Agri-Food and Biosciences Institute
Agriculture, Food and Environmental Science Division
Fisheries and Aquatic Ecosystems Branch

Cruise Report: CO 2310
Vessel: RV *Corystes*
Date: 5th – 11th June 2010
Area: Irish Sea (north); ICES VIIa
Survey Type: Juvenile Gadoid Survey & Mooring Service

Personnel:

S Beggs	AFBI	5th – 11th June
I McCausland	AFBI	5th – 11th June
J Peel	AFBI	5th – 11th June
P McCorriston	AFBI	5th – 11th June
B Stewart	AFBI	5th – 11th June
R Gilmore	AFBI	5th – 11th June
D Haberlin	Uni of Cork	5th – 11th June

Objectives:

i. To investigate the distribution and processes which determine the success of gadoid development through to settlement.

ii. To obtain abundance indices for early-stage juveniles of the 2010 year-class of gadoids in the western Irish Sea for use in stock assessments.

iii. To obtain samples for otolith primary increment analysis.

iv. To collect zooplankton, fish larvae and environmental data using the Gulf VII.

v. To maintain and service the Irish Sea insitu monitoring programme at open sea station 38A.

Circulation	✓
DCEO & CEO	✓
Ship Managers	✓
Fisheries Division	✓
ANIFPO	✓
NIFPO	✓

Comments

Signed Head of Branch

Methods:
During the hours of daylight a Gulf VII High Speed Plankton sampler fitted with a 40cm nose cone and 280µm mesh was deployed at a series of fixed sampling stations. 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 seabird 19plus CTD environmental sensor was employed to recorded vertical profiles of temperature and salinity at each Gulf VII station. The oceanographic mooring was recovered and serviced.

Cruise Narrative:
The vessel left Belfast on Saturday afternoon and headed directly to the western Irish Sea to begin MIK net sampling. Sampling continued through the hours of darkness before switching to the Gulf VII high speed plankton sampler. After a second night of MIK net sampling the vessel was in the vicinity of the open sea station 38A, and the opportunity of good weather was taken to recover and service the buoy. While on station approximately 2-3 killer whales were observed, a rare sighting in the Irish Sea. After successful redeployment of the buoy the Gulf VII plankton sampling recommenced. By the morning of the 9th June the majority of stations in the western Irish Sea were completed and the vessel made her way towards the eastern side. Due to time constraints it was decided to focus effort on the more northerly stations based on past catch data in the area. Sampling was hampered at one station on the 9th June by a large swell which resulted in the loss of the cod end and sample. It was decided to abort the station due to the localised conditions. The vessel completed her last station on the morning of the 11th June before returning directly to Belfast.

Work Completed:
63 Gulf VII and 44 MIK net stations were successfully completed during the survey (Figures 1a-b). In total 1,957 fish larvae were removed and identified from the samples. From the MIK net samples, which provide an index of the abundance of juvenile gadoids, 281 whiting, 14 cod and 7 haddock juveniles were identified. In addition ctenophores, jellyfish and crustaceans were identified to species, and numbers and weights recorded. Vertical depth profiles (salinity, temperature and fluorescence) 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.
The abundance of juvenile gadoids in the water column depends on the initial number that reach metamorphosis and individual growth and mortality rates.

The MIK net sampling provides an index of juvenile gadoid abundance in the Irish Sea. This year a decrease in the abundance of juvenile cod, haddock and whiting in the western sampling area to a level below the series mean was observed (Figure 2).

Based on historical correlations between cod recruitment and water temperature it was hoped that Irish Sea cod may have enjoyed a better recruitment success in 2010, after such a cold 2009/2010 winter. The data from this survey suggests that this may not have been the case.

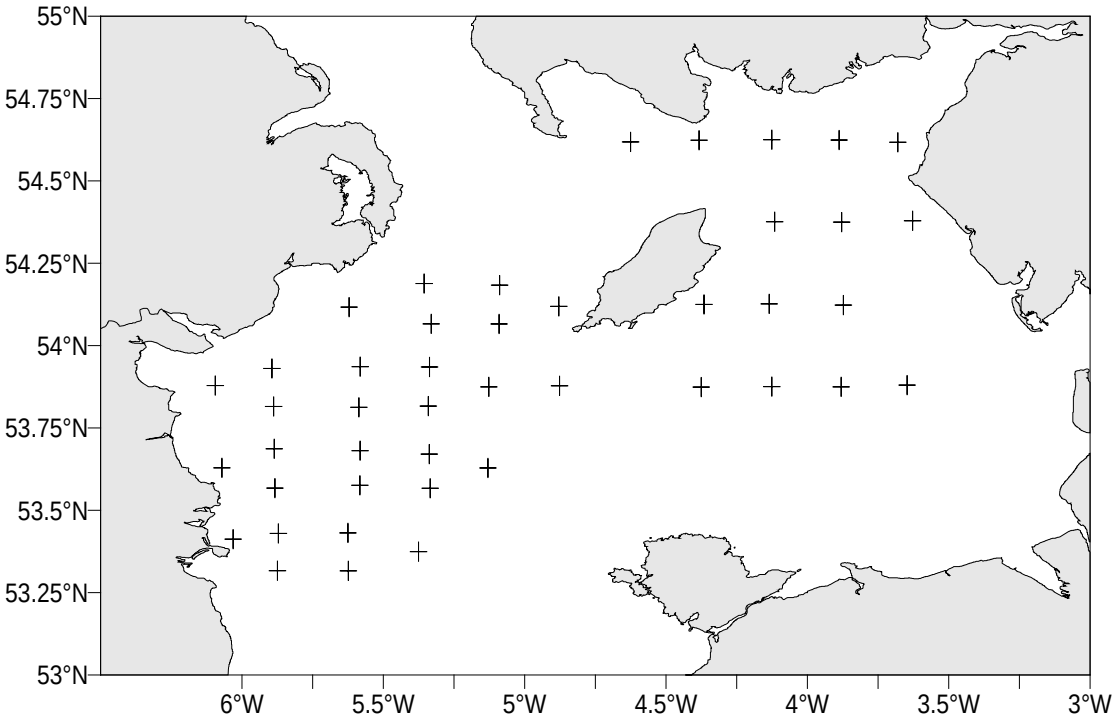

Figure 1a. MIK net sampling stations C02310.

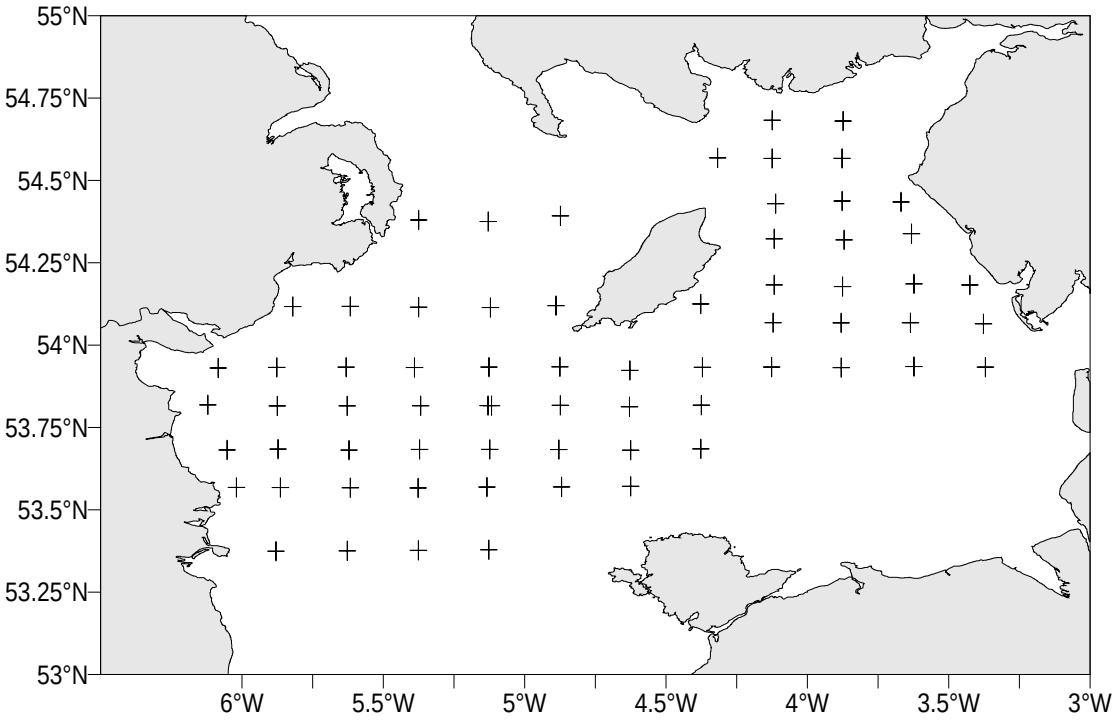

Figure 1b. Gulf VII sampling stations CO2310.

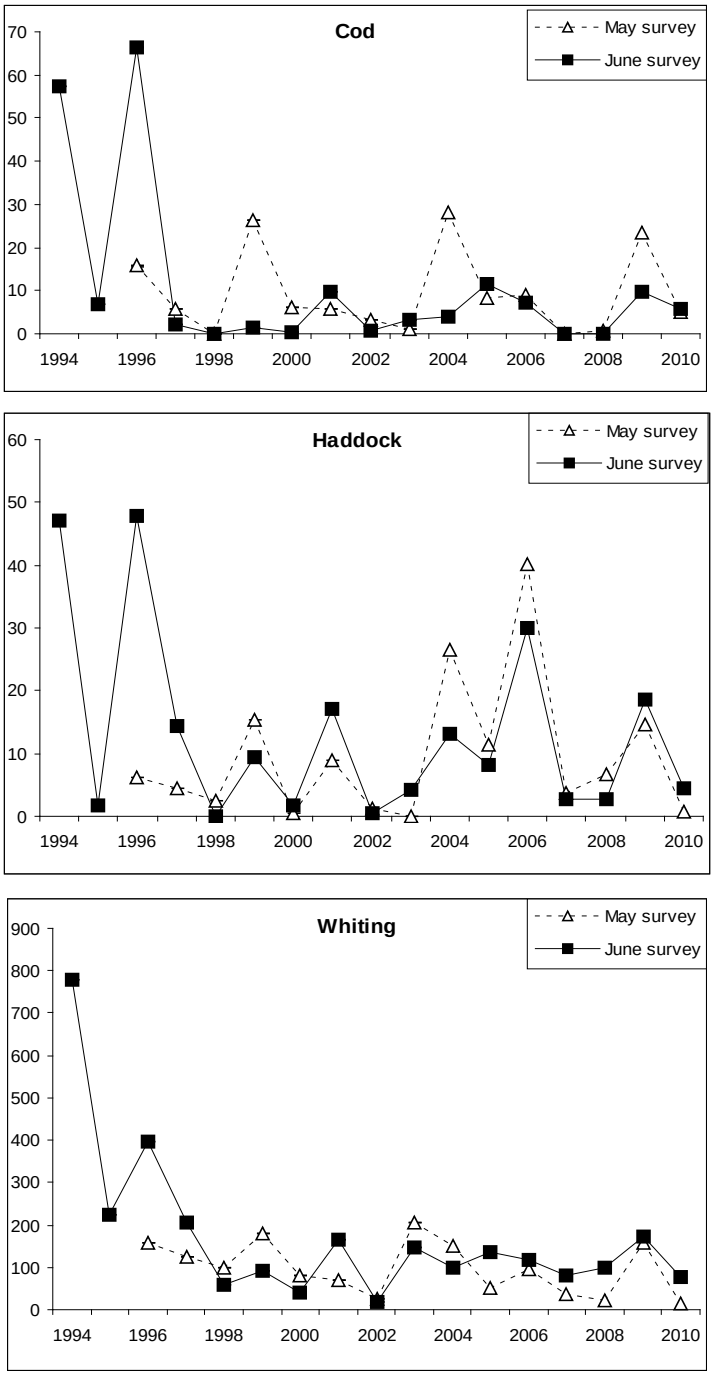

Figure 2. Time series of gadoid species (cod, haddock, whiting) abundance indices.

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.

Signed:

Scientist in charge (SIC)