

APPENDIX 6 TO AGENDA ITEM B2

Title: Whelk Fishery Flexible Permit Byelaw 2020 IA No: 1 RPC Reference No: Lead department or agency: Kent and Essex Inshore Fisheries and Conservation Authority Other departments or agencies: Marine Management Organisation, Department of Environment, Food and Rural Affairs	Impact Assessment (IA)		
	Date: 27/10/2020		
	Stage: Development		
	Source of intervention: Domestic		
	Type of measure: Secondary legislation		
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Summary: Intervention and Options	RPC Opinion: Not Applicable
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Cost of Preferred (or more likely) Option (in 2019 prices)

Total Net Present Social Value	Business Net Present Value	Net cost to business per year	Business Impact Target Status
-£378595.2	-£83121.1	£9656.6	Non qualifying provision

What is the problem under consideration? Why is government action or intervention necessary?

The current Whelk Fishery Permit Byelaw has been in force within the Kent and Essex Inshore Fisheries and Conservation District (the District) since 2012. It became apparent during 2019 that the management measures in the current byelaw were proving challenging both for the industry to comply with and for enforcement officers to enforce. In January 2020, an emergency byelaw was introduced by KEIFCA which altered the enforced minimum size metric from the 'riddle size' or 'shell width', to the equivalent 'shell height'. This has been trialled with the industry and the proposed byelaw combines the current byelaw with the minimum shell height metric provided for in the emergency byelaw.

What are the policy objectives of the action or intervention and the intended effects?

Overall compliance with whelk management will be improved as a result of measures which are easier to communicate and explain to those who are required to comply with them. Long term sustainability of the fishery can only be achieved with the consent and buy-in of the fishing industry within the District, especially for the whelk fishery which is the primary non-quota species available to the fleet and thus which is key to the economic viability of the inshore fleet within the District. Therefore the proposed byelaw will introduce flexibility which will result in management remaining aligned to local needs in the long term.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 0 – Do nothing. This option would mean that the existing KEIFCA Whelk Fishery Permit Byelaw would remain in force which, whilst providing management for the fishery, has resulted in significant conflict between the industry and KEIFCA as a result of difficulties in communication and explanation related to compliance and enforcement action. This will continue to make management extremely challenging. As a result, this option has been rejected.

Option 1 – Whelk Fishery Flexible Permit Byelaw. This option continues to provide management and regulation equal to that of the current byelaw, but introduces it in a way which is easier for KEIFCA to communicate to the industry, and in a way which mirrors the approach taken to the minimum landing size of whelks used in other Inshore Fisheries and Conservation Districts, as well as in EU and UK legislation. It also provides a means for the byelaw to remain relevant to the needs of the fleet in the long term by providing catch, gear and management restrictions as flexible measures.

Option 2 – Remove all management. The current byelaw was introduced in 2012 as a response to large increases in the amount of gear being set to target whelks within the District. There is no evidence to show that the threat of this has decreased. Therefore, removing management would result in a significant risk of this fishery becoming overexploited, especially given that this is the primary non-quota species within the District. As a result, this option has been rejected.

Does implementation go beyond minimum EU requirements?	Yes			
Is this measure likely to impact on international trade and investment?	No			
Are any of these organisations in scope?	Micro Yes	Small Yes	Medium Yes	Large Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded: N/A		Non-traded: N/A	

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 01/2023

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

APPENDIX 6 TO AGENDA ITEM B2

Signed by the responsible Chief Executive: Dr W. Wright Date: 27/10/2020

Summary: Analysis & Evidence

Policy Option 1

Description: Whelk Fishery Flexible Permit Byelaw

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2020	Time Period Years	Net Benefit (Present Value (PV)) (£)		
			Low: -364447.4	High: -354447.4	Best Estimate: -358447.4

COSTS (£)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	40000	36531.0	354447.4
High	50000	36531.0	354447.4
Best Estimate	44000	36531.0	354447.4

Description and scale of key monetised costs by 'main affected groups'

The proposed byelaw combines the existing whelk fishery permit byelaw with the whelk minimum size emergency byelaw which was introduced in January 2020. The emergency byelaw introduced a minimum shell height metric which provides an equivalent catch restriction as the 'riddle width' metric contained within the current permit byelaw. As a result, there is no extra burden on industry and therefore no additional monetised costs on the fishing industry over those faced under the current management. However, for clarity, the annual costs of the permits under the proposed byelaw, which are the same as those under the current byelaw have been calculated and are provided. There are no enforced transitional costs, however many fishermen are already improving their riddling mechanisms on board to ensure compliance with the minimum shell height size requirement for less effort on board. Therefore, an indicative transitional cost for all existing category 1 permit holders (20 vessels) to move to mechanical sorting riddles has been calculated although these riddles are not mandated for by the proposed byelaw.

Other key non-monetised costs by 'main affected groups'

There are no direct non-monetised costs to industry, as a result of the proposed byelaw being an amalgamation of the current permit byelaw and the minimum size emergency byelaw which is in itself an equivalent restriction to that provided by 'riddle width' in the current permit byelaw. Nevertheless, due to the improved ease of communication, explanation and enforcement of the management measures, it is likely that some vessels may have to move fishing grounds within the District if the grounds they presently work contain a large percentage of whelks below the minimum size prescribed within the proposed byelaw.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	N/A	N/A	N/A

Description and scale of key monetised benefits by 'main affected groups'

There are no monetised benefits

Other key non-monetised benefits by 'main affected groups'

With the introduction of the proposed byelaw, communication of the compliance requirements will become more straightforward and as a result, easier for industry to comply with. This will help to secure the long-term sustainability of this important non-quota fishery which contributes significantly to the economic viability of the fishing industry within the District.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
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The above assessment assumes that all permit holders will purchase mechanical riddles despite them not being mandated by the proposed byelaw. It also assumes they will not be able to secure grant funding to assist with these purchases and that the number of permit holders will remain relatively consistent.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £:			Score for Business Impact Target (qualifying provisions only) £:
Costs: 9142.7	Benefits: 0	Net: 9142.7	
			N/A

Evidence Base

1. Problem under consideration and rationale for intervention

1.1 Introduction

IFCAs have been established under the Marine and Coastal Access Act 2009 (MaCAA) as the lead regulator for the sustainable management of inshore fisheries. As such, the Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) is the appropriate Authority to implement and enforce fisheries management measures within the six nautical mile District.

In 2013, following an approach to KEIFCA by the local fishing industry, a Whelk Fishery Permit Byelaw was the first byelaw to be made by the newly formed Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA). This introduced the need for a permit to set whelk pots within the District as well as specific gear requirements including a prohibition on landing any whelk which would pass through a specified gap in a riddle.

In December 2019 KEIFCA hosted a workshop attended by whelk fishermen, industry representatives and Authority Members to discuss industry concerns over inconsistencies with the riddling process and to discuss and review future management options for the whelk fishery. KEIFCA's whelk permit byelaw has been in place since April 2013, replacing an emergency byelaw introduced in November 2011 at the request of local whelk fishermen. It restricts effort by way of a 300 pot limit and protects juvenile stocks by use of a 25mm riddle.

This led to the Authority introducing an emergency byelaw which specifies the minimum shell height of each whelk that may be landed, instead of using a riddled size. Shell height is an easily understood metric used by the majority of regulations which manage whelk landing size, including other IFCA byelaws such as Eastern IFCA and the EU Minimum Conservation Reference Size legislation.

This Emergency Byelaw was implemented in close cooperation with the fishing industry within the District, especially with the current 27 individuals who hold permits under the current byelaw. This implementation and education period has identified the notable improvement that has been made in compliance and understanding of the aims of management and has also facilitated improvements in on-board sorting mechanisms on a range of different vessels. As the emergency byelaw only has a maximum lifespan of 18 months, now is the right time to combine the existing permit byelaw with the minimum size specified in the emergency byelaw. This cannot be done within the mechanisms of the current permit byelaw as it is not a flexible measure.

1.2 Rationale for intervention

MaCAA provides a framework for managing the demands put on our seas, and aims to ensure clean healthy, safe, productive and biologically diverse oceans and seas, by putting in place effective systems for delivering sustainable development of the marine and coastal environment. This justifies the need for a new whelk fishery permit byelaw, and also aligns with national and local marine strategies.

1.3 IFCA duties

KEIFCA has clearly defined duties to manage sustainable fisheries and conserve the marine environment within the coastal waters off Kent and Essex, set out in Section 153 subsection (2) of MaCAA. This includes seeking to ensure that the exploitation of sea fisheries resources is carried out in a sustainable way, balancing the social and economic benefits of fishing with the need to protect the marine environment. Section 156 subsection (4) of MaCAA allows IFCAs to create:

... provision prohibiting or restricting the exploitation of sea fisheries resources without a permit issued by an IFC authority, including—

(a) provision for the charging of fees for permits;

(b) provision enabling conditions to be attached to a permit...

This legislative framework designates KEIFCA as the appropriate authority to introduce a permit byelaw to manage the harvesting of whelks within the District.

IFCA high level “Success Criteria” directly relate to this byelaw’s objective to standardise legislation in the district, as Success Criterion 2 requires that “IFCAs implement a fair, effective and proportionate enforcement regime.” To achieve this, KEIFCA must a) ensure regulations are consistent and appropriate across the entire District and b) develop regulatory consistency with other organisations. Both objectives can be achieved by introducing the new Whelk Fishery Flexible Permit Byelaw 2020.

1.4 Market Failures

Fishing activities can potentially cause negative outcomes as a result of ‘market failures’. These failures can be described as:

- Public goods and services – A number of goods and services provided by the marine environment such as biological diversity are ‘public goods’ (no one can be excluded from benefiting from them, but use of the goods does not diminish the goods being available to others). The characteristics of public goods, being available to all but belonging to no one, mean that individuals do not necessarily have an incentive to voluntarily ensure the continued existence of these goods which can lead to under protection/provision.
- Negative externalities – Negative externalities occur when the cost of damage to the marine environment is not fully borne by the users causing the damage. In many cases no monetary value is attached to the goods and services provided by the marine environment and this can lead to more damage occurring than would occur if the users had to pay the price of damage. Even for those marine harvestable goods that are traded (such as wild fish), market prices often do not reflect the full economic cost of the exploitation or of any damage caused to the environment by that exploitation.
- Common goods - A number of goods and services provided by the marine environment such as populations of wild fish are ‘common goods’ (no one can be excluded from benefiting from those goods however consumption of the goods *does* diminish that available to others). The characteristics of common goods (being available but belonging to no one, and of a diminishing quantity), mean that individuals do not necessarily have an individual economic incentive to ensure the long term existence of these goods which can lead, in fisheries terms, to potential overfishing. Furthermore, it is in the interest of each individual to catch as much as possible as quickly as possible so that competitors do not take all the benefits. This can lead to an inefficient amount of effort and unsustainable exploitation.

KEIFCA byelaws aim to redress these sources of market failure in the marine environment through the following ways:

- Management measures to support continued existence of public goods in the marine environment, for example conserving the range of biodiversity in the sea of the District.
- Management measures to also support continued existence of common goods in the marine environment, for example ensuring the long-term sustainability of fish stocks in the District.

2. Rationale and evidence to justify the level of analysis used in the IA

This assessment has used the following information:

- Fisheries / catch returns data supplied by the whelk fishing industry to KEIFCA
- Feedback from informal consultation with the whelk fishing industry;
- Feedback from implementation and education period of Whelk Minimum Size Emergency Byelaw
- Expert information provided by fisheries scientists at Bangor University working in conjunction with KEIFCA

These pieces of information are the most pertinent to the whelk fishery within the District as they are provided by or undertaken by the industry within the District or KEIFCA in relation to the management of this fishery over the previous 8 years.

There is a limitation to Kent and Essex IFCA catch returns as there have been instances of non-compliance with the requirement to provide this information.

3. Description of options considered

A range of management options were discussed in an initial stakeholder workshop ahead of making the emergency byelaw before being considered by the KEIFCA technical panel on the 4th November 2020.

Option 0 – Do nothing. This option would mean that the existing KEIFCA Whelk Fishery Permit Byelaw would remain in force which, whilst providing management for the fishery, has resulted in significant conflict between the industry and KEIFCA as a result of difficulties in communication and explanation related to compliance and enforcement action. This will continue to make management extremely challenging. As a result, this option has been rejected.

Option 1 – Introduce a Whelk Fishery Flexible Permit Byelaw. This option continues to provide management and regulation equal to that of the current byelaw, but introduces it in a way which is easier for KEIFCA to communicate to the industry, and in a way which mirrors the approach taken to the minimum landing size of whelks used in other Inshore Fisheries and Conservation Districts, as well as in EU and UK legislation. It also provides a means for the byelaw to remain relevant to the needs of the fleet in the long term by providing catch, gear and management restrictions as flexible measures.

Option 2 – Remove all management. The current byelaw was introduced in 2012 as a response to large increases in the amount of gear being set to target whelks within the District. There is no evidence to show that the threat of this has decreased. Therefore, removing management would result in a significant risk of this fishery becoming overexploited, especially given that this is the primary non-quota species within the District. As a result, this option has been rejected.

4. Policy objectives

4.1 Marine Policy Statement

The Marine Policy Statement (MPS) is the framework for taking decisions affecting the marine environment, and contributes to the achievement of sustainable development in the United Kingdom marine area. It has been prepared and adopted for the purposes of section 44 of MaCAA. The new byelaw seeks to align with the MPS in the following ways:

- *Achieving a sustainable marine economy* – ensuring that the primary non-quota species in the District continues to provide additional income for the fishing industry
- *Ensuring a strong, healthy and just society* – supporting the local fishing economy is vital as they play a key role in coastal communities.
- *Living within environmental limits* – ensuring that landings of whelks within the District follow best practice for long-term sustainability

- *Promoting good governance* - KEIFCA are implementing clear, timely and proportionate regulation. Relevant stakeholders are consulted to ensure that all views are considered throughout the decision making process.
- *Using sound science responsibly* - best available evidence is used to inform the byelaw making process.

4.2 Defra 25 Year Plan to Improve the Environment

Defra's 25 year plan describes a strategy for the future of fisheries and the marine environment in the UK and emphasises the need for sustainably exploited natural resources to allow long term benefits. The objectives are associated with those of the proposed byelaw:

- Reversing the loss of marine biodiversity and, where practicable, restoring it.
- Increasing the proportion of protected and well managed seas, and better managing existing protected sites.
- Making sure populations of key species are sustainable with appropriate age structures.
- Ensuring seafloor habitats are productive and sufficiently extensive to support healthy, sustainable ecosystems

The policy objective pertinent to this IA is to replace the current whelk permit fishery byelaw and whelk minimum size emergency byelaw with a new whelk fishery flexible permit byelaw which encompasses the minimum shell height specified in the emergency byelaw as well as the permit measures contained in the current permit byelaw. No additional measures are being introduced with this byelaw other than those already in force. This byelaw will also allow any future reviews of management to be undertaken within the review procedure specified within the proposed byelaw and ensure that management remains fit for purpose in the long term.

4.3 Policy objectives:

1. **Introduce the emergency byelaw whelk minimum size into a full byelaw:** bring together the permit requirements of the current whelk permit byelaw with the minimum size requirements introduced through the minimum size emergency byelaw
2. **Bring legislation in line with neighbouring IFCA byelaws:** mirror the shell height method of measuring whelk size with that in the neighbouring IFCAs and EU/national legislation.
3. **Protect the long term sustainability of the whelk fishery:** minimise the impact of towed fishing activity on seafloor habitats and species.
4. **Encourage improved compliance:** introduce a minimum size metric which is clearer and easier to communicate, thus supporting improved compliance with measures and much increased engagement by industry

The objectives will bring together the permit measures contained in the current Whelk Fishery Flexible Permit Byelaw with the minimum shell height requirement contained within the Whelk Minimum Size Emergency Byelaw. Few vessels will be affected by the byelaw, as all of the proposed measures are already in force within the District from the current byelaw and the shell height metric provided by the emergency byelaw is the equivalent of the riddle size metric contained within the permit byelaw which will be removed in the proposed byelaw. The bylaw will contribute towards maintaining a healthy ecosystem by ensuring that sufficient stocks of whelks remain on the grounds to act as a food source for other species such as Thornback Ray (*Raja clavata*). The byelaw will contribute towards a viable fishing industry by ensuring that this primary non-quota species is maintained as a viable fishery in the long term for the local inshore fishing industry

Section 153 of the Marine and Coastal Access Act (MaCAA), 2009 requires that for the management of inshore fisheries:-

- (1) The authority for an IFC district must manage the exploitation of sea fisheries resources in that district.

(2) In performing its duty under subsection (1), the authority for an IFC district must:

- (a) Seek to ensure that the exploitation of sea fisheries resources is carried out in a sustainable way,
- (b) Seek to balance the social and economic benefits of exploiting the sea fisheries resources of the district with the need to protect the marine environment from, or promote its recovery from, the effects of such exploitation,
- (c) Take any other steps which in the authority's opinion are necessary or expedient for the purpose of making a contribution to the achievement of sustainable development, and
- (d) Seek to balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district.

4.4 Marine Plans

4.4.1 South East Marine Plan

The South East Marine Plan is currently in a draft format under consultation and as such is a material consideration when undertaking any decision which is not an authorisation or enforcement decision.

As per paragraph 58(3) of the MaCAA, Kent and Essex IFCA must have regard to the South East Marine Plan when undertaking any decision which is not an authorisation or enforcement decision. By definition, as per paragraph 58(4), a byelaw would fall under the definition of 'authorisation or enforcement decision'.

That said, the proposed measures ensure compatibility with the following objectives and policies of The draft South East Marine Plan:

- Objective 2: The marine environment and its resources are used to maximise sustainable activity, prosperity and opportunities for all, now and in the future
- Objective 4: Marine businesses are acting in a way which respects environmental limits and is socially responsible. This is rewarded in the marketplace.
- Objective 9: There is equitable access for those who want to use and enjoy the coast, seas and their wide range of resources and assets and recognition that for some island and peripheral communities the sea plays a significant role in their community.
- Objective 11: Biodiversity is protected, conserved and, where appropriate, recovered, and loss has been halted.

4.4.2 South Marine Plan

As per paragraph 58(3) of the MaCAA, Kent and Essex IFCA must have regard to to the South Marine Plan when undertaking any decision which is not an authorisation or enforcement decision. By definition, as per paragraph 58(4), a byelaw would fall under the definition of 'authorisation or enforcement decision'.

That said, the proposed measures ensure compatibility with the following objectives and policies of the South Marine Plan:

- Objective 3: To support diversification of activities which improve socio-economic conditions in coastal communities: specifically, S-FISH-1;
- Objective 5: To avoid, minimise, mitigate displacement of marine activities, particularly where of importance to adjacent coastal communities, and where this is not practical to make sure significant adverse impacts on social benefits are avoided: specifically S-FISH-2 and S-FISH-3;
- Objective 10: To support marine protected area objectives and a well-managed ecologically coherent network with enhanced resilience and capability to adapt to change.

The byelaw is consistent with the government marine policy statement. The UK vision for the marine environment is for 'clean, healthy, safe, productive and biologically diverse oceans and seas'. The UK high level marine objectives published in April 2009 set out the broad outcomes for the marine area in

achieving this vision and reflect the principles for sustainable development. This byelaw has particular relevance to high level marine objectives of the Marine Policy Statement (MPS), namely

- Marine businesses are acting in a way which respects environmental limits and is socially responsible. This is rewarded in the marketplace.
- Biodiversity is protected, conserved and where appropriate recovered and loss has been halted.
- Healthy marine and coastal habitats occur across their natural range and are able to support strong, biodiverse biological communities and the functioning of healthy, resilient and adaptable marine ecosystems.
- Our oceans support viable populations of representative, rare, vulnerable, and valued species.
- People appreciate the diversity of the marine environment, its seascapes, its natural and cultural heritage and its resources and act responsibly.

5. Monetised and non-monetised costs and benefits of each option (including administrative burden)

5.1 Costs

The revocation of the Whelk Fishery Permit Byelaw and Whelk Minimum Size Emergency Byelaw and the creation of the proposed Whelk Fishery Flexible Permit Byelaw 2020 could result in the following costs:

- Costs to the fishing industry and recreational fishers as a result of being required to purchase a permit
- Direct costs to the fishing industry as a result of new gear purchases
- Indirect costs associated with displacement to other fishing grounds
- Costs to Kent and Essex IFCA related to the introduction of the byelaw and compliance and education activities.

5.1.1 Monetised annual costs to the fishing industry

The byelaw specifies an annual permit cost for the two categories of permit provided by the byelaw. Category 1 permits allow the permit holder to set up to 300 whelk pots within the District and are intended primarily for commercial fishermen who rely on whelks for a considerable part of their income. Category 2 permits allow the permit holder to set up to 10 whelk pots within the District and are intended for recreational/hobby fishermen and commercial fishermen who only fish for whelks on a low-level basis for the likes of direct-to-public sales on the quayside. The annual costs of each of these permits can be seen summarised in Table 1.

	Category 1 permit	Category 2 permit
Cost of permit	£100	£30
Cost of tags	30p per tag	30p per tag
Max total cost of tags	£90	£3
Max total annual cost of permit	£190	£33

Table 1. Annual costs to each applicant associated with a whelk permit

These annual costs however are exactly the same as the permit costs charged by the current Whelk Fishery Permit Byelaw, therefore the proposed byelaw imposes no additional costs over those faced by industry currently. However, these costs have been factored into the economic assessment of the proposed byelaw for the purposes of full transparency. These annual permit fees cover the administration of the fishery, primarily issuing of permits, but do not cover enforcement or research activities undertaken by KEIFCA.

The proposed byelaw limits the number of pots which each permit holder can set, specifies the size and number of escape holes which must be present in each pot and the marking of each fleet of pots. All of these measures are exact replicates from the current Whelk Fishery Permit Byelaw and so there are no additional costs associated with these measures over the burden already faced by industry.

The one new restriction contained within the proposed byelaw but which is not in the current byelaw is a specification of a minimum shell height landing size of 53mm. It may be initially assumed that this would alter the number of whelks being returned to the seabed and thus potentially reduce the financial gain by each permit holder from each fleet of pots.

However, over the past six years KEIFCA have worked with fisheries scientists at Bangor University and University of Essex to carry out a number of research projects into the whelk populations within the District. One of these was a study into the relationship between shell height and shell width (riddle width)¹. Fig 1 shows the summary of this relationship. It can be seen that the riddle width of 25mm equates to a shell height of 53mm.

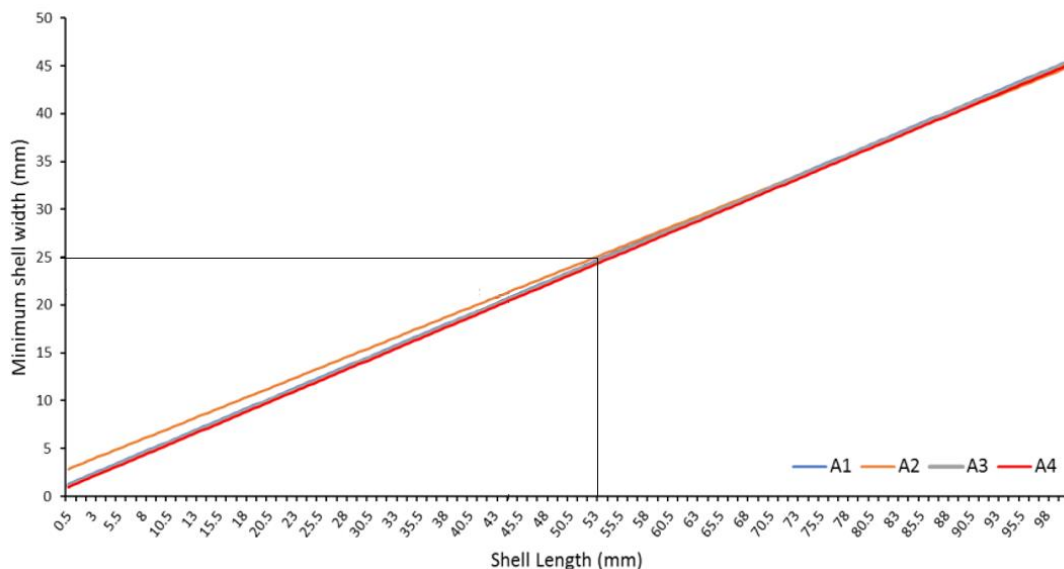


Fig.1 The relationship (lines of fit) between Shell Length (mm) and Minimum Shell Width (mm) for each of the 4 areas within KEIFCA district. The vertical and horizontal lines show the shell length that is equivalent to the 25mm shell width. (Hollyman and Richardson (2017) Age and growth rate of whelks, *Buccinum undatum*, in Kent and Essex waters)

Therefore, there would be no new costs or additional burden incurred by the sector as a consequence of the addition of this measure into the proposed byelaw. This is because the 25mm current riddle size is a proxy for the 53mm proposed shell height - a direct translation from one metric to the other.

In addition, the byelaw provides for a 5% tolerance by weight on the landing of undersized whelks. Since the introduction of the Whelk Minimum Size Emergency Byelaw in February 2020, KEIFCA officers have undertaken a significant campaign of education and explanation of the shell height restriction. 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 demonstrative 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 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. The results of these inspections are shown in

¹ Age and growth rate of whelks, *Buccinum undatum*, in Kent and Essex waters.
Phil Hollyman and Chris Richardson
School of Ocean Sciences, College of Natural Sciences, Bangor University, Menai Bridge, Anglesey, LL59 5AB, UK

Fig 2 and summarised in the Compliance Progress Report presented to the KEIFCA Technical Panel on 4th November 2020.²

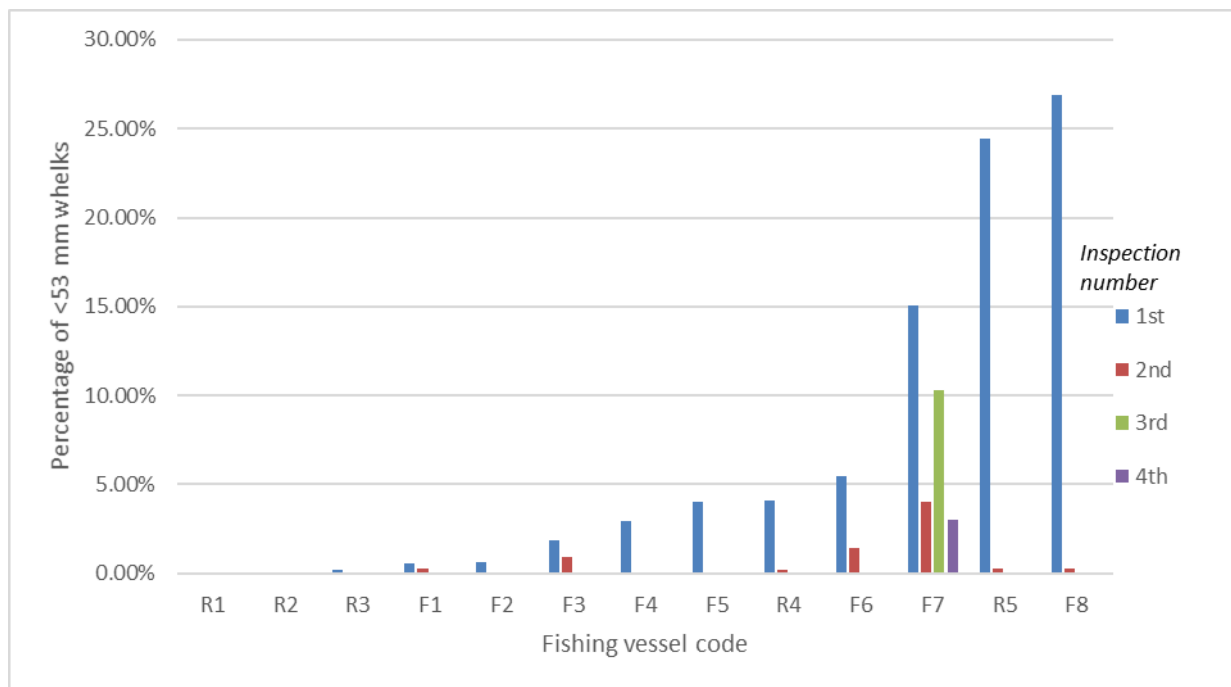


Fig 2. Inspection results of fishing vessels under the emergency byelaw showing compliance with the shell height metric of 53mm

With 75% of vessels passing on the first inspection, it has been shown that the theoretical translation of 25mm riddle width into 53mm shell height is effective in real-world application to the fishing industry. This means that in practise the change from a shell width (riddle size) metric to a shell height metric does not require industry to drastically change their fishing methods, as long as catches are riddled effectively.

In summary, the annual costs for permit fees would continue to total £4031 for the current fleet of twenty-seven permit holder vessels. However, there are no additional monetised costs, over those from the current byelaw, to the fishing industry with the replacement of the current byelaw with the new proposed byelaw or the addition of a minimum shell height metric to the proposed byelaw.

5.1.2 Monetised transitional costs to the fishing industry

On-the-ground feedback and observation of inspections under the emergency byelaw 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.

As a result, whilst the byelaw does not specify a specific type of riddle to be used by the industry, many fishers have started to purchase or make enquiries with regards to purchasing mechanically operated riddling/sorting mechanisms for use on board whilst at sea. As a result, and for the purposes of transparency, these have been included as transitional costs were all permit holders to purchase these systems. There are currently two main manufacturers with costs between £2000 and £2500 at present for rotary riddle systems. Other types of system including vibrating systems, are being explored which would be cheaper to make and purchase, therefore the transitional costs specified are at the upper end of what would be expected.

The cost for all category 1 permit holders to purchase rotary riddles would total £44000 for all twenty vessels. However, based upon the requirements of the byelaw there are no imposed monetised transitional costs associated with the byelaw.

² Compliance Progress Report – location TBC

5.1.3 Non-monetised costs to the fishing industry

As shown in the Compliance Progress Report³, the majority of vessels were compliant with the requirements of the emergency byelaw.

However, there is some anecdotal information from fishers to suggest that they will not be able to comply if they continue to fish on areas which contain a larger majority of smaller whelks. They would then have to relocate their pots to grounds within the District where there was a lower proportion of small whelks. This displacement could result in some local conflict between fishers as vessels tend to have 'implied ownership' of specific pieces of ground which they work.

Vessels may also be displaced outside of the District, where they can catch and land smaller whelks provided that they are above the EU Minimum Conservation Reference Size of 45mm.

5.1.4 Costs to KEIFCA: administration and compliance

There are some costs involved in advertising the new management measures, although these can be advertised through direct interaction between KEIFCA officers and fishermen and on the Authority's website at no additional cost. Whilst there are administrative costs related to the running of the fishery, these are covered by the cost-recovery mechanism provided by the permit fees, and in any case are costs which have been faced since 2012 and the introduction of the current permit byelaw.

The lead responsibility of ensuring compliance with an IFCA byelaw under section 155 of the MaCAA will fall to KEIFCA. KEIFCA currently have byelaws in place throughout the District relating to vessel specifications. The proposed byelaw covers the entire District which covers all combined legacy areas, and therefore compliance management and costs will be comparable (Table 2). KEIFCA would monitor compliance onshore via landings of relevant fishing vessels and from their patrol vessel and respond to relevant intelligence.

Table 2. Annual additional costs of ensuring compliance with recommended option

Activity	Cost per Unit (£)	Number of Units per year	Total cost per year (£)
Routine shore patrol surveillance *	250	6	1,500
Routine Sea Patrols **	1,500	8	12,000
Intelligence led patrols***	2,250	4	9,000
Additional compliance and administration costs****	10,000	1	10,000
TOTAL			32,500

* Routine shore based compliance checks involving one Inshore Fisheries and Conservation Officer (IFCO) plus vehicle

** Patrol Vessel (PV) running costs per day based on 2018 IFCA stats

*** Intelligence led surveillance involving several IFCOs and one patrol vessel per day

**** Including IFCO and PV time, administration and legal fees.

5.2 Benefits

The revocation of the Whelk Fishery Permit Byelaw and Whelk Minimum Size Emergency Byelaw and the creation of the proposed Whelk Fishery Flexible Permit Byelaw 2020 could result in the following non-monetized benefits:

- Improved communication of the compliance requirements and as a result, easier for industry to comply with.
- Secure the long-term sustainability of this important non-quota fishery which contributes significantly to the economic viability of the fishing industry within the District.
- Contribute to a healthy ecosystem, by ensuring that sufficient whelks remain on the fishing grounds to act as food source for other key species within the District.

³ Compliance Progress Report Location TBC

- Modernises legislation and brings byelaw wording in line with the permit byelaw text in other KEIFCA byelaws

5.2.1 Improved compliance

Throughout the implementation period of the Whelk Minimum Size Emergency Byelaw KEIFCA 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.

With all permit holders passing during the second inspection programme we verified that the 5% tolerance is achievable for all fishermen. The dramatic improvements in the percentage of undersize from fishermen who were non-compliant on first inspection shows that by making simple adjustments to riddling process or fishing methods all permit holders can comply. Some individuals been more resistant to changes more than others, however KEIFCA have made every effort to support and educate these fishermen, providing advice and lending equipment to encourage best practise. Anecdotally, all fishermen inspected have agreed that the inspection process is fairer and more efficient than the previous legislation.

5.2.2 Contribute towards long term viability of the fishery

Since 2013, the whelk fishery within the District has been a critical fishery for many inshore vessels. This is primarily a result of the non-quota status of the species and its prevalence within the District, especially in Kent. It's good practice to allow individuals to breed at least once before they are removed from the population in order to maintain a viable fishery. If too great a proportion of the breeding stock is removed, then there is significant risk of collapse.

Considerable KEIFCA research has gone into determining the size-at-maturity for whelks in different sections of the district, the results of which have demonstrated that the current EU MLS of 45mm is too low to afford protection to immature individuals, at a District level. By setting the MLS at 53mm, it allows more whelks the opportunity to breed at least once before their removal and minimising the risk of population collapse.

Considerable KEIFCA research has gone into determining the size-at-maturity for whelks in the district, the results of which have demonstrated that the EU MLS is too low to afford protection to immature individuals. By increasing the MLS to a size that mirrors the size-at-maturity, it allows more whelks the opportunity to breed at least once before their removal and minimising the risk of population collapse.

With the uncertainty of the future, having fisheries which are contained within the District and under local management, is of benefit to the local industry to ensure its continued survival and viability. This needs to be achieved by KEIFCA working together with the industry.

In recent years, the lack of clarity in how compliance and enforcement action is undertaken against the current whelk permit byelaw has resulted in conflict between KEIFCA and fishers. By moving to a more transparent byelaw with clear and achievable measures, it is hoped that the cooperation between industry and KEIFCA, which has proven so beneficial in other fisheries within the District, can be replicated with the whelk fishery. This will ensure the long-term viability of the fishery to continue to support the fleet as the primary non-quota species within the District.

5.2.3 Contribute towards a healthy ecosystem

Whelks play an important role in the marine ecosystem by recycling decaying marine matter and providing food for other species. Their main source of food are worms, small bivalve molluscs and echinoderms, and any dead material that reaches the seabed. Research into their ability to scavenge has shown they contribute to the recycling of dead matter.

Whelks themselves are predated by various predators at different stages of their lives, smaller whelks are vulnerable to certain species of starfish, whereas larger whelks are predated by commercially important species such as crab and lobster.

The extent to which whelks have an influence on other commercially important fisheries is still unknown. However, there is anecdotal information that they have a role as a food source for a number of key species in the District including thornback ray (*Raja clavata*) and cod (*Gadus morhua*). Ensuring that stocks are not over exploited by fishing, also ensures a continued food source for these other key species.

5.2.4 Modernise byelaw legislation and wording

Since the current Whelk Fishery Permit Byelaw was introduced in 2013, KEIFCA has introduced a number of other byelaws including two permit byelaws; the Cockle Fishery Flexible Permit Byelaw and the Blackwater, Crouch, Roach and Colne Estuaries Marine Conservation Zone Native Oyster Fishery Flexible Permit Byelaw. These two permit byelaws have contributed to an improved structure, wording and process of application for permits within the District.

As a result, bringing the permit byelaw for the whelk fishery into the same structure would assist fishers in the understanding of the legislation as well as assist communication and explanation of the management measures to a range of stakeholders.

5.3 Uncertainty and assumptions

Displacement of fishing effort is difficult to quantify, and impossible to predict where exactly within the District activities will be displaced to.

Estimated transitional costs to the fishing industry are likely to be an overestimate, as some fishers have already purchased mechanical riddles and adapted their practices and gear to ensure compliance for minimal effort whilst at sea.

5.4 Impact on small and micro businesses

No firms or individuals are exempt from this byelaw and it applies to all firms and individuals who use the area. It does not have a disproportionate impact on small firms. It also has no impact on competition as it applies equally to all businesses that utilise the area and applies to recreational as well as commercial operators.

6. Conclusion

Kent and Essex IFCA has a duty to manage the exploitation of sea fisheries resources in the District to ensure that it is carried out in a sustainable manner, whilst balancing the different needs of persons engaged in the exploitation of sea fisheries resources in the district.

The creation of a Whelk Fishery Flexible Permit Byelaw 2020 which combines the permit measures of the current Whelk Fishery Permit Byelaw and Whelk Minimum Size Emergency Byelaw, whilst at the same time revoking both, would continue the significant improvements in management of this critical non-quota fishery within the District, whilst at the same time taking on board feedback from industry and enabling closer cooperation between industry and KEIFCA

It is not anticipated that there will be any direct costs to industry associated with implementation of the byelaw as the gear restrictions and permit requirements are already a part of the current Whelk Fishery Permit Byelaw which has been in force since 2012. In addition, the minimum size requirements which are being incorporated from the Whelk Minimum Size Emergency Byelaw are already being complied with by industry as a result of the minimum bar spacing used by riddles on board all fishing vessels. However, there is an annual permit cost for fishers and it is anticipated that over the next ten years this will total £4031 per annum based on the current number of permit holders.

Whilst there are no direct transitional costs mandated by the proposed byelaw, the local fleet have shown, throughout the period of the emergency byelaw, that they are exploring more efficient ways of sorting whelk catches on board whilst at sea to enable easier compliance with the requirements of the byelaw. This may lead some to move to mechanical riddles rather than the hand riddles many are

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currently using. It is anticipated that this would result in a total one-off cost to industry of £44000 if all commercial permit holders were to purchase this equipment.

The use of the Whelk Minimum Size Emergency Byelaw which was implemented in January 2020 has allowed KEIFCA to work with industry to trial all of the aspects of the proposed Whelk Fishery Flexible Permit Byelaw. This has included extensive education and cooperation with demonstration landing inspections so that fishers understand how they will be inspected and how they can check their own catch prior to landing.

Recommended Option:

Introduce the Whelk Fishery Flexible Permit Byelaw 2020 and revoke the Whelk Fishery Permit Byelaw and Whelk Minimum Size Emergency Byelaw.