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

FRV *Alba na Mara*

Cruise 1010A

PROGRAMME

30 July – 13 August 2010

Ports

Loading: 27 July, Fraserburgh
Unloading: 13 August, Fraserburgh

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:

M Breen	
R Kynoch	(30 July – 5 August 2010)
K Summerbell	(5 – 13 August 2010)
C Hall	
J Mair	
P MacDonald	(Visitor: NAFC (Shore-based 30 July – 5 August 2010; Onboard 5-13 August 2010)
A Beveridge	(30 July – 5 August 2010)

Costs to Project: 15 days – MFO600

Fishing Gear:

- BT 199 Jackson R.Hopper 3T trawl
- 3 x 42mm codends
- Trawl doors (V 39 & 40)
- Groundgear (centre: 12" hoppers; wings 10" hoppers)
- Sweeps – 20mm x 55m (4 of)
- Bridles – upper: 16mm x 36.6mm (4 of); lower: 20mm x 36.6m (4 of)
- Backstrops – 18mm x 7.5m (4 of)
- Pennants - 16mm x 9.5m (4 of)
- Floats – 8" (25 on net; 12 spare)
- Patching and twine
- Scanmar (headline height/depth, net speed, wing spread, door spread & bottom contact)

Scientific Equipment:

- RCTV system
- Mini Cameras (6 x Bowtech Aqua Vision L3C-550, plus Bowtech Navigators, as backup)
- Flashback recorders & housings (3 x shallow water; 3 x deepwater)
- Camera frames (3 x low-profile design; 3 x deepwater design)
- Catch bins
- Catch sorting table

Objectives:

1. Develop an experimental trawl with vertical separator panels and three separate codend to enable quantification of the horizontal distribution of fish entering the mouth of the net;

2. Quantify the horizontal distribution of fish entering the mouth of the net (in particular cod, megrim AND monkfish) with consideration to possible explanatory variables; and

3. Describe the behaviour of fish species entering the mouth of the net (in particular cod, megrim AND monkfish) with reference to explaining their horizontal distribution as described in 2).

Protocols

Equipment will be loaded at Fraserburgh on 27 July 2010. Additional preparation of the fishing gear and RCTV system will continue on 28 & 29 July, as required.

Staff will travel to Fraserburgh on the morning of 30 July. The vessel will then travel to Shetland (Scalloway) to collect visiting staff (P MacDonald; NAFC). The cruise will end in Fraserburgh on 13 August 2010.

Gear Development

The first part of the cruise (estimated to be ~5 days), will focus on the development and testing of the "3T trawl". Behavioural data (catch & video) will still be collected during this part of the cruise but the priority for each haul will be given to gear development.

Behavioural Observations

Once the gear development is complete, the remainder of the cruise will be used to investigate the behaviour of fish immediately ahead of the trawl. Behavioural data, in terms of horizontal (& vertical) distribution of fish as they enter the net, will be collected both quantitatively (from catch data in the "3T Trawl") and qualitatively (using cameras in fixed positions on the net). Any qualitative data will be used to substantiate observations from the catch data and investigate likely behavioural mechanisms. Particular attention will be made to the behaviour of cod, megrim and monkfish.

Video cameras will be placed in fixed and co-ordinated positions on the net. Two tactics will be adopted for these cameras positions:

1. To provide a "panoramic" overview of the fish and their movement as the net approaches (how "panoramic" will clearly be dependent on ambient conditions – i.e. turbidity & light levels); and

2. To view fish entering the trawl at close range (<3.0m focal length) to allow individual fish to be identified to a species level.

All cameras will be time-synchronised and have overlapping fields of view, to allow for the detailed tracking of the behaviour and movement (using camera type 1) of positively identified fish (using camera type 2).

The optimum positions for the cameras will be selected before the cruise (where practical). These positions will be marked on the net and fitted with reinforcing, etc, to aid quick and secure attached of the cameras and recorders. Purpose build, low-profile camera frames will be used, which will allow camera angle adjustment, where necessary.

Handling the Catch

There will be three codends per haul. Although catches in individual codends are likely to be relatively small, it will be essential to manage the catch carefully to ensure accurate recording of catch data. The codends will be colour-coded on the selvages to ease identification. Half-height catch bins will be used on deck for receiving and storing the catch from individual codends, while the remainder of the catch is sorted and measured. The catch will be sorted into key species, weighed and individual total length measurements recorded.

Normal contacts will be maintained with the laboratory.

Submitted:
M Breen
16 July 2010

Approved:
I Gibb
23 July 2010