

R1/3

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FRV Lough Foyle

Cruise 9/91

REPORT

6-13 September 1991

Personnel

J Dunn	HSO (in charge)
R Mitchell	SSO (6-9 September)
C D Hall	SSO
J Pirie	SSO
D Reid	SSO (9-13 September)
R Payne	HSO (6-9 September)
A Matthews	SO
S Heaney	ASO
P Brennan	Student (9-13 September)
A Rees	Visitor (PML)
T G McInnes	Princ Photo

Objectives

1. To lift, service and redeploy instruments in Loch Linnhe.
2. To carry out a programme of physical, chemical and biological sampling in Loch Linnhe.

Narrative

The scientific equipment was loaded and set up in Oban on 6 September and the vessel sailed at 1500. The outer mooring was serviced directly on leaving port and a surface current meter deployed at the Lismore mooring, where it was discovered that the ship pick-up pallet was missing. The thermistor chain at Lismore was recovered. The following day the inner mooring was serviced and the tide gauge and thermistor chain recovered; the latter was replaced with a serviced one.

An ARIES tow from Fort William through Corran Narrows was found to have failed due to a software problem which was remedied and the deployment from the recovery point south of Corran to Glen Sanda worked well. The tide gauge at Glen Sanda was serviced.

On the early morning of the 8th the outer fixed station was completed after which the vessel proceeded to the Lismore mooring and replaced the pick-up recovery line and pallet before servicing the mooring. The thermistor chain was redeployed and calibration carried out. An ARIES tow from Fort William through Corran Narrows and two Methot tows were successfully completed.

The Firth of Lorne fixed station and an ARIES tow were completed on the morning of the 9th before the vessel docked in Oban for scientific crew change. On leaving Oban another ARIES tow and two Methot tows were completed and a survey using ROXANN and a suspended TV camera were completed before the vessel made its way to the Lismore fixed station position which was started in the early hours of the 10th. Another survey with ROXANN and suspended TV camera was carried out at the southern end of Loch Linnhe before a line of Methot stations was completed up to Fort William. The ROXANN and suspended TV camera system was again used in the upper basin while a fault in the towed CTD system was investigated.

The inner fixed stations was started in the early hours of the 11th and a zigzag surface CTD tow survey was made from Fort William to the open sea. A small portion of this was repeated due to a technical fault before the vessel took up position on a line of seven stations across the loch just to the north of the Lismore fixed station. These stations were then sampled intensively over the next 23 hours using SEABIRD, CHELSEA and OPC with water bottle samples being done at station 4 (the mid loch one).

The sonar calibration was carried out and completed by midnight on the 12th while packing up continued to 0230.

The vessel docked in Oban on the 13th at 0745 when all SOAFD equipment was off loaded and the light logger was downloaded at Dunstaffnage en route to Aberdeen.

Results

The major survey objectives were all achieved. The majority of the moored instrumentation had worked well despite a jammed syringe on one of the inner mooring nitrate analysers. Ten Methot net tows and a complete series of undulating ARIES tows were completed. Four fixed vertical sampling stations were completed where live material was collected and experimental incubations performed to measure phytoplankton primary production, nitrogen assimilation, zooplankton excretion and microzooplankton grazing.

A zigzag survey with the towed CTD/optical plankton counter system was successfully carried out in conjunction with this continuous dual frequency echosounding was carried out and pumped surface water sampled to give continuous nitrate analysis and calibration sampling for the towed instruments.

Several areas of the loch were successfully surveyed with the ROXANN system and a TV camera survey carried out to visually verify the results from ROXANN. A Van Veen grab was also successfully deployed to obtain samples of the bottom in the survey areas.

A series of seven stations across the loch just to the north of the Lismore buoy position were successfully sampled over a 23 hour period using the SEABIRD CTD, CHELSEA logging system and optical plankton counting systems with water samples using van Doorn water bottles being taken at the mid-loch position (ie station 4).

J Dunn
11 December 1991