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MRV Scotia

Survey 0223S: North Sea International Bottom Trawl Survey

PROGRAMME

22 January – 11 February 2023

Ports

Loading: Aberdeen, 19 January 2023

Sailing: Aberdeen 22 January 2023

Half landing: Kirkwall (date flexible)

Unloading: Aberdeen, 11 February 2023

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.

Out-turn days: 21 days, NSIBTS / 20671

Fishing Gear

GOV Trawl (BT137) with ground gear A & B

Morgere Polyvalent Oval 1100kg GOV trawl doors

New survey trawl BT237 with light hopper gear

MIK Net (Round Frame)

MIKeyM net (attached onto the MIK frame on selected stations)

Other Gear

RBR concerto³ CTD unit

Objectives

1. To complete an internationally coordinated demersal trawling survey in the North Sea in ICES area IV.
2. To undertake MIK sampling for pre-metamorphosed clupeid and sandeel larvae during the hours of darkness within the trawl survey area. To collect fish egg samples concurrently with selected MIK deployments.
3. To obtain temperature and salinity data from the surface and seabed at each trawling station.
4. To collect samples of surface and near seabed water for nutrient analysis (nitrates, silicates and phosphates) at each station.
5. To collect additional biological data in line with the UK work plan, the EU data collection regulation and by IBTSWG request.

6. To record marine litter at each trawl station for MSFD.
7. To undertake extra trawl stations using new survey net BT237 in conjunction with standard Morgere GOV doors where possible.
8. To collect net geometry data on BT237 when used in conjunction with standard Morgere GOV doors where possible.

Background

NSIBTS Q1 is a fishery-independent multi-species bottom-trawl survey of the North Sea undertaken by Denmark, France, Germany, Netherlands, Norway, Scotland and Sweden and coordinated by International Bottom Trawl Survey Working Group (IBTSWG). The survey aims to provide ICES assessment and science groups with consistent and standardised data for examining spatial and temporal changes in (a) the distribution and relative abundance of fish and fish assemblages; and (b) the biological parameters of commercial fish species for stock assessment purposes. The stratification of the survey is grid-based using ICES statistical rectangles. Rectangles are allocated to each participating country by IBTSWG so that each rectangle is sampled with two hauls with each of these hauls undertaken by two different countries where possible. The overall survey area and rectangles allocated to Scotland for 2023 are shown in Figure 1.

Trawling

A single haul of 30 minutes duration will be made in each assigned rectangle using the GOV trawl. Exceptions to this will be in the 11 squares indicated (figure 1.) where two hauls will be made logistics allowing. Hauls in adjacent rectangles will be separated by at least ten miles where possible. Wherever possible, fishing will be carried out during daylight hours as defined below:

	Daylight period – GMT	
	South of 57 30'N	North of 57 30'N
22-31 January	0747 - 1635	0815 - 1545
1-10 February	0729 - 1658	0749 - 1636
11 February	0708 - 1720	0723 -1705

For each degree of longitude west, four minutes will be added to the time; for each degree of longitude east, four minutes will be subtracted.

The exact fishing position in each square will be decided on a haul by haul basis in collaboration with the fishing master and will depend largely on logistics (of both trawl and MIK survey) and on prevailing sea conditions. However, efforts will be made to undertake hauls at positions proposed in advance by IBTSWG to improve the randomisation of sampling.

The Scanmar system will be used throughout the survey to monitor and summarise headline height, wing spread, door spread and distance covered during each haul. A bottom contact sensor (BCS) will be attached to the ground-gear to quality assure contact with the seabed and the data collected will be downloaded after each haul.

Catches will be processed as per the most recent version of the IBTS sampling manual (ICES SISP 10 Revision 11 November 2020) with additional biological data collected for target species in line with the UK work plan, the EU data collection regulation and by IBTSWG or other request.

As part of initial efforts to commence incorporation of newly designed survey net BT237 into NSIBTS Q1, some additional hauls are intended be made with this net fished in conjunction with standard Morgere GOV trawl doors. It is expected that these additional hauls will be made in any or all of rectangles 48E6, 49E6, 49E7 and 50E7 and the survey will plan accordingly to make the most of any opportunities to facilitate this. Catches will be worked up as per standard instructions, data will not however be submitted to DATRAS along with that from coordinated trawl stations. Further open-codend deployments of BT237/Morgere doors may be made at any point where logistics permit to allow collection of net geometry data over, ideally, a range of depths.

MIK Sampling

Pre-metamorphosed clupeid larvae will be sampled during the hours of darkness with the MIK mid-water trawl (round frame). A minimum of two double oblique tows is planned for every rectangle within the survey area (up to four in rectangles assigned double effort). The vertical profile of the tow will be monitored using the Scanmar system. A 20 cm round frame net (MIKeyM net) will also be deployed on the MIK frame on one station per rectangle for the purpose of collecting pelagic fish eggs from the overall survey area and of collecting pre-metamorphosed sandeel larvae from pre-selected squares. Catches will be processed as per the most recent version of the MIK sampling manual (ICES SISP 2 Version 3 November 2017).

Hydrography

Surface and bottom temperatures along with salinities will be recorded at all coordinated trawl stations by vertical deployments of the CTD to within 5 m of the seabed where possible. A seawater sample will be collected from both surface and seabed at each CTD station for calibration purposes.

Seawater Nutrient Analysis

A sample of surface and near seabed water will be collected at each CTD station and frozen for analysis back at Marine Laboratory.

Marine Litter Recording

All litter picked up in the trawl will classified, quantified and recorded as per accepted protocol then retained on board for appropriate disposal ashore.

Regular contact will be maintained with IBTS coordinator to allow the SIC to respond to any requests as they arise or to facilitate alterations to the initial survey plan should this be required.

Normal contacts will be maintained with the Laboratory.

Submitted: J Drewery, 10 January 2023

Approved: I Gibb, 18 January 2023

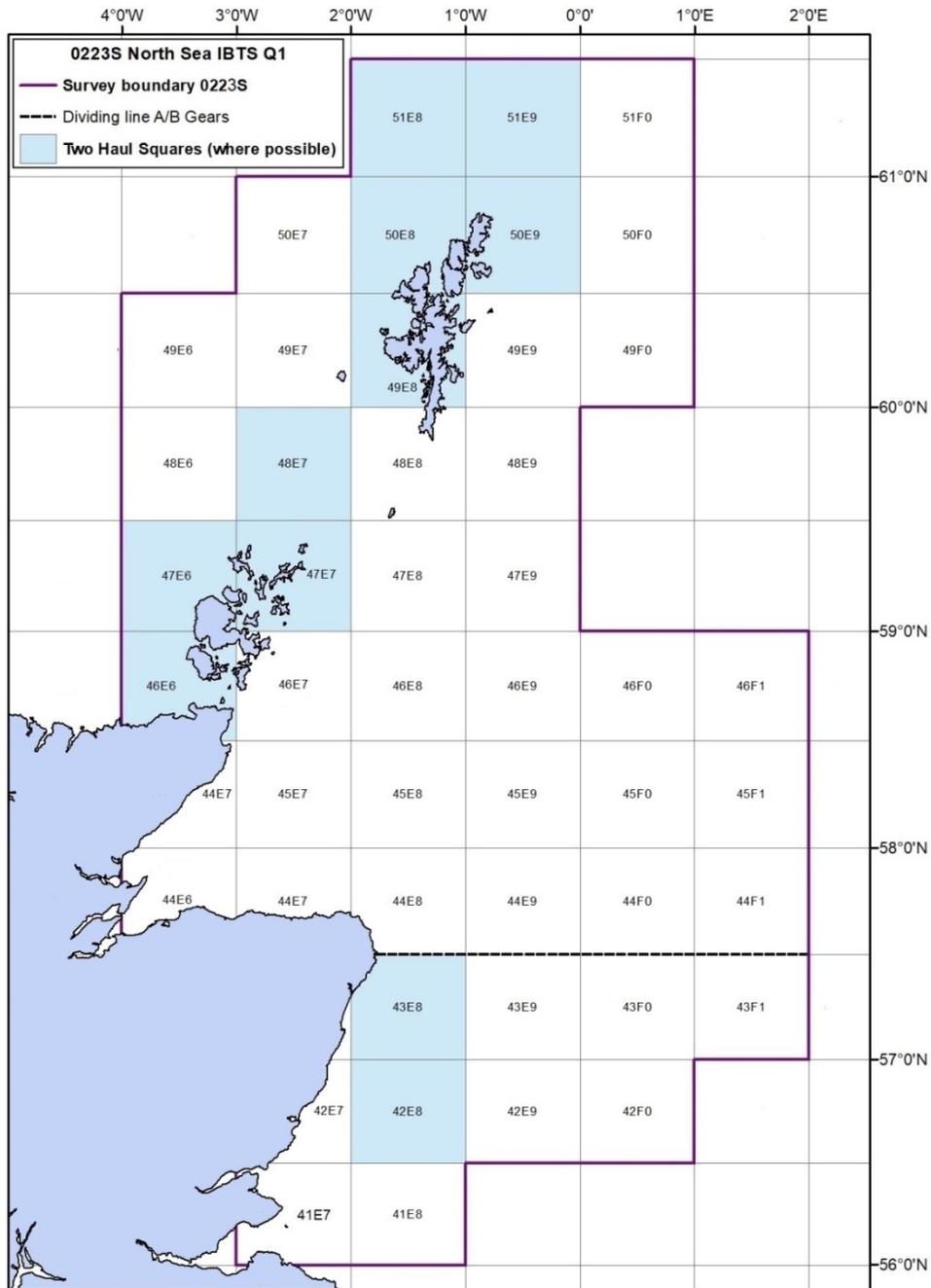


Figure 1: Survey 0223S: survey area allocated to Scotland. The dashed line at 57.5 degrees north indicates the dividing line between GOV groundgear types (groundgear A used south of line, groundgear B used north of line).