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

FRV *Alba na Mara*

Cruise 0909A

PROGRAMME

4 - 17 June 2009

Ports

Loading: Fraserburgh, 1 June 2009

Unloading: Fraserburgh, 17 June 2009

Half Landing: (provisional) Montrose, Wednesday 10 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 D Lichtman, 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
H Drewery	
C Greathead	
E Guirey	
L Morley	4-10 June
E Armstrong	10-17 June

Sampling Gear

- International Young Gadoid Trawl PT154 with 6 mm Codend;
- Jackson Rockhopper Trawl BT158 with 10 mm Codend.

Equipment

Seabird CTD, water sample bottles.

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.
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 whiting, haddock and cod, the main fish predators of sandeels. At each trawl station the length frequency of all fish species caught will be determined. Sub-samples of the three gadoids will be weighed to determine length-weight relationships. Sample will be retained for stomach analysis at a later date.
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.

Procedure

Scientific equipment will be loaded onto *Alba na Mara* on 1 June. Scientists will join the vessel by 1000 hours on the morning of Thursday 4 June and the *Alba na Mara* will sail shortly thereafter, making for a suitable anchorage in the Firth of Forth. Between 5 June and 9 June a total of 19 trawl stations will be fished. All these stations have been fished in previous cruises. Each catch will be worked up to determine numbers at length of all species caught. Fish gape measurements and prey size measurements will also be collected for certain species. Trawl performance characteristics will be monitored using Scanmar equipment to enable swept area to be determined. Catch size can then be converted to point density estimates. Size stratified samples of cod, haddock and whiting will be weighed to determine their length-weight relationships. Samples of these fish will be retained for analysis back at the laboratory to determine diet and food consumption rates, energy reserve status and age. 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. On completing the demersal fish survey, *Alba na Mara* will steam for Montrose to arrive in Montrose by Wednesday 10 June (Provisional). E Armstrong will travel to Montrose by laboratory car to join the vessel on the morning of Wednesday 10 June. L Morley will leave the vessel and use this car to travel back to Aberdeen.

Alba na Mara will commence acoustic survey work on Thursday 11 June. Acoustic survey work will continue over the next five days, mostly between 0430 and 1530 hours. The vessel will start work on each day so as to be on station by 0430 hours. A mini-logger will be attached to the acoustic towed-body so as to collect information regarding spatial variation in water temperature at a depth of around 5 m. If time permits additional survey track around the Wee Bankie will be steamed to examine the diel behaviour of sandeels in relation to time

of day, stage of tide, and hydrographic conditions. Concentrations of pelagic fish encountered 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. 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.

Acoustic survey work will cease in time to arrive in Fraserburgh by 17 June. The scientific equipment will be offloaded at the earliest opportunity on Wednesday 17 June, and the scientists will leave the vessel.

Normal contacts will be maintained with the Marine Laboratory.

Submitted:
S Greenstreet
29 April 2009.

Approved:
I Gibb
1 May 2009.