



Cruise Report: CO 2209

Vessel: RV *Corystes*

Date: 26th - 30th May / 1st June – 11th June

Area: Irish Sea (north); ICES div. VIIa

Survey Type: Juvenile Gadoid Survey / Mooring Service and Biological Oceanography

Personnel:

S Beggs	AFBI	26 th – 30 th May/ 1 st June – 11 th June
I McCausland	AFBI	26 th – 30 th May/ 1 st June – 11 th June
J Peel	AFBI	26 th – 30 th May/ 1 st June – 11 th June
E O’Callaghan	AFBI	26 th – 30 th May
B Stewart	AFBI	1 st June – 11 th June
R Gilmore	AFBI	1 st June – 11 th June
M Lilley	Uni of Wales	26 th – 30 th May
T Bastian	Uni of Cork	26 th – 30 th May/ 1 st June – 11 th June
C Murray	Sea Mammal Observer	26 th – 30 th May/ 1 st June – 11 th June

Objectives:

- i. To investigate the distribution and abundance of juvenile gadoids in the Irish Sea (VIIaN).
- ii. To collect zooplankton, fish larvae and environmental data.
- iii. To carryout CTD and zooplankton sampling.
- iv. To maintain and service the Irish Sea insitu monitoring programme at open sea station 38A.
- v. To carryout sea mammal observations throughout the survey area.
- vi. To undertake sampling of jellyfish species as part of 2 PhD studies.

<u>Circulation</u>	<input checked="" type="checkbox"/>	<u>Comments</u>
DCEO & CEO	<input checked="" type="checkbox"/>	<hr style="border: 0; border-top: 1px solid black; margin: 0;"/> <p style="margin: 0;">Signed Head of Branch</p>
Ship Managers	<input checked="" type="checkbox"/>	
Fisheries Division	<input checked="" type="checkbox"/>	
ANIFPO	<input checked="" type="checkbox"/>	
NIFPO	<input checked="" type="checkbox"/>	

Methods:

During the hours of daylight a Gulf VII High Speed Plankton sampler was deployed at a series of fixed sampling stations (Figure.1). The sampler was towed at between 3 - 4 knots passing steadily through the water column in a 'V' shape, i.e. forming a double oblique tow, the lowest point being ~3 m above the sea bed. Fish larvae, ctenophores and jellyfish were removed from the fresh plankton samples at sea and recorded. Fish larvae were preserved in ethanol while the remaining plankton sample was bottled and preserved in a 4% formaldehyde solution. During the hours of darkness the MIK net was towed at 3 - 4 knots in a "V" shape i.e. forming a double oblique tow, the lowest point being ~5 m above the sea bed. Total catch was identified and enumerated while juvenile fish were identified, measured and preserved in ethanol. A thermosalinograph was run continuously to log surface temperature and salinity. A seabird 19plus CTD environmental sensor was employed to recorded vertical profiles of temperature and salinity at each Gulf VII station. The rosette water sampler and zooplankton net where deployed at a series of fixed stations while the oceanographic mooring was recovered and serviced.

Cruise Narrative:

The vessel left Belfast on Tuesday morning and headed directly to the western Irish Sea to begin Gulf VII sampling. During the hours of darkness the MIK net was deployed. In favourable conditions the vessel remained in the area before returning to Belfast on Saturday morning upon completion of stage 1 of the survey. After a short cruise break, which allowed for a change of scientific personnel and loading of equipment, the vessel left Belfast on Monday evening heading directly to the north eastern Irish Sea area. Upon arrival the vessel began Gulf VII sampling before switching to the MIK net during darkness. The vessel continued southwards over the next few days in the eastern Irish Sea before picking westward along a series of oceanographic stations in unseasonal conditions. Gulf VII and MIK net sampling was resumed in the western Irish Sea over the next few days, before a spell of forecast light airs provided safe conditions for the recovery of the mooring buoy. Finally the vessel finished the remaining Gulf VII and MIK net stations before returning to Belfast on Thursday afternoon via the Beaufort Dyke, where 4 oceanographic stations were sampled.

Work Completed:

This survey saw the successful completion of an ambitious joint sampling programme, much aided by the reasonable weather conditions throughout. In all 121 Gulf VII, 81 MIK net and 20 oceanographic stations were successfully sampled as well as the recovery and redeployment of the insitu mooring buoy. In total 2365 fish larvae were removed from Gulf VII samples while 811 whiting, 68 cod and 76 haddock juveniles were identified from the MIK net samples. In addition other fish species, ctenophores, jellyfish and crustaceans were identified to species, and numbers and weights recorded. Vertical depth profiles were collected at each Gulf VII station and zooplankton samples preserved for future analysis. The thermosalinograph was run continuously to log surface temperature and salinity.

Preliminary Results:

The abundance of juvenile gadoids in the water column depends on the initial number that reach metamorphosis and individual growth and mortality rates. Due to the temporal variability in the settlement of both cod and haddock the series of abundance used to show likely year-class strength is constructed from the maximum estimate from that year (either May or June). This is not the case with whiting, which remain pelagic for much longer and therefore are estimated from the June survey abundance. The MIK net sampling provides an index of juvenile gadoid abundance in the Irish Sea. This year saw an increase in the abundance of juvenile cod in the western sampling area. Initial estimates suggest that abundances in May are the 3rd highest in the

series for that month, similar to levels last seen in 2004. This may be evidence of an improvement in the recruitment success of this species which has had very poor recruitment success in recent years. Haddock abundances were also up slightly on last year as were whiting (Figure 1).

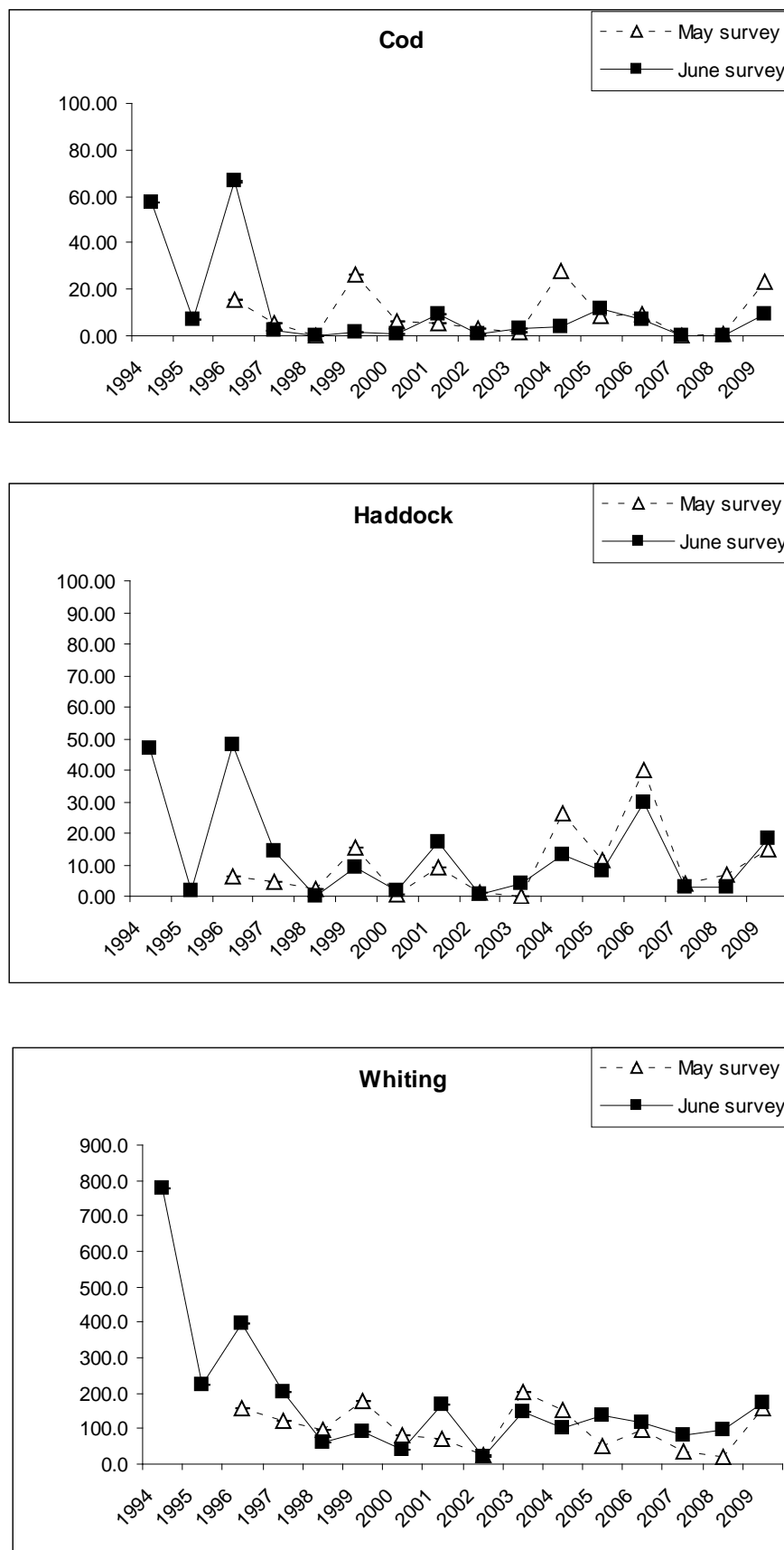


Figure 1. Time series of gadoid species (cod, haddock, whiting) abundance indices.

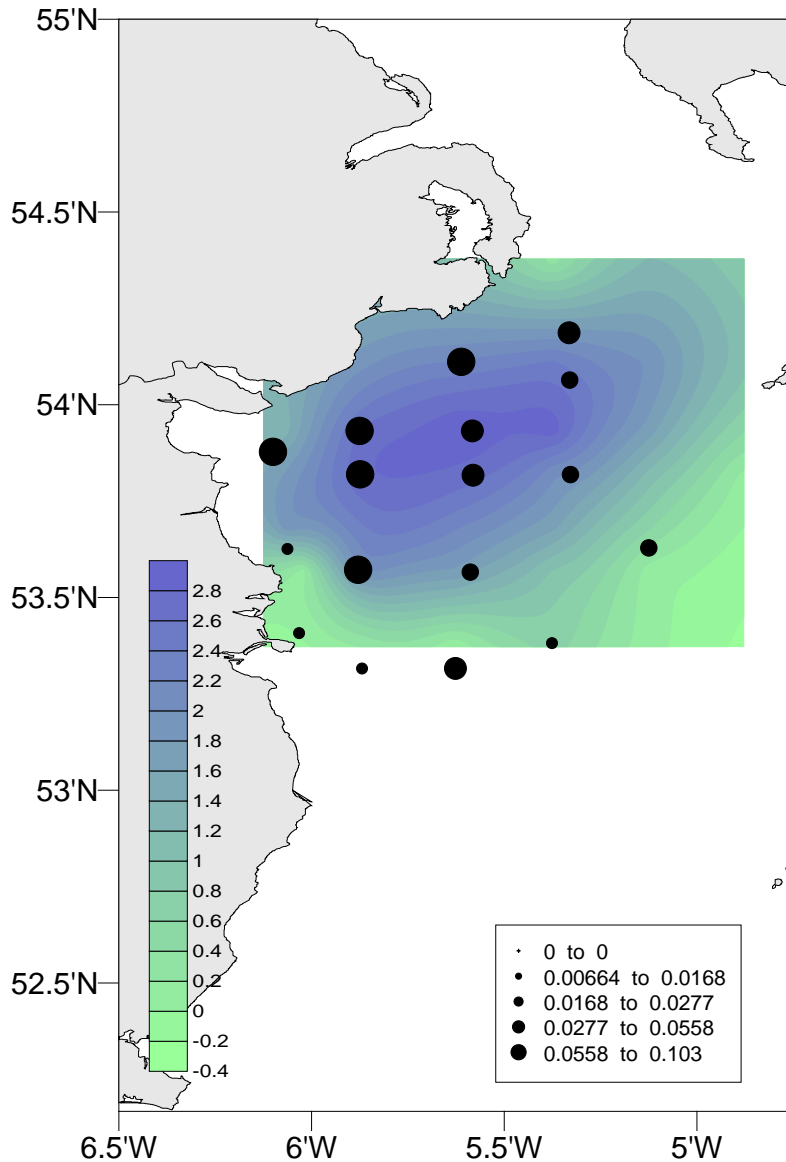


Figure 2. Spatial distribution of juvenile cod in western Irish Sea during week 1 of CO2209. Colour contour plot represents temperature gradient in water column (°C), stratified conditions represented by deeper colours.

Acknowledgements:

The Master and Crew of *RV Corystes* are thanked for their assistance and cooperation in ensuring the successful completion of the survey. The scientific staff are commended for their thorough and efficient work throughout the survey and general good humour and teamwork which was crucial to the successful completion of the survey.

Signed:

Scientist in charge (SIC).....date

Head, AESD Aquatic Systems..... date