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FRV *SCOTIA*

Cruise 0511S

REPORT

7 – 23 May

Loading: Aberdeen
Unloading: Aberdeen

Personnel

G Slesser SIC
M Geldart
D Lichtman
D Lee
J Wright
N Collie 7-16 May
K Cook 7-16 May
J Beaton 7-16 May SAMS
R O'Hara Murray 16-23 May

Gear

Sea-Bird CTDs, ADCP and Current Meter instrumentation, Mooring Equipment, Recovery Trawl, Ocean Sampler.

Objectives

1. Deploy a current meter mooring off Stonehaven at the inner Long Term Monitoring position.
2. Perform hydrographic surveys along the JONSIS standard section in the northern North Sea.
3. Perform biological sampling along the JONSIS standard section and East Coast section using the Ocean Sampler.
4. Perform hydrographic surveys along the standard Faroe Shetland Channel sections.
5. Carry out deep sea coring at Nolso-Fugga station NOL-04.
6. Take samples for long term storage at Fair Isle – Munken stations FIM-01 and FIM-06.
7. Service four ADCP moorings in the Faroe Shetland Channel.

8. Deploy a SAMS ADCP mooring on the Wyville-Thomson Ridge.
9. Perform CTD surveys across the Fair Isle channel and along the Shelf Edge as time allows.

Out-Turn Days per Project: 17 days: ST03P

Narrative

Scotia sailed from Aberdeen at 0600 (all times are GMT) on Saturday 7 May to the Stonehaven LTM (Long Term Monitoring) position to deploy a current meter mooring. On route to the mooring position muster and familiarisation exercises were carried out. The mooring (56 57.89'N 002 06.81'W) was deployed at 1021. Passage was then made for the start of the East Coast section for a biological survey using the Ocean Sampler. At the first station of this section the CTD/Carousel instrument package was successfully tested (Stn. 127) before the survey took place.

Ocean Sampler sampling of the East Coast section commenced at 1715 on Saturday 7 May and was terminated on the last station due to bad weather at 0315 on Sunday 8 May. Passage was made to the start of the JONSIS section for sampling with the CTD/Carousel and Ocean Sampler.

Due to bad weather on arrival at the first station the work did not commence until 0514 on Monday 9 May. The JONSIS section was completed at 2024 on Monday 9 May (Stns. 128-139).

Following this *Scotia* made way to the Faroe-Shetland Channel ADCP mooring positions area to commence recovery and redeployment of the four ADCP moorings. ADCP moorings NWSF, NWSE and NWSD were recovered successfully 0810, 1340 and 1732 respectively on Tuesday 10 May. The data from these ADCP instruments were downloaded and made ready for redeployment. ADCP moorings NWSF (60° 12.00'N 004° 00.00'W) and NWSE (60° 16.73'N 004° 19.74'W) were successfully deployed at 1204 and 1527 on Wednesday 10 May. On Thursday 11 May mooring NWSD (60° 27.00'N 004° 22.50'W) was deployed at 1021. This was followed by recovering mooring NWSG at 1338. The data was downloaded from the ADCP instrument and made ready for re-deployment. Mooring NWSG (60° 30.51'N 004° 34.00'W) was deployed at 1636. *Scotia* then made passage overnight for the Wyville-Thomson Ridge to deploy an ADCP mooring for SAMS.

The SAMS ADCP mooring (60° 14.85'N 008° 55.30'W) was deployed at 0816 on Thursday 16 May. This was followed by a CTD station (stn. 140). Passage was made by *Scotia* for the start of the Nolso-Flugga section for CTD and water sampling. On the first station of this section the sea cable had to be re-terminated, this delayed work for 1 and ½ hours. The section eventually commenced at 0030 on Friday 13 May and completed at 0430 on Saturday 14 May (Stns 141-156)

Passage was made to carry out a CTD survey of the Fair Isle Section section (Stns. 157-164). This was carried out between 1114 and 1653 on 14 May. On completion *Scotia* made way to 60° 0.00'N 005° 55.00'W (1000m) to carry out CTD trials. Eight CTD stations (165-172) were sampled at this site. *Scotia* then made way to Stornoway for personnel change over and the mid cruise break. *Scotia* berthed at 0830 on

Monday 16 May.

Scotia departed at 0830 on Tuesday 17 May to the first station on the Fair Isle-Munken section. CTD and water sampling commenced at 2154 on Tuesday 17 May and was completed at 1939 on Wednesday 18 May (Stns. 173-186). Passage was then made to the start of the Cape Wrath – Faroe CTD section (Stns. 187-199) and this work commenced at 2041 on 18 May and completed at 0923 on Friday 20 May, gale force winds halted sampling twice during sampling of this section. Further sampling work across the shelf edge (Stns. 200-204) was continually interrupted by bad weather and this work was abandoned and passage was made to carry out a repeat of the JONSIS section.

Sampling the JONSIS section (Stns 205-215) began at 1408 on Saturday 21 May and was terminated at 2355 on the last station due to a fault in the termination of the sea cable. Given this occurred at near the deadline time for making passage to Aberdeen it was decided to cease operations. The repair to the sea cable would be made at Aberdeen. The *Scotia* berthed at 2030 on Sunday 22 May.

Results

The weather conditions throughout the cruise varied from good to gale force conditions.

1. A current meter mooring was deployed at the LTM Stonehaven inner position.
2. CTD and water sampling was carried out along the JONSIS standard section in the northern North Sea. A repeat of CTD sampling only of the JONSIS section was carried out at the end of the cruise.
3. Biological sampling was carried out along the JONSIS standard section and East Coast section using the Ocean Sampler.
4. Hydrographic surveys were performed along the standard Faroe Shetland Channel sections.
5. The deep sea coring was cancelled just prior to the cruise departure.
6. Samples for long term storage at Fair Isle – Munken stations FIM-01 and FIM-06 were taken.
7. Four ADCP moorings in the Faroe Shetland Channel were recovered, data downloaded, and redeployed.
8. A SAMS ADCP mooring was deployed at the Wyville-Thomson Ridge.
9. A CTD line was carried out across the Fair Isle Channel and some additional CTD stations on the shelf edge.

Throughout the cruise, sea surface temperature, salinity and fluorescence recordings were made using a Sea-Bird SBE21 Thermosalinograph and Sea Point Fluorometer. Surface samples were taken throughout the cruise to calibrate these data. Detailed

results of the data collected during the cruise will be made available as these data are worked up and interpreted in the laboratory. Calibrations were carried out on *Scotia* for both the thermosalinograph and CTD instrumentation. All hydrographic data are delivered to the ICES and BODC data centre in due course over the following year.