Not to be cited without prior reference to Marine Scotland, Marine Laboratory, Aberdeen.

FRV *Alba na Mara*

Cruise 0311A

PROGRAMME

9-28 March 2011

Ports

Loading: Fraserburgh, 7 March 2011
Unloading: Fraserburgh, 28 March 2011

Half Landing: Montrose, 15 **OR** 16 March 2011

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 Marine Scotland's Working Time Policy (Lab Notice 34/03). 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 I Gibb and the Cruise Summary Report (old ROSCOP form) to M Geldart, within four weeks of a cruise ending. In the case of the Cruise Summary Report a nil return is required, if appropriate.

Estimated days per project: 20 days – MF0172

Personnel

S Greenstreet	SIC
J Clarke	
M Machairopoulou	
E Armstrong	9-15(16) March
C Greathead	9-15(16) March
P Boulcott	15(16)-28 March
D Demain	15(16)-28 March

Sampling Gear

- International Young Gadoid Trawl PT154 with 6 mm Codend;
- Jackson Rockhopper Demersal Trawl BT158 with 10mm Codend;
- Two 4' Sandeel dredges with 6mm cover and 6" teeth, spare tooth bars.

Equipment

Seabird CTD, Day Grab and Table, 2mm sieves, Dual Bongo net, 1m Ring Net.

Objectives

1. To undertake an acoustic survey of clupeid fish (and sandeels if present) in the water column using 38 and 120 kHz. Acoustic survey will be undertaken on route from Fraserburgh to the Tay. The standard six transects across the Wee Bankie, Marr Bank and Berwick Bank will be surveyed. Then transects surveyed in the outer Firth of Forth in November 2010 will again be steamed. Concentrations of fish will be sampled using the pelagic trawl. This survey work will be undertaken during the day between 0600 and 1800.

2. To conduct RoxAnn survey of the substrate along all acoustic survey track.

3. To conduct seabird at sea survey and survey of marine mammals along the acoustic survey track.

4. To assess abundance, length-frequency-distribution, weight-at-length, age-at-length and maturity-at-length of 2+ aged sandeels at previously established stations on the Wee Bankie, Marr Bank, Berwick Bank, and St Andrew's Bay using the sandeel dredge (undertaken at night between 1800 and 0600).

5. To assess abundance, length-frequency-distribution, weight-at-length, age-at-length and maturity-at-length of 1 group sandeels at each visited dredge station by means of random drift Day grab survey (undertaken at night between 1800 and 0600).

6. To assess abundance, length-frequency-distribution, and weight-at-length of demersal fish predators at 19 fixed stations in the area by demersal trawl survey. Stomach samples will be collected from the principal sandeel predators to assess diets and consumption rates.

7. To sample variation in water temperature, salinity and fluorometry through the water column using a Seabird CTD sampler at all demersal trawl stations and at approximately 24 locations between the demersal trawl stations.

8. To assess variation in the abundance and composition of the zooplankton community through a combination of acoustic survey and sampling using both the dual bongo net and the 1m ring net.

Procedure

Scientific equipment will be loaded onto *Alba na Mara* on 7 March. This includes all gear and equipment except the demersal trawl gear. Scientists will join the vessel by 1030 on 9 March and the vessel will then sail as soon as possible to make passage for St Andrews. Acoustic survey and seabird survey at sea will commence the following day, steaming the six main transects and some additional transect inside the Firth of Forth. Survey work will take place between 0600h and 1800h. Concentrations of pelagic fish will be sampled using the PT154, aiming to fish twice each day if possible. If time permits at the end of each day the 1m ring net will be deployed to sample larger zooplankton organisms. This acoustic survey work will require approximately 5 days.

Weather permitting therefore, *Alba na Mara* will be in Montrose sometime during the day of 15 March (or if weather has hampered work – 16 March) and the pelagic trawl will be exchanged for the demersal trawl. E Armstrong and C Greathead will leave the vessel and P Boulcott and D Demain will join.

On 16 March or on 17 March if weather has delayed the port call, *Alba na Mara* will depart Montrose in the evening to commence night-time operations for the next 3 nights. This work will involve deploying the 2m dredge at selected stations on the Wee Bankie and Marr Bank, and drift grab sampling at the three main Wee Bankie stations. Catches-at-length of sandeels in the dredge and grab samples will be quantified and sampled to assess weight-age- and maturity-at-length. Weather permitting, this dredge and grab work should be completed by the night of 18/19 March and the vessel will put into Montrose during 19 March to replenish water. If earlier work has been hampered by weather, then this dredge work might finish one night later and the port-call will take place on 20 March.

On 20 (or 21) March *Alba na Mara* will depart Montrose to commence demersal trawl survey. 19 stations will be fished. At each station the full catch, in terms of abundance at length, will be quantified. Further samples of selected species will be taken to determine weight, diet and food consumption rates at length. The CTD and Dual Bongo net will be deployed at each demersal trawl station, and at a further 25 intermediate hydrographic stations. Acoustic data will also continue to be collected during this part of the cruise to assess variation in the abundance and distribution of zooplankton. To ground-truth these data, it will be necessary to deploy the 1m ring net on occasion.

Any time spare after completion of demersal trawl and main hydrographic survey will be spent collecting further zooplankton acoustic data and ground-truthing data using the ring net. This work may be undertaken whilst on the return journey to Fraserburgh, splitting this journey over two days provided weather conditions permit lying at anchor off Stonehaven.

Alba na Mara will return to Fraserburgh by the evening of 27 March. The scientific equipment will be offloaded and scientists will depart the vessel on the morning of 28 March.

Normal contacts will be maintained with the Laboratory.

Submitted:
S Greenstreet
17 February 2011 (revision 4 March 2011).

Approved:
I Gibb
6 March 2011