

By: Lead Scientific & Conservation Officer

To: Kent and Essex Inshore Fisheries and Conservation Authority – 29th November 2016

Subject: **Whelk Research Update**

Classification Unrestricted

Summary:

This report provides Members with an update on recent whelk research by KEIFCA and future proposals for whelk research

Recommendations:

Members are asked to:

1. **APPROVE** a funding application to the European Maritime and Fisheries Fund for payment of £15,000 to allow a study into how whelk populations vary seasonally; and
2. **COMMENT** on the actions taken by officers

Background:

In November 2011, KEIFCA introduced an emergency byelaw limiting the number of whelk pots that could be used in the district to 300. At 18th January 2013 Authority meeting a decision was made to develop a flexible byelaw to help sustainably manage the whelk stocks in the long-term and it was agreed to design a byelaw that allowed the number of whelk pots, the riddle gap size and the number and size of escape holes to be periodically reviewed. In April 2013 the byelaw was signed by the Secretary of State and permits were issued under the new legislation. Under the whelk permit byelaw it is required to review the technical specifications at least every three years, taking into account new research into whelk populations and analysis of the KEIFCA whelk fishery over the past few years.

A technical panel of the Kent and Essex IFCA (KEIFCA) met on 7th January 2016 to review the technical specifications of the KEIFCA whelk permit byelaw that was introduced in 2013 and make recommendations to the full KEIFCA for future whelk permit byelaw technical specifications.

Recommendations from the technical panel to the Authority on 22nd January 2016 were to increase the escape hole size in pots and the riddle size to 25 mm, to maintain the minimum number of escape holes in pots at 2 per pot and to maintain the current pot and tag limits. The Authority decided against changing the existing technical specifications and requested that more evidence be gathered to investigate the impact of increasing escape hole and riddle size on catch size and landings.

1. Whelk escape hole and riddle size research

1.1 Introduction

In order to collect further evidence on the impact of increasing escape hole and riddle size to 25 mm, experiments were carried out in waters off Kent and Essex. Some whelk fishermen were approached and asked if they would be willing to use our experimental pots and collect whelks on our behalf for this one off experiment, however none of the fishermen asked wished to participate and therefore FPV Tamesis was used to deploy and recover the pots.

1.2 Aim

To quantify changes to the weight and size structure of whelks caught and retained using larger 25 mm escape gaps and riddles in whelk pots and therefore estimate the economic impact to fishermen of an increase in whelk escape gap and riddle size.

1.3 Method

Experimental whelk pots were baited with spotted dogfish and deployed from FPV Tamesis on 3rd November (from Ramsgate) and on 11th November (from Brightlingsea). Ten whelk pots with 20 escape holes each of 22 mm diameter and ten pots with 25 mm escape holes were set in 2 strings, with 5 pots of each escape hole size on each string. Pots were hauled after 1-day soak time in Kent and after 3 days' soak time in Essex, due to the usually lower abundance of whelks in Essex.

Whelks from each pot were riddled through a 25 mm and a 22mm riddle and the shell length of all whelks retained and rejected by the riddles was measured. The weight of each riddled fraction along with the total weight of catch in each pot was measured.

Statistics (t-tests) were used to test for differences in the weight of catch that is retained using 25 mm escape holes and a 25 mm riddle compared to the weight of catch retained using 22 mm escape holes and 22 mm riddle.

1.4 Results

1.4.1 Kent

Whelks caught in Kent using both 22 mm and 25 mm escape holes comprised a large number of small, juvenile whelks that passed through the 22 mm riddle. Statistical tests show that there was no significant difference in the weight of

whelks retained using 22 mm escape holes and riddle versus 25 mm escape holes and riddle. However, there were large differences in the size composition of whelks between the two strings of pots despite them being set in close proximity to each other. There was a greater number of smaller whelks that weren't retained by either size riddle on one string of pots regardless of the size of escape hole used compared to the second string of pots that had a greater number of larger whelks.

This high variance in whelk sizes between strings of pots and between pots means that it is difficult to draw conclusions from this set of data, despite there being no statistical difference between the weight of catch using the two different methods.

1.4.2 Essex

One string of pots was recovered after three days, however, the remaining string of pots could not be found. Whelks retained in the pots that were recovered were of a very small size and, similar to Kent, the majority caught in both 22 mm and 25 mm pots passed through a 22 mm riddle.

1.5 Conclusion

The results from both of these trials in Kent and Essex are inconclusive due to the lack of medium and large sized whelks caught. The large numbers of small whelks caught could be due to spatial variation in the distribution of different age classes of whelks, e.g. pots could have been set in a whelk nursery area. The spatial and temporal variation of whelks in the district is largely unknown. Initial reports from fishermen in Kent indicate that whelks are being targeted further offshore, outside the district, more so than in previous years. This could indicate a change in the distribution and abundance of whelks inside the district although there is currently no data to support this.

2. Funding proposal for future whelk research

In January 2016, the Authority requested that further data be collected in order to inform management of the whelk fishery. As a result of this, a funding proposal has been drafted to be submitted to the European Maritime and Fisheries Fund (EMFF) for approximately £15,000 to study how whelk populations vary seasonally, in order to understand the stock better and to inform future management decisions. The project proposes to pay a fisherman to collect whelks once a month for two years using scientific pots supplied by KEIFCA and a tender invitation was issued in October 2016 on the KEIFCA website and to all whelk permit holders to conduct the sampling. The project proposes that whelks will be measured and dissected to determine their gender and size at maturity and funds are being sought from the EMFF to cover the costs of sample collection (by fishermen), sample processing (by IFCOs) and project management and report writing (by the LSCO). If successful in gaining funding from the EMFF for this project it is anticipated that work can begin early next year.

The Authority is asked to **approve** this funding application.

3. Whelk grading machine trials

Currently there is a requirement under the KEIFCA whelk permit byelaw and associated technical specifications to size grade whelks by passing them through a 22 mm riddle. There is no standard method for riddling of whelks on board commercial vessels with many fishermen using different sized riddles (with the same 22 mm slots in them) and many riddling by hand. Trials are currently underway by industry to test a mechanical whelk grading riddle that could improve efficiency of sorting of whelks on vessels and also introduce standardisation of whelk riddling on commercial vessels. The design of this riddle resembles the type currently used on the Thames Estuary cockle vessels whereby the whelks pass through a rotating chamber with the required bar spacing. The bar spacing being tested is 25 mm although it is believed this could be adjusted to different widths. The length of this chamber could be specified to ensure that undersized whelks have a greater chance of passing through the bars and that the sorting method can be standardised between vessels. If successful, this could also reduce the risk of fishermen landing undersized whelks.

4. Next steps

Between now and the January 2017 Authority meeting, officers intend to try and work closely with the industry to progress our understanding of the potential management measures available and the impacts of the proposed measures. Officers have started to develop a longer-term management plan (including ideas on reviewing management based on a set of trigger points), with the intention to present the plan at the next Authority meeting.

Recommendations:

Members are asked to:

2. **APPROVE** a funding application to the European Maritime and Fisheries Fund for payment of £15,000 to allow a study into how whelk populations vary seasonally; and
3. **COMMENT** on the actions taken by officers