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MRV *Alba na Mara*

Survey 0116A

PROGRAMME

6 - 22 January 2016

Ports

Loading: Fraserburgh, 18 December 2015

Sailing: Fraserburgh, 06 January 2016

Half Landing: Oban, date TBC

Unloading: Fraserburgh, 22 January 2016

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 (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)
J. Hunter (Part 1)
L. Blackadder (Part 2)
N. Collie (Part 2)
M. Watson (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 bracket for the drop frame
1 x BT201 prawn trawl (plus minimal spares)
Day grab and table
Prawn sorting table
Large plankton bongo frame
Scanmar depth units
Flowmeters
Go Pro deep water housing

Estimated Days per Project: 17 days, 20159

Objectives

- To obtain estimates of the *Nephrops* habitat distribution in the open waters to the south of Mull in the South Minch, using sediment grabs and underwater cameras.
- To obtain estimates of the distribution and abundance of *Nephrops* within this area 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.
- To deploy the large plankton bongo frame in the Sound of Canna to obtain sea pen larvae.

Procedure

The priority of this survey continues the work previously completed in the sea lochs of the South Minch in 2014 and 2015 (0114A and 0115A) 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 be presented at WGNEPS 2016. This information will assist in determining the extent and influence of *Nephrops* habitat in the South Minch sea lochs and areas of open water, on the *Nephrops* management advice for the overall South Minch area (Functional Unit 12), where little or no BGS data is available

Each survey site will be located near 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 significant observations will be recorded on DVD as well as manually. These observations will include the muddy sediment boundary, the point where *Nephrops* burrows begin to appear or disappear, and any signs of fishing 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 and on recovery the sediment 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 conditions, a selection of stations will also be surveyed for *Nephrops* abundance, whereby the drop frame will be deployed over known *Nephrops* grounds. The vessel will drift over the grounds whilst a 10 minute recording is made of the sea bed, during which time the number of *Nephrops* burrow complexes will be recorded. A sediment grab will be required following each of these operations. The number of TV stations to be completed will be determined by the extent of the muddy grounds and time available. 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 area to be surveyed will be defined by VMS, observer and SCOTMAP data but will be located between Mull and the known muddy habitat north of Jura. 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 observe the abundance of observed *Nephrops* burrow complexes between the drop frame and sledge will be carried out. The sledge will be deployed five times on known *Nephrops* grounds, in parallel tracks 200m long and approximately 50m 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 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 experiment location will be discussed with the ship's officers during the survey.

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

If sea conditions permit, a day will be spent deploying the large bongo plankton net up to three times in the Sound of Canna. Oblique tows at 2.5knots will be carried out using the hydro winch. The contents of the cod end will be preserved in isopropanol and ethanol. All COSHH and appropriate risk assessments will be provided prior to sailing. The bongo frame will be rigged by a member of the Planning and Environmental Advice Group from MSS prior to sailing.

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
18 November 2015

Approved:
I. Gibb
03 December 2015