

R1/3

Not to be cited without prior reference to Marine Scotland, Marine Laboratory, Aberdeen

MFV *Caspian BF 38*

Cruise 0709H

## REPORT

29 April – 9 May 2009

### Personnel

J Drewery (SIC)  
R Watret  
M Hay

### Objectives

1. To undertake a nationally co-ordinated demersal trawling survey of anglerfish (*Lophius piscatorius*, and *L. budegassa*) in the North West of Scotland and West of Shetland sea areas.
2. To obtain temperature at depth profiles at each trawling station.
3. To record and map distributions of megrim (*Lepidorhombus whiffiagonis*), four spot megrim (*L. boschii*) and cod.

**Out-turn days per project:** MFO1Ta – 11 days.

### Narrative

This was part of the fifth annual anglerfish trawl survey undertaken to a set of protocols drawn up by an Industry / Science survey planning group which was made up of Marine Scotland scientists and Fishing Industry representatives.

Scientific staff overnighed in Scrabster and met with MFV *Caspian* and crew on the morning of Wednesday 29 April. The net (BT195) arrived shortly after 9am and after an inspection to ensure the groundgear and rigging were in order this was loaded by the crew while Marine Lab staff dealt set up scientific equipment and other survey gear. *Caspian* sailed early afternoon and headed out in fair sea conditions to the first station to the west of Orkney. Fishing operations commenced at 1720 hours in 120m resulting in a successful tow with BT195 performing very well and only minor adjustments to the scanmar setup needed. Over the next few days *Caspian* worked northwards under good conditions in the shallower depth stratum along the eastern side of the survey area. Numbers of anglerfish caught were small at first but catches by weight increased with progress to the north where larger fish were encountered.

Cod featured strongly at most of the stations from 25 miles north of Orkney to the tip of Shetland in 90-120m. On 1 May the most northerly station was reached and *Caspian* fished south working back and forth over the 200m line at depths ranging from 100 to 480 m. Fresh SW-W winds and moderate to rough seas slowed down transit times between stations but did not cause any stoppage to actual fishing. There were some good catches of anglerfish recorded around this period that covered the depth spectrum of this part of the survey and

one notably large catch of megrim. Haul 17 was noteworthy for its large component of deepwater redfish (*Sebastes spp*). On 3 May *Caspian* worked in an arc to the east into shallower stations before fishing west and back up along the deeper stations. This was to coordinate the survey with a projected window in the weather that would permit transit to and working at the westernmost and isolated stations. Again some good catches of angler were recorded mainly in 130 – 170 m with catches decreasing somewhat in the more eastern and southern stations. Four-spot megrim made their only recorded occurrence here at one of the deeper stations. Opportunity to fish west was hampered by poor conditions and a deteriorating forecast therefore *Caspian* steamed south and completed a further station. By early morning on 7 May the sea state had become very poor and *Caspian* shifted to just off the Butt of Lewis in company with several Spanish static gear vessels where she remained until afternoon before dodging back out to the next station. By this time an arrangement was made with the scientists and skipper of the MFV *Norlantean* (undertaking the western area survey) to complete two of the westernmost stations of the northern survey while *Caspian* undertook three stations for the western survey. This worked well for both vessels given their respective positions at the time. *Caspian* then worked east to finish the survey with the final station completed in the early hours of 9 May. *Caspian* docked at Scrabster at 6am on the same day for unloading.

## Results

*Caspian* successfully completed 38 hauls for the trip. A total of five of the core stations were substituted with five of the additional positions that were provided. Four of these were where the ground was marked as very poor and there were no suitable tows within 5 miles or more; one was substituted for logistical reasons towards the end of the survey, a suitable replacement having already been completed earlier on. Of the 37 core stations projected for the northern survey all were completed or a substitute found.

There were no foul hauls. There was only one incident of damage where minor repairs were needed to the port wing, this was judged not to have compromised the haul. BT195 came badly fast four times. In the first occasion this occurred a short time into the tow and the haul was redone from scratch. In the other three instances there were respectable sample times, *Caspian* hauled immediately with no damage found, and the hauls were accepted as valid.

BT185 was closely monitored by Scanmar net geometry sensors on the doors, wings and headline throughout the trip; these generally worked very well with only a few easily rectified problems. Datasets for all 38 hauls were obtained. Bottom contact data was obtained for all 38 hauls using an accelerometer based sensor mounted on the groundgear. Both temperature and depth data was obtained for 35 of the hauls from a combined minilogger unit. For 3 of the deeper hauls an alternative minilogger rated to a greater depth was used but this provided temperature data only. Depth data in this case was obtained by use of an additional scanmar unit on the headline.

Unfortunately this was found to give readings of 2.8-2.9 times the actual depth despite having been calibrated prior to sailing. A later examination confirmed this unit to be faulty but the data should still be of use once a proper conversion factor for the depth is determined.

Only three stations were scored as a zero catch for the two anglerfish species; these were in the southern part of the area surveyed. Overall the catch rates appear lower than those recorded for previous surveys. The highest anglerfish catch rates (kg/hr) occurred over a wide range of depths (140-480m) in areas to the north and west. One catch of megrim stands out: a substantial weight recorded from the northern end of the survey in 220m (see below). The four-spot megrim was only encountered once in the survey in haul 31 at 494 m depth.

A total of 295 anglerfish and 30 black bellied anglerfish were caught for total weights of 672.4 kg and 57.5 kg respectively. These were all scored for length (cm), sex, maturity stage, whole weight (g) and gutted weight (g). A total of 254 of these had empty stomachs for the remaining 41 the stomachs were weighed and the contents examined. Of the 10 that had identifiable remains in them the following food species were recorded: common dab, poor cod, dragonet (*C. lyra*), mackerel, ling, haddock and octopus (*E. cirrhosa*). An otolith (stored in water) and illicia (frozen) were removed from all anglerfish for age determination on return to Marine Lab. A total of 920 megrim were caught for a weight of 355.2 kg. All were scored for length and live weight with the exception of those from one station (no.12) where over 100 kg was caught. Megrim from this haul where all were scored for length and 5 specimens per 1 cm size class scored for live weight. Additionally a total of 117 megrim from various stations throughout the trip representing up to 5 specimens per 1 cm size class were further scored for gutted weight (g), sex and maturity. An otolith was retained from each of these for age determination on return to Marine Lab. A total of 10 four spot megrims was caught for 2.7 kg. These were scored for length and live weight. All cod caught were measured to a total number of 435.

Catch rates for anglerfish (Figures. 1-3), megrim (Figures. 4), cod (Figures. 5) and haul numbers with approximate haul midpoints (Figures. 6) are illustrated below.

Marketable fish caught during the survey were processed on board and after being refrigerated over the weekend were sold on Scrabster fish market on Monday 11 April. In total some 73 boxes of mixed fish were landed with cod, ling, haddock, redfish, angler and megrim being the most abundant species. Proceeds from the sale of the catch will be used by Marine Lab to offset the charter cost.

### **Acknowledgements**

A large thanks is due the skipper (David Watt) and crew of the *Caspian* for their help, experience and enthusiasm and also the Marine Lab staff for their support and expertise, all of which was greatly appreciated and ensured a successful cruise. Thanks must also go to Eric Armstrong for invaluable technical help immediately prior to the cruise.

*Jim Drewery*  
22 May 2009

Figure 1

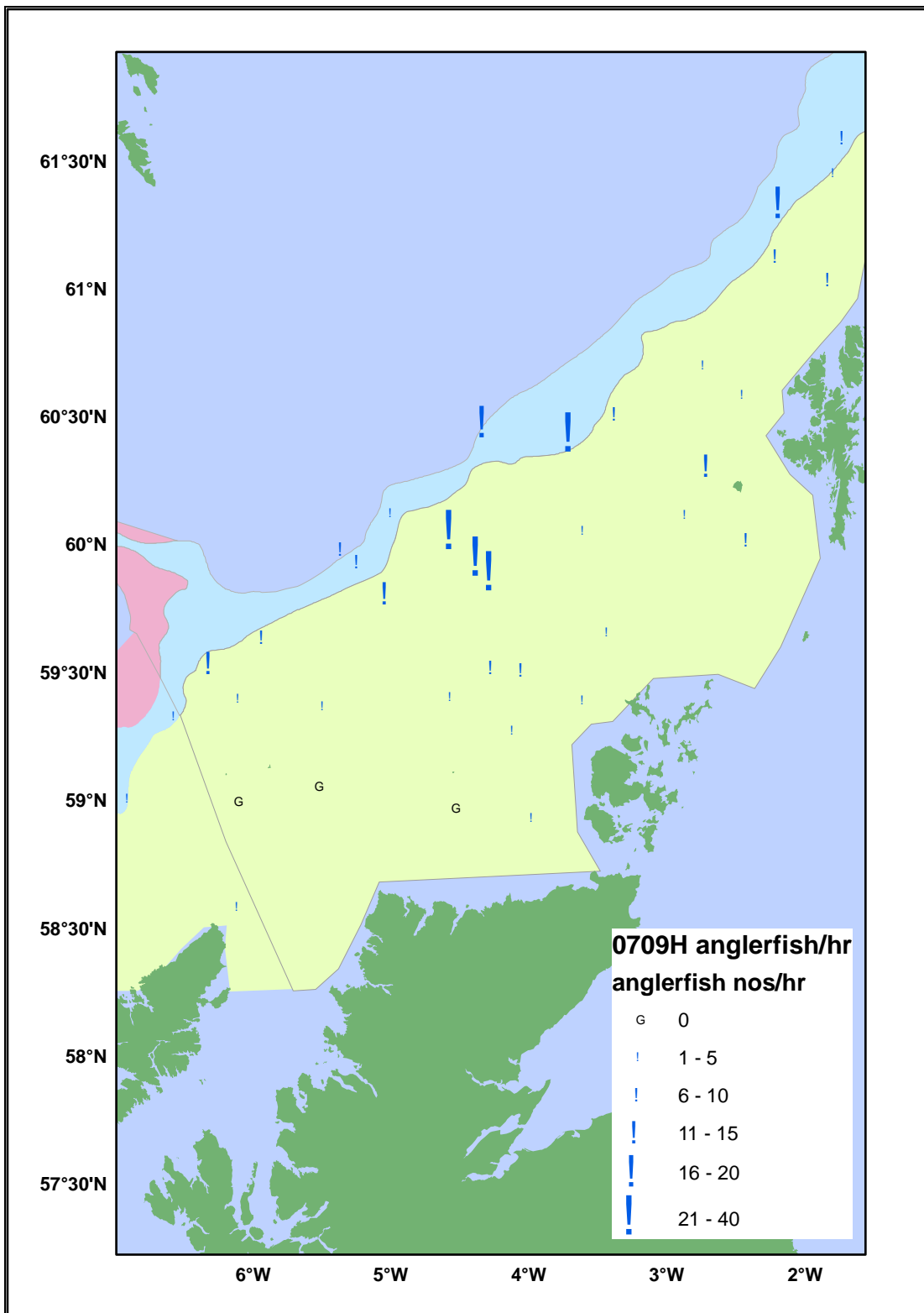


Figure 2

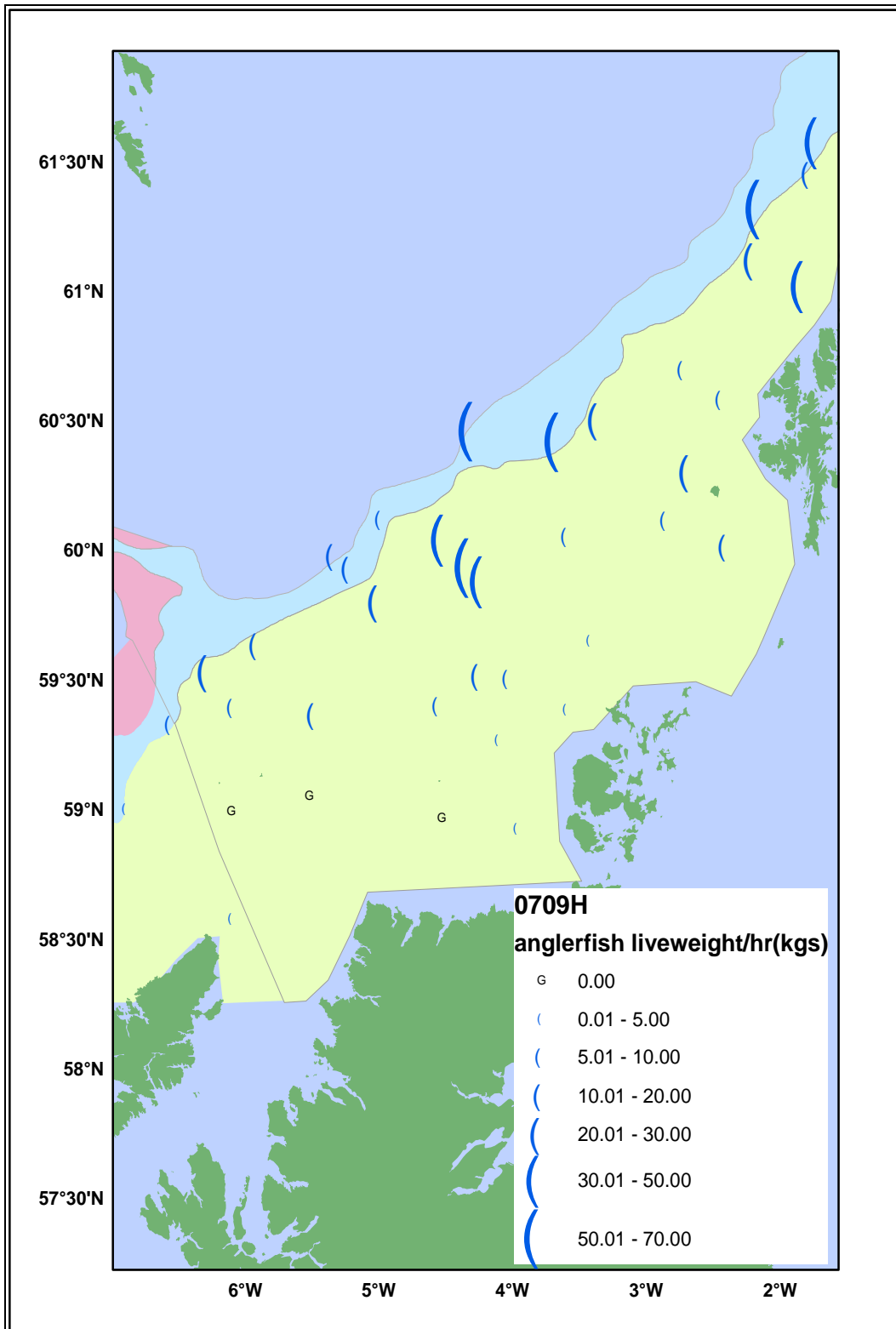


Figure 3

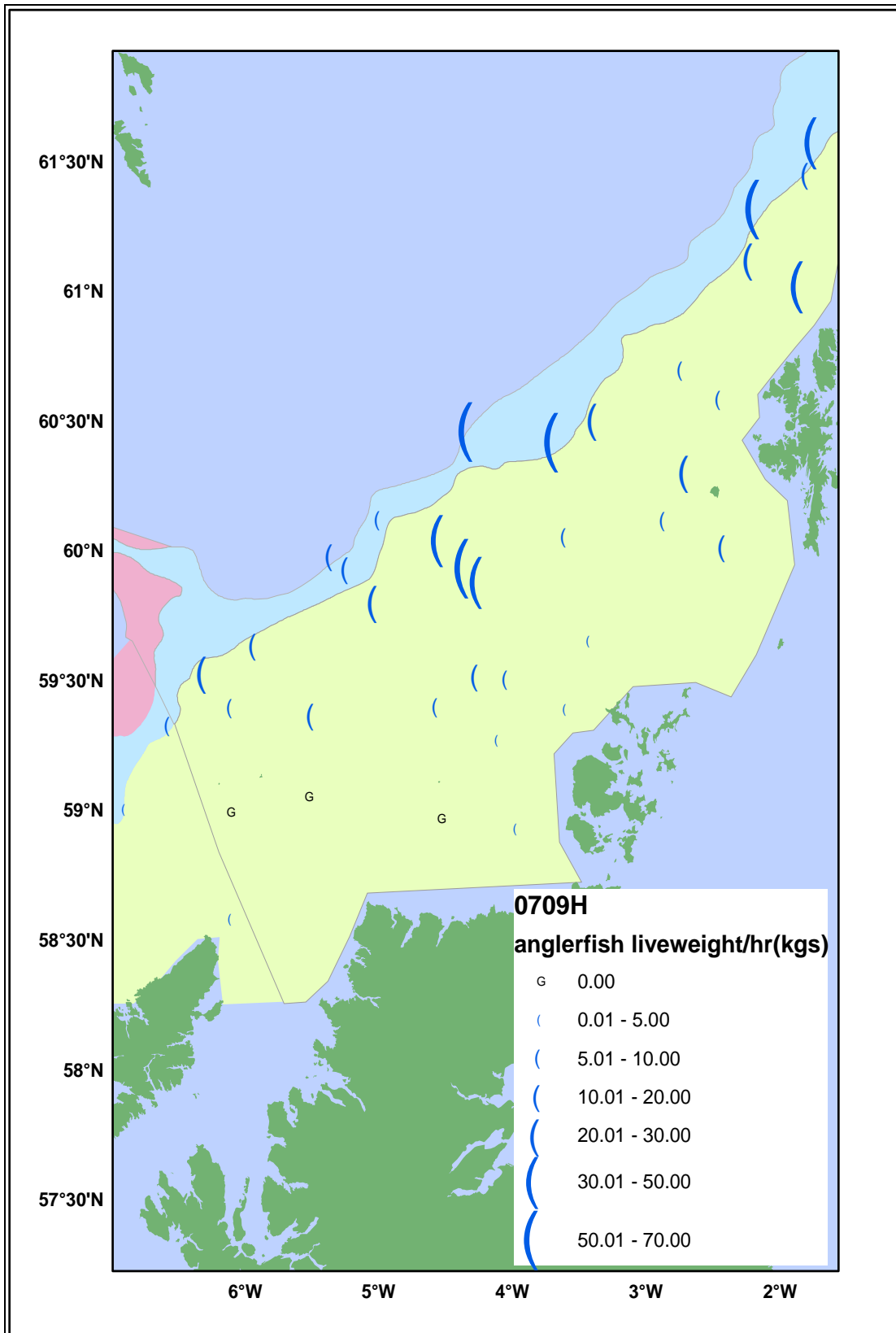


Figure 4

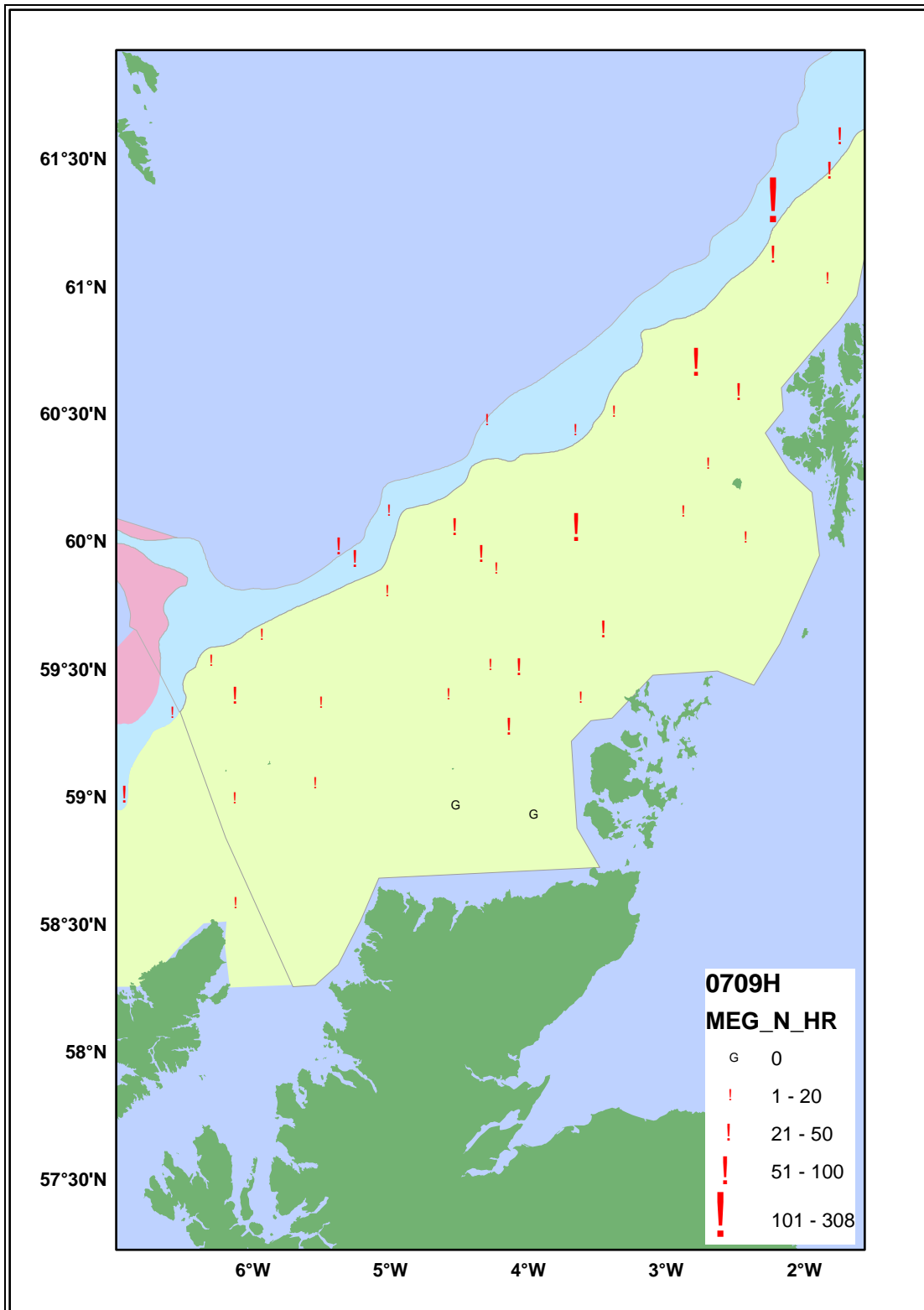


Figure 5

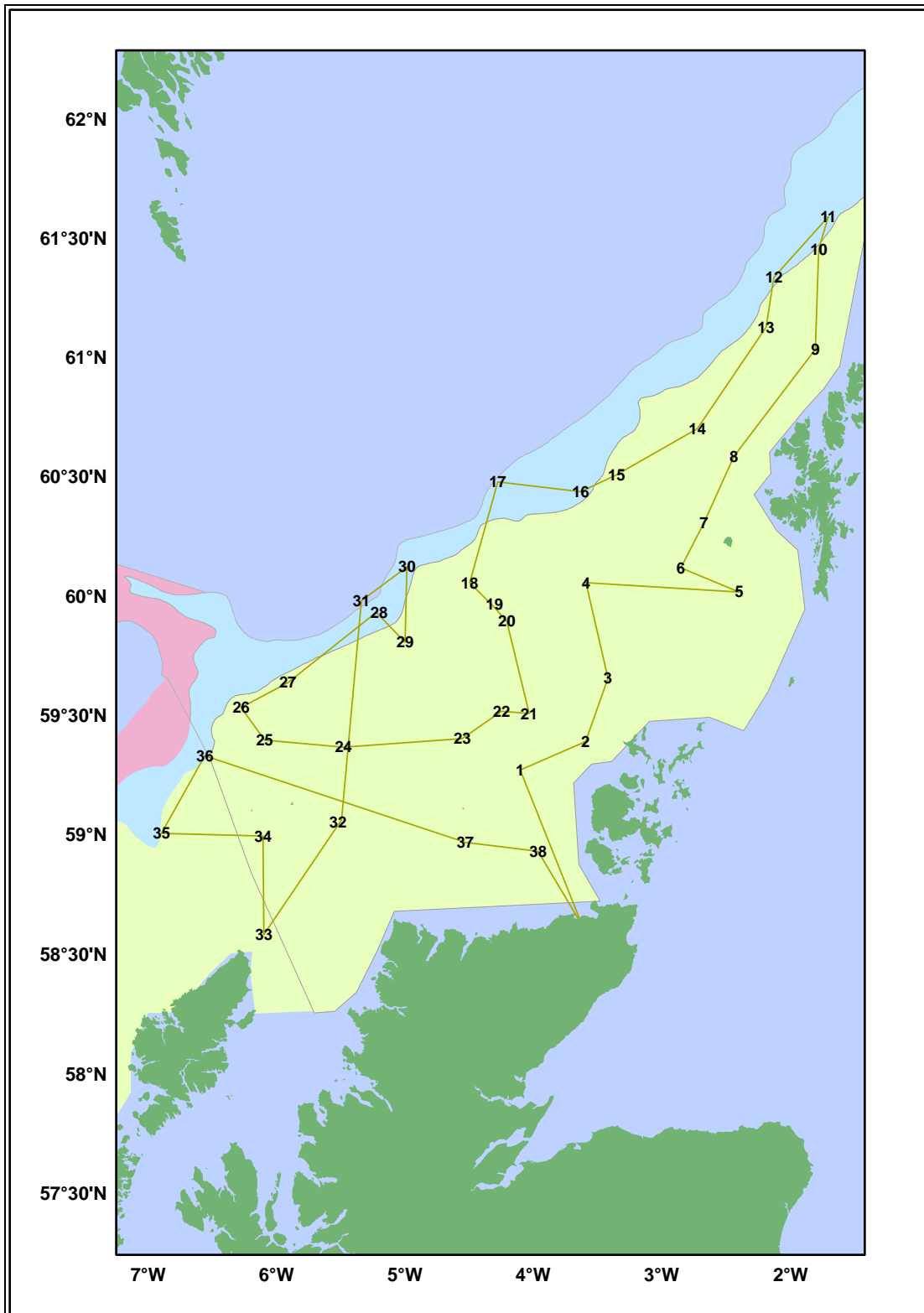




Figure 6

