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MRV *Scotia*

Survey 1420S

PROGRAMME

24 September – 9 October 2020

Ports

Loading: Ullapool, 22 September 2020

Unloading: Aberdeen, 09 October 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 (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.

Deep Eco Survey

Estimated Days per Project: 16 days – SP02Q0/20113

Camera Gear:

VMUX towed video chariot with HD camera system and integrated CTD
Dropframe with HD camera system and integrated CTD
Ranger 2 USBL positioning system

Fishing Gear:

2 x Jackson BT 184 bottom trawl
2 x ground-gear bag nets (for centre section only)
2 x pairs Morgere ovalfoil trawl doors
2 x Agassiz benthic sampling trawl
Scanmar trawl sensors
Bottom contact sensor
Conductivity/depth/temperature logger (CTD DST logger)

Other:

Van Veen Grab
Day grab

Objectives:

1. To collect digital still images and video footage of the seabed from inside and outside the Haddock Box (RHB).

2. To assess the bathymetric distribution of haddock and deepwater species including invertebrates by carrying out a downslope transect of trawls on:
 - (a) The eastern slope of Rockall Bank at the approximate isobaths of 300 m, 500 m, 1000 m, 1500 m, 1800 m and 2000 m.
 - (b) The western or south-western slope of Rockall Bank at regular 100 m isobaths between 300 m and 1200 m inclusive.
3. To record marine litter at each trawl station for MSFD.

General:

Collection of still and video footage will allow an assessment of whether the RHB closure has also affected a change in the benthic communities on account of reduced trawling pressure. Given the current adoption of area based measures in marine conservation (e.g. Marine Protected Areas) and the period of time the RHB has been in place, a study of this type potentially offers insight into what might occur in inshore areas that also receive protection. Trawl sampling will cover the southern Rockall Slopes to compliment similar studies undertaken in 2011 and 2012 on the northern slopes (Figure 1) and will allow a faunal comparison of Rockall with the Hebridean Shelf slope, Rosemary Seamount, and the Faroe-Shetland Channel for which a large dataset already exists within MSS. Trawl sampling will not be undertaken in any protected areas other than the RHB.

Specific

Objective 1:

Digital still images and video footage of the seabed from inside and outside the Haddock Box will be collected using a random stratified sampling design. If sea conditions allow then the priority will be image collection using the Dropframe on trawled grounds outside the haddock box and on grounds within that are untrawled since closure. Where conditions prove unsuitable for Dropframe work but would still allow VMUX towed video chariot deployments the focus will shift to delineating the distribution boundaries of the recently discovered pennatulid *Ptillella greyi* and other benthic species in the central and eastern areas of the Haddock Box. Environmental parameters will be collected using an integrated CTD logger on both the Dropframe and VMUX chariot.

Objective 2:

The fauna of a downslope transect in the approximate region of Transect 4 (Figure 1) will be examined by means of completing 30 minute trawls at each of 300 m, 500 m, 1000 m, 1500 m, 1800 m, and 2000 m isobaths. These isobaths will provide comparability with data from the long-term MSS Deepwater Timeseries surveys on the eastern side of the Rockall Trough. Where conditions and seabed suitability allow, trawls on isobaths intermediate to those above will also be undertaken.

A second transect in the approximate region of either Transect 5 or Transect 6 (whichever is found to be most suitable) will be studied by means of completing 30 minute trawls at regular 100 m depth intervals between the 300 m and 1200 m isobaths.

Secondary objectives:

If time and circumstances permit -

- (a) Trawls along the remaining transect (Yransect 5 or 6) will be similarly undertaken.
- (b) An area of particular Loliginid squid abundance in the vicinity of Rockall Islet will be visually examined with either Dropframe or VMUX chariot.

Actual trawl locations down each transect will be decided during survey 1420S itself as the seabed is examined by sounder and/or by visual methods. The Scanmar system will be used to monitor and record wing spread, door spread and distance covered during each haul. A bottom contact sensor will be mounted on the footrope to monitor seabed contact while environmental parameters will be recorded using a CTD DST logger mounted on the headrope. For a subset of these trawls the groundgear bag net will be mounted beneath the main net to collect macrobenthos and to gather further data on the catch-ability of the BT184 trawl with respect to deepwater fish. Fish catches will be worked up according to the protocols for International Bottom Trawl Surveys. Invertebrates will be identified as far as possible and quantified. Tissue samples of selected fish and invertebrates will be collected.

Contingency Plans:

Should conditions prevent any type of camera work at Rockall for an extended period of time but allow trawling then opportunity may be taken to continue Transects 5 or 6 south or southwest (Transect 7 and 8, Figure 1) out to depths fully comparable with MSS' Deepwater Time Series data from the eastern Rockall Trough.

A number of sites have been selected if conditions do not permit trawling or camera work in the vicinity of Rockall Bank. These include Rosemary Seamount and Faroe-Shetland Channel for which exact positions will be supplied as required.

Work Shifts:

Daily start times for camera work will be at approximately 1800 hours running through to 0600 hours while trawling will generally be from 0700 hours to 1500 hours allowing time for vessel transit between trawl and camera stations. Some flexibility in scheduling may be necessary to maximize the opportunity for visual survey during favourable weather conditions

Normal contacts will be maintained with the Laboratory.

Submitted:
J Drewery
17 September 2020.

Approved:
I Gibb
18 September 2020.

Figure 1: Pre-survey map showing sampling strata, the Rockall Haddock Box along with other protected areas and the nominal locations of all trawl transects for 1420S.

