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FRV *Scotia*

Cruise 1506S

REPORT

3 October – 16 October 2006

Loading: Aberdeen
Unloading: Aberdeen

Personnel

G Slesser In charge
J Beaton
D Lichtman
N Collie
M Rose
D Watson
M Geldart

Gear

SeaBird CTDs, ADCPs, Acoustic releases.

Objectives

1. To perform a hydrographic survey along the JONSIS standard section in the northern North Sea.

2. To perform hydrographic surveys along the standard Faroe Shetland Channel sections.

3. To service two ADCP moorings in the Faroe-Shetland Channel.

4. To deploy two current meter moorings east of the Shetland Islands.

5. To carry out CTD hydrographic surveys east of Shetland and along the shelf edge.

6. To sample phytoplankton along the Faroe-Shetland Channel sections to analyse species composition present.

7. To collect twenty phytoplankton samples for marine biotoxins (ASP, DSP and PSP toxins).

Out-Turn Days per Project: 14 days, AE11r

Narrative

Scotia sailed from Aberdeen at 1030 (all times are GMT) on Tuesday 3 October for the JONSIS monitoring section. On route a test dip of the 911+ CTD was performed. CTD measurements and water sampling commenced at 0158 on Wednesday 4 October and was completed at 1227 on the same day (Stns. 392-403).

Scotia then proceeded to the start of the Fair Isle - Munken section for further CTD measurements and water sampling. Work started at 1823 on Wednesday 4 October and five stations were completed before breaking off at 2156 to prepare for the recovery of the ADCP moorings the following morning.

On the morning of Thursday 5 October the two ADCP moorings, NWSD (60 16.63'N 004 20.17'W) and NWSE (60 27.02'N 004 22.50'W) were recovered. The data from both ADCP instruments were downloaded successfully and the ADCP instruments re-initialised for deployment in the afternoon. Mooring NWSE (60 16.62'N 004 20.08'W) was deployed at 1318 and NWSD (60 26.97'N 004 22.54'W) was deployed at 1449.

The Fair Isle - Munken section was recommenced at 1526 on Thursday 5 October and completed at 0600 on Friday 6 October (Stns. 404-417). Ships passage was then made to the start of the Nolso-Flugga section where CTD stations commenced at 1030 on Friday 6 October. The section was completed at 1317 on 7 Saturday October (Stns. 418-433) and passage was made to the mooring position East of Shetland 1 (60 34.42'N 000 38.13'W). This mooring was deployed at 1746.

Following this, CTD deployments were made to trial a new version of CTD Sea-Bird software until 2030 with the view of using this throughout the remainder of the cruise. The trials proved to be successful and hence this version of the software was used until the end of the cruise.

Passage was then made to mooring position East of Shetland 2 (60 28.55'N 000 07.92'W) for deployment the following morning. At 0802 on Sunday 8 October the mooring position East of Shetland 2 was deployed successfully. The Scotia then commenced a hydroraphic CTD/ thermosalinograph survey East of Shetland encompassing the current meter mooring positions. This work commenced at 1353 on Sunday 8 October. Due to poor weather conditions towards the end of the survey work was abandoned at 1700 on Wednesday 11 October. (Stns. 434- 481) Passage was then made for shelter north west of Shetland.

During this latest work period the CTD cable became entangled in the drum of the CTD winch. In the process of un-entangling the cable, a kink in the cable was caused. 160m of cable was chopped off at the end of the cruise. Re-termination of the cable will be carried out prior to the December cruise.

At 1452 on Thursday 12 October work recommenced with a further hydroraphic CTD/ thermosalinograph survey north and west of Shetland and this continued until 2315 on Saturday 14 October. (Stns. 482 – 526).

On the morning of Sunday 15 October *Scotia* proceeded to Aberdeen, where she berthed at 2045 on Sunday 15 October.

Results

The weather conditions throughout the trip were good throughout except for a mid cruise period when poor weather caused a break in the work for a period of 22 hours between 1700 on 11 October to 1500 on 12 October.

1. The JONSIS standard section in the northern North Sea was surveyed.

2. The two standard Faroe Shetland Channel sections were surveyed.

3. The two Nordic WOCE ADCP moorings NWSD and NWSE were recovered successfully, the data downloaded and re-deployed. The recovered ADCP data will be processed in the laboratory by in-house software.

4. The two current meter moorings east of the Shetland Islands were successfully deployed.

5. A hydrographic CTD survey was carried out east, north and west of the Shetland Islands. This also included a thermosalinographic survey grid north and south of the mooring positions and a 13 hour CTD survey by the outermost mooring position.

6. Phytoplankton samples were collected along both the Faroe-Shetland sections. These samples will be analysed at the laboratory.

7. Twenty phytoplankton samples for marine biotoxins were collected along the Faroe-Shetland sections to be analysed in the laboratory.

Throughout the cruise, sea surface temperature, salinity and fluorescence recordings were made using a Sea-Bird SBE21 Thermosalinograph and Sea Point Fluorometer. Calibrated results of the hydrographic data collected during the cruise will be made available as the data are worked up and interpreted in the laboratory. Calibrations samples were taken for both the thermosalinograph and CTD instruments. A conductivity calibration was determined for CTD during the cruise.

G Slesser
16 October 2006

Seen in draft: Captain M Hegarty.