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MFV Caspian

Cruise 0806H

Report

2 -12 November 2006

Personnel

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Objectives

1. To undertake a nationally co-ordinated demersal trawling survey of anglerfish on the western continental shelf/slope using the BT195 monktrawl.

2. To obtain a temperature profile at each trawling station.

3. To obtain gill samples for genetic analysis from *L. budegassa.*

4. To obtain catch weights and length frequency data for both megrim (*L. whiffiagonis)* and four spot megrim *(L. boscii)*. In addition Norway lobster *(N. norvegicus)* numbers and weights were also recorded from each haul.

Out-turn days per project: MF0353 – 10 days

Narrative

The intention was for Caspian to depart from Kinlochbervie harbour at 1800 on Thursday 2 November. However a hydraulics problem delayed sailing until midnight. Caspian then headed WNW, arriving at the first station 10nm west of the Butt of Lewis at approximately 0800 on Friday 3 November. The ground in this area is rather unforgiving and subsequently the gear came fast a couple of times although thankfully there was no damage to the fishing gear. The net returned to the vessel after a one hour tow intact and with decent numbers of anglerfish albeit small specimens. The Caspian then continued south and west covering the shallow stations west of the Hebrides and overall continued to encounter good catches of small anglerfish (See Figure.1. for cruise track and sample positions). Weather during the first four days was poor with the wind blowing a steady 25 – 30 knots. Despite this the vessel continued to fish without any real problems. Caspian arrived in the South Minch on the morning of the 6 November having dodged south during the night. Good progress was made despite the poor weather and by the early morning of the 7 November 15 stations had been completed with the vessel and the fishing gear continuing to perform well. Station 16 came back fouled with extensive repairs needing to be made to the starboard wing section and the crown of the net. A substitute tow was located 7nm NNE of the foul haul and was completed without incident. Although three boulders were present in the codend the gear remained intact and the survey was able to proceed. Caspian now headed north to tackle the more westerly and generally deeper offshore stations of the survey. Station 25 had to be

abandoned due to extensive gillnetting in the vicinity of the sample location and another additional tow was found further north in approximately the same depth. (Haul 29 – station #1, see Figure 1.). Progress was hampered at this time by strong winds and a large swell. With the threat of storm force winds looming for the night of the 9 November Caspian pushed on and was able to complete another 7 stations before the weather forced the vessel to run for shelter. This brought the total number of valid hauls up to 31. Storm force westerly winds forced Caspian to shelter behind the Butt of Lewis until the morning of the 10 November. By noon there was still no improvement and the decision was made to put into Stornoway with a view to reassessing the situation in 24 hours. On Saturday 11 the wind was still storm force and by this time had veered into the NW which reduced options further. The wind finally abated in the early hours of Sunday 11 November and Caspian put to sea again. With significant residual swell and only an eight hour working window before tidal restrictions meant Caspian had to return to Kinlochbervie the decision was made to complete one additional tow in the North Minch before heading in. (Haul 33 – station #2, see Figure.1.). This was completed successfully and Caspian was alongside at Kinlochbervie by 1500 on Sunday the 12 November.

Results

Of the 39 samples stations allocated, 32 were completed successfully. Stations 32 – 39 were unreachable given the weather encountered at the end of the survey. Prior to this the survey had been going well despite the delay in departing Kinlochbervie and the Caspian was ahead of schedule by the time the storm arrived on the 9 November.

In response to discussions that took place after last year's surveys the decision was made to reduce the tow duration from two to one hour. All the tows undertaken on Caspian were therefore of one hours duration. All but one of the hauls were completed within 5nm of the sample position. A badly damaged net at station 16 meant that it was necessary for the vessel to move 7nm NNE to the nearest clean replacement tow in order to repeat the station. In accordance with the previous year the survey design was depth stratified with randomised sample positions within each stratum. The depth strata are unchanged from the previous year i.e. 0 – 200m, 200 – 500m and 500 – 1000m.

The fishing gear performed well overall although some chaffing did occur in the wings and there was a persistent problem with turns appearing in the sweeps. The decision was made after haul 19 to shorten the bottom bridle by 3 chain links. As well as chaffing, the net was also picking up rather a lot of stones. The result of shortening the lower bridle brought the groundgear forward and thus relieved the pressure on it to some degree. It was successful and no more stones were encountered in the codend after this. Chaffing was also reduced. Scanmar sensors were placed on the net (wings and headline) as well as on the doors to monitor net geometry and performance. The readings for each sensor as well as navigational information from the GPS were collected at 10 second intervals and saved to a haulfile on the bridge laptop PC via hyperterminal. In addition to this a bottom contact sensor was deployed on the groundgear to monitor ground contact. A DST was attached to the headline and left for the duration of the trip to provide a temperature profile at depth for every haul. During some of the deeper hauls the readings from some of the scanmar sensors notably the wing and depth units became rather intermittent, however when fully charged the sensors generally performed well throughout as did the bottom contact sensor.

A total of 450 anglerfish were caught from the 32 valid hauls undertaken in depths ranging from 76m to 870m. (See Figure.2. for plot of anglerfish catch rates.). Each was sampled for length, sex, maturity stage as well as whole and gutted weight. In addition the illicia and sagittal otolith were retained for ageing. Of these, 387 were *Lophius piscatorius* and 63 were *Lophius budegassa.* Following a request from Martha O'Sullivan, gill samples from the *L. budegassa* were collected for genetic analysis. The total live weight of anglerfish caught

during the survey was 594kg. Length frequency information was also collected for all megrim and four spot megrim encountered during the survey. In total 419 megrim were measured for a total weight of 178 kg with a total of 32 four spot megrim measured for a total weight of 5 kg. (See Figures.3 and 4 for plots of megrim catch rates). In addition some very large *Nephrops norvegicus* were encountered in some of the deeper hauls typically between 300 – 700m depth and Morphometric measurements and weights data were collected from these. (Figure.5 provides catch rates as well as average weight of N*ephrops* per haul.) All marketable fish caught during the survey were processed and landed for sale at Kinlochbervie fish market on Monday 13 November. In total around 110 boxes of mixed fish were landed with haddock, ling and angler being the abundant species. Proceeds from the sale of the catch will be used by FRS to offset the charter cost.

Conclusions

The survey proceeded well right up until the very end of the survey when stormy weather forced Caspian to abandon fishing operations and run for shelter. With the exception of one foul haul when the net sustained severe damage, there was very little damage experienced and the fishing gear worked extremely well even when deployed in very poor weather. The largest catches of anglerfish were encountered in the shallower water of the continental shelf (0 – 200m strata) with very few being observed in the deeper water of the continental slope (200 – 1000m). Size distribution followed a fairly predictable pattern with the larger anglers being found in the deeper water and the smaller fish being present in the shallower water. A plot of mean angler weight by haul can be seen in Figure.6. With the exception of the very deep hauls megrim were found throughout the survey area although the largest catches were encountered in the intermediate stratum (200 – 500m). Four spot megrim were restricted almost exclusively to this stratum also. A big thank you must go to the skipper David Watt as well as to the whole crew of the Caspian, whose help, advice and patience were invaluable in ensuring the success of the survey under what were quite often difficult weather conditions.

Finlay Burns
10/1/2007

Figure1: Caspian 0806H cruise track and trawl positions. Core station positions are in red text next to haul positions. Blue circles mark positions of additional tows, red circle marks the position of the foul haul.

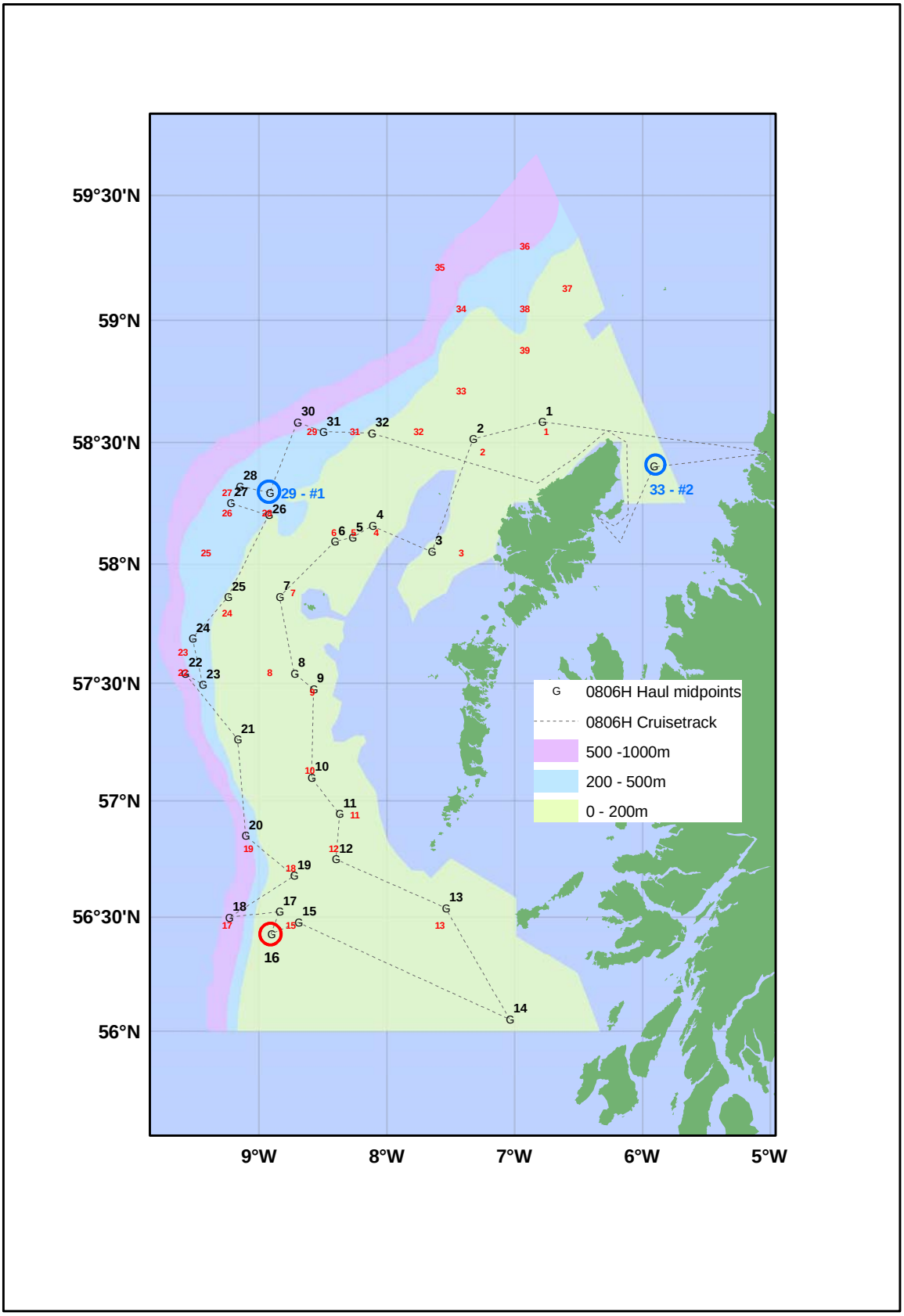

Figure 2: Haul catchrates / hr for anglerfish 0806H

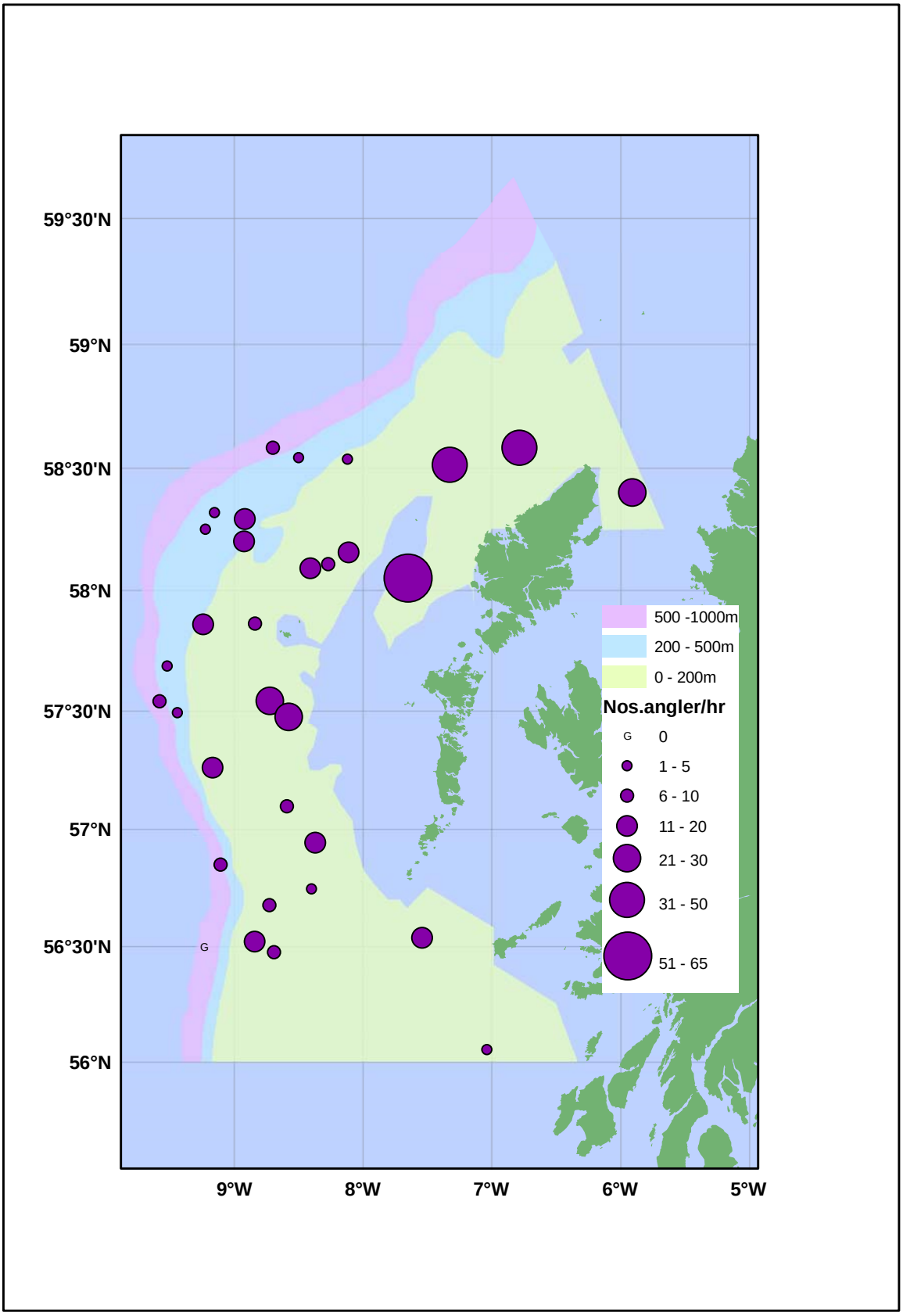

Figure 3: Haul catch rates / hr for megrim 0806H.

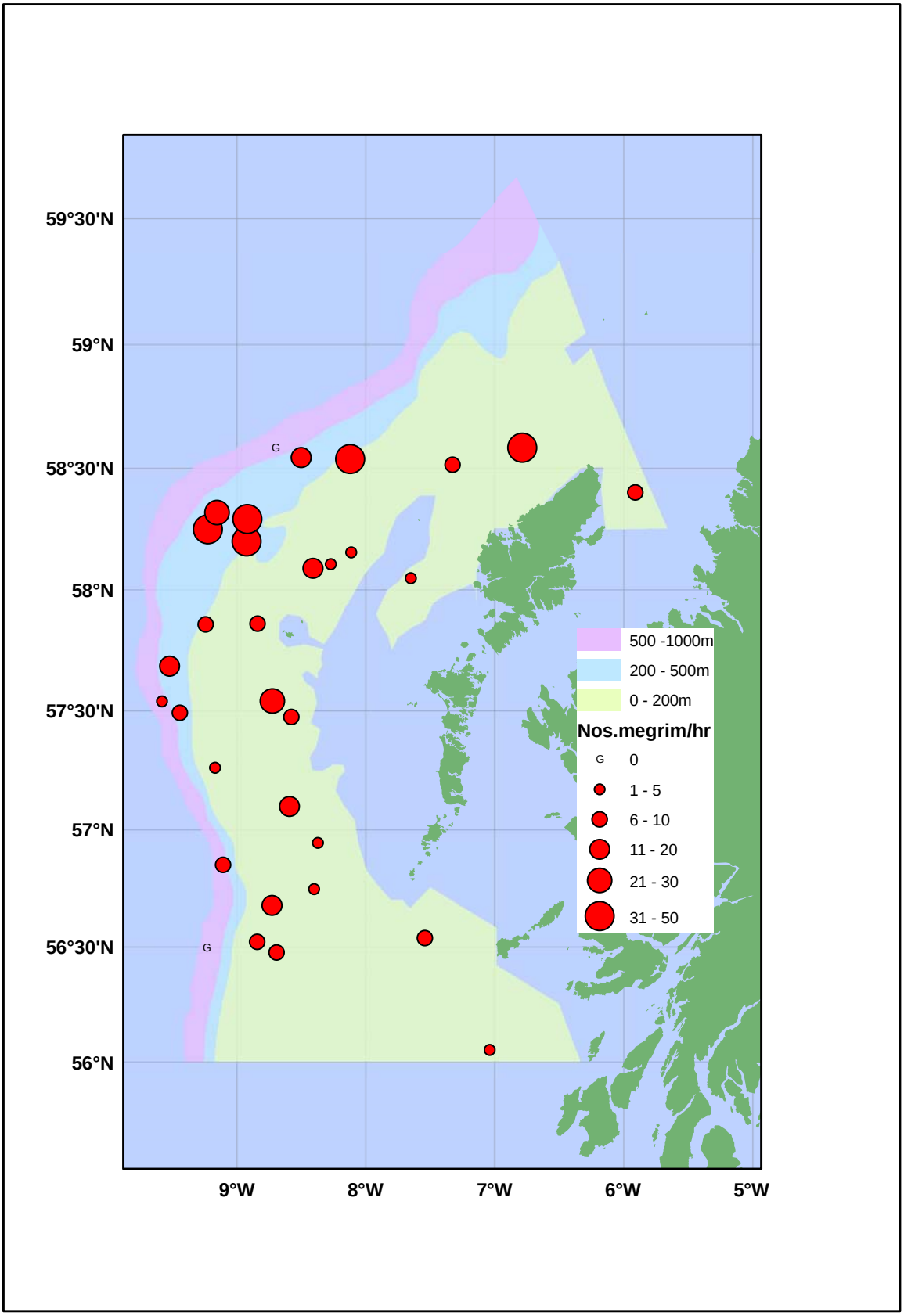

Figure 4: Haul catch rates / hr for four spot megrim 0806H.

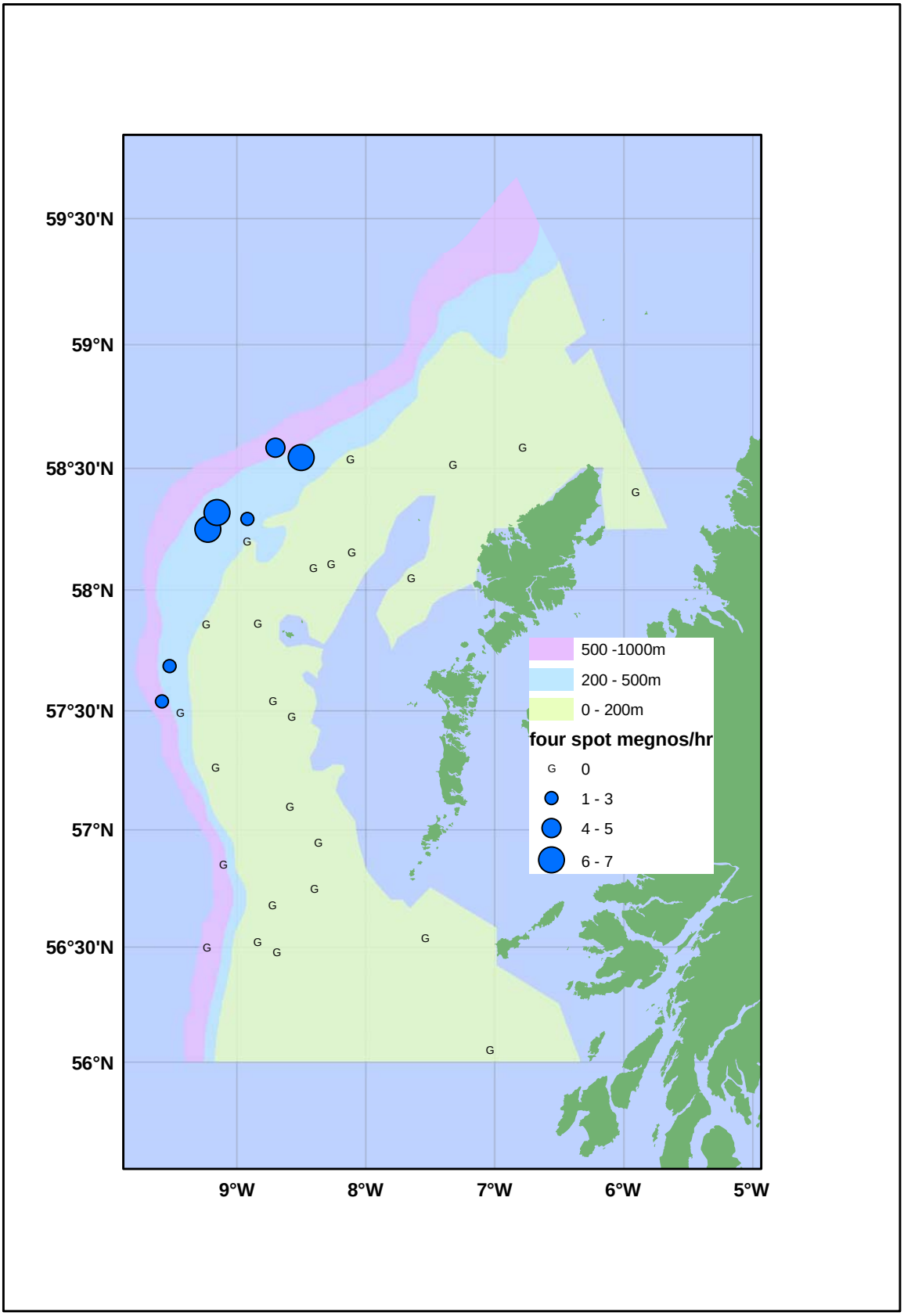

Figure 5: Haul catch rates N*ephrops* / hr and mean liveweight - 0806H

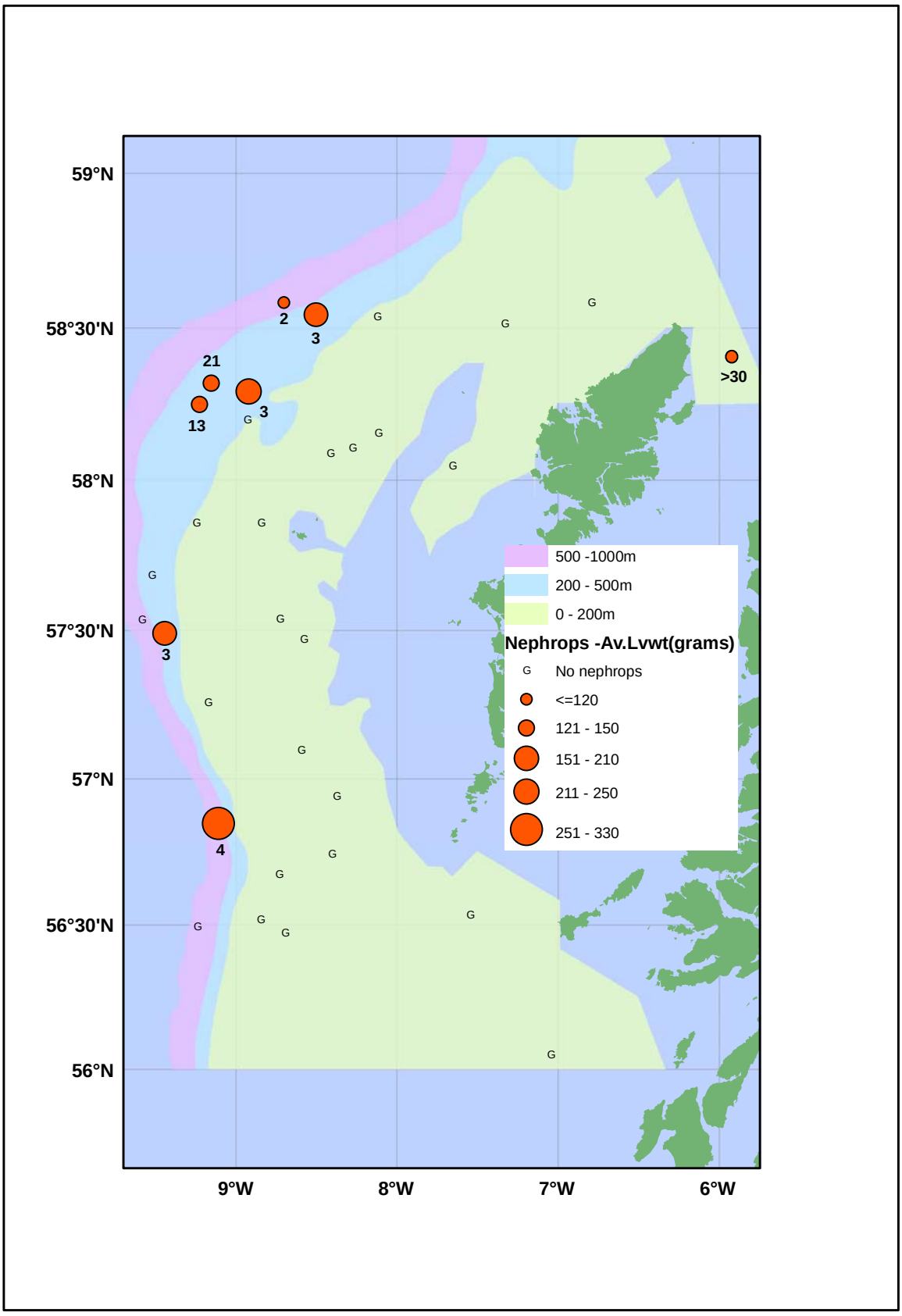

Figure 6: Mean liveweight of anglerfish / haul (kgs)