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MFV *Genesis*

Cruise 1207H

Report

31 October - 9 November 2007

Ports

Loading: Ullapool, 31 October

Unloading: Ullapool, 8 November

Personnel

F Burns (In Charge)

K Summerbell

R Watret

Out –turn Days per Project: 9 days to MF0353

Fishing Gear: Anglerfish Trawl BT 195

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

Narrative

The *Genesis* arrived in Ullapool on the morning of the 30 October and proceeded to offload her own fishing gear in readiness for the forthcoming charter. The net (BT195) and associated gear arrived mid-afternoon and FRS personnel aided by the crew were able to prepare the vessel in readiness for the charter. Setup was complete by early evening and the vessel was able to depart Ullapool first thing next morning (31 October) The cruise track as supplied by the project coordinator directed the vessel south through the Minch to the first station south of Coll (see Figure 1). A strong WSW gale was blowing which initially slowed progress until lee was reached close to the east side of Lewis. *Genesis* was then able to proceed south with an improving forecast and arrived at the first station at around 0645 on the morning of the 1 November. The first station was completed successfully at a depth of around 80m and although yielding no monks the fishing gear and sensors performed well. *Genesis* then proceeded south to complete stations 2 and 3 which were located just north of 56'N. Again both stations were completed successfully and without incident and *Genesis* continued west on the afternoon of the 1 November still without catching a single anglerfish. Station 4 was located south west of Stanton banks in a depth of 140 metres. Another

successful deployment followed as well as 5 anglerfish in the catch. Settled weather conditions allowed good progress to be made although anglerfish catches overall were low. The settled weather continued until the evening of the 4 November when the wind started to freshen from the south west. At this stage *Genesis* was west of Gallen Head having successfully completed 23 stations without any significant gear damage. The wind shifted round to the northwest and continued to strengthen throughout the 5 until by mid afternoon it was gusting 40 knots. This was to be the script until the end of the survey with the 6 and 7 November providing very little respite. Although *Genesis* was able to keep working a consequence of the weather meant the last 3 deepwater stations in the north of the survey area had to be abandoned. These were subsequently replaced with shallower additional stations located nearby. Conditions were set to deteriorate even further with 80 knot winds forecast for the morning of the 8 November. With hurricane force winds less than 24 hours away *Genesis* completed haul 34 (station 35) before heading south towards the Butt of Lewis. Enroute, *Genesis* took advantage of a temporary lull in the weather and completed an additional station located ten miles NW of the Butt of Lewis (haul 35). The final haul (haul 36) was completed 15nm SSE of the Butt of Lewis by 2200 on the 7 November. By this time the weather had once again started to deteriorate and a rough passage across the Minch followed. *Genesis* finally arrived back in Ullapool at 0300 on the morning of the 8 November 2008.

Results

Of the 36 samples stations allocated, 32 were completed successfully. Stations 28, 31 and 33 were located within the deepest stratum and were abandoned due to the severe weather encountered towards the end of the survey whilst station 23 was replaced on account of the ground being unfishable. In response, 4 additional stations were completed to take the haul total back up to 36. (see Figure 1.) Hurricane force winds forced *Genesis* into Ullapool, cutting the charter short by more than a day. Thankfully excellent progress had been made prior to this so that the net result was no loss of survey effort albeit the three abandoned deep stations were replaced with shallow hauls.

In accordance with survey protocols all tows undertaken were of one hour duration. In addition all the hauls were completed within 5nm of the sample position. As in previous years the survey design was depth stratified with sample positions distributed randomly within each stratum. The depth strata are unchanged from the previous 2 years i.e. 0-200m, 200-500m and 500-1000m. *Genesis* successfully completed 25 hauls in the 0-200m stratum, 9 hauls in the 200-500m stratum and 2 hauls in the 500-1000m stratum.

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 a 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 although a few hitches were experienced during the first few stations.

A total of 352 anglerfish were caught from the 36 valid hauls undertaken in depths ranging from 56m to 800m. (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, 311 were *Lophius piscatorius* and 41 were *Lophius budegassa*. The total live weight of anglerfish caught during the survey was 612kg. Length frequency information was also collected for all megrim and four spot

megrims encountered during the survey. In total 594 megrim were measured for a total weight of 214 kg with a total of 26 four spot megrim measured for a total weight of 3.6kg. (See Figures 3 and 4 for plots of megrim catch rates). In addition 101 *Nephrops norvegicus* were measured for a total weight of 3.7kg, including some very large specimens that were encountered at some of the deeper stations typically between 300 – 500m depth. Individual weights were collected from these. (Figure 5 provides catch rates as well as average weight of *Nephrops* per haul.) All marketable fish caught during the survey were processed and consigned for sale at Peterhead fish market on Friday 9 November. In total around 115 boxes of mixed fish were landed with saithe, 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 extremely well right up until the very end of the survey when very poor weather curtailed fishing operations. As with previous years the fishing gear performed extremely well even whilst being 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). As was the case in both 2005 and 2006 the 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. Overall catch rates for the survey were down compared with last year although the catch weight saw a slight increase albeit with more hauls than 2006. Figures 7-9 display mean catch rates/depth stratum and also catch weights/depth stratum as well as providing the mean individual weight of anglerfish for each depth stratum for both 2006 and 2007. For the shallowest stratum (0-200m) 2007 showed a significant decline both in terms of numbers of anglerfish caught and also the mean catch weight recorded per hour. Interestingly yields for the intermediate stratum (200-500m) actually increased both in number and in weight with average catch weight at this stratum showing an increase of almost 100% on 2006. For the deepest strata the data were based on only 2 hauls so no real interpretation was possible except to say that it appeared to follow the pattern seen in previous years in terms of providing low numbers of larger specimens. Figure 9 shows an increase in the mean individual weight of anglerfish across all depth strata and this was also something that was noted during the survey. Figure 10 displays the total number of anglerfish recorded by centimetre length class and expressed as a percentage of the total catch for the survey. The modal length of anglerfish for 2007 is 44cm compared to 29cm for 2006.

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 megrims were restricted almost exclusively to this stratum also.

A big thank you must go to the skipper Alan Watt as well as to the whole crew of the *Genesis*, whose help, advice and patience were invaluable in ensuring the success of the survey under what were latterly testing weather conditions.

Finlay Burns
14 January 2008

Figure1: *Genesis* 1207H - cruise track and trawl positions. Core station positions are in black text. Completed haul positions are in red text. Blue circles mark positions of abandoned stations and red circles mark the position of additional stations completed to replace these.

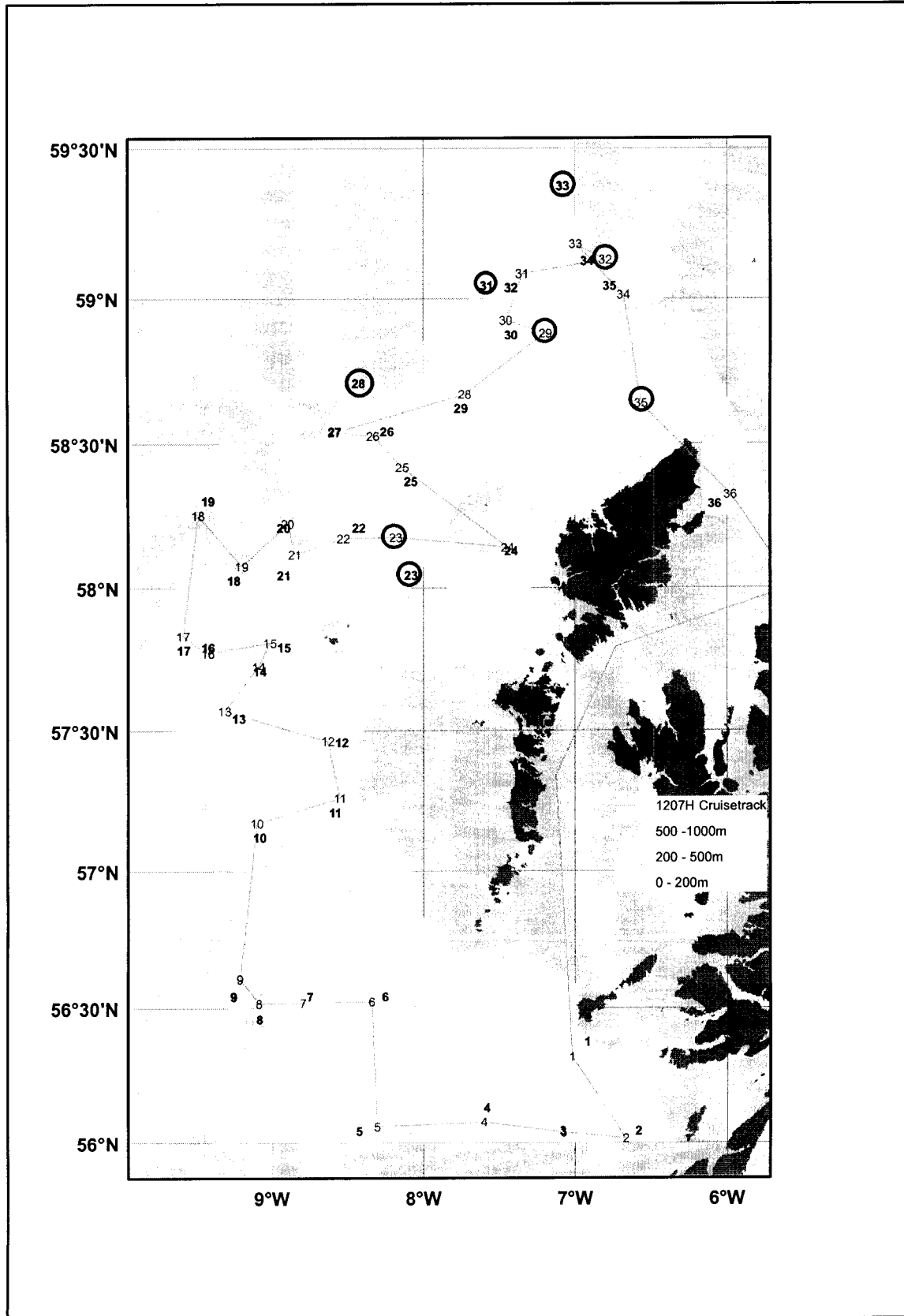


Figure 2: Haul catchrates / hr for anglerfish - *Genesis* 1207H.

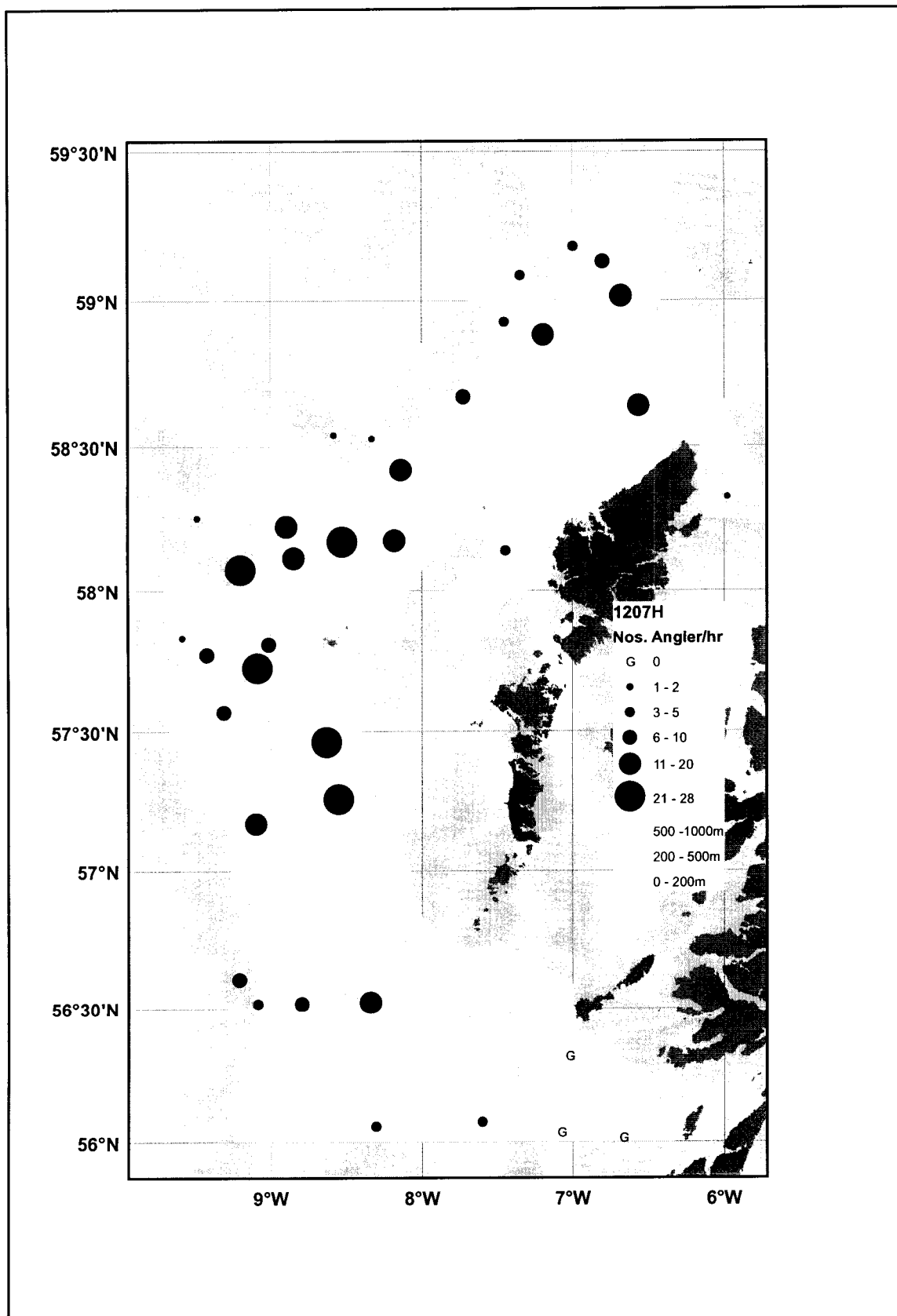


Figure 3: Haul catch rates / hr for megrim - Genesis 1207H.

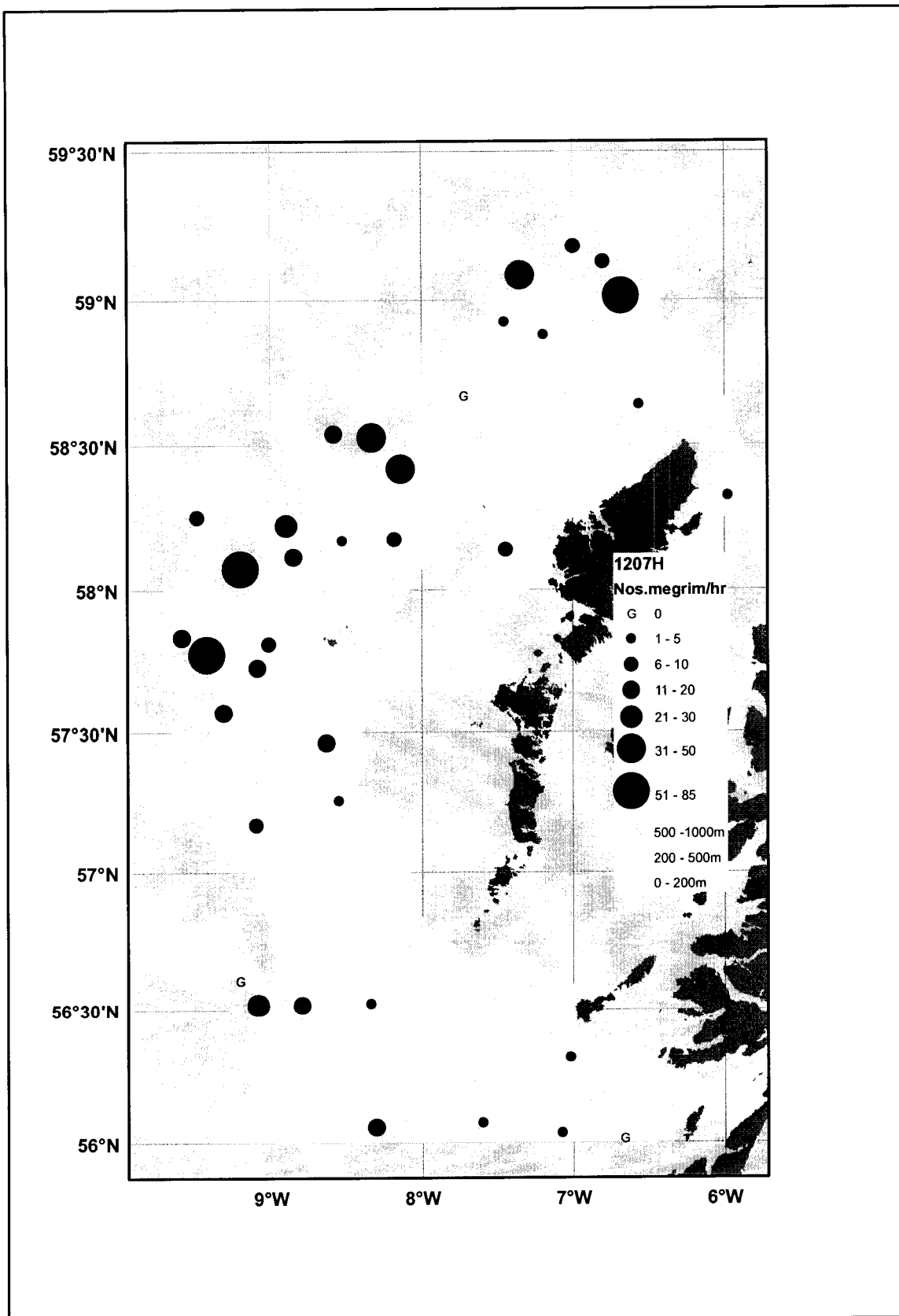


Figure 4: Haul catch rates / hr for four spot megrim - Genesis 1207H.

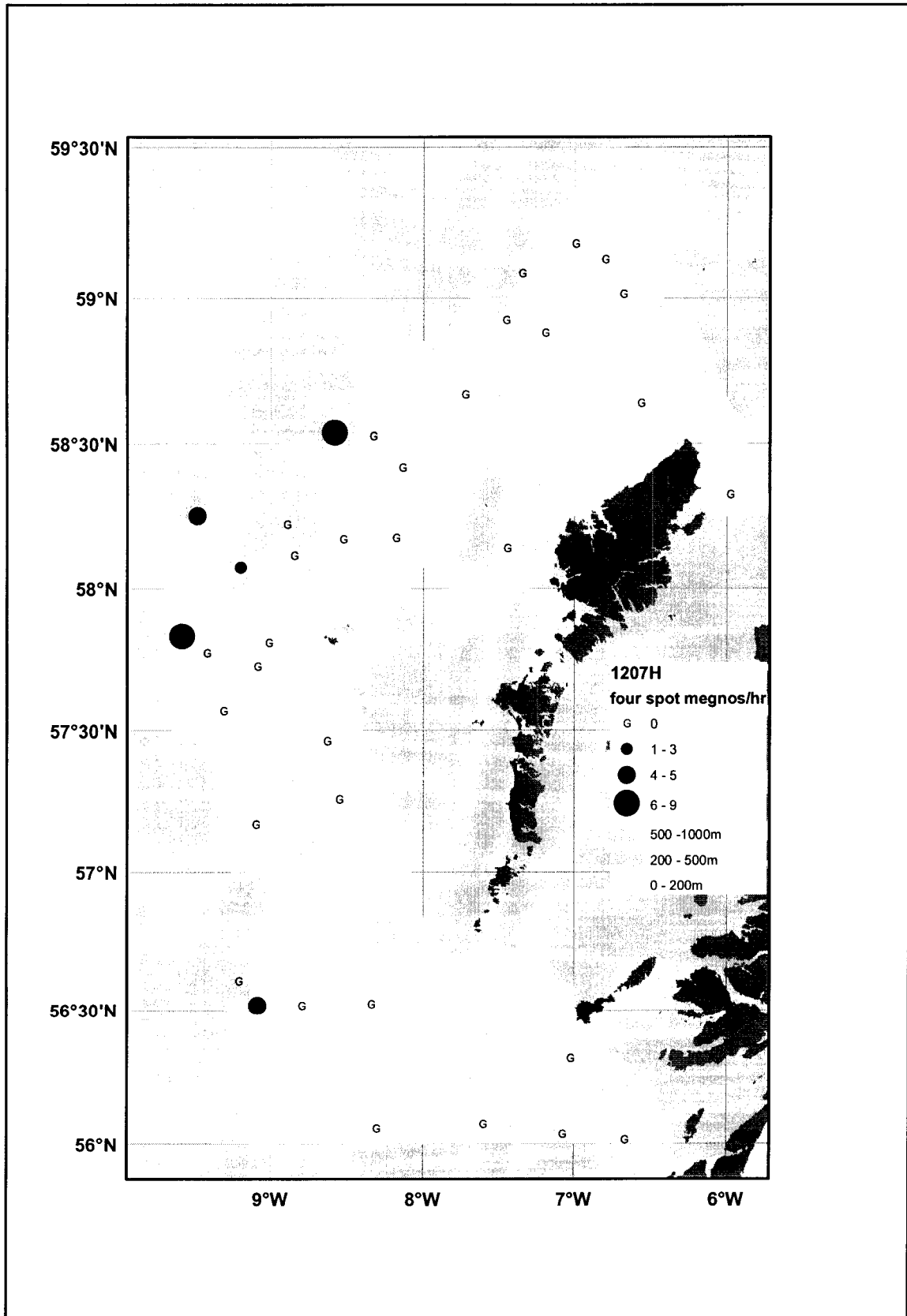


Figure 5: Haul catch rates *Nephrops* / hr and mean liveweight - Genesis 1207H

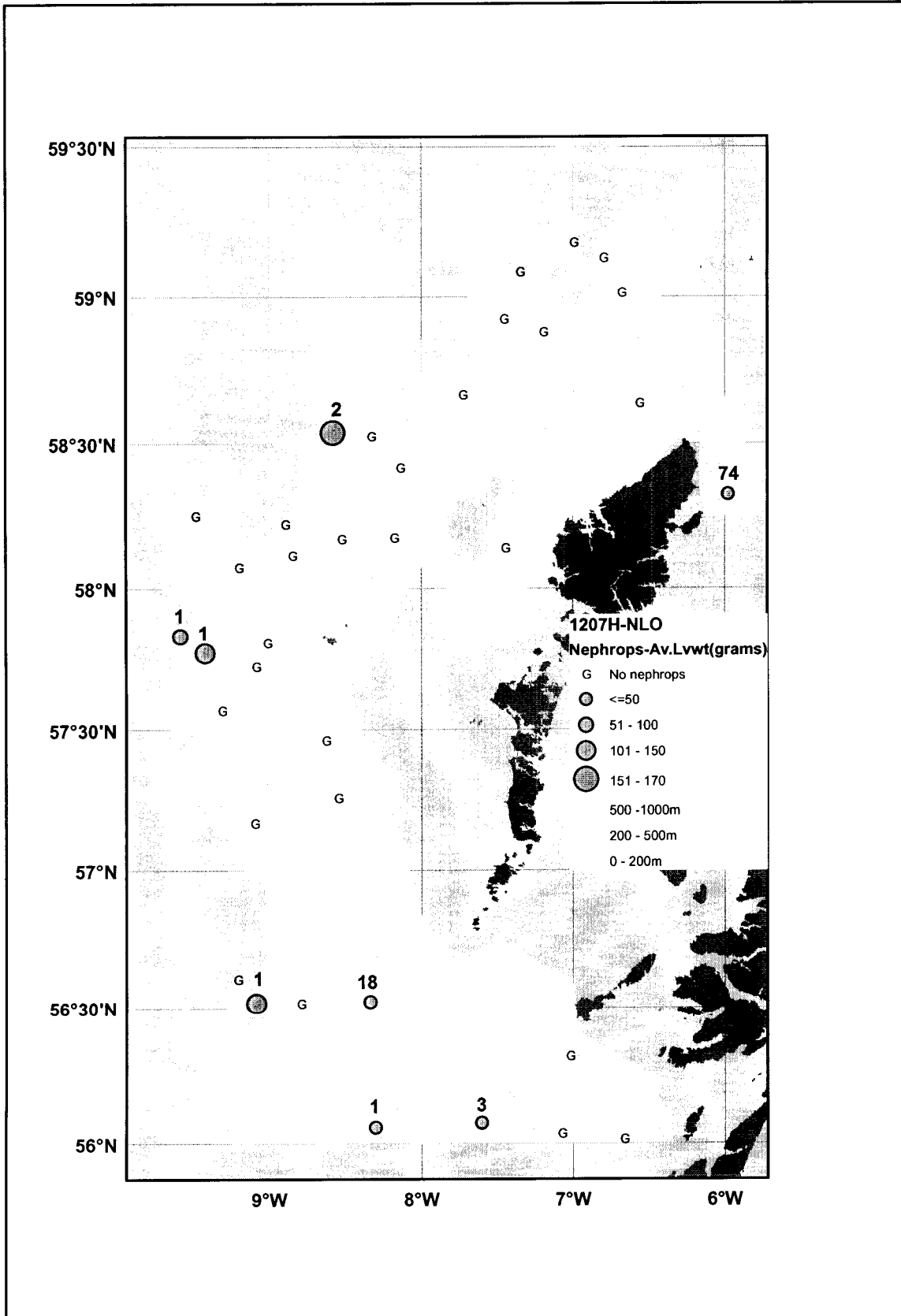


Figure 6: Mean liveweight of anglerfish / haul (kgs) – Genesis 1207H.

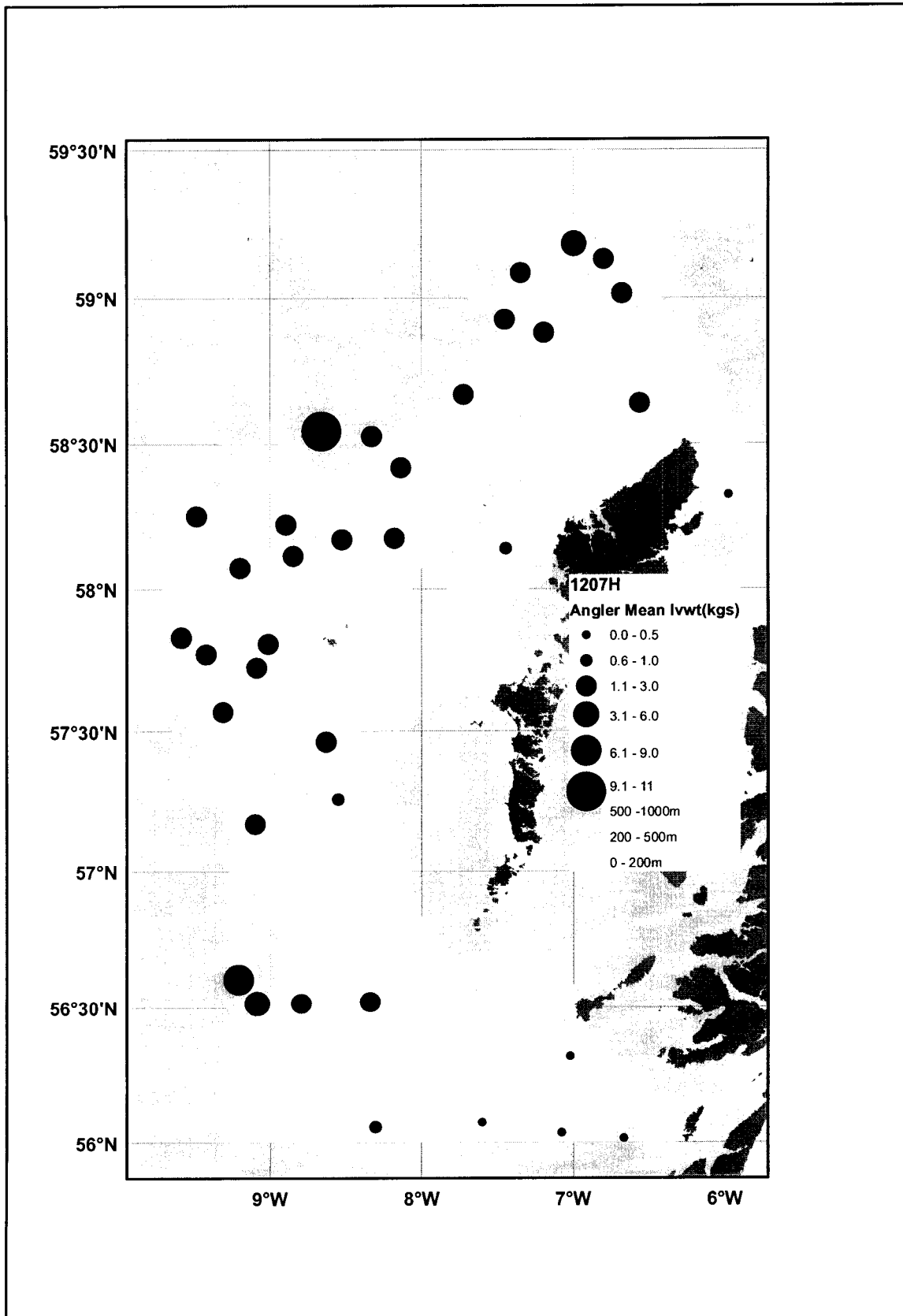


Figure 7 - 9: Comparison of anglerfish catchweights(kg) and catchrates(nos/hr) by depthstratum as well as average weight of individuals caught /depstratum for 2006 and 2007. (Weights used are total weight)

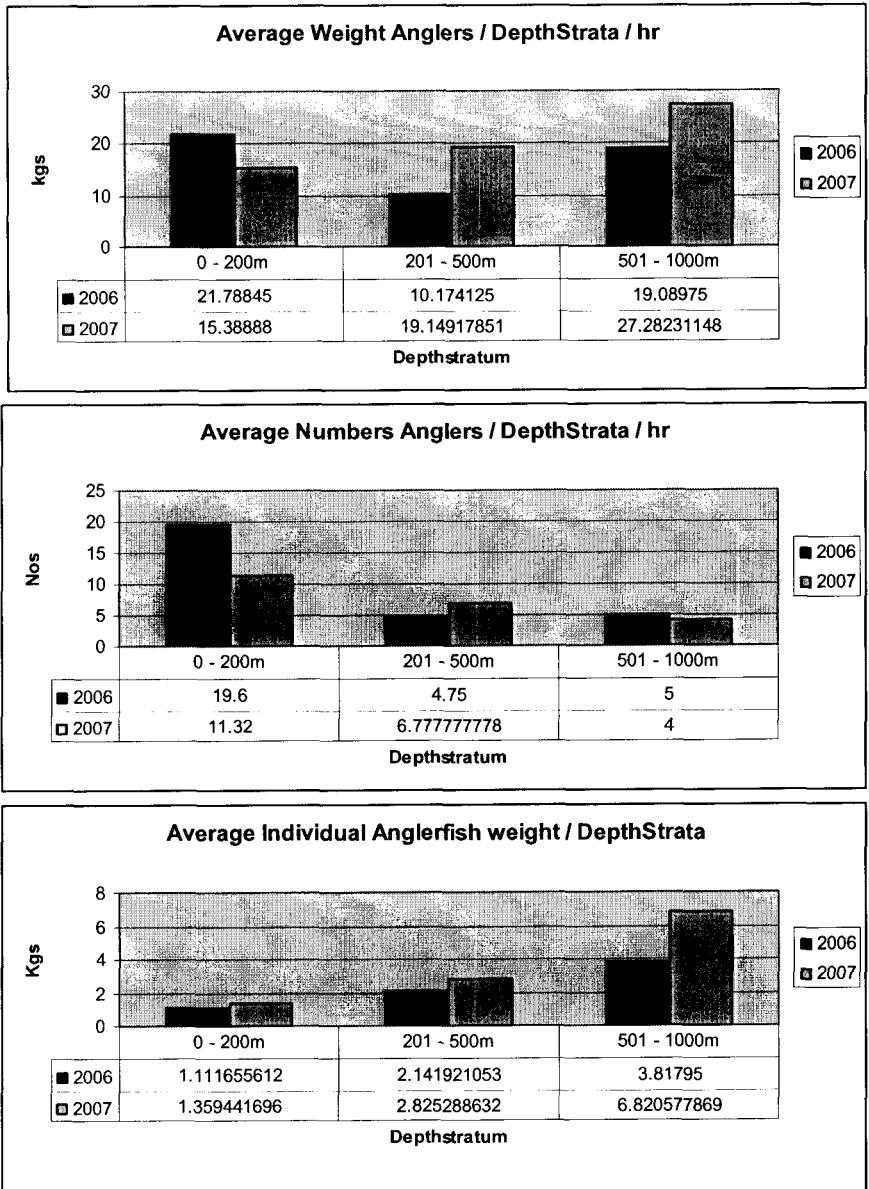


Figure 10: Total number of Anglerfish/length class expressed as a percentage of total catch.

