P17/6

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

FRV *Alba na Mara*

Cruise 0710A

PROGRAMME

2-22 June 2010

Loading: Fraserburgh, 28 May 2010
Unloading: Fraserburgh, 22 June 2010

Half Landing: (provisional) Montrose, Tuesday 8 June

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.

Personnel

S Greenstreet	SIC
C Greathead	
E Guirey	
J Clarke	
E Armstrong	2-8 June
D Demain	8-18 June
J Dunn	18-22 June

Sampling Equipment

- International Young Gadoid Trawl PT154 with 6 mm Codend;
- Jackson Rockhopper Trawl BT158 with 10 mm Codend.
- Seabird CTD
- Water sample bottles
- Dual Bongo Net

Project Code

AE11d – 21 days

Objectives

1. To undertake an acoustic survey of sandeels and clupeid fish in the water column using 38 and 120 kHz. Concentrations of fish will be sampled using the pelagic trawl. Species composition and length frequency distributions of fish caught will be determined. Sub samples will be weighed and their otoliths removed to establish length-weight relationships and age composition. Stomach samples will be collected for diet analysis

2. To conduct a RoxAnn survey of the substrate in the study area to investigate variation in the sandbank structure between this and previous cruises.

3. To conduct a survey of seabirds using the study area, to determine their abundance and distribution, using standard census methods.

4. To record all sightings of marine mammals (number of animals, species if possible, and their location) observed during the course of the cruise.

5. To carry out a demersal trawl survey to determine the abundance and distribution of piscivorous fish predators in the area. At each trawl station the length frequency of all fish species caught will be determined. Sub-samples of cod, haddock, whiting, Norway pout, poor cod, common dab, long rough dab and grey gurnards will be weighed to determine length-weight relationships and stomach samples collected for diet and food consumption rate analysis.

6. To determine spatial variation in water temperature and salinity across the Wee Bankie/Marr Bank study area using a Seabird CTD sampler. Approximately 40 vertical dip stations will be sampled utilising the demersal trawl stations and additional locations mid-way between the trawl stations.

7. To undertake plankton sampling to determine spatial variation in the abundance of the potential prey of sandeels, herring and sprat.

Procedure

Scientific equipment will be loaded onto *Alba na Mara* on 28 May. Scientists will join the vessel by 1000 hours on the morning of Wednesday 2 June and the *Alba na Mara* will sail shortly thereafter, making for a suitable anchorage in the Firth of Forth. Between 3 and 7 June acoustic survey of pelagic fish abundance will be carried out between the hours of 0430 and 1530 hours, the vessel starting work each day so as to be on station by 0430h. The standard six transect steamed in previous cruises will again be surveyed. Concentrations of pelagic fish encountered on route will be sampled by pelagic trawl. It is anticipated that between two and three trawl operations will be required each day. Trawl samples will be worked up to determine the total catch at length of each species. Sub-samples of herring, sprats and sandeels will be weighed to determine length-weight relationships, and have otoliths removed for age composition assessment back at the laboratory. Stomach samples will also be collected for diet analysis. RoxAnn data will be collected along the same fish assessment acoustic transects to enable the development of seabed sediment maps. Seabirds-at-sea data will also be collected using standard transect census methods to determine the numbers of seabirds using the study area on a daily basis and their distribution over the area. The number, species (if possible) and position of all marine mammals observed throughout the entire cruise will be logged.

If the full five days are required for the acoustic/seabird survey work, *Alba na Mara* will steam into Montrose on the evening of 7 June (HW Montrose at 2250h) or early morning of

8 June (HW Montrose at 1050h) for a personnel and fishing gear change-over. On the morning of Tuesday 8 June the pelagic fishing gear will be exchanged for the demersal gear and E Armstrong will leave the vessel to be replaced by D Demain. The vessel will then sail either early after-noon or late evening of 8 June (HW Montrose at 2350h).

Demersal trawl survey will be undertaken between 9 and 17 June. A total of 19 trawl stations will be fished at a rate unlikely to exceed 3 per day. All these stations have been fished in previous cruises. Each catch will be worked up to determine numbers at length of all species caught. Trawl performance characteristics will be monitored using Scanmar equipment to enable swept area to be determined to convert catch abundances to point density estimates. Size stratified samples of cod, haddock, whiting, Norway pout, poor cod, common dab, long rough dab and grey gurnard will be weighed to determine their length-weight relationships and stomach samples collected for diet and food consumption rate analysis. Prior to each demersal fishing operation, the Seabird CTD sampler will be deployed. In addition, further deployments of the CTD will be made between fishing stations.

If the full nine days are required to complete the demersal trawl/hydrographic survey work then *Alba na Mara* will steam into Montrose during the early evening of Thursday 17 June (HW Montrose at 1730h) for a personnel exchange; D Demain will depart the vessel and J Dunn will join. *Alba na Mara* will then leave Montrose early in the morning of Friday 18 June (HW Montrose at 0545h).

If the acoustic and seabird survey is completed earlier (down-time for poor weather is included in the five day estimate) then the first visit to Montrose may be brought forward so that the gear and personnel changes might be made on the morning of Monday 7 June. The rest of the cruise schedule will then be moved forward accordingly. Similarly, the nine days allowed for hydrographic and demersal trawl survey also includes anticipated down-time for poor weather. This survey work could therefore also be completed earlier than planned and, under these circumstances, the second port call could also be made earlier.

For the days that remain following the second port call, *Alba na Mara* will undertake zooplankton survey, sampling locations previously sampled by either CTD, demersal trawl, or pelagic trawl. As many samples will be collected as possible in the time remaining. Plankton sampling will cease in the afternoon of 20 June and the vessel will steam north to Fraserburgh during 21 June. The scientific equipment will be offloaded at the earliest opportunity on Tuesday 22 June and the scientists will leave the vessel.

Normal contacts will be maintained with the Marine Laboratory.

Submitted:
S Greenstreet
6 May 2010

Approved:
I Gibb
14 May 2010

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

FRV *Alba na Mara*

Cruise 0710A

PROGRAMME AMENDMENT

S Hay will now replace J Dunn (18-22 June 2010).

I Gibb
10 June 2010