DEPARTMENT FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS.

2004 RESEARCH VESSEL PROGRAMME

REPORT: *RV CORYSTES* Cruise: 11X/04

STAFF:

Part 1 : D Limpenny (SIC until 19th Aug)
K Cooper (SIC from 19th Aug)
W Meadows
S Boyd
S Bolam
S Birchenough
P Whomersley (Until 19th Aug)
J Eggleton
S Ware (From 19th Aug)
G Hodgetts (From 19th Aug)

DURATION: 12th – 25th Aug

Changeover at sea on 19th or 20th Aug somewhere convenient in southern North Sea or English Channel.

LOCALITY:

Southern North Sea/English Channel

AIMS:

1. To apply a range of sampling methodologies at a number of aggregate extraction sites, to assist in the development of environmental indicators for these activities.

2. To sample the benthos and sediments from sites in the eastern English Channel and Humber/Wash areas to instigate time-series studies using the Hamon grab.

3. To conduct time-series studies at gravelly locations following cessation of aggregate dredging, using grabbing, trawling, photographic and acoustic techniques.

4. To sample a number of aggregate extraction sites using various grab, trawl, photographic and acoustic techniques to identify suitable experimental sites for future rehabilitation/restoration studies.

NARRATIVE:

Corystes left Lowestoft at 19:30hrs on 12th August and sailed for Area 408, an aggregate extraction site 60 miles off the Humber. Sampling of treatment and reference boxes was carried out at the site during the 13th using a Jennings 2m beam trawl. The faunal biomass was measured from a single trawl from each of the sites sampled. During the afternoon and evening, a series of UWTV sledge tows were carried out at impact and reference sites and also at locations intended for coring the following day. The following morning, the NIOZ box corer was successfully deployed along a transect of 5 stations across the former extraction site. Sub-cores were sectioned and retained for faunal and sediment particle size analysis. On completion of this work *Corystes* sailed for aggregate extraction area 107 in the outer Wash. Three sidescan sonar lines were run across the northern part of the site and 5 groundtruth samples were collected using a Shipek grab.

Overnight, the vessel sailed to relinquished aggregate extraction site Area 222. During the morning of the 15th, Hamon grab samples were collected from two treatment and two reference sites as part of a study into the rehabilitation of aggregate extraction sites. 2m Jennings beam trawl samples were collected from the high treatment box and faunal biomass was measured from one of these trawls. UWTV sledge tows were then carried out at 4 sites. *Corystes* sailed overnight to the Hastings Shingle Bank, in order to sample this area ahead of predicted bad weather in the Channel later in the week.

Work commenced the following morning at Area X and Area Y, also for the purpose of investigating the recovery of the seabed following cessation of dredging. This work included the collection of Hamon grab, 2m beam trawl and UWTV samples. The following morning *Corystes* steamed to the eastern English Channel traffic separation scheme in the mid channel to undertaker take Hamon grab sampling on a transect of EARS (Environmental Assessment Reference Stations) which run through the proposed eastern English Channel aggregate extraction areas. On completion the ship undertook a sidescan sonar survey of Area 466. The following day the remaining beam trawl samples were collected from the Hastings shingle bank and in the afternoon sidescan sonar surveys of areas '473 east' and '473 west' were completed. Overnight, the ship anchored off Margate in bad weather and then sailed the following morning back to the outer Thames estuary. Again poor weather prevented work being undertaken at this time and so *Corystes* proceeded to Lowestoft to allow the transfer of personnel the following day (20/08/04).

On the morning of the 20th D Limpenny and J Eggleton were transferred by small boat to shore and G Hodgetts and S Ware joined the ship. *Corystes* then steamed back to the outer Thames estuary. Following an improvement in the weather, which prevented work being carried out during the day, sidescan sonar surveys were undertaken at aggregate extraction areas 119 and 239. On Saturday the remaining beam trawl samples were collected at area 222 (Aim 3) and during the afternoon, following an improvement in the sea-state, 30 Hamon grabs were collected from Area 119. Whilst at Area 119 the opportunity was also taken to re-run a sidescan survey line (poor quality on the first survey). The ship then steamed to the eastern English channel overnight to carry out work on Sunday, as forecasts indicated this would be the last opportunity to carryout grabbing in this area. On arrival work commenced on Hamon grab and underwater TV surveys at 3 proposed aggregate extraction sites

within the traffic separation scheme (areas 473East, 473 West and 466). All samples were successfully collected with the exception of 3 Hamon grabs as grabbing operations had to be suspended as a result of a weld failure on the grab. However, the remaining samples were collected for later analysis of particle size using a Shipek grab. Overnight the ship anchored off Hastings and, the following morning, returned to the mid-channel to collect a number of 2m beam trawl samples from a transect of stations from both the EARS and AREA 466 surveys.

Overnight the ship returned to area 119 in the Thames estuary. At this site 6x 2m beam trawl samples were successfully collected although poor underwater visibility prevented the collection of underwater TV footage. The ship then sailed back to Lowestoft to dock, returning at 16:00.

KC & DSL

INITIALLED:

DISTRIBUTION:

Basic list +
All listed scientific cruise personnel
M Waldock
S Malcolm
L Murray
D Morris
J Rees
P Larcombe
H Rees
C Vivian
S Rogers
D Carlin
S Faire
P Burch
N Lyman
A Nicholls