**Cruise report RV Corystes: Cruise 8x/03 (draft):**

**Scientific staff:**

Ruth Parker (SIC)
David Sivyer (2IC)
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Roger Coggan
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Bill Meadows
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David Limpenny } For 18th July only
Stiofan Creavan (Aquafact) }

**Duration:**

16th to 20th July.

**Locality:**

North Sea: Tyne disposal area.

**Overall aims:**

To undertake biogeochemical and benthic faunal observations at sites in the Tyne area impacted and not impacted by disposal activities.

To trial a Sediment Profile Imagery (SPI) camera for application to CEFASs impact assessments under habitat mapping, FEPA monitoring, disturbance assessment etc.

**SICs account.**

16th July:

Corystes sailed from Lowestoft at 10:00 (delayed one tide due to late arrival of Sediment Profile Imagery-SPI equipment). During the steam north to the Tyne area, underway samples for salinity, chlorophyll and nutrients were collected every 2 hours from 12:30 BST until the trial station at Inner Silver Pit.

At 18:00 Corystes arrived at Inner Silver Pit (53 34N, 00 45E) for a trial station. Both the CTD and NIOZ corer were trialed and sorted some teething problems. The CTD deployment was successful but the NIOZ sampling was unsuccessful and one core tube was bent. The trials were stopped at 19:30 and the steam up to the Tyne area resumed.

17th July:

A sediment geochemistry and benthic fauna survey was conducted at two sites at the Souter Point disposal site and water calibration samples were taken from the continuous supply.
At Tyne site 1 (54 59.483N, 01 13.033W (TYNE 1, outside the disposal ground) successful sampling using the CTD, Hamon grabs for infauna, NIOZ corer for sediment biogeochemistry and oxygen profiles and beam trawling for epifauna was completed. A repeat schedule was also completed at a second Souter Point site (54 58.910N, 01 15.834W (TYNE 2) which was inside the designated disposal area. Each sample area was defined by a 100m radius bull-ring on Sextant which targeted all sampling effort. Event locations for Hamon/NIOZ and beam trawls were recorded on Sextant.

Corystes anchored overnight near the Tyne ready for personnel pick-up in the 18th July.

18th July:

Personnel from CEFAS and Aquafact were picked up at 08:00 from North Shields. When they were aboard, Corystes moved up to the first of the SPI (Sediment Profile Imagery) camera trial sites at the North Tyne disposal area (TY070).

Whilst the SPI camera was being assembled NIOZ coring was commenced at this site. On the first deployment the corer dropped several metres (apparent free fall) from just above the rail. The corer was held only by one of the control ropes which became caught in the rail gate, and the firing pin took the full weight of the corer. No scientific staff or crew were injured but this was considered a near miss (associated incident report). After discussions with the master, engineers, and other staff involved it was decided to abandon the NIOZ coring and progress with the SPI survey whilst further tests on the winch controls etc were carried out. Over the course of the day the winch was tested with some weights with no repeat of the incidence. The control box was also replaced. However, as the source of the fault had not be found it was decided upon consultation with the scientific staff involved that they were not happy with using the winch for heavy kit and therefore further deployment of kit would now happen over the stern.

The SPI camera was successfully deployed at 19 stations guided by acoustic information from AE1033. The trial was very informative as to the functioning of this piece of kit and its potential usefulness to CEFAS. The results and report will be compiled by Aquafact in a few months.

Six calibration samples were also taken from the continuous flow system and sample analysis undertaken for salinity, chlorophyll and nutrients.

Personnel were dropped back at North Shields at approximately 20:30.

19th July:

Work was undertaken at the North Tyne disposal site (TY070). Work started at TYNE 3 (55 02.111N 01 16.254W) at 06:00. A series of Hamon grabs, NIOZ cores and beam trawls were collected. Bottom water samples were collected using the hydrowire for oxygen, salinity, nutrients, chlorophyll and suspended load. The continuous flow system was used to collect a corresponding surface sample. A bull-ring and Sextant to target and record sampling was used again. A second site (Tyne 4-55 02.591N 01 17.943W) was completed in the same way.

Corystes then proceeded to a site between North Tyne and Souter point (55 0.570N 01 17.485W) where 5 Day grab samples for macro/meiofauna, PSA, metals and organics were collected for Hubert Rees.

Corystes departed for Lowestoft at 19:00. Arrival on p.m. tide of July 20th at approximately 13:00.

All the main cruise objectives were completed and for this, many thanks must go to the officers and crew of the Corystes for their help and hard work.

Ruth Parker
(SIC)

(20/07/03)