

CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE SCIENCE,
LOWESTOFT LABORATORY, LOWESTOFT, SUFFOLK NR33 0HT

CRUISE REPORT: CORYSTES 01/2004

STAFF:

Clive Fox (SIC)
Natasha Bunn (CRP)
Christie Stewart
Philip Davison
Sophie Pitois

Cheryl Burt
Matthew Eade
Kevin Sullivan
Mike Shaw

DURATION: 17 February - 9 March 2004

LOCATION: North Sea (IV)

AIMS:

1. To carry out plankton surveys in the North Sea to determine cod and plaice spawning. The identification of cod-like eggs will be undertaken using a recently developed genetic approach.
2. To undertake CTD profiles for the characterisation of the water column.
3. To collect some additional plankton samples to test the fixation and buffering capacity of sodium glycerophosphate in 4% formaldehyde to reduce damage to DNA for potential use of samples in genetic analyses.

NARRATIVE:

Equipment was loaded during 17 February. All gear requested was delivered and accepted. Scientific staff were all aboard by 16:30. Sailing was however delayed by the absence of three members of crew. Corystes finally sailed at 08:30 on the 18 February and headed for the first sampling station in calm and sunny conditions. The first boat drill of the cruise was undertaken at 16:00.

Corystes arrived at the first sampling station at 17:40 and work commenced in the southern survey area. Work continued around the clock until 22 February when increasing winds and waves meant sampling had to be abandoned. At this point stations 1 through 34 had been completed. At 10:40 Corystes anchored off Flamborough Hd, in company with RV CEFAS Endeavor, to gain some shelter from the NE gales. The following day the winds reduced but the forecast showed another northerly gale was imminent. At 13:00, Corystes weighed anchor and sailed north with the intention of picking up some sampling stations if possible but with the option to head into the Firth of Forth for shelter. During 24 February a number of stations in the outer Firth of Forth were sampled but deteriorating conditions again forced the ship to run for shelter towards evening. The vessel again headed north around 18:00 on 25 February in strong to gale force conditions. The 26 February was spent dodging off Peterhead and the decision was taken to head into Aberdeen to gain some respite as several days of NE gales were forecast. Corystes docked in Aberdeen at 15:30.

With a forecast of improving conditions, Corystes departed Aberdeen on 28 February at 08:30 and reached the nearest sampling station at 16:00. Conditions stayed relatively calm for the remainder of the cruise and stations were sampled continuously until 7 March. At this point the second engine failed reducing steaming speed to around 7-8 knots. The decision was taken to abandon some of the secondary stations in the Dogger Bank area, to work the remaining primary stations and then to steam for Lowestoft. The final station was sampled at 10:50 on 8 February.

Corystes docked at Lowestoft on 9 March 2004 at 11:00.

RESULTS:

Task 1. In total 138 plankton stations were sampled (see attached cruise track). A total of 5189 cod-like eggs were sorted at sea, measured, staged and individually fixed in ethanol for subsequent gene-probe analysis. Sorting eggs at sea is undoubtedly a difficult and tiring task and all scientific staff are to be commended for the effort and care they exercised in undertaking this task. A breakdown of eggs collected by developmental stage is given below.

Stage	Number pre-sorted
1A	1411
1B	323
Total 1	1734
2	753
3	1138
4	828
5	736
Total	5189

When late stage eggs were sampled an attempt was made at species identification based on embryonic pigment patterns. This suggested that of the 736 stage 5 eggs examined only 17 were positively cod.

A chart showing the location and numbers of pre-sorted eggs is attached.

Task 2. At all stations except 2, salinity and temperature profiles were collected using Guildline CTD mounted on the plankton sampler. Because of the tight sampling schedule taking into account time lost due to poor weather the decision was taken not to undertake vertical CTD casts. This would have meant stopping the vessel at each station resulting in at least an additional 30 minutes sampling time. At most stations there was very little vertical structure, as expected at this time of year.

Task 3. Was not completed as there was insufficient time.

EQUIPMENT:

Most equipment functioned satisfactorily. The starboard towing cable failed after around 100 stations and was switched to the port cable. One flowmeter cap was lost, one altimeter damaged and one EGG monitor failed.

C J Fox
9 March 2004 (at sea)

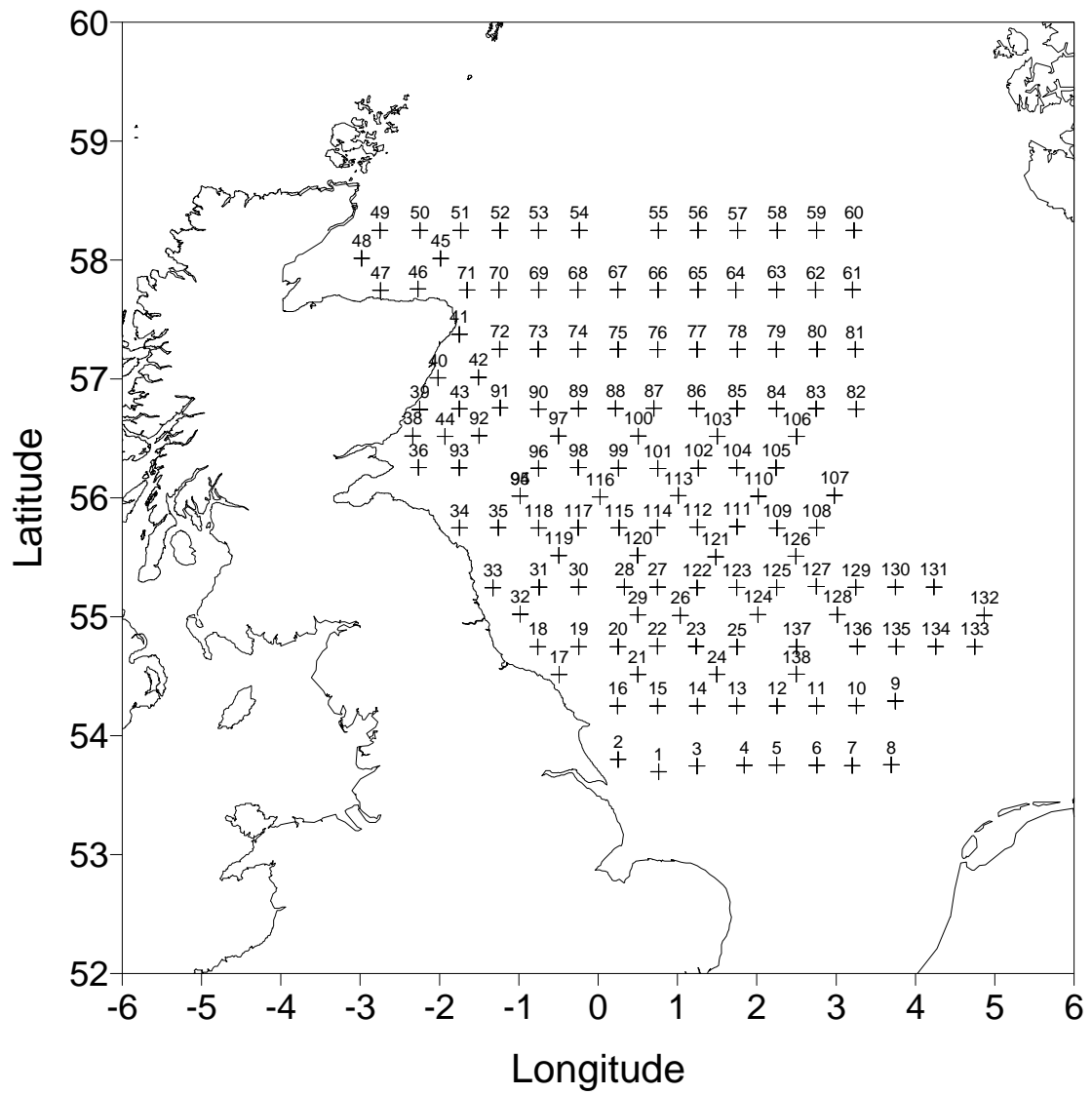
INITIALED:

DISTRIBUTION:

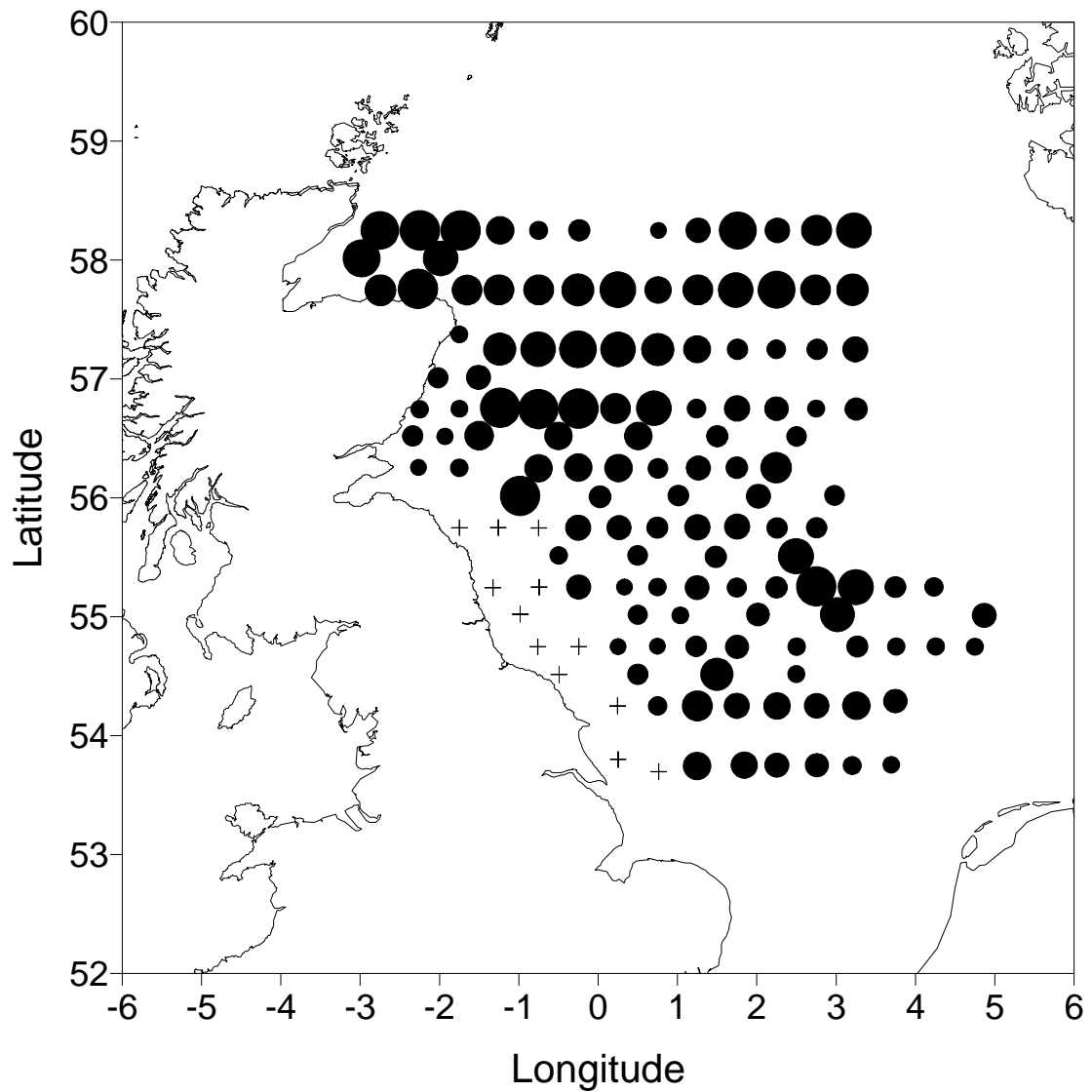
Basic list +
Staff on cruise
Dr J Horwood
Dr C Bannister
Dr C O'Brien
Mr S Milligan

Sea Fisheries Committees:
PGEGGS committee (SIC to distribute)

Corystes 1 2004 stations sampled



Numbers of cod-like eggs pre-sorted during cruise Corystes 1 2004



Linear scaling

+ 0 eggs

• 1 egg

• 50 eggs

• 100 eggs

Numbers of stage 1 cod-like eggs pre-sorted during cruise Corystes 1 2004

