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MRV *Alba na Mara*

Survey 0120A

PROGRAMME

6-22 January 2020

Ports

Loading: Fraserburgh, 18 December 2019

Sailing: Fraserburgh, 06 January 2020

Half Landing: Gairloch/Kyle of Lochalsh (**TBC**), 13 January 2020

Unloading: Fraserburgh, 22 January 2020

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

Gear

Large TV drop frame

TV sledge

Static time lapse camera frame

1 x 600m umbilical towing cable

1 x armoured cable

Video cameras and associated equipment (plus backup)

Stand-alone time lapse stills camera, recorder and power supply (for static camera frame)

Four lasers and 60cm bracket for the drop frame

Adjustable laser bracket

1 x BT201 prawn trawl (plus minimal spares)

Day grab, sieves and table

ROV Video Ray model 3

Prawn sorting table

Go Pro deep water housing

Estimated Days per Project: 17 Days 20159

Objectives

- To obtain video footage from *Nephrops* grounds using adjustable lasers mounted on the TV sledge in able to estimate *Nephrops* burrow entrance size.
- To compare two different methodologies to establish *Nephrops* burrow abundance (using the sledge and drop frame UWTV systems).
- To monitor burrow reconstruction following trawl activity.

- To trial the OTAQ high definition camera.
- To observe burrowing fauna on *Nephrops* grounds using the static, time lapse camera.
- To use the video footage to record occurrence of other benthic fauna and evidence of commercial trawling activity.
- To stream the trawl to adjust warp spooling.
- To collect trawl caught samples of *Nephrops* for comparison of reproductive condition and morphometrics.
- To record and collect any trawl caught marine litter.

Procedure

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

On leaving port, the vessel will head to the Southern trench and shoot the trawl, paying out as much warp as possible. The trawl will then be recovered immediately allowing for adjustments to be made to the spooling process as required by the vessel.

The vessel will then head west to Loch Torridon, where potential sites for deploying the static camera frame will be surveyed using the ROV. Once a suitable site is selected the frame, equipped with a time lapse camera, flash and power supply, will be lowered onto the seabed on *Nephrops* grounds. Depending on the weather and progress with the work schedule, this frame will remain in place until the day before the half landing, when the frame and camera will be recovered, the data downloaded and then returned to the seabed until the work on the west coast has been completed near the end of the survey.

Following the deployment of the time lapse camera, the next task during the first half of the survey will be to carry out burrow recovery trials at two sites. Ideally this work will be carried out in the southern end of the Inner Sound; however, this will depend on the availability of a sufficiently large enough area, free from creels and other potentially high risk objects – a visual inspection of the area will be required before any work is undertaken. Initially the operation will involve carrying out five standard sledge tows on known *Nephrops* grounds, 500 m apart in a linear path at both of the trawl sites. Following the sledge work the trawl will be deployed over the areas previously surveyed by the sledge. Each of the sites where the sledge was deployed will be revisited on a regular basis (where practicably possible) over the remaining days before the half landing and the sledge redeployed on the original positions. The cod end will remain open during the trawls in an effort to return as many live animals (i.e. *Nephrops* and other species) to the grounds as possible to maximize the potential for burrows to be re-excavated. This work is an extension to similar trials carried out on 0119A.

During the burrow recovery trials, a high definition camera will be attached to the TV sledge to record footage in parallel to the standard analogue Konesberg camera used in UWTV surveys. A comparison of the two formats will be undertaken and examined for quality control purposes.

Following the recovery and redeployment of the static camera frame the vessel will then head to port for the half landing where a change of scientific and engineering staff will take place.

Comparative trials between the drop frame and sledge UWTV system will be carried out during the second half of the trip. This work will be undertaken at several sites in the Sound of

Raasay and the Inner Sound (as time and weather permits) by deploying the sledge 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 and at 90° to the direction that the sledge travelled, with video of the sea bed being recorded at all times with both methods. This work will be a continuation of work completed on previous surveys. Precise details of the locations where the trials are to be carried out will be discussed nearer the time with the ship's officers and be dependent on weather, commercial activity and habitat suitability.

Throughout the survey, two lasers on an adjustable bracket will be attached to the sledge. The distance between the lasers will be adjusted between deployments and provide a comparative scale to estimate burrow size.

Time and weather permitting, trawling may take place and all *Nephrops* caught during the trawls will be assessed for morphometric, weight, maturity and sex data. All landed litter will be recorded and returned to port.

All sediment samples obtained during the survey will be frozen.

The half landing is proposed for 13 January at either Gairloch or Kyle of Lochalsh, depending on the weather and progress with the work.

General

No chemicals will be required on board for this survey.

TV work will take place during daylight hours.

Normal contact will be maintained with the laboratory.

Submitted:
A Weetman
4 December 2019

Approved:
I Gibb
05 December 2019