Appendix 1 to Agenda item B5

Whelk Minimum Size Emergency Byelaw 2020 paper

Background

During the latter part of 2019 KEIFCA engaged with industry to discuss current management and review future management options for the whelk fishery. Industry raised concerns over the fairness and consistency of the riddling process required by the current permit byelaw, which required all whelks that could pass through a 25mm riddle to be returned to sea. Previously, officers conducted compliance inspections by riddling the catch on landing, measuring the weight of whelks that passed through (i.e. were rejected) to determine if the catch had been effectively riddled.

The feeling from the industry was that whilst a riddle will grade whelks of different sizes, there is still some variance even when the same riddle set up is used. In practice this means that the same batch of whelks could be passed over the same riddle but show slightly different results in the proportion of whelks that were retained or rejected. This is due to the irregular shape of a whelk, meaning the probability it will pass through the riddle depends on the angle of exposure to the riddle bars. Such inconsistency highlighted the issue of using riddle width as a proxy of whelk minimum size to manage the fishery. KEIFCA's research showed that a mechanical rotary riddle could grade whelks more reliably than a flat hand-worked riddle, however results were still not completely consistent.

In an effort to make the grading process more consistent, KEIFCA created an emergency byelaw in January 2020 which translated the current riddle size (which grades whelks on shell width of 25mm) into a minimum shell height size (53mm). This was based on research data which showed that, on average, whelks with shell height of 53mm had a minimum shell width of 25mm, which from a stock management perspective is the size at which 50% of whelks are likely to have bred. Unlike shell width, shell height is not variable and therefore provides a measurement that can be repeatably checked by fishermen and inspecting officers alike.

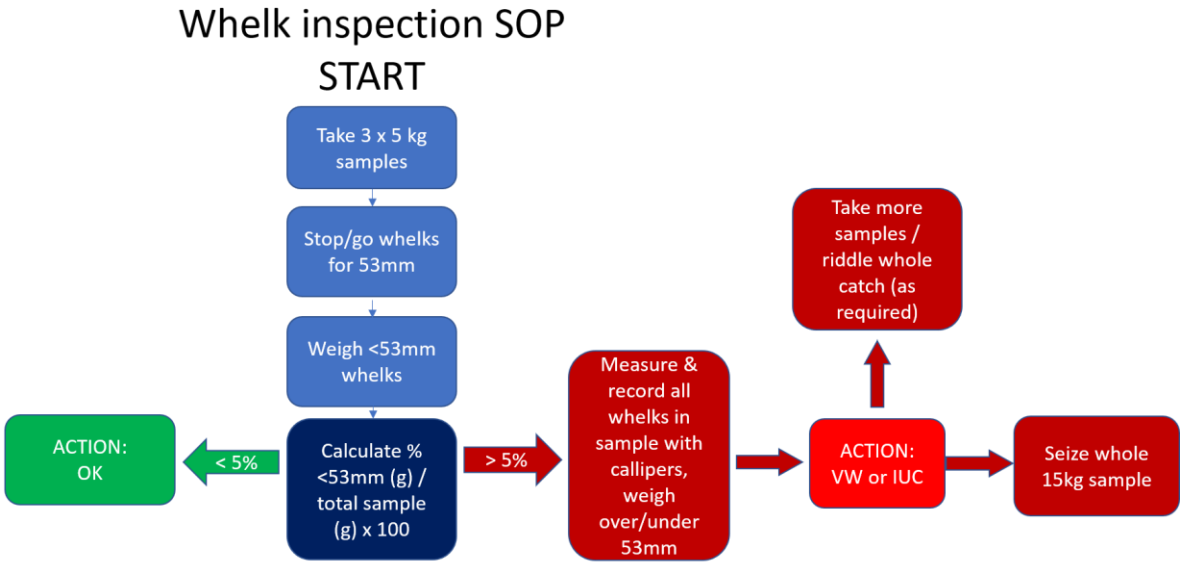
A percentage tolerance for whelks below the new minimum size of 53mm shell height was included in the emergency byelaw to account for issues of accuracy with the riddling process, and the bulk-quantities in which whelks are landed. For ease of assessment by both the industry and KEIFCA officers, it was agreed that a percentage by weight rather than number would be used. A 5% tolerance for whelks below 53mm length was deemed reasonable, although landing any whelks below the statutory EU size of 45mm minimum length would remain illegal.

The emergency byelaw also outlined a clear inspection process for checking catches on landing. This was designed to be consistent and fair, with a standardised number and weight of samples taken from different parts of the catch. It specified a minimum of three samples of 5kg to give a reasonable assessment, but that more samples could be taken if required at the officer's discretion.

Methods

Following the introduction of the emergency byelaw, officers were tasked to conduct landing inspections of whelk fishing vessels. The overall aim was to use "real-world" feedback from the fishermen and officers to get a better feel for the metrics used in the inspections (number and weight of samples, and the percentage tolerance under the minimum size). Furthermore, by conducting 'education' inspections KEIFCA could fairly introduce industry to new procedures and

gather data on compliance levels under current fishing practises.



Officers organised inspections with whelk permit holders from Leigh on Sea, Whitstable, Ramsgate, Folkestone, Hythe and Dungeness between February and August 2020. The COVID-19 pandemic delayed the inspection programme considerably between April and July; however, the officers were able to resume engaging once lockdown restrictions had eased. For each permit holder, officers explained the new procedure before demonstrating an inspection and giving immediate feedback. Officers made particular efforts to engage with fishermen who had raised concerns about the previous riddle-based enforcement to show how the new method was clear and repeatable.

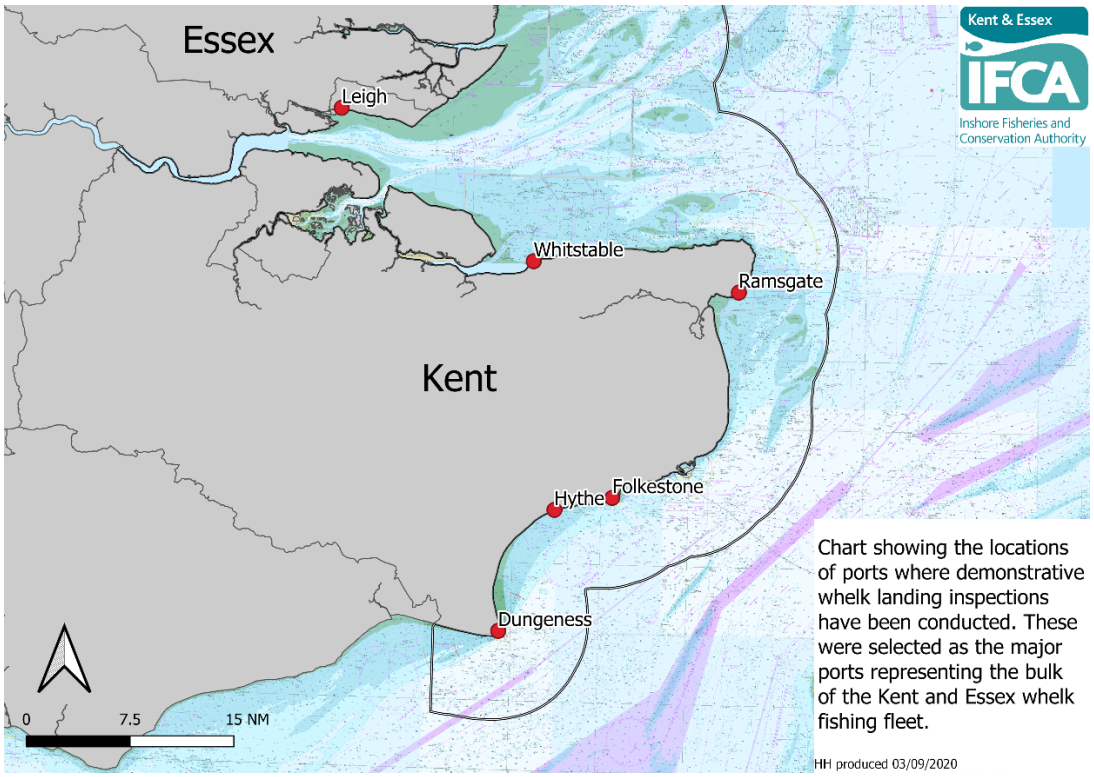
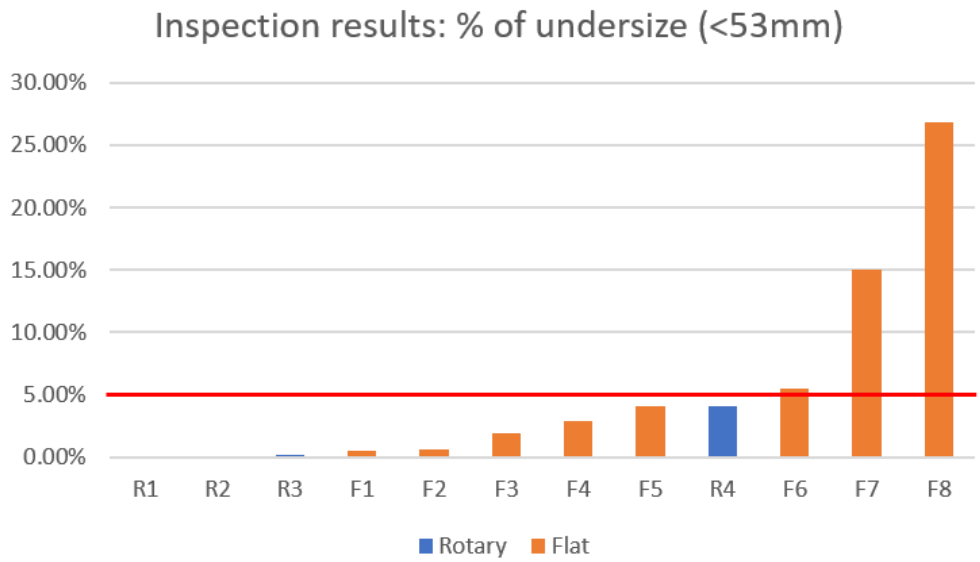


Chart showing the locations of ports where demonstrative whelk landing inspections have been conducted. These were selected as the major ports representing the bulk of the Kent and Essex whelk fishing fleet.

Results

Initial inspections showed that the vast majority of the whelk fleet were compliant with the new emergency byelaw when operating under their usual fishing practises i.e. using a 25mm riddle as required in the permit byelaw. Twelve inspections were carried out between February and August 2020 from vessels across the district, with further inspection data still being processed from Folkestone. Results showed that three quarters of vessels (nine out of twelve) passed with less than 5% of whelks below 53mm on first inspection, and moreover a third of all vessels (four) passed with less than 1% of whelks below 53mm. Of the three vessels that failed, one only failed by a narrow margin with less than 6% undersize. The remaining two boats that failed did so more decisively with significantly greater than 5% undersize.



Breaking down the data further to examine the effect of riddle type on inspection results, the data showed that all four vessels that use a rotary riddle passed their initial inspection, whereas only two thirds (five out of eight) vessels using a flat-type riddle passed with less than 5% undersize whelks.

Such a high pass rate on initial inspection therefore indicates that the use of a 25mm riddle is mostly effective at eliminating whelks below 53mm shell length from the catch. At this early stage of the emergency byelaw being introduced there was no indication that any fishermen were actively checking their catch for 53mm on board (i.e. measuring with a gauge) but relied primarily on the riddle as a sorting tool.

Potential reasons for failure

The vessel that failed with the highest percentage (26.9%) of under 53mm whelks was clearly non-complaint, as the catch had not been effectively riddled as required by the permit byelaw. A flat 25mm riddle with a calculated surface area of 3500 cm^2 was used, which is significantly smaller than that of a rotary riddle which averages 10000 cm^2. The relatively small surface area of this riddle could have contributed to the higher proportion of undersize whelks, but conversely other fishermen with a similar flat riddle passed their inspection with well below 5%. This therefore indicates that it is the method of riddling whelks which needs to be improved (i.e. riddling more thoroughly) in order to reduce undersize in the catch. In addition, officers noted at the time of

inspection that the whelks were very muddy, (despite the skipper claiming to have run a deck wash over them) and also had some slipper limpets attached. This may have contributed to the higher proportion of undersize, as excess mud and limpets could prevent smaller whelks from falling through the riddle bars. It should be noted however, that other vessels with muddy and limpet covered whelks managed to pass inspection, highlighting again that the most likely reason for failure was the lack of a thorough riddling process. With the emergency byelaw being recently introduced at the time of inspection there was no indication that the skipper was checking his own catch for under 53mm whelks, another process that would certainly improve results.

The vessel with the next highest percentage (15%) of under 53mm whelks also used a flat 25mm riddle, but with an even smaller calculated surface area of 1500 cm^2. Industry observations show that a smaller riddle makes it more difficult to riddle as effectively, as riddle gaps can be blocked by other whelks if too many are sorted at one time. These whelks were also slightly muddy and had some slipper limpets attached (see discussion above). The skipper said that his whelks are only washed after they are riddled, and this could indicate that excess mud could have prevented undersize whelks from being rejected by the riddle. The skipper gave his own explanation for the high number of undersize, stating that he had been fishing an area of inshore ground where the whelks were all typically smaller. Again, best practise indicates that a larger (preferably rotary) riddle with a deck wash run over it would help reduce the proportion of undersize whelks. Using the current riddle, the skipper would need to ensure the catch was more thoroughly riddled to remove small whelks, especially if fishing on grounds where whelks are known to be smaller. As with the previously discussed vessel, there was no indication that the skipper was checking his own catch for 53mm whelks after riddling.

The third vessel landed 5.5% undersize whelks, and so failed by a very narrow margin of 0.5%. The flat 25mm riddle had a similarly small surface area of 1700 cm^2, which again suggests that a riddle with larger surface area could have helped remove undersize. The method of sorting was different again from the other failed vessels, with whelks tipped directly into a fish basket from the pots to be washed before being riddled. Officers noted that the whelks were clean but were fouled by some slipper limpets and barnacles which could have affected retention in the riddle. Again, a larger (ideally rotary) riddle was advised to resolve the issue, and obligingly the skipper informed officers that he had already ordered a rotary riddle for the boat.

Conclusions and next steps

With 75% of vessels passing on the first inspection, it is encouraging to see that in practise the emergency byelaw does not require industry to drastically change their fishing methods, as long as catches are riddled effectively. We have shown that the theoretical translation of 25mm riddle width into 53mm shell height is effective in real-world application to the fishing industry. Furthermore, we have seen multiple examples of best practise being adopted throughout the fleet, with effective riddling processes in place and increasing numbers of permit holders investing in rotary riddles.

Research thus far indicates the best methods for reducing the proportion of under 53mm whelks in the catch are: A) using a large or rotary riddle as opposed to a small or flat riddle, B) developing a thorough sorting process on board for riddling whelks, and C) skippers checking the catch themselves for under 53mm whelks while on board. If these best practises are adopted by the fleet it should be straightforward for all permit holders to comply with the 53mm shell length requirement.

The initial inspection programme has detected a high level of compliance among the whelk fleet, but importantly it has also identified which permit holders failed to pass the test and we need to work with to improve their sorting process so that they can reliably pass in the future. As a next step, we need to gather further data with a second round of inspections of all vessels to verify our initial results, identify reasons for failure and provide advice to skippers based on best practise. In particular we need to engage with fishermen that were significantly over the 5% tolerance again, giving an opportunity to demonstrate what steps they have taken to adjust their fishing practises in order to comply. A key aspect of this will be to encourage all whelk fishermen to use 53mm stop-go gauges to check their own catch on board.

With the majority of the whelk fleet being based in Kent, we will also actively involve officers from Essex in the next round of inspections for training purposes to develop experience and consistency across the organisation. With more inspections taking place, officers will gain experience and confidence in conducting landing inspections, while fishermen will become accustomed being inspected under the new procedures and the expectations that go with it.