

A Preliminary Survey of Small Cod Around Shetland - 2009

Ian Napier & Leslie Tait

Fisheries Development Note

No. 28

October 2009

Summary

In response to reports from fishermen, a preliminary survey was carried in August 2009 to evaluate the abundance of small cod on fishing grounds around Shetland. The results showed that there was a relative abundance of cod around 29 cm in length (just over one year of age). Although a similar peak was less evident in data collected during international fisheries surveys, this could be due to differences in the areas fished or gear used.



NAFC Marine Centre's fishing vessel *Atlantia* (LK 502) used in this survey.

Introduction

During the Spring and Summer of 2009 persistent reports were received from Shetland fishermen of abundances of small cod on fishing grounds around Shetland. In response to a request from the Shetland Fishermen's Association, the NAFC Marine Centre undertook a short survey during August 2009 to establish the size distribution of cod on these grounds.

Methods

The survey was carried out using the NAFC Marine Centre's fishing vessel *Atlantia* (LK 502). During the survey the *Atlantia* used her standard otter trawl fitted with a small mesh (about 40mm) cod-end so as to retain more small fish (a derogation to allow the use of this net was granted by Marine Scotland).

A series of tows were made by *Atlantia* with this net on inshore fishing grounds around Shetland during August 2009. Following each tow, all of the cod caught were measured.

Results

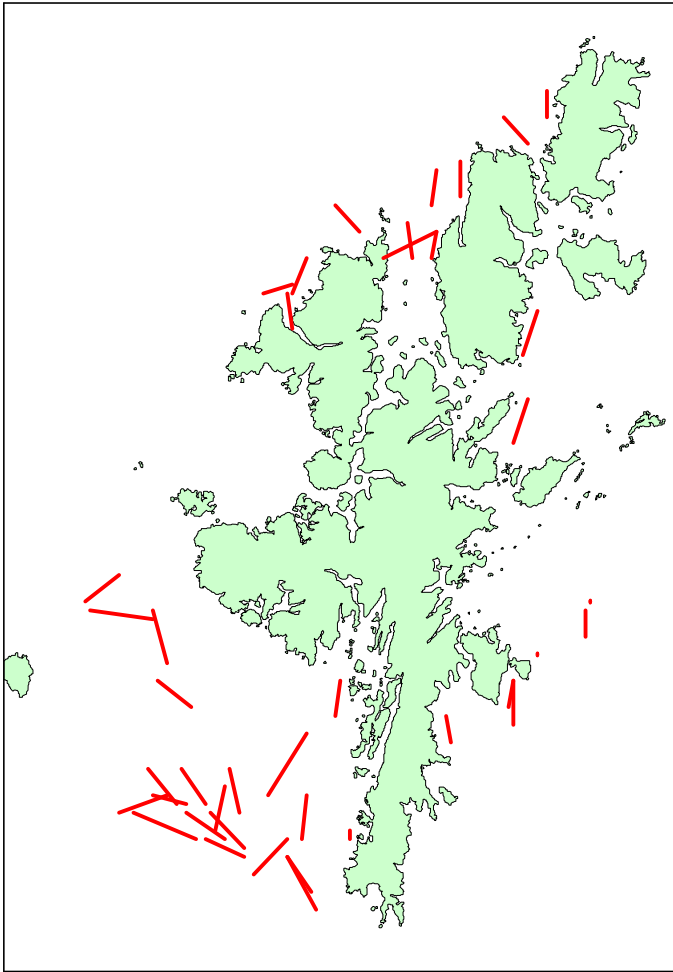
A total of 41 tows were made between the 4th and 18th of August 2009 (see map overleaf). Two tows were 'foul' due to the net coming fast and tearing, leaving 39 successful tows. In general catches were disappointing, especially in the early part of the survey which was hindered by poor weather. Time was also required to optimise the rigging of the net.

Overall, a total of 796 cod were caught, ranging in length from 19 to 84 cm. Very few cod less than 20 cm in length were caught, possibly because the cod-end used was not retaining such small fish.

The length frequency distribution of the cod that were caught - the proportion of the number caught that were of each length - is shown in the graphs overleaf. Also shown are separate length frequency distributions for the cod caught in three separate areas around Shetland: the southwest, north west, and east.

There was a strong peak in the frequency of lengths around 29 cm. Overall, about half (49%) of all the cod caught were between 25 and 35 cm in length (35 cm is the minimum landing size for cod). Similar peaks were evident in the three separate areas.

Small Cod Around Shetland - 2009



The locations of the tows made by Atlantia between the 4th and 18th of August 2009.

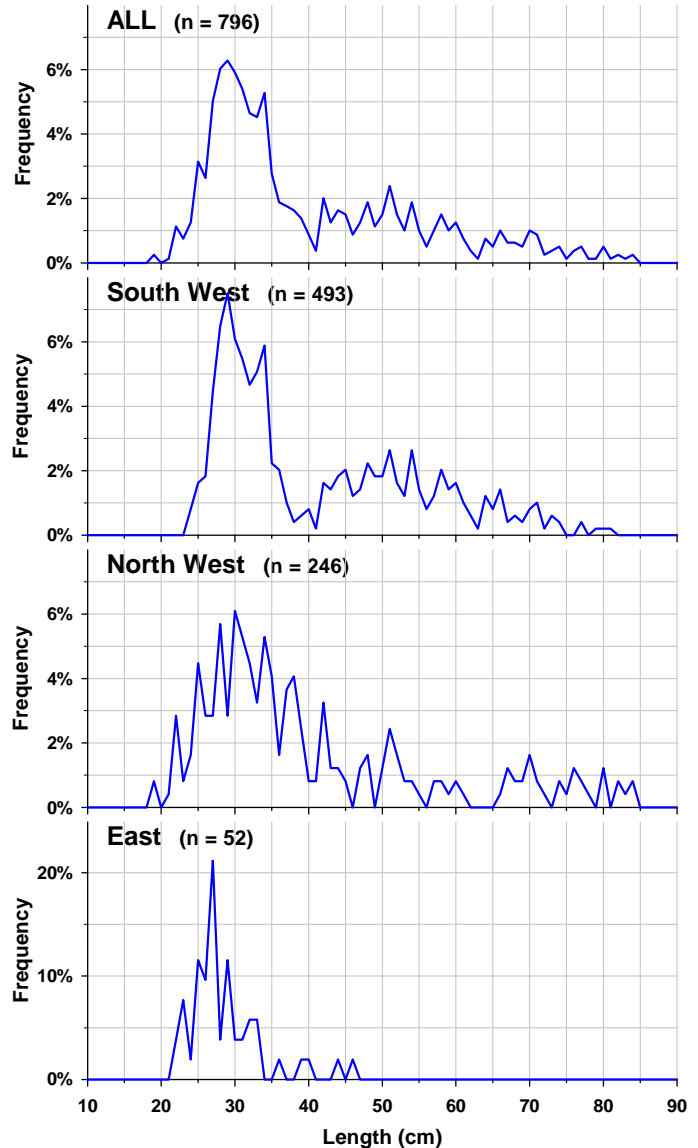
Published length-age relationships indicate that cod of 29 cm in length will be just over one year old, suggesting that these fish were of the 2008 year class.

In the east very few cod over 35 cm in length were caught, but the results may have been skewed by the relatively small total number of cod caught in this area.

Discussion

The results of this short survey indicate that 'small' cod (< MLS) accounted for about half (52%) of all the cod caught around Shetland by the *Atlantia* in August 2009. There was a strong peak in the frequency of cod about 29 cm in length, which are probably just over one year old.

The proportion of these 'small' cod in the *Atlantia's* catches was more than three times greater than the 14% in the catches taken around Shetland by a fisheries research vessel at about the same time



Length frequency distributions of all cod caught (top) and in three separate areas (number of cod of each length as % of total number in each case).

as part of the International Bottom Trawl Survey (IBTS).

This difference may reflect a difference in the distribution of small cod, between the inshore waters covered by this survey and the more offshore waters where most of the research vessel hauls were made, or a difference in the performance of the two vessels' nets.

Acknowledgements

This survey was funded by the NAFC Marine Centre. IBTS data for 2009 were provided by the MSS Marine Laboratory.