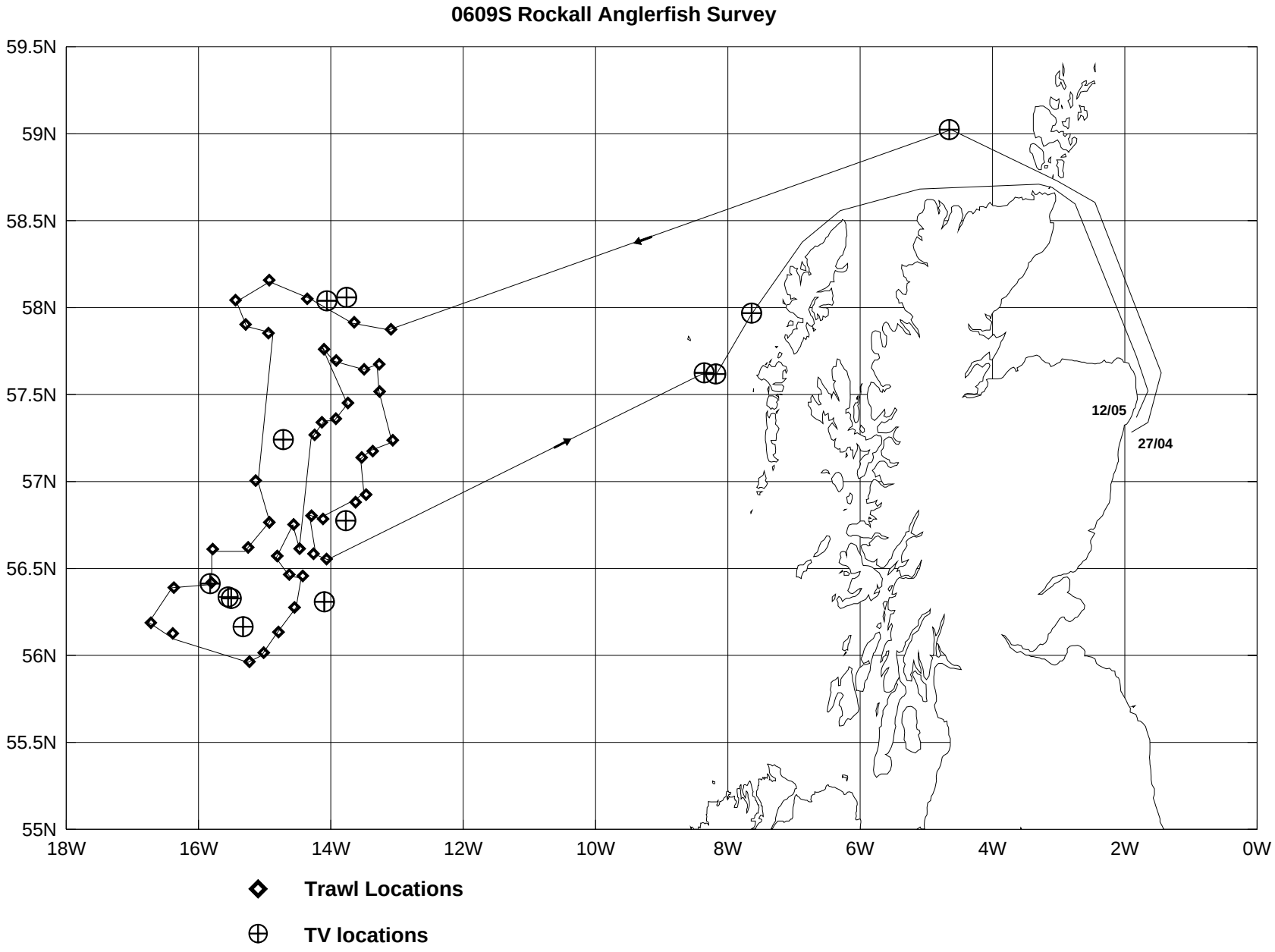


Figure 2


0609S Rockall Anglerfish Survey
59.5N
59N
58.5N
58N
57.5N
57N
56.5N
56N
55.5N
55N
18W
16W
14W
12W
10W
8W
6W
4W
2W
0W
12/05
27/04
Trawl Locations
TV locations