Cruise Report: CO 3011
Vessel: RV *Corystes*
Date: 20th – 26th July 2011
Area: Irish Sea (north); ICES VIIa, g & j
Survey Type: Biological Oceanography

Personnel:

B Stewart	SSO	AFBI	20 - 26 July 2011
R Gilmore	HSO	AFBI	20 - 26 July 2011
P Irvine	SO	AFBI	20 - 26 July 2011
A Coyle	SO	AFBI	20 - 26 July 2011
E Capuzzo		CEFAS	20 - 26 July 2011
J Foden		CEFAS	20 - 26 July 2011
C Noble	Student	Exeter Uni.	20 - 26 July 2011

Objectives:

i. To maintain an *insitu* monitoring programme in the Irish and Celtic Sea.

ii. To investigate the distribution of dissolved nutrients and phytoplankton in the water column in the Irish Sea, Celtic Sea and Celtic shelf edge.

iii. To assess levels of primary and secondary production in the Irish Sea, Celtic Sea and Celtic shelf edge.

Circulation	✔
DCSO & CSO	✔
Ship Managers	✔
Fisheries Division	
ANIFPO	
NIFPO	

Comments

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Signed Head of Branch

Methods:

- Stations were profiled using a Seabird SBE 32 water sampler and SBE 911 CTD
- Vertical zooplankton net hauls were taken using a 200 micron mesh Bongo net with a 500mm diameter inlet.
- Primary production was measured using a ^{14}C radio isotope technique.
- An enzymatic method with chitobiase was used as an index for secondary production.

Cruise Narrative:

Wednesday 20 July 2011
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 AFBI mooring station 38A.

Thursday 21 July 2011
The vessel arrived on station 38A at 0800 hrs. The weather was dry and bright with a fresh 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 1330 hrs in depth 95 metres on position $53^0 46^1$.919N $005^0 38^1$.068W. Following deployment of the rosette water sampler and CTD the Corystes sailed in a southerly direction to sample at stations 50, 62 and B11 where work for the day finished at 2045 hrs. Primary and secondary production assessments were conducted on samples taken at station 38A. Overnight the Corystes sailed to the CEFAS SmartBuoy mooring in the Celtic Sea.

Friday 22 July 2011
Work for the day commenced at 0800 hrs when the SmartBuoy instruments and mooring components were prepared for deployment. With no existing SmartBuoy mooring to recover or service the shipboard SmartBuoy mooring was successfully deployed at 0830 hrs in depth 101 metres on position $51^0 14^1$.919N $006^0 04^1$.930W. Following deployment of the rosette water sampler and zooplankton nets the Corystes continued on a southerly track sampling at Celtic Sea stations C5 and CS01. Primary and secondary production assessments were conducted on samples taken at the Celtic Deep mooring site and at station C5. Overnight the ship sailed to shelf edge station CS10.

Saturday 23 July 2011
Work continued from station CS10 along "shelf" stations CS09, CS08, CS07 and CS06 with productivity assessment conducted at CS09.

Sunday 24 July 2011
Work continued overnight sampling at stations CS05, CS04 and CS03. Productivity work was conducted at CS02 at 1145 hrs and sampling continued at stations B7 and B8 as the Corystes sailed in a northerly direction towards the western Irish Sea.

Monday 25 July 2011
Overnight sampling continued at stations B9 and B10 before sailing for Irish coastal station 47D where productivity work was conducted. Survey work continued at coastal stations 36 and 37 before sailing in a westerly direction to sample Liverpool Bay transect stations LB08 and LB07 where work for the day finished at 2000 hrs. Overnight the ship sailed into Liverpool Bay.

Tuesday 26 July 2011

Work for the day commenced at 0600 hrs on LB04 and continued at stations LB03 and LB01. With productivity work completed at CEFAS Liverpool Bay mooring site and station LB06 the Corystes sailed to dock in Belfast at 2200 hrs

Work Completed:
Favourable weather conditions enabled a successful service of both the AFBI and Celtic Deep SmarBuoy moorings and a smooth passage along the transect stations to the Celtic Shelf break. All scheduled stations were surveyed and productivity assessments conducted. Detailed results of the hydrographic data collected during the cruise will be made available as the data is worked up and interpreted by the laboratory. Samples taken for nutrient analysis were returned to the laboratory and processed for ammoniacal nitrogen, phosphate, total oxidised nitrogen, silicate, nitrite and chlorophyll. Results will be available when the data is fully worked up by the laboratory.

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 any of the scientific equipment. The hotel and catering service was of an acceptable standard and there was a reasonable 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.
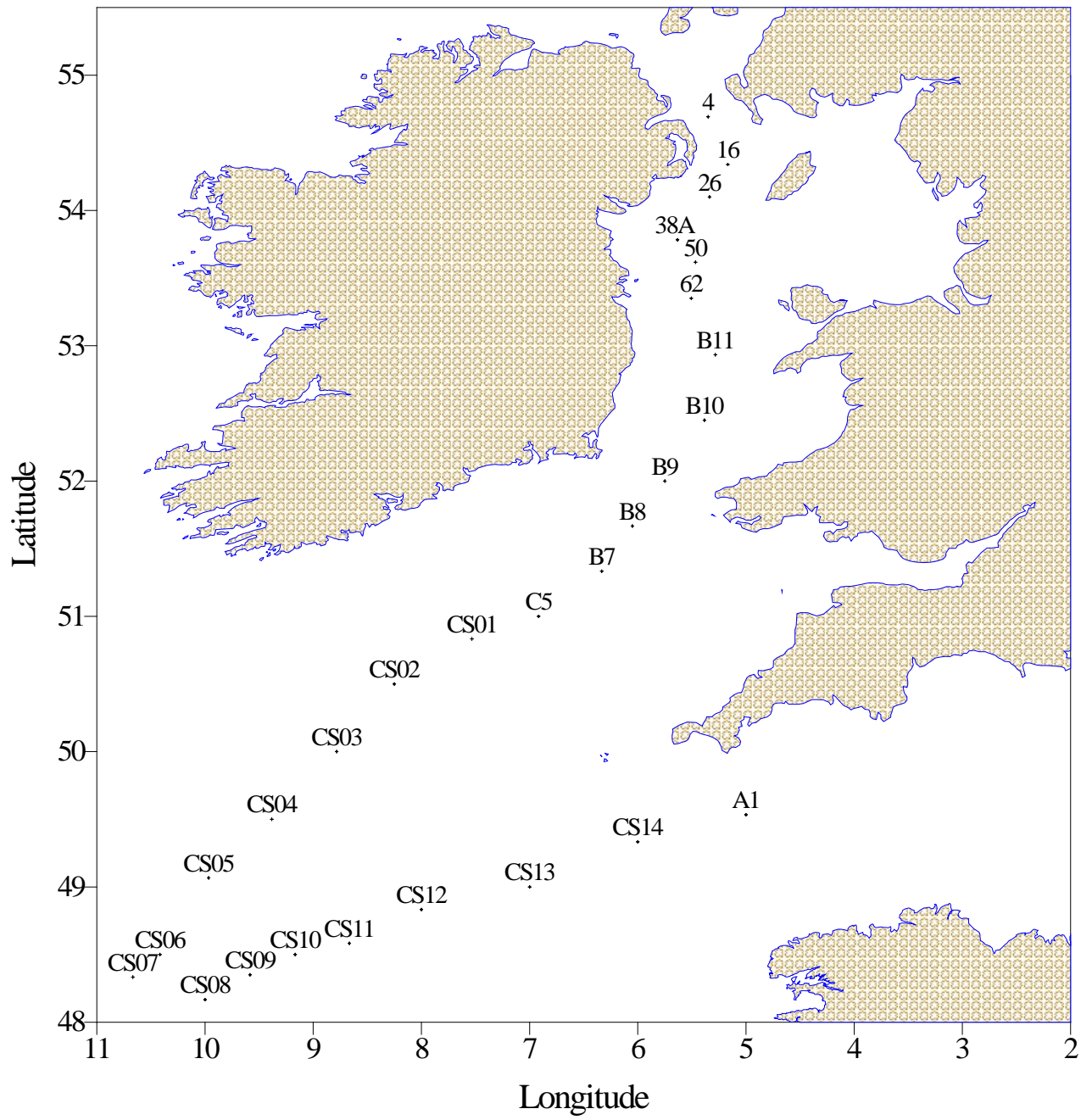
Acknowledgements:
I am grateful to the deck crew of the RV Corystes for their co-operation and assistance during the mooring recovery and deployment operations. The ship's master, officers, engineers and catering staff are also thanked for their co-operation during this cruise.
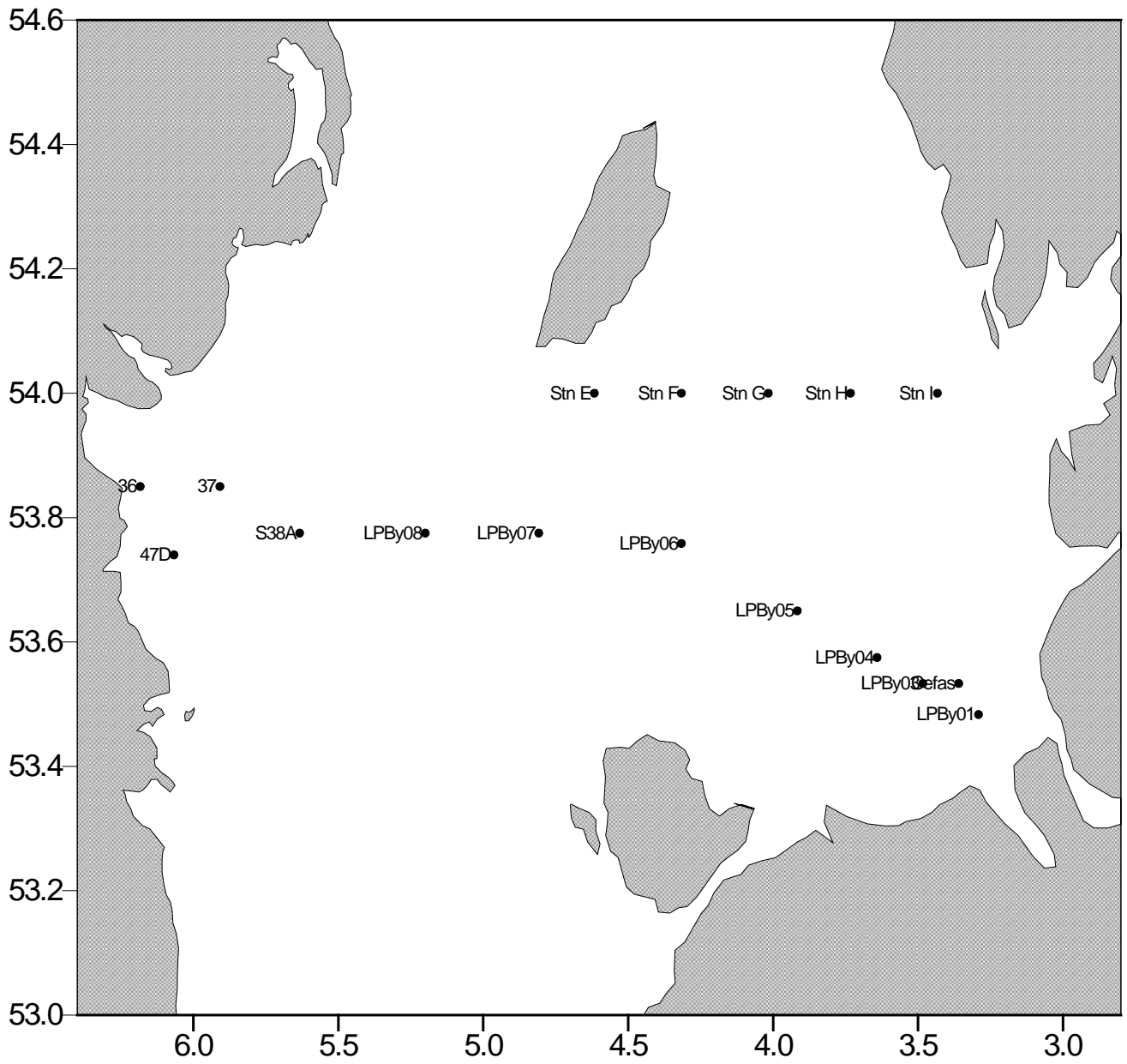
Brian M Stewart
Scientist in Charge

Date: 3rd August 2011

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Irish Sea, Celtic Sea and Celtic Shelf stations

54.6
54.4
54.2
54.0
53.8
53.6
53.4
53.2
53.0

6.0 5.5 5.0 4.5 4.0 3.5 3.0

Stn E● Stn F● Stn G● Stn H● Stn I●

36● 37●

S38A● LPBy08● LPBy07● LPBy06●

47D●

LPBy05●

LPBy04●

LPBy03●efas●

LPBy01●

Irish Sea, Liverpool Bay and Isle of Man transect stations