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MRV *Scotia*

Survey 1419S

PROGRAMME

28 September – 11 October 2019

Ports

Loading: Ullapool, 26 September 2019
Unloading: Aberdeen, 11 October 2019

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.
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Estimated Days per Project: 14 days – RV1918/20546

Fishing Gear

BT 184 Deepwater trawl with 16 " ground-gear and Morgere 1700 kg trawl doors

Other Gear

Groundgear Bosom bag for BT184
Agassiz trawl
MIK net
Net-mounted water (eDNA) sampler
Net-mounted CTD data storage tag
Manta Trawl (Catamaran)

Objectives

- To map the composition, distribution and abundance of continental slope species on the deepwater slope west of the Hebrides from Donegal to the Flannans (55–59^{o}N) and Rosemary Bank (Figure 1).

- To collect samples (genetics and otoliths) of key species for population studies.

- To continue use of groundgear bag on selected stations to further evaluate BT184 catchability of deepwater fish species at different depths as well as providing valuable benthic assemblage data.

- To collect a near-seabed water sample from each standard fixed station for analysis of environmental DNA content back at the laboratory.

- To collect temperature/salinity at depth during all hauls using a data storage sensor attached to the trawl headline.

- To collect sponge samples from Rosemary Seamount for analysis of assemblage composition, baseline levels of hydrocarbons and chlorinated biphenols and for molecular studies.

- To collect specimens of fish and invertebrates for the National Museum of Scotland

- To undertake any other sampling requests such as MSFD marine litter recording and samples of microplastics from surface waters.

Procedures

Loading of the BT184 and ancillary gear will take place on 26 September in Ullapool. Scientific staff will join the vessel on 27 September. The survey will depart from Ullapool on 28 September and, conditions permitting, proceed south through the Minch to the first trawling station on the shelf slope within statistical rectangle 41E9.

Trawling will mainly be at fixed stations at depths of 500, 1000, 1500, 1800 and 2000 m on each transect where possible. Additional trawls may be undertaken at intermediate depths within selected transects. Trawl duration will typically be one hour and the locations of trawling stations will be provided to the vessel at the commencement of the survey. Daily meetings with take place between the fishing master, captain and the SIC to discuss and refine the survey plan as the survey progresses. While it may be on occasions necessary to trawl at night, it is expected that trawling will mainly be conducted within the hours of daylight. Short deployments of either an MIK net or Manta Trawl will be undertaken directly after the last trawl on an opportunistic basis. The rest of the night will be spent in passage to the sampling area for the following day.

On selected tows a ground gear bagnet will be attached to the BT184 for benthic sampling. The Agassiz 2 m benthic trawl will be deployed for short (2-5 minute) hauls in certain areas.

From all tows the entire catch will be sorted, weighed and length-frequency data collected for all fish species encountered. Invertebrate by-catch will also be recorded. Additional biological sampling will be carried out on selected species.

If time permits following completion of survey stations on the shelf slope and at Rosemary Seamount, *Scotia* will transit to squares 48E4 and 49E4 and trawl on fixed stations (not illustrated) previously undertaken in 2014 in depths of between 300-1100 m.

Scotia will return to Aberdeen for unloading on the morning of 11 October.

Normal contacts will be maintained with the Laboratory.

Submitted: J Drewery
19 August 2019.

Approved: I Gibb
19 September 2019

Figure 1: 1419S - Shelf slope with approximate position of survey trawl transects (black bands).