AGRI – FOOD and BIOSCIENCES INSTITUTE (NI)
Agriculture Food and Environmental Science Division

(Fisheries & Aquatics Ecosystem Branch)

CRUISE REPORT: CO 01 2012 Biological Oceanography

VESSEL: R.V. Corystes DATES: 5th – 16th January 2012

AREA OF OPERATION: Irish Sea, Celtic Sea and Malin Sea

TYPE OF SURVEY: Biological Oceanography/EEF Malin Survey/ NIEA Coastal Winter Nutrient Survey

PERSONNEL

B Stewart	SSO	AFBI	5 – 16 Jan 2012
R Gilmore	HSO	AFBI	5 – 16 Jan 2012
C Smyth	SO	AFBI	5 – 11 Jan 2012
P Irvine	SO	AFBI	5 – 11 Jan 2012
G Annett	SO	NIEA	5 – 11 Jan 2012
S Brennan	TSO	NIEA	11 –16 Jan 2012
M Service	PSO	AFBI	11 –16 Jan 2012
G McNeill	SO	AFBI	11 –16 Jan 2012
N McAuley	TASO	AFBI	11 - 16 Jan 2012

OBJECTIVES

- To maintain an *insitu* monitoring programme in the Irish Sea, Celtic Sea and Liverpool Bay
- To investigate the distribution of dissolved nutrients and phytoplankton in the water column in the Irish Sea, Celtic Sea and Malin Sea
- To provide an assessment of nutrient distribution across the Northern Ireland coastal WFD water bodies
- To provide data towards the assessment of chemical and biological trends in the marine environment (CSSEG)

	✓
DCSO & CSO	✓
Ship Managers	✓
Fisheries Division	
ANIFPO	
NIFPO	

Comments

Signed Head of Branch

METHODS

- Stations were profiled using a Seabird SBE 32 water sampler and SBE 911 CTD
- Salinity, temperature, fluorescence and position were continuously recorded using a Seabird SBE 21 thermosalinograph
- Vertical zooplankton net hauls were taken using a 200 micron mesh bongo net with a 500mm diameter inlet.

CRUISE NARRATIVE

Thursday 5 January 2012

Following a talk on ship's safety and a demonstration of personal life saving equipment, the RV Corystes departed Belfast at 2200 hrs and sailed overnight to the mooring station 38A.

Friday 6 January 2012

The vessel arrived on station 38A at 0730 hrs. The weather was dry and bright with a light westerly wind when work commenced with recovery of the instrument mooring to ship deck. Data from thermistors, CTD and water sampler were down loaded. Samples were removed from the water sampler and following a detailed inspection of mooring components the instruments were reprogrammed and mooring components reassembled. The instrument mooring was then successfully redeployed at 1130 hrs in depth 94 metres on position 53^0 46^l.902N 005^0 38^l.217W. Following deployment of the rosette water sampler, CTD and zooplankton net the Corystes sailed to sample at stations 50, 62, B11 and B10 before sailing south overnight to the Celtic Deep mooring site.

Saturday 7 January 2012

Work for the day commenced at 0800 hrs when the Celtic Deep SmartBuoy was readied for deployment. With the ship on position the SmartBuoy mooring was deployed without incident on position 51^0 14^l.737N 006^0 04^l.980W. Following deployment of the CTD and rosette water sampler scientific staff began working a "watch" system as the Corystes continued on a southerly track sampling at Celtic Sea stations B7, C5, CS01and CS02.

Between stations samples were taken at 30 minute intervals from the ship's clean seawater supply and processed for nutrient and chlorophyll analysis

Sunday 8 January 2012

The survey continued with deployment of the rosette sampler and CTD at Celtic Sea stations CS03, CS04, CS05, CS06, CS07, CS08, CS09 and CS10. Sampling the clean seawater supply at 30 minute intervals continued between stations.

Monday 9 January 2012

In the early hours, with work completed at the Celtic shelf, the Corystes changed course to a northerly direction to sample at stations B8 and B9 before sailing overnight into Liverpool Bay.

Tuesday 10 January 2012

Work for the day commenced with the preparation and programming of the "on board" SmartBuoy and continued with the deployment of the rosette water sampler at Liverpool Bay station LB01. The survey continued at the CEFAS mooring site where the SmartBuoy was recovered and replaced with the programmed "on-board" buoy at 1130 hrs on position 53^0 31^{l}.894N 003^0 21^{l}.672W. Sampling continued along the remainder of the Liverpool Bay transect stations towards Irish coastal station 47D where work for the day finished at 2200 hrs. The vessel then sailed to dock in Dublin at 2355 hrs.

Wednesday 11 January 2012

During the mid-cruise break there was a change of scientific personnel when C Smyth, P Irvine, G Annett and N McAuley were replaced by M Service, G McNeill and S Brennan.

Thursday 12 January 2012

The Corystes departed Dublin at 0630 hrs and sailed to station CSSEG 6 in the Irish Sea where multiple sediment samples taken using a Day grab were sieved through a 1000 micron mesh. Biological material isolated by sieving was stored preserved in 4% formaldehyde. Following deployment of the rosette water sampler the Corystes sailed to sample at stations CSSEG 5, CSSEG 3 and CSSEG 4 where the sediment and water sampling protocol was repeated. Overnight the vessel sailed towards Carlingford Lough

Friday 13 January 2012

The Northern Ireland coastal nutrient survey commenced at station 89 off Carlingford at 0800 hrs and finished, for the day, on station 38 close to Larne Lough. The rosette water sampler was deployed at 9 stations along the coastal transect with samples processed and preserved for nutrient and chlorophyll analysis. The ship's thermosalinograph was programmed to record position, temperature and salinity at 1 minute intervals along the coastal sampling transect while the QuAAtro nutrient analyser was programmed to simultaneously determine ammonia, phosphate, total oxidized nitrogen, silicate and nitrite by sampling the ship's filtered clean seawater supply every 3 minutes..

Work for the day was completed on station CSSEG 2 with the deployment of the rosette water sampler and Day grab.

Saturday 14 January 2012

The Northern Ireland coastal nutrient survey continued from station 38 at 0800 hrs and was completed on station 13 off the Foyle estuary. Profile samples taken at 10 stations along the transect were processed for nutrient and chlorophyll analysis while the thermosalinograph recorded position, temperature and salinity and the QuAAtro analyser monitored nutrient concentrations by regularly sampling the clean seawater supply.

Following the deployment of the rosette water sampler and Day grab at station CSSEG 6, scientific staff again began working a "watch" system as the Corystes sailed to commence sampling at stations along the Malin Sea transect.

Sunday 15 January 2012

Sampling commenced with the deployment of the rosette and CTD on station M07 at 0150 hrs and continued westerly along a grid of stations to Malin Shelf station M24. The survey continued in a northerly direction along the shelf break to Malin Shelf station 30 before turning easterly and working overnight towards Rathlin Island.

Monday 16 January 2012

The water sampler and CTD were deployed at station M04 off Rathlin at 0507 hrs as the survey continued along a grid of stations to finish on station 4 at 1245hrs.

Work completed the Corystes sailed to dock in Belfast at 1600 hrs.

WORK COMPLETED

Favourable weather conditions enabled the successful service of the AFBI mooring and the Celtic Deep and Liverpool Bay SmartBuoy moorings. With light winds the survey

experienced a smooth passage to the Celtic and Malin shelf regions. Sampling at all CSSEG stations was completed and careful manipulation of the work programme around the weather enabled the completion of the Northern Ireland coastal nutrient survey.

OPERATIONAL ASPECTS OF THE SHIP

During the cruise the A-frame, main trawl winches, both hydrographic winches and the ship's clean seawater supply were used. No problems were encountered with the ship's equipment or indeed ant of the scientific equipment. The catering service was of an acceptable standard and there was a good working relationship between the scientists and the ship's crew. Prior to the ship departing Belfast a comprehensive and detailed safety briefing was delivered to the scientific crew.

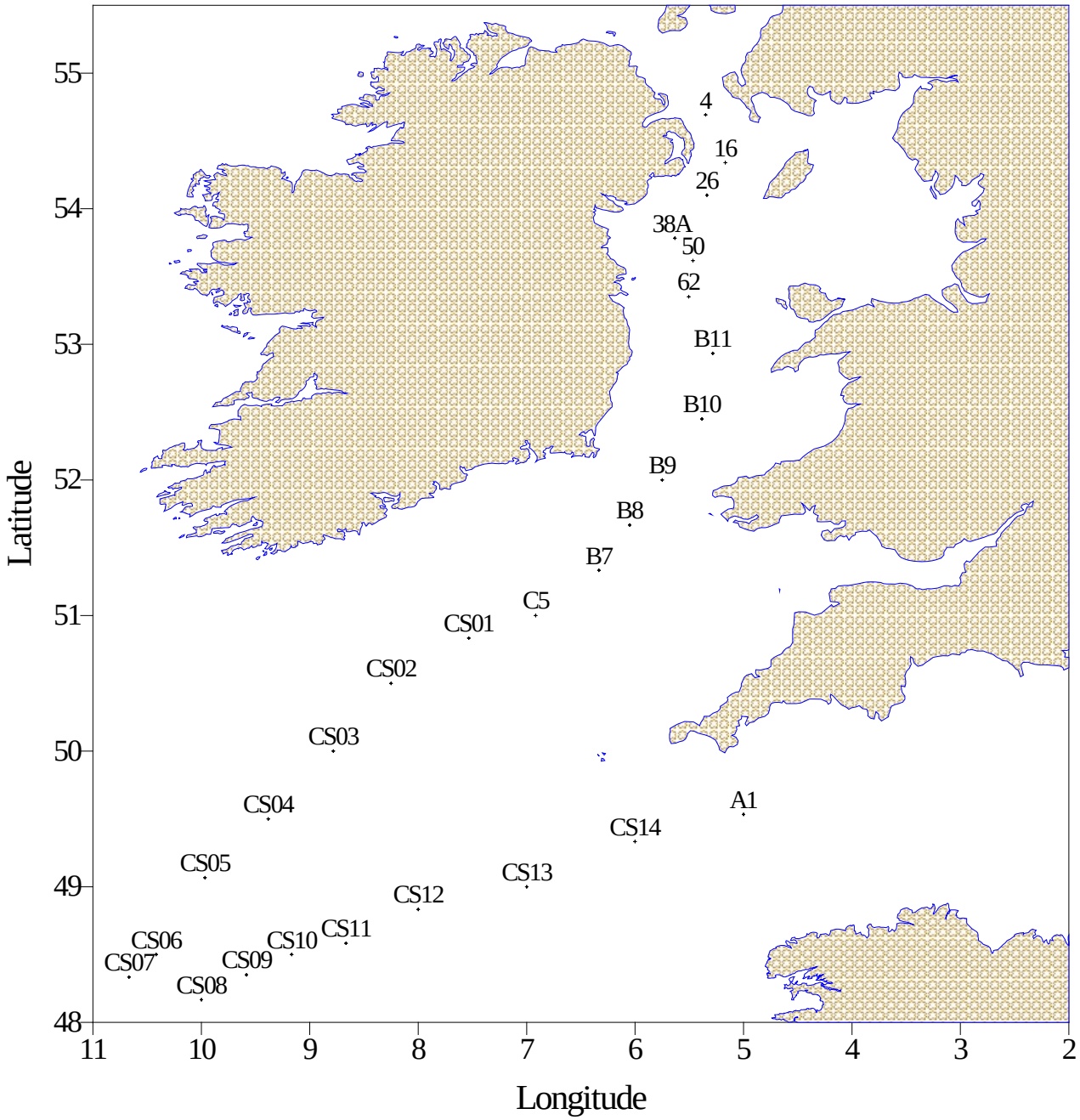
ACKNOWLEDGEMENTS

I am indebted to the deck crew of the RV Corystes for their co-operation and assistance during the mooring recovery and deployment operation. The ship's master, officers, engineers and catering staff are also thanked for their co-operation during this cruise.

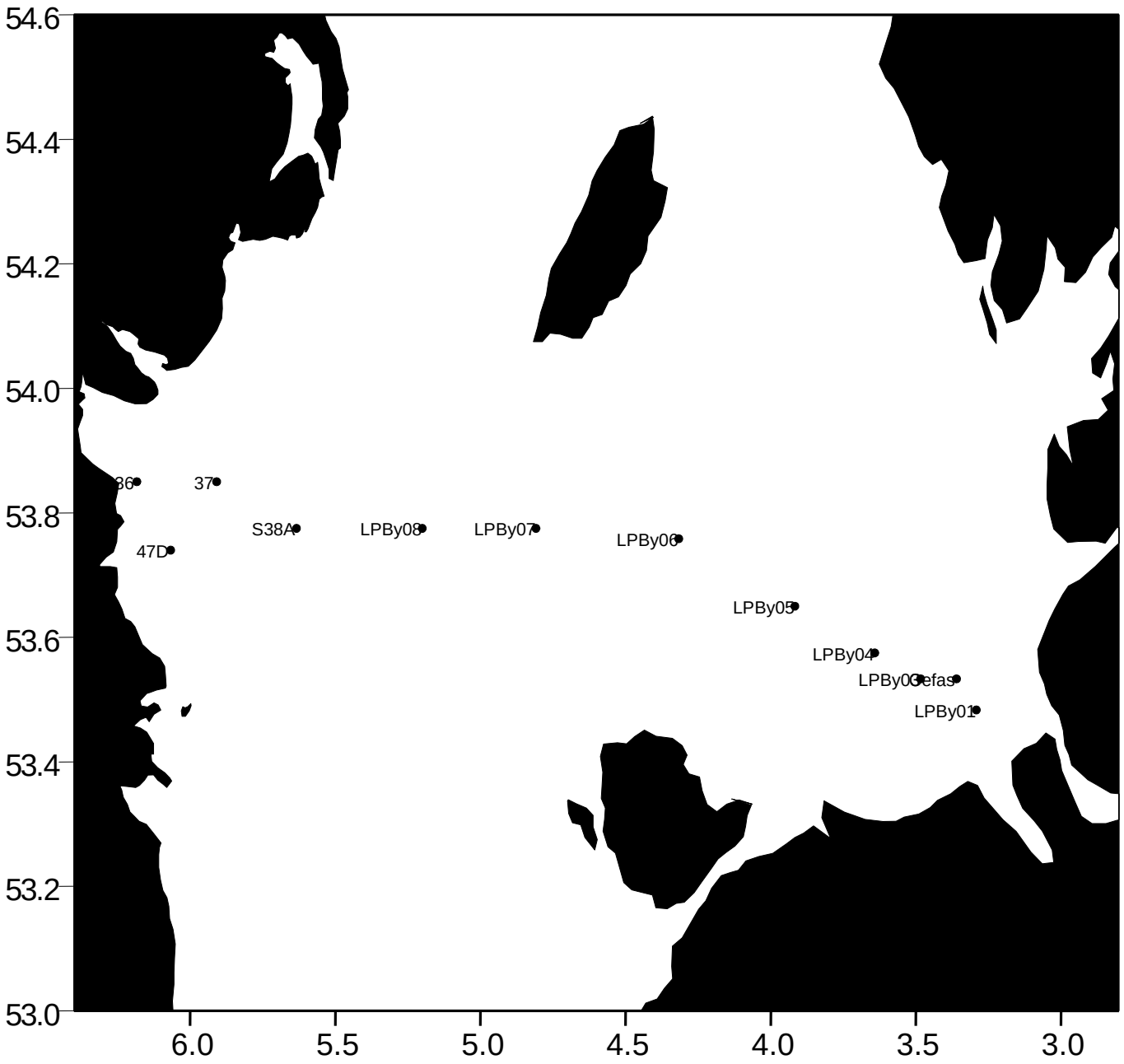
Brian M Stewart

Scientist in Charge

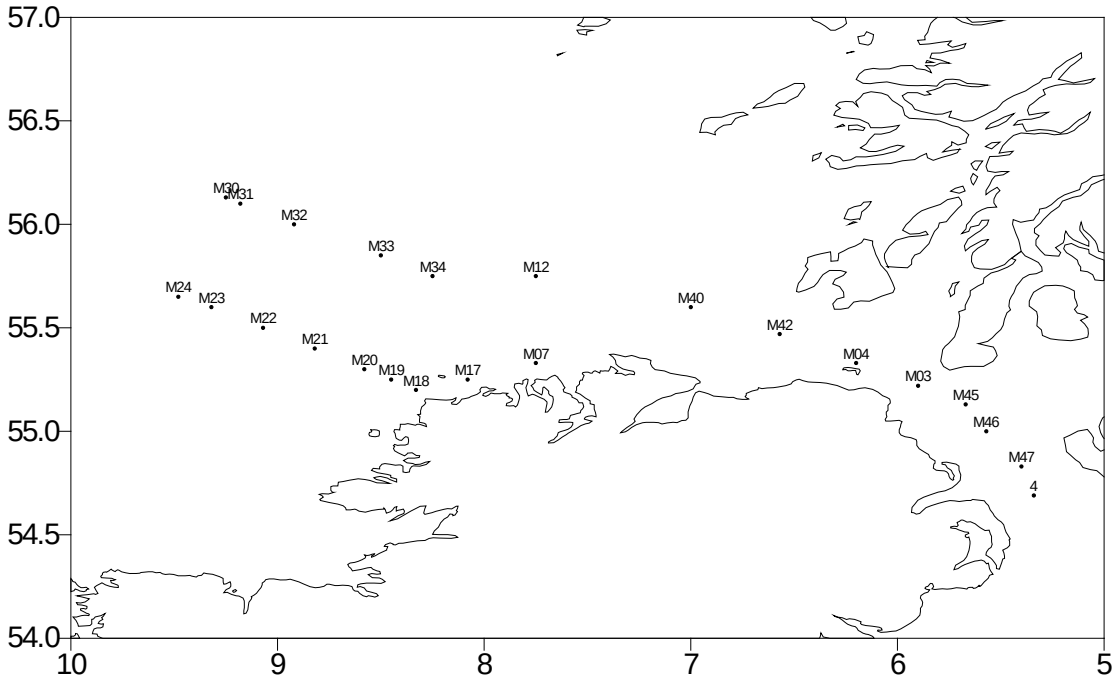
Date: 5 February 2012



CO 01 2012 Irish Sea & Celtic Sea stations



CO 01 2012 Irish Sea and Liverpool Bay stations



CO 01 2012 Malin Sea stations