CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE SCIENCE, LOWESTOFT, SUFFOLK, ENGLAND

DRAFT 2008 RESEARCH VESSEL PROGRAMME

Report: RV Endeavour: CRUISE 08/08

STAFF:

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DURATION: Monday 21stth April 23:00 – Wednesday 23rd 23:00
Thursday 24th 2300 – Thursday 1st May 0600

LOCALITY: Southern Bight, Oyster grounds and Central North Sea, Dogger Bank region

Background: This was the 7th cruise of a series of cruises that form an essential part of a project addressing the source, cycling and fate of nutrients (i.e. carbon, nitrogen, silicon, oxygen) in UK Shelf Seas, specifically the North Sea. The aim of the project is to examine the relative importance of the various ecosystem components, their degree of connectivity and their susceptibility to change due to environmental or human pressures. The project combines an intensive observational programme in the North Sea, with model development and operation. Three representative sites have been selected for detailed process studies of pelagic (water column) and benthic (seabed) food webs, with horizontal and vertical spatial sampling over a broader area being achieved using a variety of towed instruments, and the temporal range being extended using autonomous buoys and bottom landers. These cruises have significant involvement from partners, through the existing University links but also through the NERC collaborations and through NIOZ.

Specific cruise AIMS (not in priority order)

1. Recover and redploy landers at the three sites and additionally the smart buoys at the north dogger site.
2. Deploy sediment flume instrument for resuspension studies
3. Perform scanfish tows North of the Dogger Bank to give context for productivity
4. CTD casts for Primary productivity estimates and deck incubations using N15 uptake.
5. Undertake experiments on productivity and grazing at the three sites.
6. Collect Plankton samples for species composition using vertical nets
7. Deployment of SPI camera to investigate the impact of trawling
8. Collect core profiles, of nutrients, oxygen, chl-a. (NIOZ corer) and sediment profiles.
9. Deploy BIONESS mutlinet sampler for zoo plankton at selected sites.
10. Peform a transect of cores, CTD, SPI through different substrates.

PLAN (all times GMT) however, work will vary and all timings are approximate and liable to change:

Cruise Narrative.

Sailed on time and proceeded to the sean gas field with arrival on Tuesday.
At the fourth attempt the lander was recovered with the trawl, the ADCP was still pinging with little damage to the instrument. On recovery there were several power black outs. After this, a CTD was performed and big corer tried. After 2 attempts, the sediment was deemed to coarse for further work. The benthic sledge was deployed. Standard nioz corers were then under taken with some success. The mooring was then redployed. A CTD was performed and numerous plankton nets.
The hyperbenthic sledge was then deployed, and following this the flume.
En route to the oyster grounds a serious engine room fault lead to having to depart for the Lowestoft. 0700 on Wednesday. We subsequently docked in Lowestoft at 23:00. Repairs were made very quickly and we sailed at 23:00 on Thursday.
On arrival at the oyster ground on Friday, we started the cycle of large corer, nioz coring. The mooring was recovered via the grapnel having failed to release the balls even though the release had responded. The flume was deployed, but had failed to operate, or record information. Following the CTD the full cycle of nets was taken and the flume was redeployed.

After the flume recovery there was passage on Saturday morning to the Dogger Bank where the scanfish line was commenced. Immediately on deployment it become apparent that the tow cable had problems. Neil, set about reterminating it. In place CTDs were commenced for three sites up from main site. followed by NIOZ cores, the benthic sledge and then finally at midnight a flume test. Following this was a steam overnight to the northern end of the line, with CTDs working South, from approx 10:00. With return to the mooring site to recover the mooring. The lander communicated successfully and the floats came to the surface after a short while. The smart buoy was recovered and Nioz cores started, along the line South. These were finished, at around 21:30. The line North was commenced with Spi, and nets. Unfortunately the light on the SPI frame didn't work and we also had problems with the camera. A net was lost due to the wire parting.
The flume was finally deployed at around 06:30 and came out of the water at 0830. The Spi Line and Nets was then continued up to the end of the line finishing at 2000. The scanfish line was then commenced. However due to the cable problems, with the tow point, the line was stopped after 30 minutes. A further attempt was made,

which also lasted 30 minutes. At about 01:30 on Tuesday the ship set sail for Lowestoft and docked on the morning tide of Thursday 1st May.

Cruise Results.

8 out of 10 objectives were achieved. The two not achieved were the Scanfish section and there was no deployment of the Bioness. Good data has been retrieved from the moorings and this aspect went well. Mussels deployed on these landers have also grown at statistically significant different rates.

Flume deployments were made at all the sites, along with day and night hyper benthic sledge samples. CTDs and Nets were performed at all the main sites, along with the NIOZ coring. The big Nioz core was deployed at the Oyster grounds and after a long period of settling was used with the onboard flume. A transect of 10 CTDs and 7 Nioz core sites were completed with Spi camera and Nets at 8 of these.

Liam Fernand
(Scientist-in-Charge)
1st May 2008

DISTRIBUTION:
BASIC LIST+ all those on cruise.