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FRV *Clupea*

Cruise 1207C

PROGRAMME

27 August – 10 September, 2007

Loading: Fraserburgh, 27 August

Unloading: Fraserburgh, 10 September

Sample unloading: Lochinver, 4 September (am)

Summary of working areas:

Hydrographic work in (and offshore from) sea lochs bordering the Minch and Shetland Voes.
Sediment grabbing and small boat work in Loch Torridon.

***In setting the cruise programme and specific objectives, etc the Scientist-in-Charge needs to be aware of the restrictions on working hours and the need to build in adequate rest days and rest breaks as set out in FRS' Working Time Policy (which is published on the Intranet). In addition, the Scientist-in-Charge must formally review the risk assessments for the cruise with staff on-board before work is commenced.**

In the interest of efficient data management, it is now mandatory to return the Cruise Report, to John Morrison and the Cruise Summary Report (old ROSCOP form) to Dougal Lichtman, within four weeks of a cruise ending. In the case of the Cruise Summary Report a nil return is required, if appropriate.

Personnel

Matt Gubbins	(In charge)
George Slessor	
David Avery	
Malcolm Rose	(27 August to 4 September)
Jennifer Graham	(4 September to 10 September)

Project codes: AE1192 14 days

Equipment

Zodiac inflatable
2 outboard engines
Seallogger CTD/Rosette
2 Day grabs, 1 wooden table
2nd freezer for wetlab
80 L unleaded fuel
Zooplankton 'bongo' net

Objectives

- 1) To collect water column hydrographic data from approximately 25 sea lochs in the North Minch and Voes in Shetland to provide validation / forcing data for models of fish farming carrying capacity.
- 2) To continuously monitor chlorophyll a in surface waters during the cruise.
- 3) To undertake water and sediment sampling close to fish farms in Loch Torridon to investigate the effects of copper based anti-foulants.
- 4) To sample by CTD / Rosette close to the Loch Torridon CAPTOR buoy (if deployed)
- 5) To sample sediment from sea lochs on the west coast and Western Isles for analysis of phytoplankton cysts.
- 6) To collect samples of dog whelks from shoreline sites in Yell Sound (two sites) and the North West mainland by Zodiac inflatable – where conditions permit.

Procedure

Loading and boarding of scientific staff will take place on 27 August and survey work will commence on the West coast and then move to Shetland after a transfer of samples at Lochinver on the morning of 4 September. The survey will aim to cover approximately 25 sea lochs and voes from the provisional list below.

West Coast/Western Isles

Loch Eriboll
Loch Inchard
Loch Laxford
Loch Chairnbhairn
Little Loch Broom
Loch Torridon
Loch Ainort
Loch Hourn
Loch Ailort
Loch Sunart
Loch Boisdale
Loch Eynort
Loch Eport
Loch Uiskevagh
Loch Maddy
East Loch Tarbert
Loch Claidh
Loch Odhairn

Shetland

Clift Sound
Whiteness Voe

Seli Voe
Vaila Sound
Olna Firth
Aith Voe
Ronas Voe
Whalefirth Voe
Burrafirth (weather permitting!)
Balta Sound
Basta Voe
Mid Yell Voe
Swinister Voe
Vidlin Voe
Catfirth/Wadbister Voe
Dales Voe

Within each loch, hydrographic sampling by CTD/Rosette will be undertaken at 3 stations: near the entrance, head and midway along the loch or close to any sills. 2 further stations will be sampled in the open sea outside each loch/voe. The parameters measured at each station will be:

Nutrients
CTD
Chlorophyll a
Dissolved oxygen
Transmission and optical properties: PAR, CDOM and SPM
Zooplankton (one station per loch only)

Additional sampling work will be undertaken in Loch Torridon. This will involve Day grab sampling for sediments near fish farms that have recently used copper based anti-foulants on nets. Some sampling by reversing bottle and handheld VanVeen grab from the inflatable boat will be necessary at stations close to farms.

In outer Loch Torridon, CTD casts and water sampling will be undertaken at the site of the CAPTOR buoy and close to fish farms in the inner loch.

Following completion of survey work in the Minch, unloading of frozen samples for transport back to the lab will be undertaken in Lochinver on morning of the 4 September. A rest day is not planned for this half landing.

Survey work will then recommence in Shetland on the 5 September. Following the completion of work in Shetland on the 8 September, Clupea will steam to Fraserburgh on the 9 September, for unloading on the morning of the 10 September.

J A Morrison
15 August 2007