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BIOLOGICAL OCEANOGRAPHY CRUISE REPORT LF/09/93 31 MAR-2 APR 1993

PERSONNEL

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R Hensley	HSO
P Elliott	SO
S Bloomfield	ASO
M Charlesworth	Student

CRUISE OBJECTIVE

To map the temperature, salinity and nutrient distributions in the NW Irish Sea.

CRUISE NARRATIVE

Monday 29 & Tuesday 30 March 1993

Gale force winds on both days prevented the vessel from sailing.

Wednesday 31 March 1993

The vessel departed Belfast harbour at 0600 hrs and arrived at station 4 (see attached sampling grid) in the North Channel at 0815 hrs. The weather was dry and bright with a force 5-6 south easterly wind. The vessel proceeded southwards along a grid of stations and owing to a reduced number of Lough Foyle crewe (11 persons) sampling finished earlier than anticipated on station 38 at 2000 hrs. Work finished at 2200 hrs and overnight the vessel sailed slowly southwards to station 62.

Thursday 1 April 1993

The survey continued from station 62 at 0700 hrs and departed along an initial northerly sampling grid before veering west at station 45 to continue with inshore stations. Conditions were cloudy with sunny intervals in a force 4-5 south easterly wind. Sampling finished on station 22 at 2050 hrs and the vessel drifted overnight in calm seas off the county Down coast.

Friday 2 April 1993

The two remaining inshore stations on the sampling grid were sampled commencing with station 15 at 0700 hrs. The vessel proceeded north to finish the sampling grid on station 14 at 0800 hrs and continued to "surface map" into Belfast lough where it eventually docked at 1115 hrs. Conditions were dry and bright with a light southerly breeze.

PARAMETERS MONITORED

The entire cruise track was surface mapped for nutrients, temperature and salinity at approximately one mile intervals and chlorophyll a at approximately five mile intervals. At each station on the sampling grid the CTD/rosette water sampler was deployed to acquire nutrient, chlorophyll a, temperature and salinity data from the depth profile. Duplicate vertical zooplankton hauls were also taken at each station and underwater light measurements were made at stations 4, 26, 62, 57 and 36. Algal samples were taken at stations 4, 16, 26, 38, 45, 62, 57, 50, 47 & 24 and stored frozen for carbon/nitrogen analysis. The Day grab was successfully deployed six times at station 38 while futile attempts were made with the Bowers & Connelly corer to obtain cores at stations 38, 45, 57 & 47.

SUMMARY OF RESULTS

From the acquired nutrient and CTD data the survey area was found to be generally mixed from surface to bottom. Surface mapped values for nutrients were fairly constant throughout the survey area and were typical of winter levels. Temperature and salinity also showed little variation with mean values of 7.5 and 33.90 respectively.

PROBLEMS ENCOUNTERED AND REQUIRING IMMEDIATE ATTENTION

Immediate problems were encountered with the "bin mounted" WS Oceans CTD used for monitoring surface salinity and temperature. Unrealistic values for temperature and salinity were being displayed when the probe was located in the bin but when removed to the ship deck a stable believable temperature reading was obtained. This problem could not be resolved during the cruise and as a result the surface mapped salinity and temperature values logged by Labtech Notebook are meaningless.

The ship's navigation system (Decca Shipmate RS 4000CC No.2), which provides a signal logged by Labtech Notebook, did not maintain correct grid references over a number of hours on Thurs' 1 April '93. As a result a number of grid references in the surface mapping programme are in error. At one stage the error was 5 minutes (approximately 5 miles). Unfortunately none of the crewe could resolve the problem which eventually corrected itself. I feel an additional link should be made to another of the ship's three independant navigational systems which might allow the correct grid references to be switched "on line" should the problem occur in future.

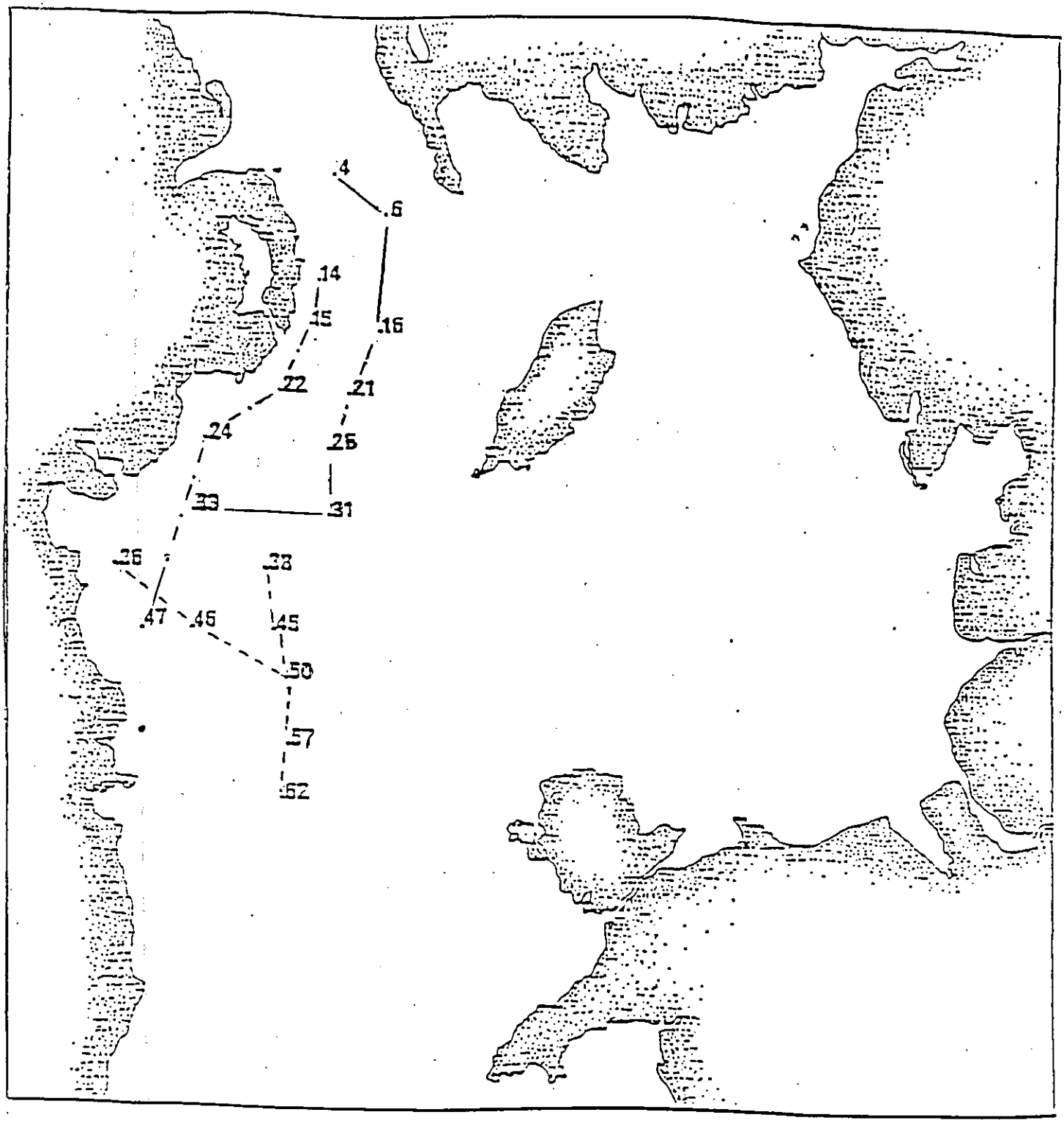
Several unsuccessful attempts were made at station 38 to obtain cores with the Bowers & Connelly corer. The successful deployment of the Day grab and noticeable traces of mud on the corer was sufficient evidence that mud was present in abundance.
Although the problem persisted at other stations a set of four cores were successfully obtained at station 47.
A concentrated attempt to fully comprehend the conditions under which this device will work properly is required. I have organised the Lough Foyle for Wed' 7 April '93 when William Clarke and myself will give the operation of the corer a thorough investigation in Belfast Lough.

ACKNOWLEDGEMENTS

The ships's master, officers, engineers, catering staff and crewe are thanked for their cooperation during this cruise.

B STEWART

4 April 1993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Work Schedule 29/3/93 – 2/4/93

Station	Position	Activity
4	5441 0520	CTD; Light; secchi; Zooplankton; + C/N ALGAE
6	5436 0510	CTD; Zooplankton; Secchi
16	5421 0510	CTD; Zoolpankton; Secchi + C/N ALGAE
21	5413 0516	CTD; Zooplankton; Secchi
26	5406 0521	CTD; Zooplankton; Secchi + C/N ALGAE
31	5358 0520	CTD; Zooplankton; Secchi
33	5358 0550	CTD; Zooplankton; secchi
38	5351 0534	CTD; Zooplankton; secchi Light; DAY GRAB + CORER + C/N ALGAE
45	5343 0532	CTD; Zooplankton; Secchi Light; + CORER + C/N ALGAE
62	5321 0530	CTD; Zooplankton; Secchi Light; + C/N ALGAE
57	5328 0528	CTD; Zooplankton; Secchi + CORER + C/N AL
50	5337 0528	CTD; Zooplankton; Secchi + C/N ALGAE
46	5343 0550	CTD; Zooplankton; secchi
36	5351 0611	CTD; Zooplankton; Secchi
47	5343 0609 ✓	CTD; Zooplankton; Secchi + CORER Light; + C/N ALGAE
24	5406 0552	CTD; Zooplankton; secchi Light; + C/N ALGAE
22	5413 0531	CTD; Zooplankton; secchi
15	5421 0525	CTD; Zooplankton; secchi
14	5428 0523	CTD; Zooplankton; secchi