

Centre for Environment, Fisheries and Aquaculture Sciences,
Lowestoft Laboratory, Pakefield Rd, Suffolk NR33 0HT, England

1998 Research Vessel Programme

Cruise report: RV Corystes : Cruise 5c/98

STAFF

	B Meadows (SIC)	17-21 May	
16-17 May			D Limpenny
	D Mills		M Pendle
	S Kröger		S Boyd
	M Rawlinson (WS Ocean)		S Campbell
16-18 May			T Locke
	N D Pearson		
	J Read		
	M Mason (UC)		

DURATION: 16 May – 21 May

LOCALITY: Harwich, Thames & Cross Sands

AIMS (all under project code A0908):

1. To service two U shaped mooring and two single point moorings in the Thames estuary as part of the Smart Biophysical Moorings campaign (A1108).
2. Obtain replicate Hamon grabs at each of the three minipod sites and at the current metre site.
3. Comparison of video results generated from the towed camera system with those generated using the drop camera system. An Early Camera drop to assess visibility will be performed.
4. Run CEFAS standard sidescan over a survey grid for baseline comparison of various sidescan systems (objective from Corystes 4/98).
5. Collect particle size analysis samples from dedicated Hamon grabs to compare variability in size distribution with sample size.
6. Compare samples collected using the Scallop dredge against the Anchor dredge.
7. Compare three types of 2m beam trawl (standard 2m beam, Jennings type heavy duty 2m beam and Jennings type with Kaiser chafer bag adaption) and assess their relative effectiveness for the collection of benthic epifauna over differing substrate types.
8. Assess the quantity of material and species diversity of replicate beam trawl samples collected over various tow distances and over various substrates (200m – 1000m).

9. Obtain still photographic images during beam trawl tows to assess variability of the substrate over the length of the tow.
10. Deploy the Hamon grab with an attached video camera to observe effectiveness of sampling and nature of surrounding substrate.
11. Trial a sub bottom profiler for identification of biotopes.
12. Recover 3 Minipods and a mooring from the Cross Sands area and to obtain Day grab sediment samples for calibration purposes.

NARRATIVE

(all times are GMT+1):

R.V. Corystes sailed at 00:05 on the 16 May from Lowestoft and steamed to the Thames outer mooring. The moorings at the Thames outer site were recovered before heading further into the Thames to service the inner Thames moorings. There was some damage to the outer site buoy (missing light) and also a logger end plate and connectors (possibly buoy rope chafe). Both current meter and NAS buoys were redeployed at inner Thames.

In the early hours of 17th Corystes returned to the outer Thames site to service the NAS moorings. The decision was made not to re-lay the current meter mooring, due to increased risk of the ship running over moorings in darkness. (An additional factor being the more advanced deterioration noted when the offshore current meter moorings were recovered, and the lengthy period before next service).

Corystes then sailed North to Southwold and recovered the Southern Minipod and two guard buoys. The minipod surface markers had been removed, forcing a recovery via the emergency release line. Corystes then sailed North to change over staff at Lowestoft (see staff list above). When complete the central Minipod (again with no surface floats) was recovered by emergency release float. (This minipod was eventually located some 700m to the North of it's guard buoys, causing some delay in recovery).

The Northern Minipod was found with only one surface marker intact – during recovery the line came tight prematurely and shortly after parted. The emergency float was triggered but did not surface (tide was mid ebb). The position was located by triangulating the range to the Mors release using the Sextant plot programme. It was decided to continue mooring recoveries and return at slack. Corystes steamed to the Eastern site and recovered the U-mooring Toroid and anchor chain. The ground wire running to the other end was not attached but the pellet marking that end was found further to the North than expected from the Toroid pickup point. Attempts to recover with Grapnel were unsuccessful but the position was accurately marked with DGPS.

Corystes returned to the Minipod in darkness and deployed a grapnel over the site with no success. A length of the recovery rope was spotted on one pass, so to minimise risk to minipod and ship, the operation was delayed until daylight slack the following day.

Overnight a QTC survey was performed over the main grid.

On Monday 18th Hamon grabs were taken at the Minipod mid site and the remaining 4 guard buoys were recovered. The minipod was re-visited on the morning slack water, in foggy conditions. The recovery rope was not located. A final check on acoustic ranging confirmed the minipod was still present before leaving for Lowestoft. (High-Water allowed Corystes to enter the Roads for safe small boat transfer of staff in poor visibility).

On completion Corystes returned to the minipod site for the afternoon slack, now in bright sunlight. The recovery line end was spotted on the surface, and with swift deployment of the searider more line and floats were attached. Corystes was then able to recover the minipod on deck. Very little damage was evident and all instruments were intact.

A line of 5 sites (HG1-5) was sampled by Mini-Hamon grab, and 2m beam trawls of varying lengths (HAB-A) over one tide.

Overnight the QTC grid was completed and a wire sweep ('Gough' sweep) devised by the deck crew was used to search for the lost current meters.

On the morning of 19th contact was made with the mooring and it was safely recovered on board. The ground rope was parted some 75m along its length in what appeared to be a fairly clean manner. (Note that several times throughout the cruise Corystes was asked if she was engaged in laying buoys by Beamer vessels fishing all around the mooring sites).

With the recovery objectives of the cruise complete Hamon and Day grabs were taken at the Eastern mooring site and Minipod Mid site before proceeding back to the HAB-A site for a sequence of Hamon Grabs and 2m beam trawls. The Hamon and day grab samples were obtained from the Minipod central site before a further QTC overnight grid survey.

On 20th a sequence of Hamon grabs and beam trawls were taken over HAB-B site – on completion the standard sidescan was run over survey line D and transversely over HAB-B.

On 21st the Hamon and Day grabs for the Northern Minipod E were completed. A further sidescan line was run East-West over the survey area. An EG&G Chirps Subbottom Profiler system was trialled on HAB-B and an East West survey line through the area past fresh dredge tracks.

R.V. Corystes docked on the 1700 tide on the 21 May in Lowestoft.

RESULTS

Aim 11 All Minipods, current meters and guard buoys were recovered from Cross sands area.

In two instances the guard buoy moorings were found in a position South of the as laid positions. Two Minipod surface markers had been removed, requiring emergency release recovery.

Aim 1 Both Thames moorings were serviced, the current meter rig at Thames Outer was not deployed due to time constraints (Extended time in downloading logger data dictated a deployment in darkness). Some subsurface water samples were not collected due to intermittent problems with the Rosette firing system. Surface water samples were substituted.

Aims 2,5 - All Hamon and Day Grab samples were collected.

Aims 7,8 - All Beam Trawls were completed. A change in benthos community was evident between HAB sites – especially in *Sabellaria* (Ross worm) colonies evident in the HAB-B site. The variability of the beam trawl as a sample tool was noted in preliminary results.

Aims 3,9,10 - Underwater visibility was nil, video survey techniques were not tested.

Aim 11,6 - Sub-bottom profile records were obtained along an East-West transect of the survey area as well as EG&G 260/Elics sidescan of Line D in survey grid.

CONCLUSIONS

The use of the MORS release acoustic ranging in conjunction with Sextant plotting provides a quick and accurate assessment of minipod position. This is invaluable in directing search operations.

It is strongly recommended that a 'Gough' sweep wire system is rigged and made available for any mooring recovery cruise.

The rigging of guard buoys for hard ground needs to be re-assessed.

It should be noted that the 100% recovery of gear was directly attributable to the professionalism and enthusiasm of the ship's staff, especially adapting to the changing programme and in devising recovery methods to meet particular circumstances.

W Meadows

Initialled: seen in draft :Master

SFM

Distribution:

Basic List + (names on staff list)