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MRV *Alba na Mara*

Survey 0117A

PROGRAMME

4-20 January 2017

Ports

Loading: Fraserburgh, 20 December 2016
Sailing: Fraserburgh, 4 January 2017
Half Landing: Date and location TBC
Unloading: Fraserburgh, 20 January 2017

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
M Inglis	(Part 1)
M Watson	(Part 1)
J Hunter	(Part 2)
G McAllister	(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* habitat distribution in the Inner Sound, to the east and south east of Raasay, using sediment grabs and underwater cameras.

- Weather permitting, to obtain estimates of the *Nephrops* habitat distribution to the east of Coll, the north west of Tiree and/or the west of Skye, using sediment grabs and underwater cameras.

- To obtain estimates of the distribution and abundance of *Nephrops* within these areas using underwater video cameras.

- To compare two different methodologies to establish *Nephrops* burrow abundance (sledge compared to drop frame).

- 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

The priority of this survey continues the work previously carried out in the sea lochs of the South Minch between 2014 and 2016 (0114A, 0115A and 0116A) where the extent of the muddy *Nephrops* habitat was mapped in areas where there is little or no BGS data available. The findings from earlier work in the North Minch were presented at WKNEPH 2013, and the outcomes from these South Minch surveys will also be presented a future WGNEPS meeting. This information will assist in providing advice in determining the extent and influence of *Nephrops* habitat in the sea lochs and areas of open water of the South Minch (Functional Unit 12), where previously little or no relevant information was available.

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 significant observations will also be recorded manually. These observations will include the muddy sediment boundary, 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.

Once an area has been satisfactorily surveyed to establish the extent of the muddy habitat, depending on available time and the weather and sea conditions, a selection of stations may also be surveyed for *Nephrops* abundance, whereby the drop frame will be deployed over known *Nephrops* grounds. The vessel will drift over the ground whilst a 10 minute recording is made of the sea bed, during which time the number of *Nephrops* burrow complexes observed will be

recorded. A sediment grab will be required following each of these operations. Due to the high probability of creels present in the proposed survey areas the drop frame will be used in preference to the sledge.

The areas to be surveyed will be defined by VMS, observer and SCOTMAP data but more specific details will be discussed with the ship's officers prior to sailing.

If time and weather conditions permit, as well as the objective described above, in a separate exercise, a gear trial to record the abundance of *Nephrops* burrow complexes observed on the same ground using the drop frame and sledge will be carried out. 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 approach has previously been trialed, however, further repetitions are required 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 location where the trial is to be carried out will be discussed with the ship's officers during the survey.

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

The date and port for the half landing will be dependent on location and progress of the survey programme.

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
24 November 2016

Approved:
I Gibb
20 December 2016