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FRV *Alba na Mara*

Cruise 0708A

REPORT

23 July – 5 August 2008

Loading: Fraserburgh, 23 July
Unloading: Fraserburgh, 5 August
Crew change: Lochinver, 29 July

Personnel

M Gubbins (In charge)
D Lichtman
M Rose
J Graham 23 – 29 July
M Geldart 29 July – 5 August

Project codes: AE11s (14 days out-turn)

Equipment

Proteus workboat and 100 L unleaded fuel
Sealogger CTD/Rosette
Nutrient analyser
Day grab / wooden table
Zooplankton 'bongo' net
Phytoplankton sampling 'hose' and net

Objectives

- 1) To collect water column hydrographic data from approximately 20 sea lochs in the North Minch and Voes in Shetland to provide validation / forcing data for models of fish farming carrying capacity.
- 2) To sample Shetland Voes for water and plankton for algal toxin analysis
- 3) To continuously monitor T&S and chlorophyll a in surface waters and surface irradiance during the cruise.
- 4) To sample zooplankton from a range of sea lochs to provide further information on sea loch community types.
- 5) To validate the use of the nutrient analyser on the *Alba na Mara* for UKAS accreditation purposes.

Narrative

Scientific staff joined the vessel on 23 July and the vessel departed for Shetland waters by 14:15, arriving by 17:00 Off Dales Voe on 24 July. Hydrographic and plankton sampling was completed at 3 stations in each Voe with Dales and Laxfirth Voe being surveyed on 24 July, Laxfirth, Catfirth, Swining Voe, Collafirth and Balta Sound being sampled on 25 July. Burrafirth, Whalefirth Voe (Proteus workboat was required) and Ronas Voe were subject to a similar sampling regime on 26 July, before the *Alba na Mara* moved to the St Magnus Bay area to complete surveys of Olna Firth as well as Vaila Sound, Sandsound Voe and Stromness Voe. Stromness Voe required the use of the Proteus workboat due to the narrow entrance. Clift Sound was sampled the following morning in foggy conditions, before steaming to Lochinver to effect a crew and scientific equipment change on 29 July.

Lochs Ewe and Torridon were surveyed on 30 July. The following day, Loch Ainort was surveyed from the *Alba na Mara*, and the Proteus workboat was launched to survey Loch Ailort after picking up a single hydrostation outside the loch using the CTD on board the *Alba na Mara*.

After crossing over to Skye, surveys of Loch Harport (in Bracadale) and Loch Boisdale in South Uist were completed on 1 August and Loch Skipport on 2 August. Due to a moderate swell it was not possible to launch the Proteus workboat to enter Loch Eport locally, so the *Alba na Mara* was moved to Loch Maddy and the Proteus launched in sheltered conditions before travelling into Loch Eport to effect the survey.

Lochs Maddy, Erisort, Inchard and Laxford were all surveyed on 2 and 3 of August, before the *Alba na Mara* steamed back to Fraserburgh arriving on 4 August for unloading on 5 August.

Results

Full surveys by CTD were conducted in 27 lochs/voes as shown in the table below.

Loch	Date	Hydro-stations
Dales Voe	24/07/08	3
Laxfirth Voe	24- 25/07/08	3
Catfirth	25/07/08	3
Swining Voe	25/07/08	3
Collafirth Voe	25/07/08	3
Balta Sound	25/07/08	3
Burrafirth	26/07/08	3

Whalefirth Voe	26/07/08	3
Ronas Voe	26/07/08	3
Olnafirth	27/07/08	3
Vaila Sound	27/07/08	3
Sandsound Voe	27/07/08	3
Stromness Voe	27/07/08	3
Clift Sound	28/07/08	3
Loch Ewe	30/07/08	3
Loch Torridon	30/07/08	3
Loch Ainort	30/07/08	3
Loch Ailort	30/07/08	3
Loch Harport	01/08/08	3
Loch Boisdale	01/08/08	3
Loch Skipport	02/08/08	3
Loch Eport	02/08/08	3
Loch Maddy	02/08/08	3
Loch Seaforth	02 - 03/08/08	3
Loch Erisort	03/08/08	3
Loch Inchard	03/08/08	3
Loch Laxford	03/08/08	3

Continuous logging of surface salinity, chlorophyll and irradiance during the cruise from the on-board TSG, fluorometer and PAR sensor was successful and will provide additional regional background data for modelling purposes.

Zooplankton samples were collected from all the lochs and voes surveyed and will help to expand the sample inventory and enable a better description of Scottish inshore zooplankton communities.

14 Shetland Voes were sampled for harmful algal bloom species and algal toxins in plankton samples.

The nutrient analyzer was successfully used on board the *Alba na Mara* for the first time and was used to generate a data-set for accreditation purposes.

Matt Gubbins
18/05/09