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MFV Altaire

Survey 0321H

PROGRAMME

07-22 June 2021

Ports

Loading: Peterhead, 07 June 2021
Unloading: Peterhead, 22 June 2021

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 per project: 16, SU02N0

Fishing/Sampling Gear: Gulf VII plankton sampler, vessels own pelagic midwater trawl

Objectives

1. To carry out standalone exploratory mackerel egg survey, spanning the area of the Northern North Sea and further North up and along the Norwegian Shelf from 60^{o} N to 70^{o} N (see Figure 1).

2. Opportunistic trawling for adult mackerel to collect biological information on individuals within the survey area and also to collect fecundity samples in order to progress ongoing research being undertaken within the region.

Procedures

Loading of the vessel will take place early on the morning of 7 June in Peterhead and all being well *Altaire* will depart Peterhead late morning undertaking the 200nm steam North to the first icthyoplankton station located just East of Muckle Flugga at 60^{o} 45N 0^{o}40W. Prior to commencing the first plankton *Altaire* will undertake a series of flowmeter calibrations in order to check the performance of the sampler and in particular the flowmeters and also the scanmar sensor. Once successfully completed *Altaire* will survey in an eastwards direction on the same latitude and with icthyoplankton stations being completed every 0.5 degree longitude until almost within sight of the Nowegian coast. *Altaire* will then head North before commencing a new transect heading back west across the North Sea at 61^{o} 45N towards Tampen. Once this transect is completed that will conclude the part of the survey feeding directly into the North Sea mackerel egg survey dataset (see Figure 1). Northwards from here the survey will operate as an exploratory survey with spacing between icthyoplankton stations increasing to one degree longitude when on transects in order to maximise area coverage up and along the Norwegian Shelf and with western transect boundaries being explored as far as is practicable in order to try and map the spawning distribution within the Northeastern region. Double

alternate transect methodology will be utilised when heading Northwards during the exploratory survey. This is undertaken in order to maximise deployment time during the return leg of the survey and minimise the time spent steaming back to port (see figure 1 for potential outbound/inbound survey track).

Plankton stations will be sampled using the Gulf VII sampler with mounted CTD which will record salinity and temperature during each deployment. The plankton tows will require the vessel to deploy the sampler at and maintain a speed of four knots. The sampler will then be lowered at a steady rate (ten seconds/metre) from the plankton crane to a maximum depth of 200m. The sampler will then be recovered at the same speed and rate. Once aboard, plankton samples will be washed from the sampler net, fixed in formalin, sorted and subsequently scored for egg abundance with mackerel eggs also being staged according to their development. Trawl deployments will be taken at the discretion of the scientist in charge but will not exceed 8 trawls for the survey.

Altaire will return to Peterhead for unloading on the morning of the 22 June 2021.

Normal contact will be retained with the laboratory throughout.

Submitted:
F Burns
04 June 2021

Approved:
I Gibb
07 June 2021

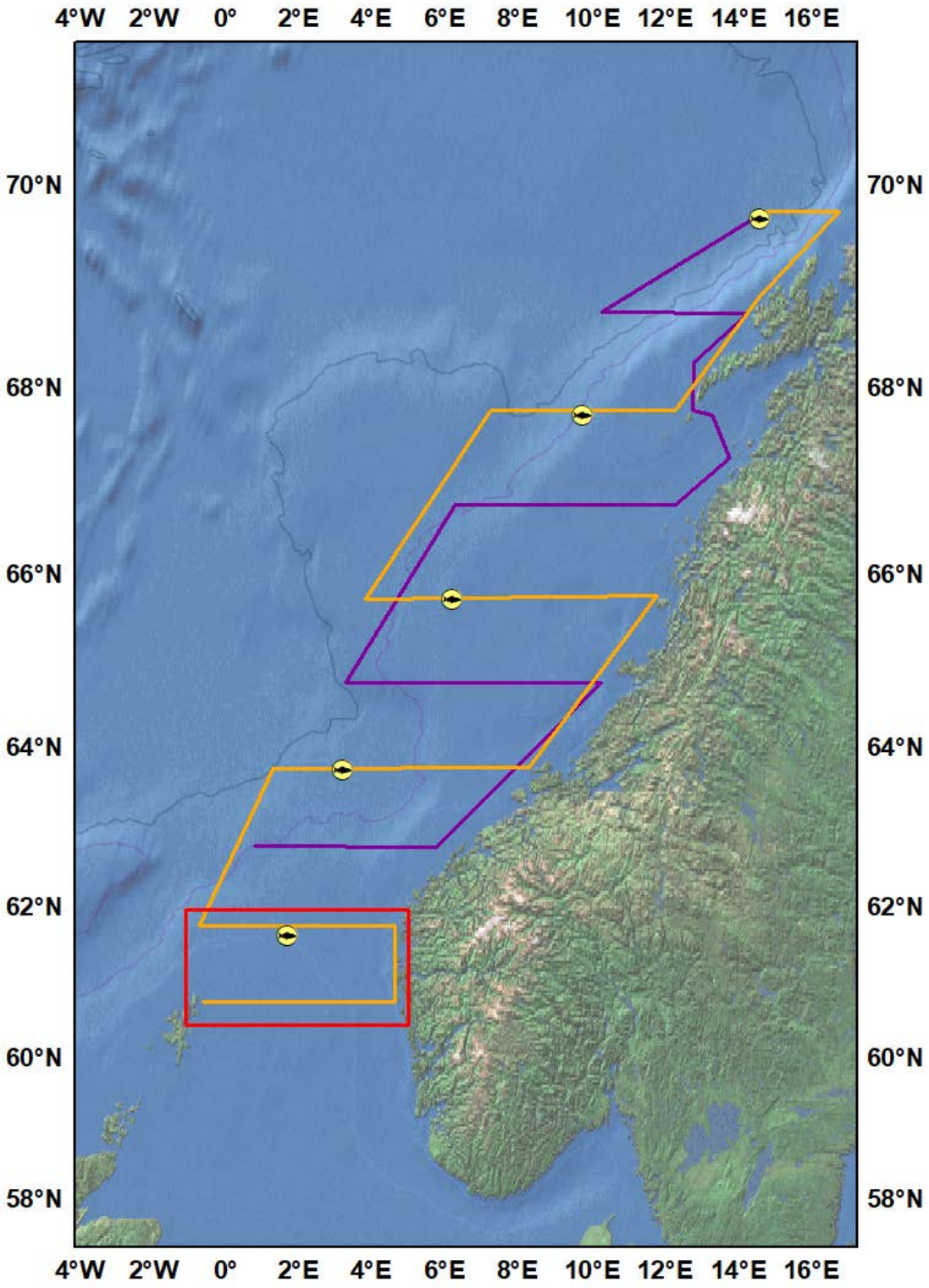

Figure 1: Map showing potential outbound (orange) and inbound (purple) survey tracks for survey 0321H. Transects enclosed within the red box denote area being surveyed as part of the North Sea MEGS survey. Fish icons denote potential trawl stations although these are indicative only with actual trawl locations being determined by the presence of mackerel or mackerel eggs in the water column.