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FRV *Alba na Mara*

Cruise 1011A

PROGRAMME

27 July – 10 August 2011

Ports

Loading: 24 July, Fraserburgh

Unloading: 10 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

K Summerbell

B O'Neill (27 July – 2 August 2011)

C Hall

J Mair

A Edridge (2 August – 10 August 2011)

P MacDonald (Visitor NAFC, 28 July - 8 August 2011)

Costs to Project: 15 days – SU004

Fishing Gear

BT 199 Jackson Rock Hopper 3T trawl

3 x 42mm codends

Trawl doors

Groundgear (centre: 12" hoppers; wings 10" hoppers)

Sweeps – 20mm x 55m (4 of)

Bridles – upper: 16mm x 36.6m (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/symmetry, wing spread, door spread, double distance panel spread & bottom contact)

Scientific Equipment:

RCTV system

Mini Cameras (6 x Bowtech Aqua Vision L3C-550, and Bowtech Navigators)

Flashback recorders & housings (3 x shallow water; 3 x deepwater)

Camera frames (6 x low-profile design; 3 x deepwater design)

Catch bins

Catch sorting table

Objectives:

1. Examine the performance of the BT199 3T trawl, by quantifying the dimensions of the entrances to the three compartments in the mouth of the trawl, and monitoring the trawls symmetry;
2. Quantify the horizontal distribution of fish entering the mouth of the net (in particular cod, megrim and monkfish) via catch rates.
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.

Protocols

Equipment will be loaded at Fraserburgh on 24 July 2011. Additional preparation of the fishing gear and RCTV system will continue on 25 and 26 July, as required.

Staff will travel to Fraserburgh on the morning of 27 July. The vessel will then travel to Scalloway harbour to collect visiting staff (P MacDonald, NAFC). Trawling will be conducted in waters around Shetland (Charts 1-3). Alba na Mara will sail to harbour for the evening of 2 August to exchange scientific staff (B O'Neill for A Edridge). On 8 August P MacDonald will be dropped off at Scalloway or Lerwick harbour before sailing back to Fraserburgh where the cruise will end on 10 August 2011.

Trawl Observations

The first part of the cruise (estimated to be ~1-2 days), will focus on monitoring the "3T trawl". This will involve the RCTC and scanmar systems quantifying the dimensions of the entrances to the three compartments. The Auto-Trawl system will also be monitored in association with a scanmar symmetry unit mounted on the headline of the trawl, to verify the trawl is fishing correctly. Behavioural data (catch and video) will still be collected during this part of the cruise.

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 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. 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 and light levels).

All cameras will be time-synchronised and have overlapping fields of view, to allow for the detailed tracking of the behaviour and movement. Where practical, the camera positions will be marked on the net and fitted with reinforcing prior to the cruise, to aid quick and secure attachment of the cameras and recorders. Purpose built, low-profile “pyramid” 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. The catch will be sorted into key species, weighed and individual total length measurements recorded.

Areas of Operation

Four potential sites have been identified for fishing operations (see Charts 1-3). All sites are on clean ground with established fishing tows. The trawl observation phase will be primarily based at the Scalloway Deeps site as it is relatively shallow (<100 m) and will make deployment and operation of the RCTV system easier. Should the catches of fish prove to be inadequate in this area, operations will move to the offshore sites for the second phase of the cruise.

Normal contacts will be maintained with the laboratory.

Submitted:
K Summerbell
24 June 2011

Approved:
I Gibb
19 July 2011

Chart 1: Inshore fishing grounds, Scalloway Deeps (site 1)



Chart 2: Inshore fishing grounds, St Magnus Bay (site 2)



Chart 3: Offshore fishing grounds (sites 3 & 4)

