

Cruise Report
Cruise no. 2220

Faroese part of MEGS 2022

19th-31th May 2022

R/V Jákup Sverri



Participants:

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INTRODUCTION

The MEGS survey is carried out every three years. In 2022 there were ten participating countries. Each of the eight participating countries covered a certain area in a certain period. The Faroese research vessel R/V Jákup Sverri was out in the period 19.May – 31.May.

The main aim of the cruise is to investigate the number of mackerel eggs. The preliminary area is assigned in the Megs SISP manual ver 2.3, but as the results from cruises prior to the Faroese are ready, the area is always a subject to changes. The area initially assigned to R/V Jákup Sverri to survey is shown in **Figure 1**.

The cruise went as planned and we were able to survey unhindered throughout the survey, see **Figure 2**.

The present survey report is based on data from R/V Jákup Sverri only. Therefore no estimate of mackerel spawning in general is given due to incomplete coverage of the distribution area and varying survey area among years.

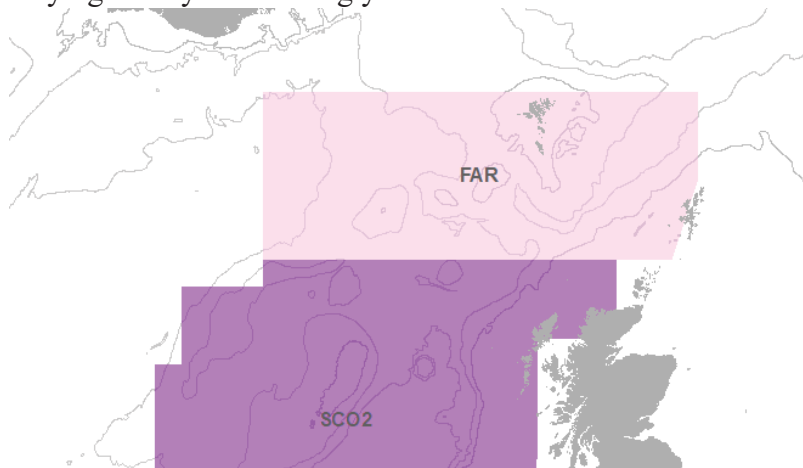


Figure 1 Area assigned to R/V Jákup Sverri to survey.

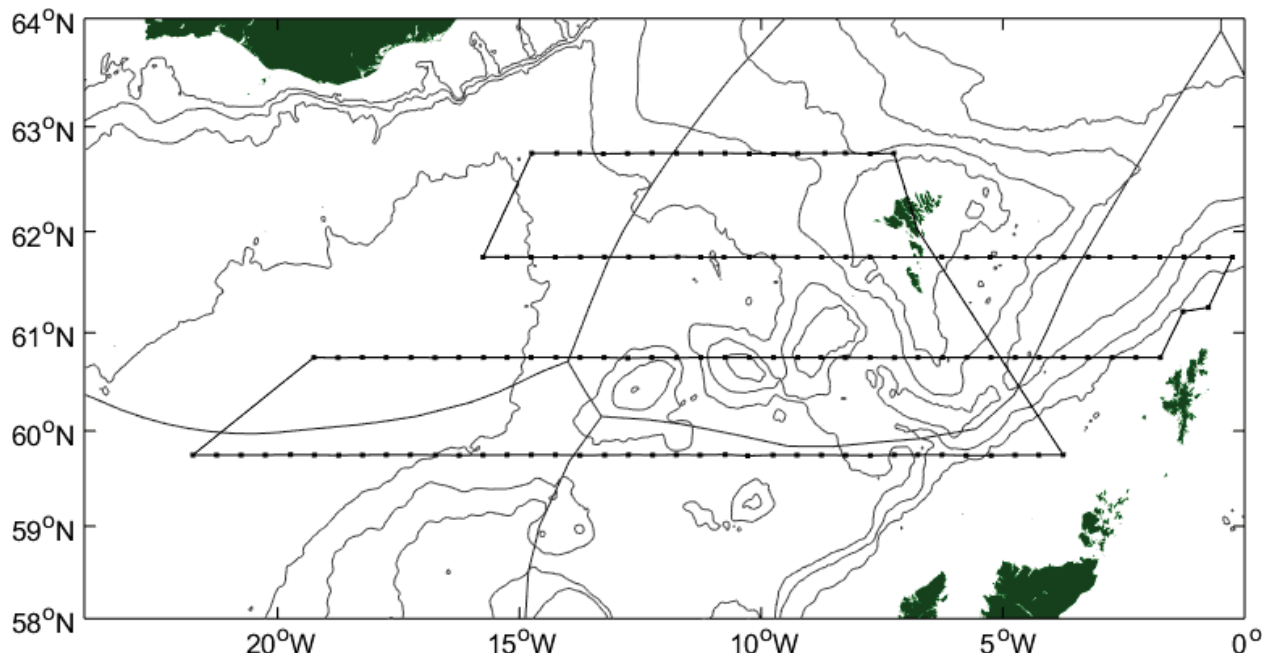


Figure 2 Cruise track of R/V Jákup Sverri on survey 2220, 19.-31.May. In total 2157 nmi were sailed.

MATERIAL AND METHODS

A Gulf VII plankton sampler with Hydro-Bios CTD and flowmeter was used to collect eggs, and pelagic trawl was used to collect biological data from adult mackerel. The sampling was carried out according to the MEGS SISP manual version 2.3.

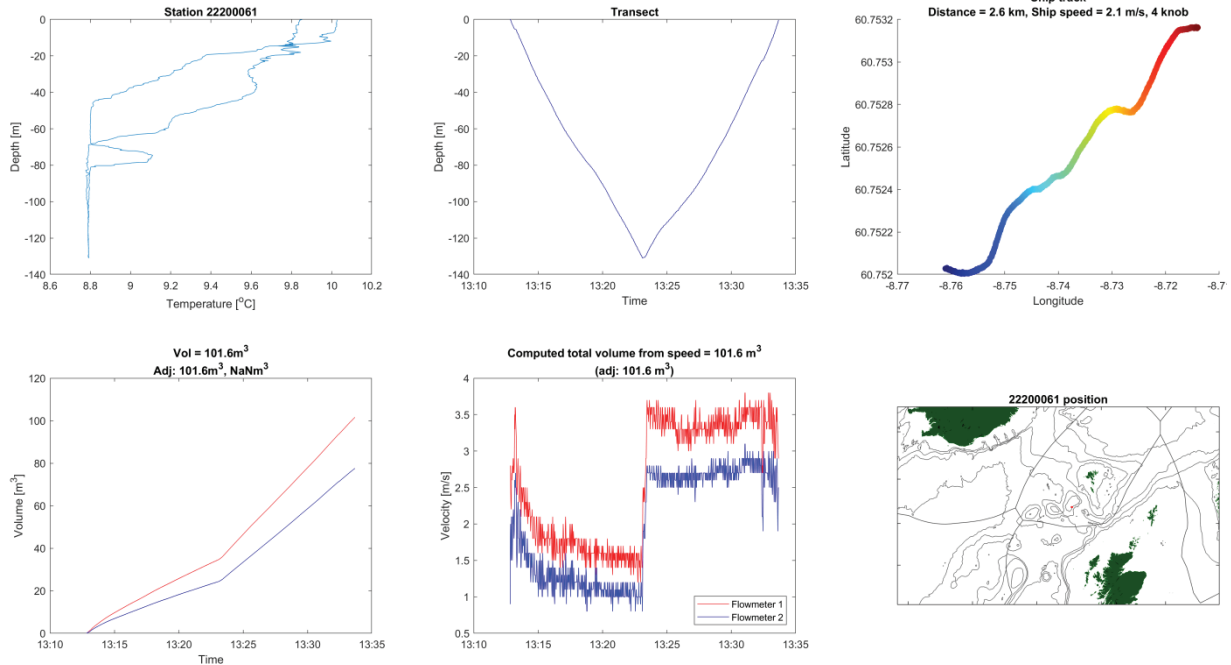


Figure 3 Example of Hydro-Bios CTD data collection at each station. In a few cases, the Gulf sampler winch stopped working when it was time to haul the sampler back in and the sampler stayed at 200m depth for a few minutes. In those cases, the volume of filtered water was adjusted and the volume filtered through the sampler at 200m depth deducted, since no mackerel eggs are found at that depth.

For the adult sampling, our task was to sample ovaries from 30 fish (a,b,c,d,e and f samples).

Table 1 Trawl (Mulpelt 832) specifications for Jákup Sverri

Circumference (m)	832
Vertical opening (m)	45
Mesh size in codend (mm)	45
Typical towing speed (kn)	3.9 (3.5-4.8)

RESULTS

EGG SAMPLING

Plankton was collected by the Gulf VII sampler on 122 plankton stations. After fixation for at least 12 hours, the eggs were sorted from the remaining plankton and a picture was taken of the eggs, which subsequently were identified and counted using ImageJ software. As a quality check a plot was made for each station (**Figure 4**).

Almost 19 000 eggs were collected and analysed, of which more than 15 000 were mackerel eggs, see **Figures 5-6**.

Eggs were sorted in two groups: “mackerel” and “other”. In the staging, no distinction was made between stage Ia and Ib. An analysis of sizes of the eggs and the sea temperatures in which they were caught is shown in **Figure 6**, right panel.

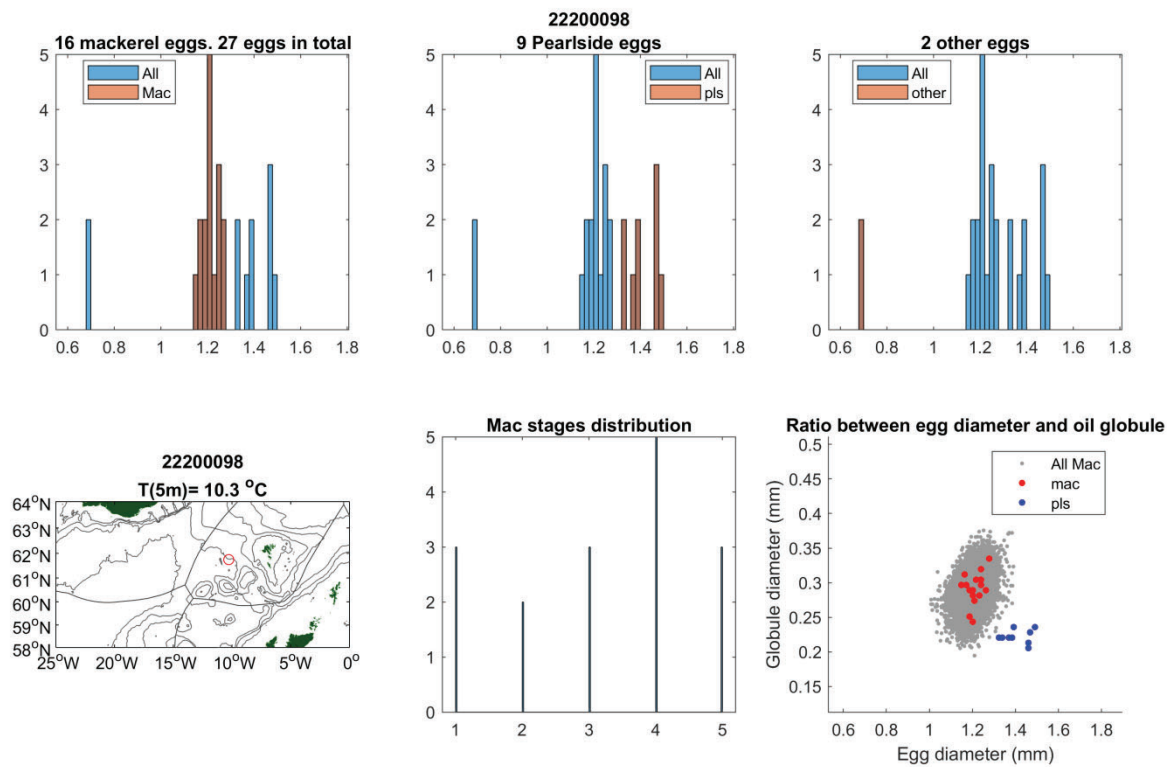


Figure 4 Example of plot, which is made for each station in order to quality check the egg identification.

The excel datasheet with egg counts has been submitted to this year's survey coordinator, Brendan O'Hea in Ireland.

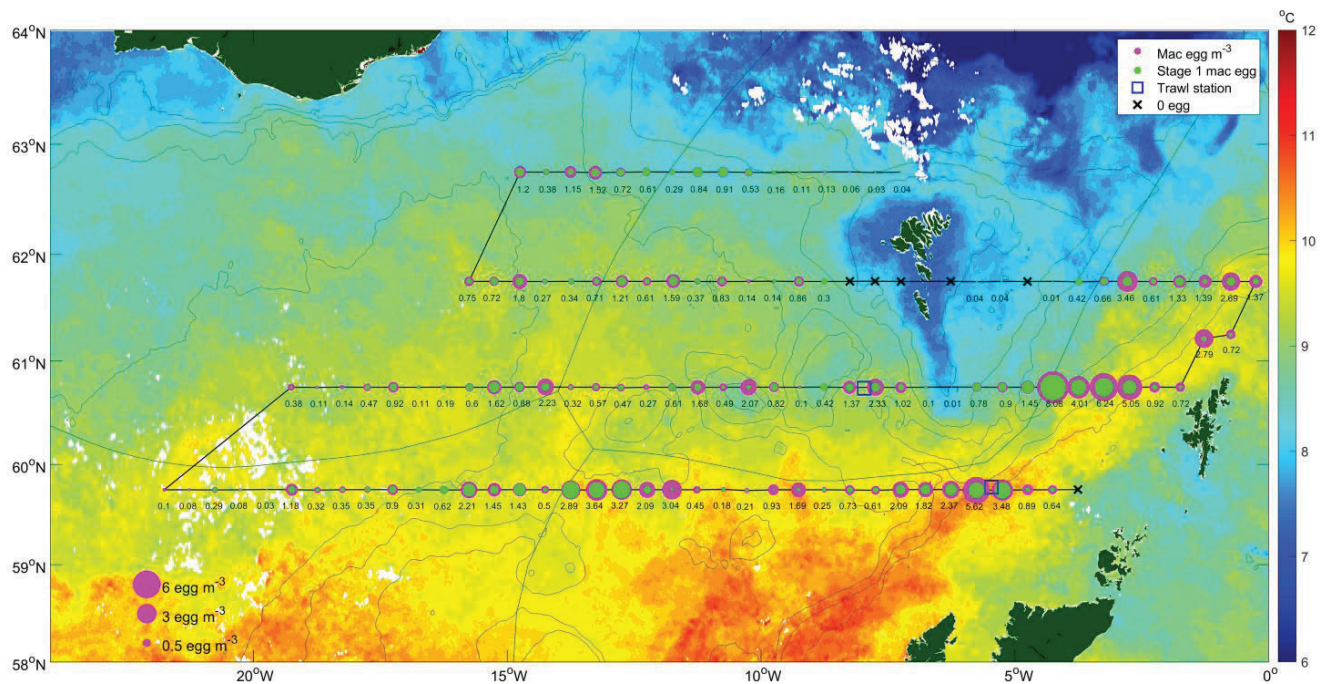


Figure 5 Abundance of mackerel eggs (all stages) shown as pink circles, with numbers below each circle. Green circles inside each pink circles indicates amount of stage 1 mackerel eggs. "0 egg" is shown as an "x". SST from based on remote sensing in the period 24.May – 4.June 2019 is shown in colours. Trawl stations are indicated by blue squares.

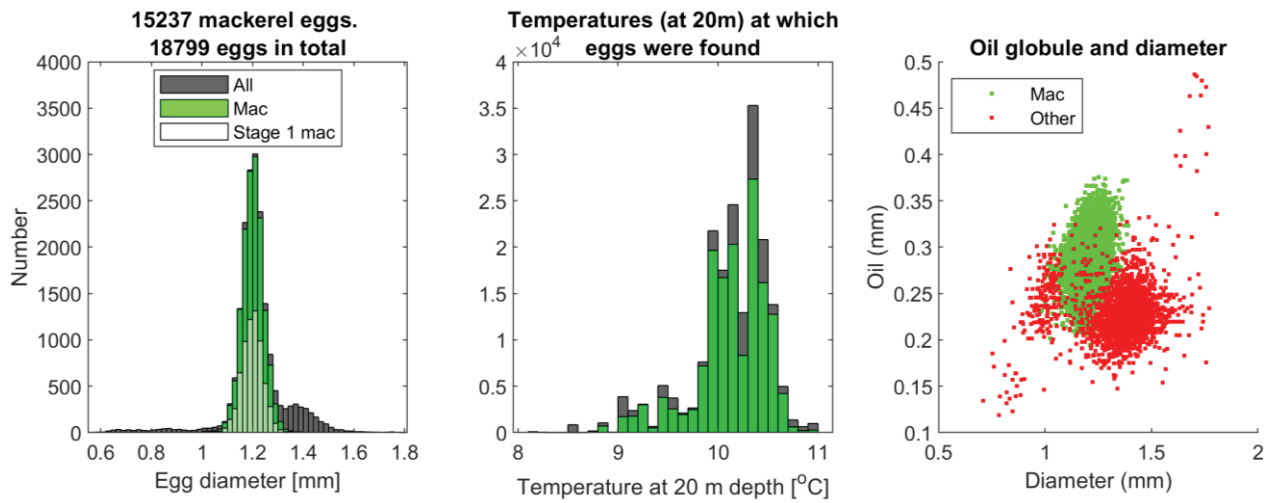


Figure 6 Eggs collected during Jakup Sverri cruise 2220. Left panel: diameters of eggs sampled. Middle panel: Temperatures at 20m depths at which

ADULT SAMPLING

Two trawl stations were taken on the cruise, see **Figure 7**. On the first station the catch was a mix of herring and mackerel, in total 39 kg of mackerel. On the last station the catch was one tonne of mackerel.

The excel datasheet for adult sampling from both trawl stations has been submitted to the biological sample coordinator, Jens Ulleweit, and the samples have been sent to their respective recipients.

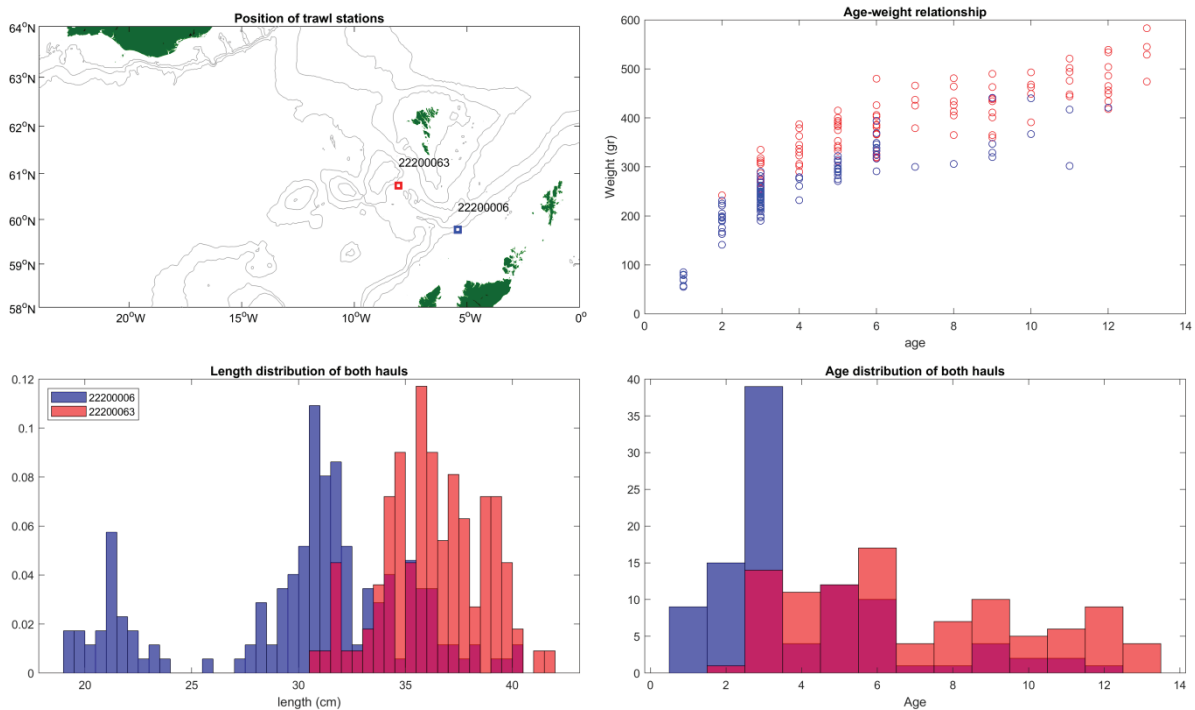


Figure 7 Overview over adult sampling.