P17/8

Not to be cited without prior reference to FRS Marine Laboratory, Aberdeen

Charter Vessel *Enterprise* FR 365

Cruise 0104H

PROGRAMME

6-25 July 2004

Ports

Loading: Fraserburgh, 5 July
Departure: Fraserburgh, 6 July
Half-Landing: Ullapool, 16 July (approx)
Return: Fraerburgh, 25 July
Unloading: Fraserburgh, 26 July

***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 FRS' Working Time Policy (which is published on the Intranet). In addition, the Scientist-in-Charge must formally review the risk assessments for the cruise with staff on-board before work is commenced.**

Personnel

P Fernandes	(SIC)
F Armstrong	
E Hatfield	
D Beare	(6-16 July)
O Goudie	(6-16 July)
F Burns	(16-25 July)
C Millar	(16-25 July)
C Embling	St Andrews University

Project: RV0407 – 20 days

Fishing Gear

Midwater Trawl PT160 x 3
4.8 m doors
3 m doors

Objectives

1. To conduct an acoustic survey to estimate the abundance and distribution of herring in the north western North Sea and west of Scotland (ICES area VIa(N) as part of the ICES International North Sea Herring Acoustic Survey.

2. To obtain samples of herring for biological analysis, including age, length, weight, sex, maturity and ichthyophonus infection.

3. To obtain samples of herring in support of the WESTHER project (biological and photographic data).

4. To collect passive acoustic data for the detection of cetaceans.

Procedure

All gear will be transported to Fraserburgh by lorry and furniture van on 5 July and gear will be loaded onto the vessel. Installation and testing will take place on 5 July. Scientific staff will travel by mini-bus to Fraserburgh to join the vessel on 5 July and the vessel will depart in the early hours of Tuesday 6 July morning.

The survey will be carried out within an area bounded by 56°–60°N and 03°–10°W. Echointegration will be carried out at 38, 120 and 200 kHz on a 24 hour-a-day basis. Data from the times between 2300 and 0300 hours will not be used for stock assessment. Passive acoustic data will be collected by towing a hydrophone array behind the vessel: the array will be recovered prior to trawling. Fish shoals seen on the echosounder will be identified using a pelagic trawl. Trawling operations will be carried out between two and four times per day, and not between 2300 and 0300 hours. Samples of all species caught will be measured for length and weight to establish a length weight relationship. Otoliths will be collected from a sub-sample of the herring to determine age. Maturity state will also be recorded. Presence of *Icthyophonus* infection will be recorded.

The survey will involve following a pre-set survey pattern, at normal steaming speed (approximately 10 knots). A half landing will take place at an approximate half way stage in Ullapool; this is to allow the transfer of staff. It is intended to complete the survey in the north-eastern part of the survey area to coincide with the acoustic survey by FRV *Scotia* in the adjacent area (ICES division IVa).

All gear will be unloaded in Fraserburgh on 26 July for return to the laboratory by lorry and furniture van. Staff will return on the previous day by minibus. Normal contact will be retained with the Marine Laboratory and the appropriate Fisheries Officers.

Working Time Directive Implications

1. Rest Period Provision

Staff will be divided into acoustic teams (P Fernandes, E Armstrong, C Embling and E Hatfield) and trawl teams (O Goudie, F Burns, D Beare and C Millar). The trawl team will work from 0800 to 2100 each day as required, with at least three periods of 30 minutes rest within that working time. Any fish caught between the hours 2100 and 0800

will be put on ice for the team to process in the morning. The acoustic team will work a consistent rota of paired 10 hour shifts. P Fernandes and C Embling will work from 0300 to 1300; and E Armstrong and E Hatfield from 1300 to 2300; E Armstrong will work an additional hour to back up data between 2300 and 2400. E Hatfield may be required to participate in biological sampling (particularly at the start) so others may be required to assist with her acoustic watch. Both acoustic watch pairs will work a 2.5-hour-on/2.5-hour-off system of acoustic watches and will assist the trawl team as required.

2. Rest Day Provision

Staff will be required to stand down for a full 24 hour period associated with the half landing; this will begin on transit to Ullapool and may include passage back to track from the half landing.

J A Morrison
2 July 2004