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MRV *Scotia*

Survey 0613S

PROGRAMME

27 May – 15 June 2013

Loading: Aberdeen 24 May 2013
Sailing: Aberdeen 27 May 2013
Half landing: Belfast (flexible 3-5 June)
Unloading: Aberdeen 15 June 2013

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

A Weetman	(SIC)
C Shand	
C Mesquita	
M Inglis	
G McAllister	
G Jones	(Part 1)
J Hunter	(Part 2)
N Collie	(Part 1)

Estimated days by project: 8 days RV1307 20214 (North Sea)
12 days RV1308 20215 (West Coast)

Gear

2 x BT175 80mm prawn trawls (one with 8" hoppers)
2 x Day grabs and 1 x sieving table
Towed UWTV sledge and the UWTV drop frame (large frame version)
2 x 600m umbilical towing cables and associated TV equipment (including back up)

Objectives

1. To obtain estimates of the abundance and distribution of *Nephrops* burrow complexes at Fladen, in the North Minch, the South Minch, the Firth of Clyde and at Devil's Hole. If time and weather permits, stations in the Sound of Jura may also be surveyed.

2. To use the TV footage to record the occurrence of other benthic fauna as well as evidence of commercial trawl activity.

3. To collect sediment samples at each station.

4. To carry out trawling for *Nephrops*, based on one haul in each sediment stratum in each of the main survey areas, to obtain samples of *Nephrops* for size composition analysis.

5. To collect samples of *Nephrops* for comparison of reproductive condition and morphometrics in each of the different survey areas (functional units).

Procedures

The main areas in which the survey will take place have been surveyed on annual basis for a number of years and are shown in Figure 1. A combination of two approaches will be used to derive the survey positions. The majority of stations will be generated by employing the traditional stratified random technique in all areas except the North Minch, where stations will be created using commercial effort based data obtained from the Vessel Monitoring System. The location of all TV stations will be provided ahead of the survey.

Weather permitting, it is planned that the vessel will first steam to the deep water in the Southern Trench (in the East of the Moray Firth) where a training session in deploying the sledge, and approximately 450 m of cable, will be carried out. The sledge will then be recovered and when this procedure is carried out to the satisfaction of all involved, the vessel can then progress on to the first of the *Nephrops* burrow TV stations at the SW edge of the Fladen ground. Once the work at Fladen has been completed, the vessel will then steam around to the west coast and survey stations in the North and South Minches.

The progress of the work to this point in the cruise will determine if the vessel continues with the survey and completes all the stations in the Clyde area before heading to Belfast for the half landing, or if the vessel will head to port first and then complete the Clyde survey following the half landing.

At the half landing there will be a change of scientific staff where N Collie will leave the vessel and J Hunter will join the survey for the remainder of the trip.

If time and the weather permits the sound of Jura will then be surveyed followed by the remaining South and North Minch stations whilst working north. Any additional stations in Fladen (if required), or those not covered on the first leg of the survey, will be completed before heading to the final survey area at the Devils Hole.

When on station, sledge deployments and TV observations will be carried out 24 hours a day. Three teams, each comprising of two people, will each be working eight hour shifts and be involved in deploying and recovering the TV equipment, recording data and liaising with the ship's compliment. There will be a requirement for staff to review video footage at sea outwith their shift period, as well as assisting in working up trawl catches and data entry. All work will be carried out in accordance with WTD regulations. Staff teams on each shift, watch leaders and the shift patterns will be provided to the ship prior to sailing.

At each TV station a video camera mounted on to the TV sledge will be towed along the seabed for approximately ten minutes – the ship's dynamic positioning will be required for this. Observed *Nephrops* burrows, surfaced *Nephrops* and other benthic fauna will be recorded onto DVD for analysis. The depth and distance travelled by the sledge, as well as camera height from the sea bed will be recorded automatically. Where practical sediment

samples will be taken using the mini van Veen grab mounted on the sledge. However, it may be necessary to use the Day Grab on occasion, if the mini van Veen fails. All sediment samples will be frozen.

Trawl caught samples of *Nephrops* will be collected and information on size composition, maturity and morphometrics will be recorded. Up to five trawls may be made in each of the main areas surveyed. Trawls will be no longer than one hour long. There will be a requirement for the trawl to be cleaned by 'streaming' it behind the vessel for 15 minutes between the main fishing areas, as well as a final, more prolonged clean at the end of the cruise.

Normal contacts will be maintained with the Laboratory.

Submitted:
A Weetman
21 May 2013

Approved:
I Gibb
22 May 2013

Survey areas for Scotia 0613S