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## **MRV *Alba na Mara***

Survey 0118A

### **PROGRAMME**

6-22 January 2018

### **Ports**

**Loading:** Fraserburgh, 19 December 2017

**Sailing:** Fraserburgh, 6 January 2018

**Half Landing:** Date and location TBC

**Unloading:** Fraserburgh, 22 January 2018

In setting the survey 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 survey with staff on-board before work is commenced.

In the interest of efficient data management it is now mandatory to return the Survey Report, to I Gibb and the Survey Summary Report (old ROSCOP form) to M Geldart, within four weeks of a survey ending. In the case of the Survey Summary Report a nil return is required, if appropriate.

### **Personnel**

A Weetman	SIC
K Boyle	(Part 1)
M Watson	(Part 1)
J Hunter	(Part 2)
G McAllister	(Part 2)
I Young	(TBC -Part 2)

### **Gear**

Large TV drop frame  
TV sledge  
1 x 600m umbilical towing cable  
1 x armoured cable  
Video cameras and associated equipment (plus backup)  
Four lasers and 60cm bracket for the drop frame  
1 x BT201 prawn trawl (plus minimal spares)  
Day grab and table  
Prawn sorting table  
Go Pro deep water housing

**Estimated Days per Project:** 17 Days 20159

## Objectives

- To obtain estimates of the *Nephrops* burrow abundance to the north of Jura using the sledge UWTV system.
- To compare two different methodologies to establish *Nephrops* burrow abundance (using the sledge and drop frame UWTV systems).
- Weather permitting, to obtain estimates of the *Nephrops* habitat distribution in the area west of Mull and to the east of Coll and Tiree, using the drop frame UWTV system and sediment grabs.
- To obtain estimates of the *Nephrops* burrow abundance in the Inner Sound using the most appropriate UWTV system.
- To use the video footage to record occurrence of other benthic fauna and evidence of commercial trawling activity.
- To collect trawl caught samples of *Nephrops* for comparison of reproductive condition and morphometrics.

## Procedure

Survey activity will be very dependent on the weather, and it may be required to alter the work plans during the survey.

The priority of this survey will be to study in greater detail than is presently undertaken on the summer UWTV *Nephrops* survey on MRV *Scotia*, the area to the north of Jura using the UWTV sledge. The location of the survey sites will be provided ahead of the survey.

The second objective is to follow on from work carried out in previous surveys, and spend at least two days performing comparative trials between the drop frame and sledge UWTV systems in an appropriate area in the South Minch. The sledge will be deployed five times on known *Nephrops* grounds, in parallel tracks 200 m long and approximately 50 m apart. The drop frame will then be deployed over the same ground a further three times, with video of the sea bed being recorded at all times with both methods. This work requires additional data to generate a larger data set to allow for a more robust analysis of the results. It is hoped that in future this drop frame approach will be able to provide quantitative *Nephrops* burrow abundance data in areas where the sledge cannot be deployed. Details of the locations where the trials are to be carried out will be discussed with the ship's officers during the survey, and will depend on weather and survey progress.

Weather permitting, the third objective involves habitat mapping work, and will be carried out in the area between Mull, Coll and Tiree, using the drop frame UWTV system. This continues the work first started in 2014 which is aimed at mapping the distribution of muddy habitat suitable for *Nephrops* in the South Minch in which the British Geological Survey has little or no data. Site locations will be provided prior to the cruise.

Each survey site will be located near to the boundary of the suspected *Nephrops* ground. The drop frame will be deployed to provide a visual record of the seabed type as the ship drifts over the ground.

The search path will continue in one direction until the presence or absence of muddy sediment becomes apparent. All video footage will be recorded onto DVD and all significant

observations will be recorded manually. These observations will include the boundary of the muddy sediment, the point where *Nephrops* burrows begin to appear or disappear, and any signs of anthropogenic activity.

The distance between, and the duration of each of these deployments will vary depending on the environmental conditions, obstructions (creels, fish farms, etc.), the size of the survey area and how quickly the boundary between *Nephrops* and non-*Nephrops* habitat is detected.

A Day Grab will be deployed at a suitable point along the track to obtain a sediment sample, and on recovery, the sample will be frozen.

Depending on the time available and having completed the previous objectives outlined above, it is hoped to be able to survey the Inner Sound using the most appropriate system (depending on creel densities in the area) for *Nephrops* burrow abundance. This will involve a standard abundance tow, in that the survey positions will be randomly generated (and supplied prior to the survey), with each tow lasting ten minutes, with the footage being recorded to DVD and the other essential data being recorded directly to PC.

Trawling will take place when appropriate, with length, weight, sex and morphometric data being collected for DCF and MSS purposes.

Alternative work plans have been prepared in case the survey is unable to sail west due to poor weather conditions, and will be discussed with the ship's master prior to sailing.

The date and port for the half landing will be dependent on the location and progress of the survey programme, but using the facilities at Kyle of Lochalsh somewhere between the 12-15 January 2018 would seem most likely at this time.

## **General**

TV work will take place during daylight hours. There may be a requirement for some trawling to take place in the evening. On days where trawling will take place, work patterns will be arranged so as not to exceed WTD recommendations.

Normal contact will be maintained with the laboratory.

Submitted:  
A Weetman  
22 November 2017

Approved:  
I Gibb  
12 December 2017