

CEFAS FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

2000 RESEARCH VESSEL PROGRAMME

REPORT:

~~PROGRAMME~~ RV CORYSTES: CRUISE 4

STAFF

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DURATION

Left Lowestoft 10:45 24/3/00
Arrived Lowestoft 06:15 30/3/00
All times Greenwich Mean Time

LOCALITY

North Sea

AIMS

This was third of a series of cruises planned to investigate the processes that influence productivity and the distribution and behaviour of suspended particulate matter and nutrients in the southern North Sea. The transport of nutrients and particulate matter from UK waters to the southern North Sea and European coastal zone is of especial interest

1. To service the Smart buoy at the Outer Gabbard
2. To service Smart buoy and mini-pod at A1221 mooring
3. To recover A1221 ADCP and current meter moorings
4. To collect water samples and CTD profiles;
5. To complete Scanfish surveys;
6. To deploy satellite tracked drifting buoys.

Cruise Report for RV CORYSTES 4/00

24th March to 30th March 2000

24/3/00

Sailed at 10:45 and proceed to the Outer Gabbard to recover the Smartbuoy. One CTD cast for instrument calibration before the recovery. One CTD cast and a fire and boat drill, during the Smartbuoy instrument turn-around period and then re-deploy the Smartbuoy at 16:40. A CTD cast immediately followed re-deployment. Corystes proceeded directly to ARGOS drifter position off Orford Ness (52 01.5N 01 52.15E), then head up the coast to ARGOS drifter position off Great Yarmouth (52 38.3N 02 07.0E) and off Sheringham (53 01.0N 01 10.0E). Surface water samples were collected hourly for salinity, nutrients and chlorophyll.

25/3/00

Arrive at the A1221 Smartbuoy position "C". Recover the Smartbuoy, Minipod and Guard Buoy without incident. The Mini-sector scanner was deployed in an attempt to locate the SSB from the previous Smartbuoy, but it failed mid-deployment. Proceed north to ADCP mooring "B". The acoustic release failed so the grapple was used to snag the ground line and retrieve the anchor at 13:10. The ADCP frame was left on the seabed but the jolt was sufficient to release the pop-up buffs and these were subsequently hooked and the frame recovered intact at 14:20. The ground line mounting point had sheared through. Proceed to mooring position "G" to recover a U-shaped, Valeport current meter mooring successfully at 16:30. Proceed to ADCP mooring "D". Acoustic signals report that the mooring is upright and has popped its buffs, but we couldn't see them in the gathering gloom. Proceed to current meter mooring "E" and recover everything. The guard buoy had an extra rope on the frame, which suggests it may have been towed to our recovery position (0.9m north of the original deployment position). The current meter no longer has a "propeller". Return to position "C".

26/3/00

05:00 collect a CTD cast at Smartbuoy mooring C for Richard Sanders (UEA) primary production work. Deploy the Minipod, Guard Buoy and Smartbuoy 08:30 to 09:15 now back in original position (~53 10.0N 2 48.5E). Sweep twice for the sub-surface buoy and anchor from the "tethered goat mooring that was lost on CORY 3, but with no success. One Day Grab seabed sediment sample was collected for calibration for the Minipod instruments. Returned to ADCP mooring "D" and there was no sign of the pop-up buffs (the acoustic release did not work) so the grapnel used to hook the ground line and recover all elements intact. Proceed to mooring "A" and recover a Valeport current meter and guard buoy.

CTD stations hourly through the night in a transect across to the middle of Scanfish line 4.

27/3/00

05:00 collect CTD for Richard Sanders, then proceed to northernmost end of Scanfish line 4. Scanfish transect line 4 (54 11.0N 4 02.0E) from 09:30 to 18:30 (see attached plots of temperature, salinity, turbidity and fluorescence). CTD cast at end of line 4 (53 25.0N 5 07.0E), mid-way to line 3 and at the southern end of Scanfish line 3. Scanfish starboard flap not responding. Spent 2 hours trying to repair the flap, but to no avail. CTD's every hour up the line until the mid point for Richard Sanders at 05:00.

28/3/00

05:00 CTD for Richard Sanders. The FSI sn1366 failed at the recovery and the FSI unit was taken from the Scanfish to replace it. The rising NE wind and swell prevented any further CTD casts and the remainder of line 3 was completed with surface water samples. Corystes then teamed west to the north end of line 2. The

Scanfish was still not working, so alternate CTD and surface stations were collected down the line finishing at 21:30. Dodge back to the mid-point of Line 2.

29/3/00

05:00 - collect water from a CTD cast for Richard Sanders primary production work. Proceed to the north end of Scanfish Line 1 collecting surface water stations en-route. Scanfish 11:00 to ~14:00 when the Seapoint OBS failed. The Scanfish was recovered and re-deployed within 20 minutes, with the LSS as a replacement OBS. The line continues... Surface water sample were collected every 30 minutes along the Scanfish transect. A final CTD profile with water samples was collected before returning to Lowestoft.

Corystes docked at 06:12 05:30 30/3/00.

Aims:-

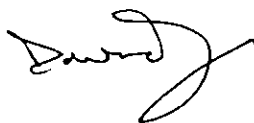
1. The Smartbuoy at the Outer Gabbard was successfully serviced and re-deployed
2. The Smartbuoy and Minipod at the A1221 mooring were successfully recovered and re-deployed
3. Other Moorings
 - A was successfully recovered
 - B was successfully recovered
 - C see Aim 2. The lost SSB was not recovered despite "sweeping" for it twice.
 - D was successfully recovered
 - E was successfully recovered

- F was not visited, an SSB and two Valeports remain to be recovered
 - G was successfully recovered
4. A large number of water samples and CTD profiles were collected between the Outer Gabbard, Wash and Friesian Islands across the main area of interest in the southern bight of the North Sea.
 5. This aim was partially fulfilled by two transects, nominally line 1 (through the moorings) and line 4 (NNW from Terschelling). The other two planned transects were covered by CTD profiles and water samples.
 6. Five sites were visited where water samples were collected at approximately 05:00 (before sunrise) on each of 5 days. These five sites have been designated for future A1221 cruises.

At all water stations, samples were collected for salinity, dissolved nutrients and chlorophyll. Suspended load samples were also collected from all CTD stations. Samples for Total dissolved nitrogen, organic carbon and organic nitrogen were collected from the surface and bottom at most CTD stations.

Once again, I wish to extend my thanks to the officers and crew of *Corystes* for their skill in handling the ship and their co-operation throughout the cruise.

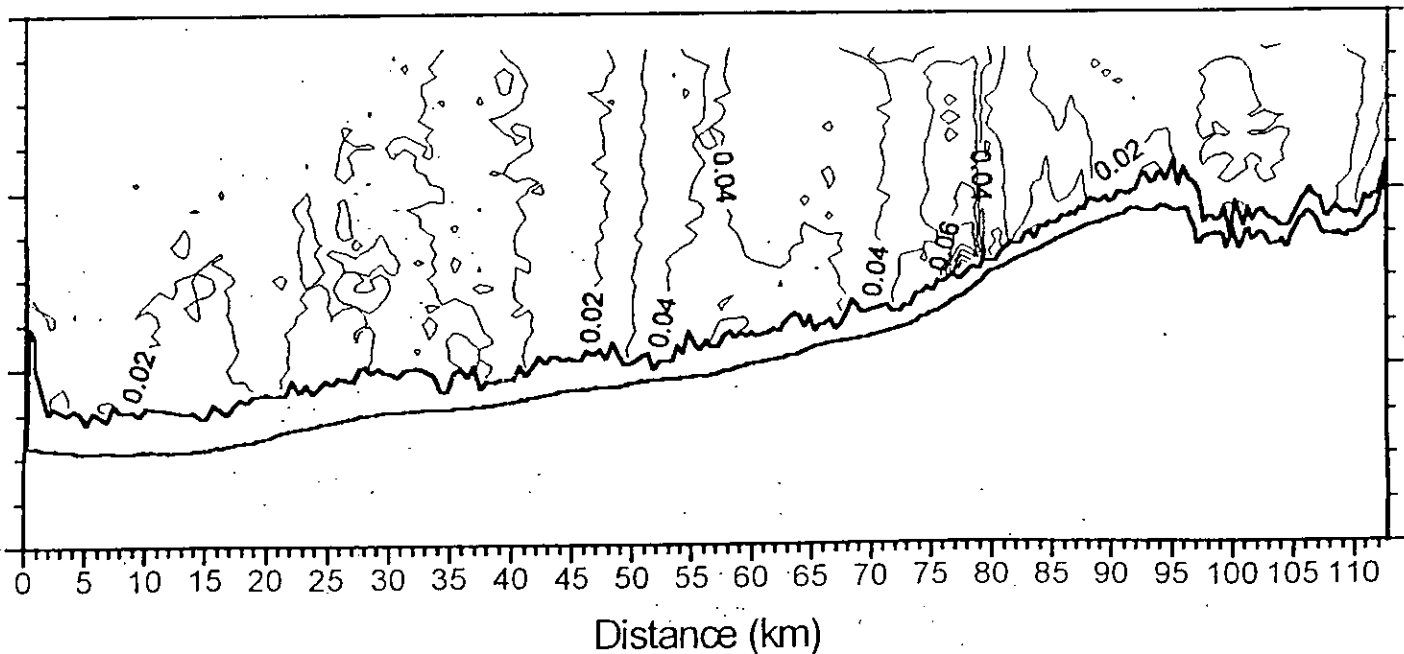
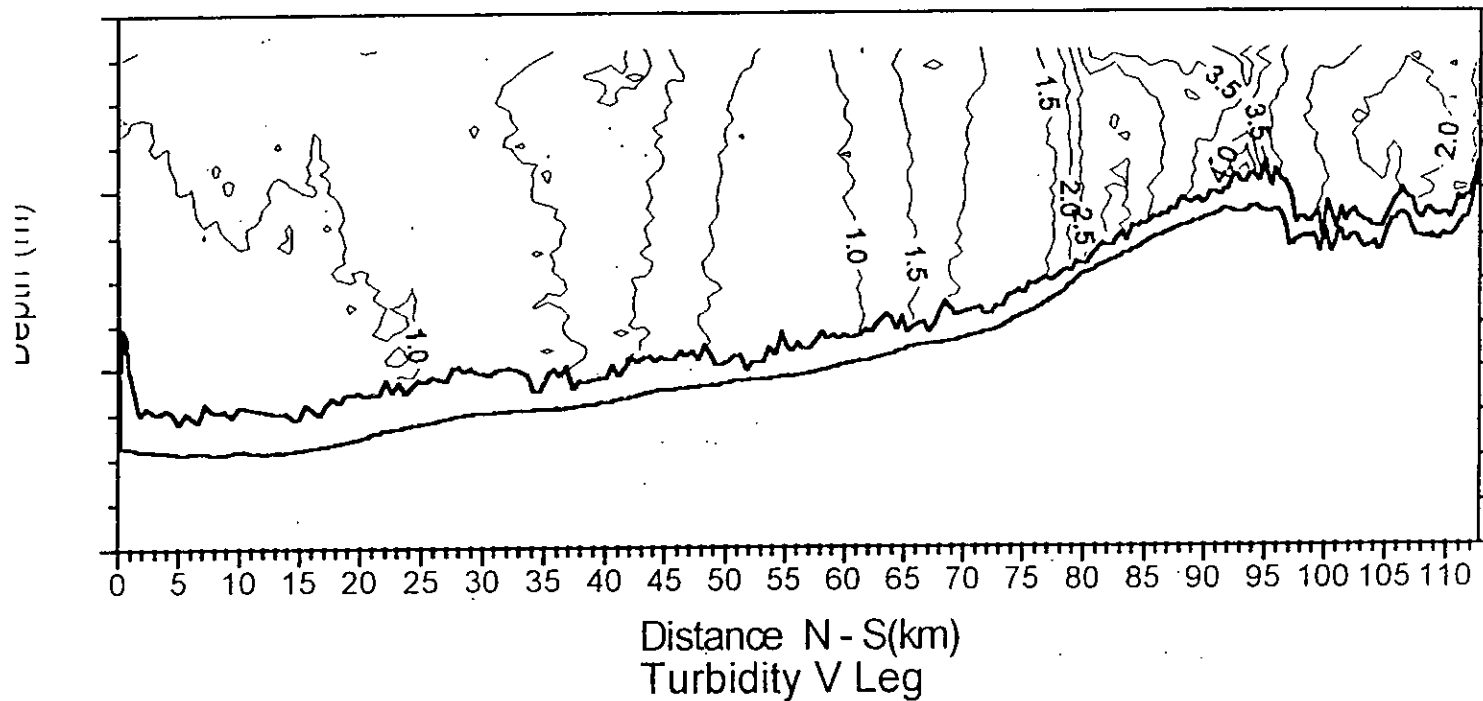
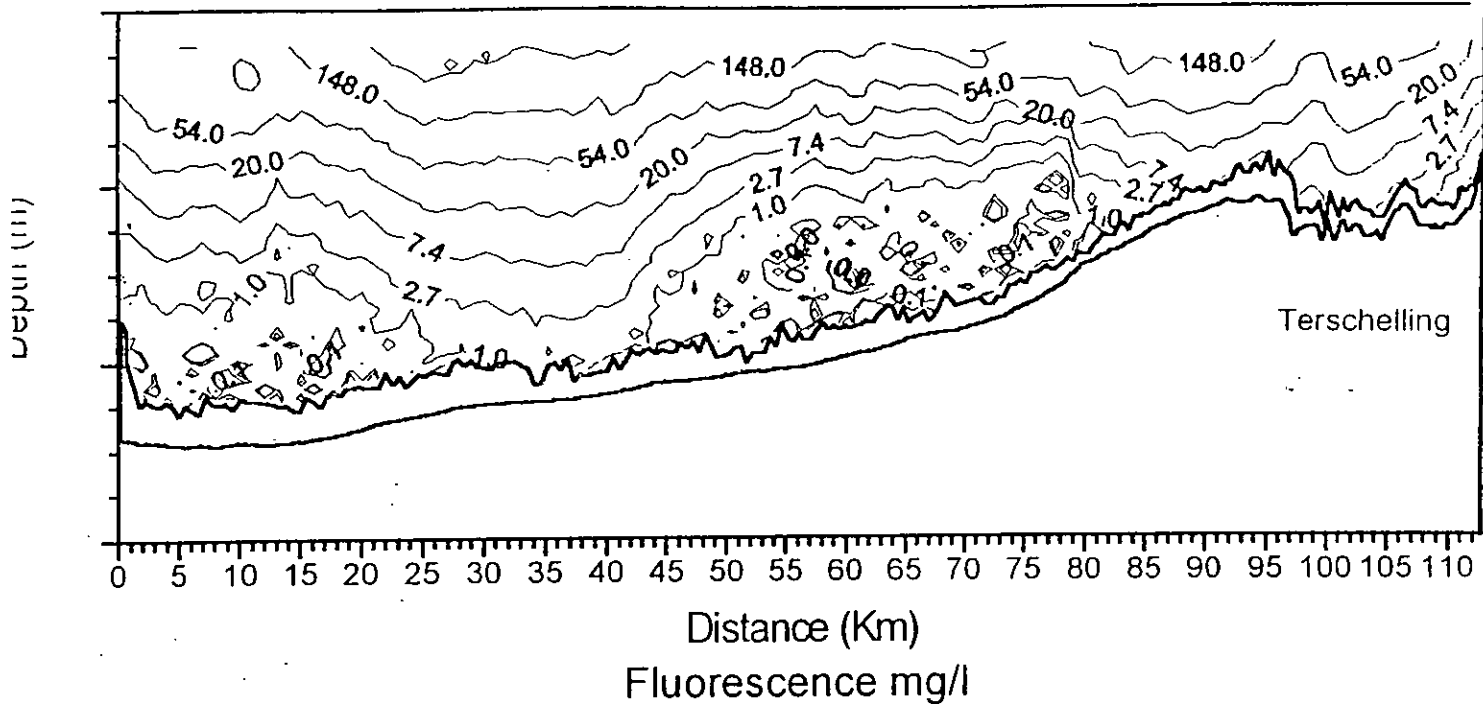
Equal thanks goes to the scientists, who worked long hours to ensure the completion of all the aims.



Dave Sivyer - SIC



Corystes 4 Scanfish Leg 4 Light



Corystes 4/00 Scanfish Leg 4 Density Sigma-t

