

<b>Title:</b> XXXIII BEAM TRAWLING BYELAW 2024 <b>IA No:</b>  <b>Lead department or agency:</b> North Eastern Inshore Fisheries and Conservation Authority (NEIFCA) <b>Other departments or agencies:</b> Marine Management Organisation (MMO), Natural England, Department for Environment, Food and Rural Affairs (DEFRA)	<b>Impact Assessment (IA)</b>		
	<b>Date:</b> 15/05/2024		
	<b>Stage:</b> Development/Options		
	<b>Source of intervention:</b> Domestic		
	<b>Type of measure:</b> Secondary Legislation		
	<b>Contact for enquiries:</b> David McCandless Chief Officer, North Eastern IFCA 01482 393 515 david.mccandless@eastriding.gov.uk		

<b>Summary: Intervention and Options</b>	<b>RPC Opinion:</b> 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
£148552.2	£10329	£1200	Non qualifying provision

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

In 2023, the NEIFCA recorded an increase in the number of trawlers targeting King Scallops using beam trawls in an area outside of the permitted area of the seasonal scallop fishery with landings of over 60 tonnes of King Scallops. To protect the current stocks from overexploitation, the NEIFCA implemented on the 17<sup>th</sup> of July 2023 an emergency byelaw prohibiting beam trawling across the district with a dispensatory process allowing a limited number of fishing vessels to continue under specific conditions. The emergency byelaw will expire on the 17<sup>th</sup> of July 2024 and the NEIFCA Trawling Byelaw does not have any provisions to manage the beam trawling activity targeting King Scallops and the number of vessels accessing this fishery.

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

To implement effort limitation to avoid over-exploitation of King Scallop and associated bycatch in the NEIFCA district

To provide a flexible framework to ensure evidence-based management measure may be implemented in a time effective manner.

To promote sustainable fisheries while conserving the marine environment.

To reduce negative externalities and ensure continued provision of common goods.

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

**Option 0.** Do nothing – allow current Emergency Byelaw to expire and fishing activity to continue without any restrictions or management measures in place

**Option 1.** Implement a new flexible Beam Trawling Byelaw

**Option 2.** Use of non-regulatory/voluntary measures – engage with industry and introduce a code of conduct to reduce potential impacts

**Option 3.** Replace existing Trawling Byelaw regulation with a flexible Trawling Byelaw model covering all methods

All options are compared to Option 0, the preferred option is Option 1

<b>Will the policy be reviewed? It will be reviewed. If applicable, set review date:</b> 07/2029					
Is this measure likely to impact on international trade and investment?			No		
Are any of these organisations in scope?		MicroYes	Small Yes	Medium Yes	LargeYes
What is the CO <sub>2</sub> equivalent change in greenhouse gas emissions? (Million tonnes CO <sub>2</sub> equivalent)			Traded: N/A	Non-traded: N/A	

*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.*

Signed by the responsible SELECT SIGNATORY:  Date: 15/05/2024

# Summary: Analysis & Evidence

# Policy Option 1

## Description:

### FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2020	Time Period Years 10	Net Benefit (Present Value (PV)) (£)		
			Low: 800	High: 200	Best Estimate: £148552.2

COSTS (£)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	£200	Optional	200
High	£800	Optional	800
Best Estimate	£500	£17,200	£148552.2

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

Administrative cost to NEIFCA of £16,000 for scientific monitoring work, data analysis and report writing required to support the management measures introduced. No additional operational costs are estimated as it will require no change to monitoring and enforcement. One off cost for setting up the permitting process on the existing NEIFCA system are estimated between £200 and £800 with a best estimate of £500. No additional administrative costs are anticipated due to the small number of permits and the short processing time with the new permit system.

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

Displacement of commercial fishing effort to outside of the NEIFCA district is anticipated due to the introduction of effort limitation. However, currently there are only 4-5 vessels using a beam trawl to target Scallops and given this has been a newly emerging fishery the level of displacement is expected to be low once effort limitation is in place. Many of the current active fishing vessel will be able to return to previous fishing activities targeting demersal fish.

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'

No monetised figures are available for the benefits of the recommended introduction of effort limitation and introduction of a flexible byelaw model. However, significant and potential benefits are described below.

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

Ensuring sustainability of stocks by regulating fishing effort through the introduction of effort limitation. Implementation of a flexible byelaw model will benefit the King Scallop fishery by allowing for changes to be made to the byelaw conditions based on new evidence. This will improve NEIFCA's ability to implement effective measures in a proactive and timely manner.

<b>Key assumptions/sensitivities/risks</b>	<b>Discount rate (%)</b>	3.5%
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Beam trawling is currently focused on only one area and without any temporal, spatial and catch restrictions, this fishing activity will continue throughout the spawning season additional fishing vessels are likely to join this fishery. This will certainly result in exploitation levels and impacts on habitat and King Scallop stocks reaching unsustainable levels and potentially stock collapse.

### BUSINESS ASSESSMENT (Option 1)

<b>Direct impact on business (Equivalent Annual) £:</b>			<b>Score for Business Impact Target (qualifying provisions only) £:</b>
Costs: £1,200	Benefits: £0	Net: £1,200	£6,000

# Evidence Base

## 1. Problem under consideration and rationale for intervention

- 1.1. The current NEIFCA Emergency Beam Trawling Byelaw will expire on the 17<sup>th</sup> July 2024 and all trawling activity will continue to be regulated through the existing NEIFCA Trawling Byelaw allowing any UK registered vessel to obtain a trawl permit within the NEIFCA district. The only limitations set by the existing Trawling Byelaw are MCZs and MPAs where any trawling is prohibited or limited through a sunset list.
- 1.2. At present the only regulated exploitation of King Scallop is limited to a permitted dredge fishery (consisting of 3 vessels) which is managed using spatial and temporal restrictions to protect stock during spawning season(s) and prevent overexploitation. Scallop dredging was previously banned prior to 2016 due to stocks collapsing following overfishing. Since it was reopened, management has been tightly regulated and data reviewed annually to determine whether the fishery should remain open for the following season.
- 1.3. At present there is insufficient data to determine MSY for King Scallops in the Yorkshire/Durham area and the impacts of the new emerging fishing activity for King Scallops outside the designated scallop fishing areas using a beam trawl is currently unknown. Little is known about the catch composition, catch efficiency, gear footprint (e.g. penetration depth etc) or depletion rate.
- 1.4. Provision has been made with an Emergency Byelaw for a period of 12 months to enable limited fishing using beam trawls to continue under scientific dispensations and any such activity is closely monitored with the purpose of research and gathering of necessary data.
- 1.5. In line with the Fisheries Act 2020 and recently published FMP objectives for King Scallops, this new beam trawling byelaw will continue the currently implemented precautionary short-term measures to provide protection of stocks whilst improving the evidence base to inform medium- to long-term management measures.

## 2. Rationale and evidence to justify the level of analysis used in the IA (proportionality approach)

- 2.1. Inshore Fisheries and Conservation Authorities have duties to ensure that fish stocks are exploited in a sustainable manner, and that any impacts from that exploitation on designated features in the marine environment are reduced or suitably mitigated, by implementing appropriate management measures (e.g. this byelaw). Implementing this flexible Beam Trawling Byelaw will be on an adaptive precautionary principle to minimise potential negative impacts on the King Scallop stocks and to ensure that fishing activities can continue and conducted in a sustainable manner whilst protecting the marine environment as best as possible.
- 2.2. Fishing activities can potentially cause negative outcomes as a result of 'market failures'. These failures can be described as:
  - 2.2.1. Ecosystem Services – Nature provides components, products and functions to be potential societal goods and benefits (Elliot, 2023). These provisions can be e.g. vertebrates, invertebrates, macrophytes; genetic resources; water and minerals; places and seascape. Regulating processes an ecosystem can provide are e.g. climate regulation; natural hazard protection; waster breakdown and detoxification.
  - 2.2.2. Societal goods and benefits – For the well-being and fulfilment of basic human needs an ecosystem provides e.g. food, fertilizer, energy (fuel), medicines and

biotechnology, climate, sea defences and erosion protection, waste processing, tourism and recreation, mental and physical wellbeing, education and research.

2.2.3. 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.

2.2.4. 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.

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

2.3.1. Management measures to conserve designated features of European marine site will ensure negative externalities are reduced or suitably mitigated.

2.3.2. Management measures will support continued existence of public goods in the marine environment, for example conserving the range of biodiversity in the sea of the IFCA District.

2.3.3. Management measures will also support continued existence of common goods in the marine environment, for example ensuring the long-term sustainability of fish stocks in the IFCA District.

### ***King Scallop spawning***

2.4. Spawning events of King Scallop populations rely on a both internal (i.e. genetics) and external (abiotic) factors. Although natural disturbance from wind and tide has also been documented to initiate spawning, the key environmental variable that influences spawning is temperature (Barber & Blake, 2006). A rapid change in temperature has been noted to be a more significant stimuli than a specific temperature or the direction in change of temperature (Barber & Blake, 2006). However, the synchronicity of spawning events across a population of scallops can also be stimulated by the presence of gametes from the opposite sex.

2.5. Across Europe, various populations of King Scallop have been reported to spawn at low continuously from April to September (Barber & Blake, 2006), with ripe, full gonads recorded throughout the year. However, clear peaks can also occur as reported by Salomonsen *et al.*, (2015) in a study conducted within Welsh waters (Figure 1) which showed major spawning events during May and July but evidenced that continuous spawning occurred until the end of September when all scallops sampled were in a resting state (ripe or developed with none spent). It is important to highlight that within this report the authors also noted the potential that an additional major spawning event

may have occurred between July and August though due to issues with sampling there was a gap in data collection at that time (Salomonsen *et al.*, 2015).

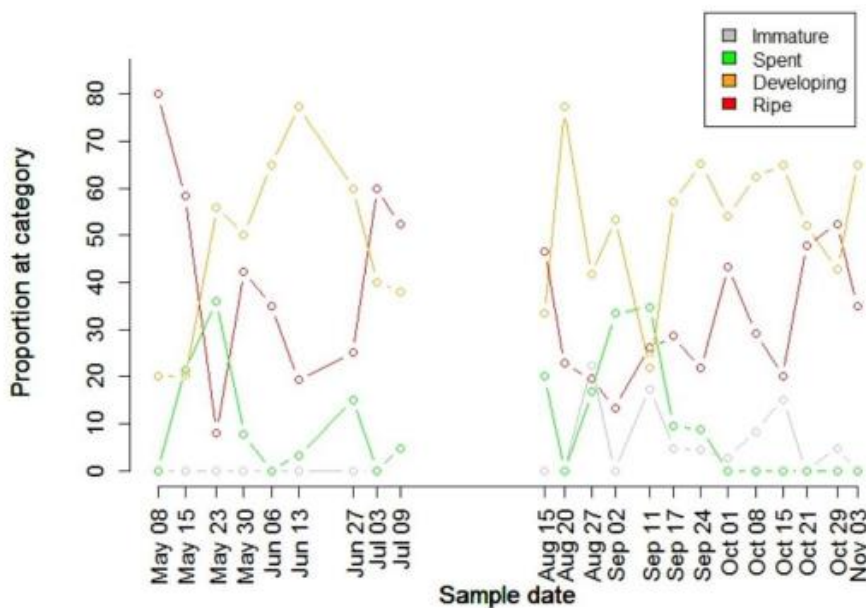


Figure 1. Proportion of King scallops found at each of 4 stages of maturity between May and November in Area A, from a study conducted in Welsh waters by Salomonsen *et al.*, (2015).

- 2.6. At present there are few data on the spawning of King Scallop populations off the North East coast of England, where nomadic scallopers target grounds outside 6 nm. However, NEIFCA have begun conducting regular sampling of King Scallop in order to collate a dataset that will allow for temporal and spatial comparison of meat yield and gonad index within and around permitted areas open to scallop dredging in the district.
- 2.7. The recent increase in beam trawling for king Scallop within the same grounds and surrounding area of the permitted dredge fishery poses a threat to the longevity of this King Scallop population, especially as these stocks have been exploited within areas closed to scallop dredging as well as during the crucial spawning period. At present only two designated boxes (North and South Box) are available to the three permitted vessels which operate with Newhaven dredges under the Scallop Dredging Byelaw XXIII situated between 4-6nm. Scallop stocks are known to extend closer inshore (to ~3nm), as well as north and south of the North scallop box, it is these grounds which are closed to the dredge fishery that are targeted by recent beam trawling activity.
- 2.8. Scallop stocks within the NEIFCA district contribute to a larger stock unit assessed annually by Cefas (Figure 2). This stock unit is heavily exploited by nomadic scallop dredging vessels outside the 6nm limit, with no total allowable catch limit set for King Scallop within English water. Anecdotal reports from industry members are that stocks have been heavily depleted in recent years. Therefore, protected scallop grounds within the NEIFCA district support not only the exploited stocks within the permitted boxes but likely provide larval supply and recruitment to scallop grounds beyond 6nm (Beukers-Stewart *et al.*, 2005). This is evidenced in a study conducted by Beukers-Stewart *et al.*, (2005) which compared King Scallop densities between an area closed to fishing for 14 years and a fished area. Results from this study showed that the increased density within the closed area population improved the overall reproductive potential shown by the reproductive biomass of scallops within the closed area being 12.5 times higher than that of the fished area (Beukers-Stewart *et al.*, 2005). This is due to King Scallop

reproducing via external fertilisation and as mentioned previously, with peaks in spawning occurring synchronously where high densities occur.

2.9. The physical impact of bottom towed gears on benthic environments is well documented in that these gear types reduce habitat complexity by impacting epifaunal and infaunal benthic species (De Groot *et al.*, 1994; Rijnsdorp *et al.*, 2018; Sciberras *et al.*, 2018), with the level of impact depending on the intensity, gear penetration and sensitivity of habitats/species present. A study conducted by Bradshaw *et al.*, (2003) investigated whether hydroid colonies effected benthic community composition in the Irish Sea. One of the key findings in their research was that hydroid colonies provide suitable settlement substrate for scallop juveniles (*Pecten maximus* and *Aequipecten opercularis*), and that the 11-year closure of an area to dredging enhances scallop stock as well as increasing biodiversity and habitat complexity (Bradshaw *et a.*, 2003). Reduced bottom fishing disturbance would not only allow for benthic environments to recover but also increases the necessary structural complexity of habitats to increase the survival and growth rates of juvenile King Scallops (Bradshaw *et al.*,2003; Beukers-Stewart *et al.*, 2005).

2.10. The scallop populations outside of the permitted dredge areas are well established as they been effectively protected against targeted fishing since 2014, allowing stocks outside of the permitted areas to recover and continuously supply recruitment to the fished and non-fished areas. These protected scallop population are now under threat of being overexploited and potentially impacting the recruitment of future stocks inside and outside the permitted areas leading to an unsustainable fishery and potential collapse of the stock. Currently there is a lack of data for spawning in NEIFCA's district and the impacts of the recently emerging beam trawling on the Scallop grounds. There is an urgent need to manage the Scallop grounds efficiently through a new byelaw to ensure the sustainability of this fishery.

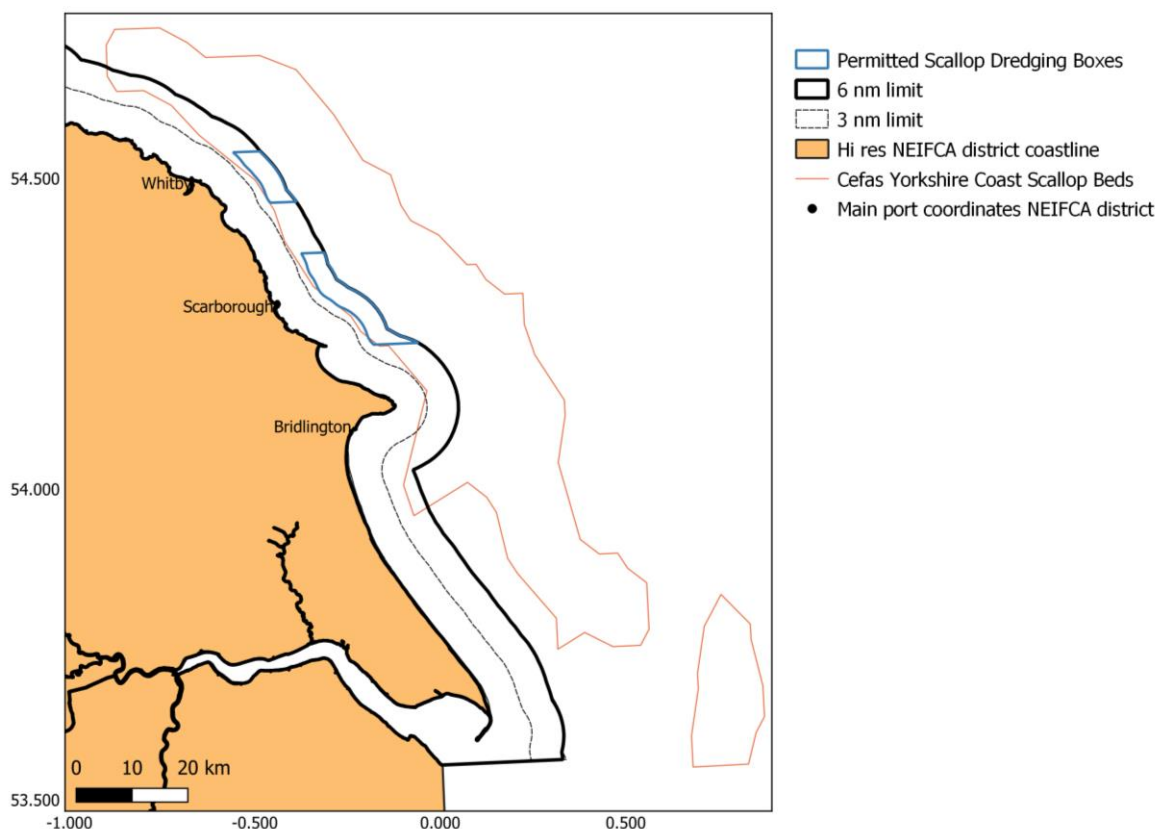


Figure 2: NEIFCA district including the permitted Scallop dredging areas and CEFAS Scallop beds

## Current Exploitation of King Scallop by Beam trawlers

2.11. Under EU regulations<sup>1</sup> a 'beam trawl' is defined as "gear with a trawl net open horizontally by a beam, wing or similar device". In comparison, under the same regulation in item 'dredges' are defined as "gear which are either actively towed by the main boat engine (boat dredge) to catch bivalves, gastropods or sponges which consist of a net bag or metal basket mounted on a rigid frame or rod of variable size and shape whose lower part may carry a scraper blade that can be either rounded, sharp or toothed, and may or may not be equipped with skids and diving boards. Some dredges are equipped with hydraulic equipment (hydraulic dredges)".

2.12. At present a total of five vessels are permitted under the scientific dispensation scheme to target King Scallop within the NEIFCA district using beam trawls. The level of disturbance on the marine environment is not the only concern and the most important impact to consider is the level of exploitation of King Scallop from grounds which have been protected against scallop dredging for nearly ten years. After reviewing MMO landings data and NEIFCA's catch returns, between January and December 2023 a total of around 68 tonnes of Scallops were landed from the inshore grounds (Figure 4). One of the vessels landed a total of 57 tonnes in 2023. This is approx. 30% of the total Scallop catch by 3 vessels dredging inside the permitted area between November 2022 to April 2023. Whether the gear efficiency of a beam is similar to a New Haven dredge is not clear at the moment but the current landings data clearly demonstrate the substantial amounts of Scallops being caught and landed. Beam Trawling has proven its effectiveness for catching King Scallop in this instance but it may not solely be due to the design and could be influenced by the high density of King Scallop in the areas fished due to long-term closure to dredging. Therefore, the amount of time of using this gear type to fish for King Scallops may be questioned as it is unknown how effective this method may be at lower densities (i.e. comparable to that of the areas currently fished by dredgers). Additionally, seasonal behaviour of King Scallop may influence the efficiency of beam trawling for scallops during winter months when they are less active and buried deeper in the sediment, than during spring/summer when they can be found closer to the surface for spawning.

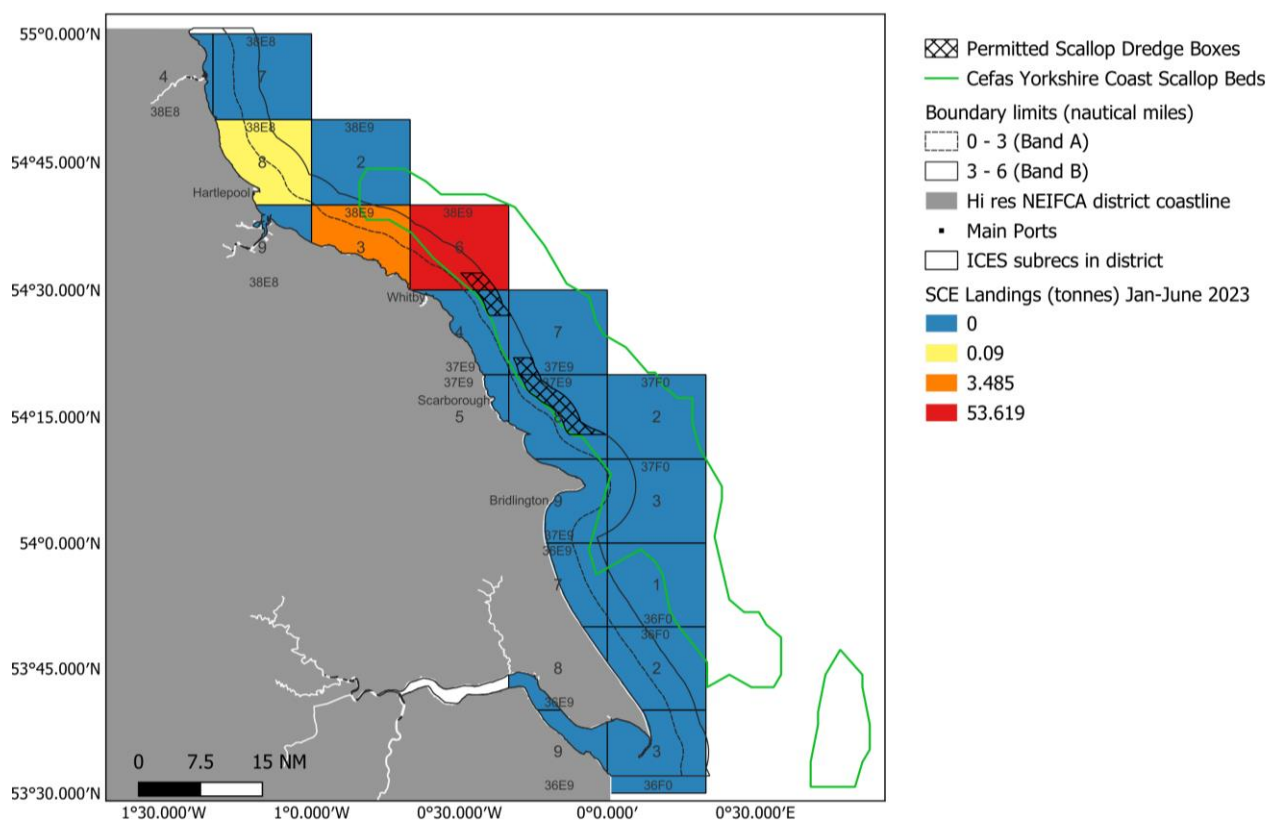


Figure 3: Levels of fishing activity for King Scallops from 3 fishing vessels along the North East coast. Data derived from the MMO under 10m catch app.



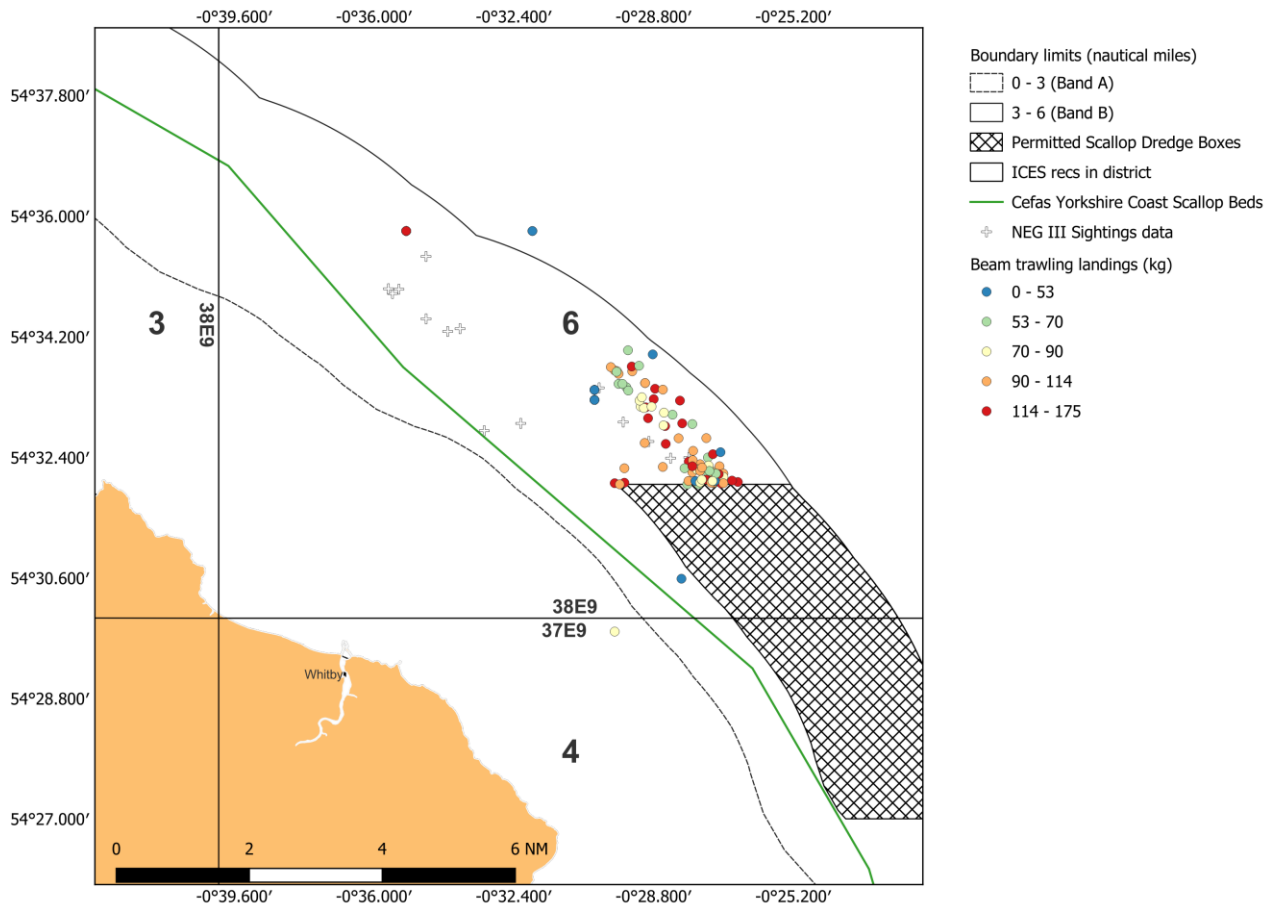


Figure 4: AIS, NEIFCA sightings and catch return data for 3 beam trawl vessels identifying fishing activity within the NEIFCA district.

### 3. Description of options considered

The following options have been considered:

**Option 0. Do nothing** – This option would involve allowing the current Emergency Byelaw to subside and the existing NEIFCA management regime to continue under the current Trawling Byelaw. While this would allow continued fishing at the same levels there is a risk of an increase in effort within the district without any management provisions and could potentially lead to stock collapse.

**Option 1. Implement a new flexible Beam Trawling Byelaw** – This option would introduce effort limitation as a management measure to regulate beam trawl fishing effort and ensure sustainability of the King Scallop stock.

**Option 2. Use of non-regulatory/voluntary measures** – A voluntary agreement would need a 100% compliance to be effective and ensure a sustainable fishery. We believe that this cannot be achieved across the NEIFCA district, due to the size of it and the potential increase of fishing vessels using a beam trawl for scallops. The tendency within the fishing sector is to exploit it to the maximum if there is an opportunity and financial reward, therefore fishermen would fish regardless of any voluntary agreements. With byelaws a high level of observance of regulation occurs, particularly as there are no ambiguities.

**Option 3. Replace existing Trawling Byelaw regulations with a flexible Trawling Byelaw model** – This option would introduce effort limitation as a management measure to regulate fishing effort and ensure sustainability of the King Scallop stock as in option 1, however due to



the extent and complexity of this task it would not be possible to complete this in time when the Emergency Byelaw expires.

As options 0, 2 and 3 are considered not to be suitable in this instance, option 1 is therefore considered in the costs and benefits analysis.

#### **4. Policy objective**

- 4.1. The policy objective pertinent to this IA is to ensure that stocks are exploited in a sustainable manner, that the regulations are easier to navigate for resource users and to increase the levels of compliance.
- 4.2. The outcomes for this Byelaw are for NEIFCA to complete and implement a management plan for the sustainable exploitation of the Scallop stock using this fishing method. The aim is to limit levels of this fishery in the NEIFCA District in the interest of conservation of the marine environment and allow a flexible more proactive fisheries management.

#### **5. Summary and preferred option with description of implementation plan**

- 5.1. Option 1 was determined to be the preferred option to manage beam trawling targeting King Scallops across the district. This secondary legislation is expected to be implemented in early 2025 and resources are in place at the Authority to actively enforce its provisions and collect the necessary data.
- 5.2. Managing this fishery through a new flexible byelaw model will allow the Authority to keep the exploitation of King Scallops outside the permitted areas at a sustainable level and continue the necessary data collection whilst working in close collaboration with the fishing industry.
- 5.3. Although no additional implementation costs are expected, the wider application of the regulations could increase the number of formal enforcement actions taken (but this cannot be estimated accurately at this stage).
- 5.4. Any subsequent changes in compliance and enforcement actions, progress of the data collection and development of the management plan will be monitored by the Authority through the Post Implementation Review Plan and adjusted if necessary.

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

##### ***Administrative and scientific monitoring costs***

- 6.1. The administrative costs setting up a new permitting process on the existing NEIFCA system are estimated at a total of £500.
- 6.2. The costs associated with scientific monitoring work required to inform the management plan and permit conditions of the new byelaw is estimated to be a total of £ 16,000 per annum. This is comprised of the operational costs for the *North Eastern Guardian III* estimated at a total of £15,000 (£3,000 day rate) vessel operating 5 Scallop dredge and video sledge survey days. Additional costs for data analysis and producing reports are estimated at a total of £1,000.

### **Fisheries costs**

- 6.3. The costs incurred by the commercial fishing industry are primarily due to the introduction of a permit charge of £200 per permit.
- 6.4. Out of current 109 commercial vessels with a trawling permit in the district, only 5 vessels have expressed interest targeting King Scallops using a beam trawl and are currently fishing under the scientific dispensation scheme.
- 6.5. The maximum number of permits for beam trawling is currently set at 6 and it is the intention of the Authority to maintain the number of permits at this level. Therefore, the total costs to the fisheries is estimated at a total of £1200.

### **Non-monetised costs**

- 6.6. The introduction of a flexible beam trawling byelaw within the NEIFCA district could result in the displacement and increase in effort outside the 6NM. This could potentially cause increased gear conflict with potting and scallop dredging vessels and an increase of pressure on the stock outside the NEIFCA district. However, it is unlikely vessels will be using beam trawls to target Scallops as dredging would be more efficient and is permitted outside the 6NM.

## **7. Risks and assumptions**

The proposed intervention is based on a precautionary principle using the following evidence:

- 7.1. **MMO under 10m catch up data for landings** – between January and June 2023, 3 local vessels landed a total of 57t of King Scallops using a beam trawl
- 7.2. **NEIFCA catch returns** – with the introduction of the Emergency Byelaw in July 2023, one of the scientific dispensation conditions is a new catch return process. The collated data contain more accurate locations of beam trawling activity, effort and landings data. Between July and December 2023, all permitted trawlers have landed a total of 11.5t of King Scallops and the fishing activity was concentrated in one area outside the permitted Scallop dredging area as previously observed through AIS & NEIFCA sightings data.
- 7.3. **NEIFCA sightings & AIS data** – although this data source is limited there is a clear indication of increased activity outside the permitted Scallop dredge areas (Figure 5).
- 7.4. **Literature** - peer reviewed articles and personal conversation with experts at the University of York and CEFAS suggest the potential impacts of this fishing activity not only on the stock itself but also on the recruitment.

<b>Assumptions</b>	<b>Risks</b>	<b>Mitigations</b>
Current levels of fishing in the previously non-fished grounds outside the permitted Scallop dredging areas especially during the spawning season will impact the spawning capacity of the stock and its recruitment	Medium	Temporal, spatial and catch restrictions will enable a sustainable management to protect the stock.
If additional fishing vessels from within and outside the NEIFCA district join this fishery, exploitation levels and impacts on habitats will reach unsustainable levels leading to a stock collapse	High	New flexible byelaw with limited number of permits. Annual assessment of stocks and exploitation levels will determine the number of permits issues for the following season.

Modification on the beam trawl causing more damage to the habitat than regular beam trawls	Medium	New flexible byelaw with initial prohibition of any type of modifications to a beam trawl until sufficient evidence is available.
Small and micro business are not viable due to intervention	Low	Fishing vessel with permits will be allowed to continue fishing and selling their catch, however this will be limited. Most vessels only started in 2023 to beam trawl for Scallops inside 6nm therefore the affected fishing vessels will still be able to return to their previous fishing activities (i.e. beam trawling outside 6nm and targeting demersal fish and potting etc).

## Evidence gaps

7.5. The following data gaps need to be addressed:

- Spawning cycles of King Scallops in the NEIFCA district
- Differences in size frequency, meat yield and gonad development between fished and low-/non-fished stocks
- Spatial distribution and level of fishing activities for the beam trawlers
- Bycatch of standard and modified beam trawling gear
- Effort levels of beam trawlers
- Comparison of habitat status between permitted Scallop dredging area, beam trawling and non-fished areas.
- Comparison of impact levels on the habitat of standard beam trawling and dredging gear.
- Abundance and density of scallop stocks inside and outside the permitted Scallop dredge areas

## Addressing the evidence gaps

Under the preferred Option (1)

7.6. One key evidence gap that may be addressed is spawning patterns for local populations of King Scallops. This could be answered using the permit conditions in the new bylaw for industry vessels to retain and provide regular subsamples of King Scallops for meat yield and staging of gonads. These data can then be collated and analysed to detect peak spawning events and estimate when spawning season starts and ends.

7.7. The second key evidence gap that may be addressed would be investigating and building an understanding of the efficiency, depletion rate and footprint of a beam trawl for King Scallop. This could be answered using a Before-After-Control-Impact (BACI) Paired-Series approach of deploying modified gear and comparing the impact to benthic habitats before and after. It would also prove of interest to compare the impact of the

modified beam trawl to that of a traditional Newhaven scallop dredge to determine whether this method provides a less destructive and efficient alternative to dredging for King Scallop.

## 8. Impact on small and micro businesses

Currently there are 5 fishing vessels permitted through the scientific dispensation scheme in the Emergency Bylaw to target scallops using a beam trawl. One of these fishing vessels has been fishing since 2022 whilst the other 4 vessels only started in April and June 2023. The fishing vessel that has been fishing since 2022 landed 38t of Scallops in 2022 with a market value of around £74k and 57t of Scallops in 2023 with a market value of around £97k. The other 3 vessels landed together a total of 30.45t in 2023 with a market value of around £52k using a standard beam trawl. This type of fishing activity inside the 6NM only emerged recently and fishing vessels are not established yet. The intention of this bylaw is not to close the fishery but to manage sustainably a small number of permitted fishing vessels targeting King Scallops. This would still allow the current active fishing vessels to access the fishery and if the Authority implements effort limitation for catching and landing King Scallops, these vessels will be still able to return to their previous fishing activities targeting demersal fish inside and outside the 6NM and dredging for King Scallop outside the 6NM.

*Table 1: Landings, days fished and market value of King Scallops for fishing vessels using beam trawling inside the NEIFCA district in 2022 and 2023. Data derived from the MMO iFish2 data.*

	2023			2022		
Vessel	days fished	landed weight t	value £	days fished	landed weigh t	Value £
1	52	51.89	97789.36	48	38.288	73983.10516
2	22	9.7	17520.32			
3	16	20.45	33840.06			
4	1	0.287	594.68			

## 9. Wider impacts (consider the impacts of your proposals)

Wider impacts are not expected as this fishery has only emerged recently.

## 10. A summary of the potential trade implications of measure

N/A

## 11. Monitoring and Evaluation

The existing NEIFCA's stock monitoring program for Scallops will be enhanced through additional surveys in collaboration with the fishing industry under a permitting scheme. Stock assessment will be extended to a wider area of Scallop grounds in the district, assessing size frequency, abundance, density and estimating biomass of the stock. Throughout the spawning season (May to September), weekly meat yield and gonad stage surveys will assess seasonality and timing of spawning events and additional habitat surveys will assess and compare impacts of Scallop dredging and beam trawling. Permits will be limited to a small number of vessels with strict spatial and temporal restrictions. Any vessel with a permit will be required to transmit AIS at all times when operating inside the NEIFCA district, submit catch returns, provide subsamples for meat yield and gonad staging and facilitate access for NEIFCA officers for observation at sea when requested. Compliance will be ensured through regular enforcement activities and data collection will be continuously analysed informing the management for the new flexible bylaw.

## References

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