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Not to be cited without prior reference to FRS Marine Laboratory, Aberdeen

FRV Clupea

Cruise 1407C

REPORT

2-19 October 2007

Ports:

Loading: Fraserburgh

Unloading: Fraserburgh

Personnel

Barry O'Neill

Jim Hunter

Mike Robertson

Chris Hall 29 9 October

Martin Burns 9-19 October

Eric Armstrong 2-13 October

Andy Revill (CEFAS) 13-19 October

Jochen Depestele (ILVO, Belgium) 13-19 October

Mike Breen Shore based

Keith Summerbell Shore based

Morag Campbell Shore based

Jim Mair Shore based

Iain Gibb Shore based

Gear

Divers TUV (net drum and towing wire)

Day grab.

Quad of Nitrox.

BT158 and modified Morgere doors

laser-camera profiler

diving equipment and divers hand held camera

high resolution load cell and accelerometer

LISST 100X

Out-turn days: 9 days, MF0759, 9 days, AE1192

Objectives

- i. To measure the immediate physical, ecological and environmental impact of a trawl gear on medium-fine sand and on mud.
- ii. To measure the immediate physical, ecological and environmental impact of a beam trawl on medium-fine sand.

Narrative

The following operations took place in Nairn Bay and Lossiemouth and Burghead with the trawl gear

- i. Towing the fishing gear while divers film and measure the large scale dimensions of the plume from the TUV, the particle size of suspended sediment using the LISST 100X and take water samples in the plume behind the trawl doors.
- ii. Taking core samples in an area, towing the fishing gear through that area and subsequently taking core samples outside the tow path and inside the impacted area.
- iii. Measuring the physical impact to the seabed outside the tow path and inside the impacted area using the laser-camera profiler.
- iv. The sediment plume samples were filtered, sub-sampled and stored on board the Clupea. Analysis of the suspended solids, particle size and nutrient will take place on return to the Laboratory. The core samples were sectioned, sieved over a 0.5mm mesh and stored in formaldehyde on the Clupea. Subsequently the infaunal community will be quantified by functional type.

High resolution engineering data were collected during the cruise using the load cells and accelerometers. The day grab was used to collect sediment samples at each location and the side scan sonar was deployed to collect bathymetric data.

The weather was very good for the first twelve days and work proceeded very well. One of the divers suffered a suspected decompression injury and was taken to the decompression unit in Aberdeen as a precaution. Diving operations were suspended for a day while procedures were reviewed. After treatment the diver was given the all clear.

The beam trawl supplied by CEFAS was bigger than expected and too large for the Clupea to take on board. CEFAS chartered a commercial boat to deploy and buoy the gear which the Clupea subsequently towed. At this stage, the weather conditions had deteriorated, and it was not possible to carry out the full set of operations detailed above. Nevertheless good video footage of the beam trawl being towed was obtained.

The Clupea headed to Fraserburgh on Thursday 18 October and all equipment and samples were unloaded the following morning and taken to Aberdeen.

Barry O'Neill
23 January 2008