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MFV Altaire (LK429)

Survey 0322H: Mackerel Egg Survey Period 7 2022

PROGRAMME

4-26 July 2022

Ports

Loading: Ullapool, 04 July 2022
Unloading: Ullapool, 26 July 2022
Half Landing: Falmouth, 17 July 2022

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: 23 days – MACEGG/20674

Fishing/Sampling Gear

Vessel's own pelagic trawl
Gulf VII plankton sampler with mounted RBR Concerto^3 CTD

Objectives

1. To carry out Atlantic mackerel (*Scomber scombrus*) and horse mackerel (*Trachurus trachurus*) egg survey (ICES Triennial Survey) within sampling Period 7 of the 2022 MEGS sampling plan, across the NE Atlantic shelf edge in the area from 46N to 58.5N (Figure 1).

2. To collect ovary and oocyte samples from adult fish, by trawling, for atresia and fecundity analysis back at the laboratory.

3. Opportunistic retrieval of a COMPASS acoustic mooring from a location within the Stanton Banks area.

Procedure

Vessel loading will take place at Ullapool on 4 July and once completed will sail down through the Minch to the first plankton station at 55.25N Northwest of the Donegal Peninsula. From there plankton sampling will continue in a Westward direction at the same latitude with stations spaced longitudinally at 30' intervals until zero or only very low numbers of target species eggs observed. Upon reaching this point *Altaire* will then transect Eastwards and Westwards alternately each time dropping down a degree of latitude and

once again with the precise limits of each transect being determined by the observed egg counts. Once the southern limit of the survey area has been reached the same process will be undertaken but this time with the vessel headings northwards alternating East and West to enable those transects 'missed' during the first sweep to be covered during the returning track North. Subsequent to the completion of the southern transects a port call will be made, most likely into Falmouth in order to allow for a changeover of scientific personnel. *Altaire* will then depart to complete the remaining transects within the Celtic Sea/Porcupine Bank area as well as those further North and West of the Hebrides. The vessel will return to Ullapool for the morning of 26 July, where all sampling gear, samplers, the MEG container, and wire for deploying the sampler will be unloaded for transportation back to MSS.

This survey represents the final survey in the 2022 MEGS survey schedule, covering the final spawning period (Period 7) and the entire spawning area for mackerel and horse mackerel. This is a challenging task, made even more so by increased targets for adult fish sampling that are required this year. The main priorities of the survey will be to ensure that sufficient effort is devoted to delineating any remaining spawning concentrations and that will also include provision within the survey plan for sufficient trawl deployments to allow a satisfactory number of spawning adult samples to be collected. The latitudinal extent of this survey will be determined largely by the results of the three vessels surveying during Period 6 and once these are available then this will allow a more informed survey plan to be drafted prior to sailing, During Period 7 horse mackerel is very much the priority species and the largest spawning concentrations for horse mackerel tend to occur within the Celtic Sea and Northern Biscay region and hence it is anticipated that the majority of the operational survey window available will be spent within these regions together with the Porcupine Bank which also records significant numbers of horse mackerel spawning. Figure 1 represents the best estimate of the proposed survey area.

Plankton stations will be sampled using the Gulf-7 with a mounted RBR Concerto CTD and backup DST datalogger to record salinity and temperature parameters during each tow. The vessel will be required to maintain a consistent speed of 4 knots whilst deploying the Gulf 7 sampler, with the sampler being lowered at a steady rate of 6 m/minute to either 200 m or 5 m from the seabed (whichever is shallower) before being retrieved at the same speed. In instances where a thermocline of greater than 2.5 °C degrees across a 10 m depth is detected the sampler will be deployed to a maximum depth of 20 m below the base of the thermocline and then retrieved. Following retrieval plankton samples will be washed from the codend net, fixed in formalin and stored for fixation before target species eggs are removed, identified, and scored for stage and abundance. In addition to mackerel and horse mackerel, white ling (*Molva molva*) and hake (*Merluccius merluccius*) eggs will also be scored as target species. Non target species such as boarfish, anchovy, pearlside, and grey gurnard eggs are also recorded but will not be staged.

Trawl stations will be conducted at the discretion of the SIC but will generally occur on or near the 200m continental shelf edge and during hours of darkness. It is expected that there will be a maximum of 12 trawl stations during the survey.

Normal contact will be retained with the laboratory and with the survey co-ordinator throughout.

Submitted:
F. Burns / H. Holah
27 June 2022

Approved:
I. Gibb
01 July 2022

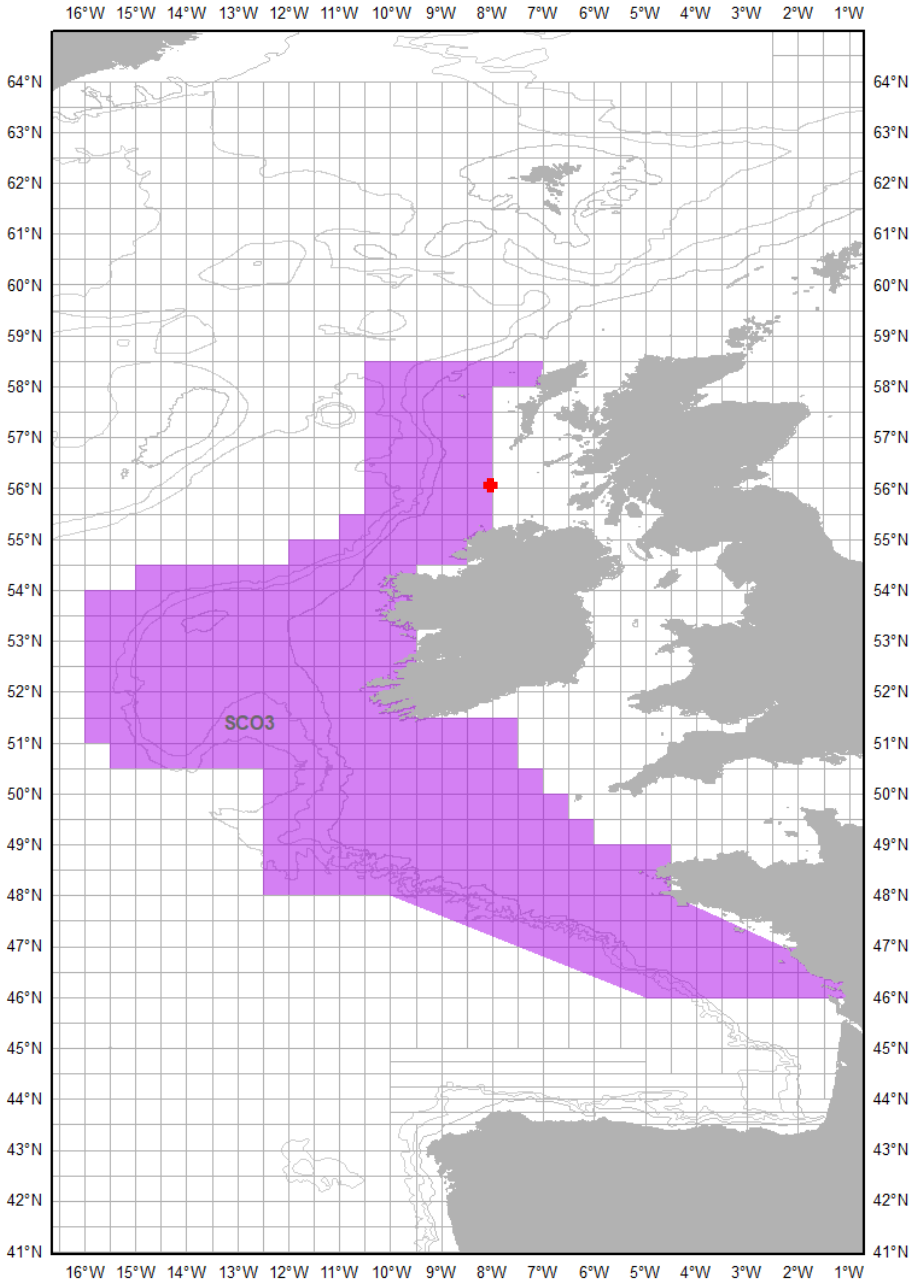

Figure 1: Provisional survey area for 0322H. Red cross denotes location of COMPASS mooring within the Stanton Banks area that *Altaire* will endeavour to retrieve during survey 0322H.