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|--|---|--|--|------------------------------------|
| Title: Shrimp Permit Byelaw 2018 IA No: DRAFT_EIFCA005 RPC Reference No: Lead department or agency: Eastern Inshore Fisheries and Conservation Authority Other departments or agencies: | Impact Assessment (IA) | | | |
| | Date: 25/06/2018 | | | |
| | Stage: Development/Options | | | |
| | Source of intervention: Domestic | | | |
| | Type of measure: Other | | | |
| Contact for enquiries: Julian Gregory - CEO Eastern IFCA (01553 775321) | | | | |
| Summary: Intervention and Options | | | | RPC Opinion: Not Applicable |

| Cost of Preferred (or more likely) Option | | | | |
|---|----------------------------|---|-------------------|-------------------------------|
| Total Net Present Value | Business Net Present Value | Net cost to business per year (EANDCB in 2014 prices) | One-In, Three-Out | Business Impact Target Status |
| £-0.1923 | £-0.0869 | £0.0096 | Not applicable | To be determined |

What is the problem under consideration? Why is government intervention necessary?
 Shrimp fishing within the Wash and North Norfolk Coast SAC has been assessed and adverse impacts on site integrity cannot be ruled out in relation to certain habitats. Spatial closures (proposed separately) mitigate the risk to these sub-features. Outside of proposed closures, the site is at risk from impacts resulting from changes in fishing behaviours. There is also a risk of displacement of activity into other marine protected areas. This byelaw will mitigate this risk by enabling Eastern IFCA to implement permit conditions and limitations on fishing effort, preventing potentially damaging fishing behaviours. The risk to MPAs dictates that a regulatory approach is required in relation to the protection of designated habitats.

What are the policy objectives and the intended effects?
 Objectives: To manage long-term, sustainable shrimp fisheries within the Eastern IFC District which do not adversely impact the conservation objectives of marine protected areas. The intended effects of the byelaw are to implement necessary technical measures and effort limitations (as required) using a permit scheme and to obtain better fisheries information related to this fishing activity (including through requiring all shrimp fishing vessels to have operational vessel monitoring devices).

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)
 Option 0. Do nothing.
 Option 1. Shrimp Permit Byelaw 2018
 Option 2. Total closure
 The preferred option is option 1 – The proposed byelaw will enable Eastern IFCA to dynamically manage shrimp fisheries through the implementation of permit conditions to meet the requirements of the fishery and the marine environment. It will also provide a greater level of information regards fishing activity on which to base management.

| | | | | |
|--|--|--|-----------------------|---------------------------|
| Will the policy be reviewed? It will be reviewed. If applicable, set review date: 07/2024 | | | | |
| Does implementation go beyond minimum EU requirements? | | | 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 |

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 Chief Executive: _____ Date: _____

Summary: Analysis & Evidence

Policy Option 1

Description:

FULL ECONOMIC ASSESSMENT

| Price Base Year | PV Base Year | Time Period Years | Net Benefit (Present Value (PV)) (£m) | | |
|-----------------|--------------|-------------------|---------------------------------------|-----------|--------------------|
| | | | Low: 0.0 | High: 0.0 | Best Estimate: 0.0 |

| COSTS (£m) | Total Transition (Constant Price) Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---------------|---|--|----------------------------|
| Low | 0.0 | £0.0180 | £0.1552 |
| High | 0.0017 | £0.0322 | £0.2792 |
| Best Estimate | 0.0017 | £0.0221 | £0.1922 |

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

Key monetised costs relate to the running costs associated with electronic monitoring devices and the permit fee. There is also a transitional cost to a limited number of fishers to install separator trawls or sorting grids in their shrimp fishing gear. The scale of this cost is considered minimal in relation to the potential income generated from the fishery.

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

The implementation of a permit scheme has the potential to change fishing behaviour as a result of 'market failures' leading to an increase in fishing effort and ultimately, poorer fishing returns and implementation of more restrictive fishing effort limitations.

| BENEFITS (£m) | Total Transition (Constant Price) Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---------------|---|--|-------------------------------|
| Low | Unkown | Unkown | Unkown |
| High | Unkown | Unkown | Unkown |
| Best Estimate | n/a | n/a | n/a |

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

none identified

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

Protection of the habitats identified as being at risk from shrimp fishing activity will have a positive effect on the overall ecological functioning of the MPA and potentially improve fishery productivity, including in relation to species other than shrimps.

Key assumptions/sensitivities/risks

Assumptions: Fishing activity levels (based on previous 6 years), costs associated with electronic monitoring devices.

Sensitivities / risks: Effort limitations / fishery closures may be required which have an economic impact on fishers (reduction of earnings, lost fishing opportunity). Permit scheme changes behaviours (increase in fishing effort and subsequent reduction in earnings per fisher).

Discount rate

3.5%

BUSINESS ASSESSMENT (Option 1)

| | | | |
|---|---------------|--------------|---|
| Direct impact on business (Equivalent Annual) £m: | | | Score for Business Impact Target (qualifying provisions only) £m: |
| Costs: 0.0094 | Benefits: 0.0 | Net: -0.0094 | |

Evidence Base

Problem under consideration

Defra's revised approach to managing fishing activity in European Marine Sites (EMS) requires Eastern IFCA to ensure that fishing activity does not have an adverse effect on site integrity in marine protected areas (MPA) which occur within the IFC District. This requirement derives from Article 6 of the Habitats directive and the Conservation of Habitats and Species Regulations (as amended) 2010 (SI 2010/490). Furthermore, Eastern IFCA are required under the Marine and Coastal Access Act 2009 to further the conservation objectives of any Marine Conservation Zones within the Eastern IFC district.

Eastern IFCA also has a duty to take action to ensure the sustainable exploitation of fisheries within its district as per section 153 of the Marine and Coastal Access Act 2009. In carrying out its duties Eastern IFCA is obliged to ensure good environmental status of fish and shellfish stocks as per the Marine Strategy Framework Directive (2008/56/EC) namely; sustainable fisheries with high long-term yields, stocks functioning at full reproductive capacity, and to maintain or increase the proportion of older and larger individuals.

The prolific shrimp fishery within the Eastern IFC District cooccurs primarily with the Wash and North Norfolk Coast Special Area of Conservation (SAC). The fishery was assessed in accordance with s.61 of the Habitats and Species Regulations (as amended) 2010 and it was concluded that management measures are required to prevent an adverse effect on site integrity.

Rationale for intervention

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 byelaw will enable Eastern IFCA to ensure that fishing activities are conducted in a sustainable manner and that the marine environment is suitably protected.

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

1. 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.
2. 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.
3. 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.

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

- Management measures to conserve designated features of MPAs will ensure negative externalities are reduced or suitably mitigated.
- Management measures will support continued existence of public goods in the marine environment by conserving the range of biodiversity in the sea of the Eastern IFC District.
- Management measures will also support continued existence of common goods in the marine environment by ensuring the long-term sustainability of shrimp stocks in the Eastern IFC District.

Policy objective

The policy objectives are as follows:

1. To have the required protective effect on MPA within the Eastern IFC District whilst minimising the economic impact on the shrimp fishing industry;
2. To ensure long-term, sustainable shrimp fisheries which are prosecuted in line with maximum sustainable yield;
3. To collect such evidence as is required to inform effective management of the shrimp fishery.

The intended effects of the measures are as follows:

1. To require shrimp fishers to obtain a Shrimp Permit in order to prosecute shrimp fisheries;
2. To limit the amount of shrimp fishing activity within the Wash and North Norfolk Coast SAC such that the activity does not have an adverse effect on site integrity;
3. To introduce, vary or revoke technical gear requirements and other permit conditions dynamically to prevent adverse effects on site integrity within MPA;
4. To require all shrimp fishers to provide the required fisheries data to enable evidenced based management of shrimp fisheries;
5. To enable Eastern IFCA to implement measures which prevent shrimp fishing activity from having an adverse effect on stock sustainability and site integrity in MPA throughout the district through a proportionate process;
6. To enable Eastern IFCA to implement measures which prevent shrimp fishing activity from having an adverse effect on stock sustainability and site integrity in MPA throughout the district through a proportionate process;
7. To enable Eastern IFCA to temporarily suspend the issuing of permits or close the shrimp fishery within the Wash and North Norfolk Coast SAC if there is a risk to fisheries sustainability or site integrity;
8. To partially recover costs associated with shrimp management measures.

With regards to the associated permit conditions

9. To limit the use of 'try-nets' as follows;
 - a. One per vessel,
 - b. Must be hand-hauled,
 - c. Must weigh no more than 20kg

d. Must be no longer than 500mm

10. To require all shrimp fishers to use a separator trawl or sorting grid;

11. To prohibit the use of 'tickler chains' or any other attachment which penetrates the seabed;

12. To prohibit the use of shoes, skids or guides which are not 'flat' across their entire length

With regards to eligibility criteria

13. To make any person who has received two financial administrative penalty for or been convicted of two relevant offence within 36 months of application, ineligible to be named on a shrimp permit

Description of options considered (including status-quo);

Option 0 (do nothing) – Status Quo

Eastern IFCA has assessed the impacts of shrimp fishing on the Wash and North Norfolk Coast MPA. This assessment has concluded that adverse impacts on site integrity cannot be ruled out in relation to some habitats. Mitigation to protect these areas is proposed in the form of spatial closures (to bottom-towed-gear) and this is considered separately in the Marine Protected Areas Byelaw 2018. The 'do nothing' option therefore relates only to the fishing outside of these spatial closures.

The assessment also concluded that the current levels (last 10 years) of shrimp fishing activity are not having an impact on site integrity outside of the proposed spatial closures. As such, the 'do nothing' option would still meet the conservation objectives of the site. However, the information used in the assessment is limited in its accuracy and scope and may have underestimated the levels of fishing activity during this period. Most importantly, the 'do nothing' option would enable fishers to change fishing behaviours (for example, increases in effort, fishing gear modifications) which may lead to fishing activity having an impact on the site.

Furthermore, this would not enable Eastern IFCA to improve data collection to better inform management decisions and assessments of impacts on MPA and fisheries sustainability.

The 'do nothing' option is not considered to adequately reduce the risk of impacts from shrimp fishing within MPAs and is therefore not considered a viable option.

Option 1 (preferred option) – Shrimp Permit Byelaw 2018

Eastern IFCA intends to introduce spatial closures within the Wash and North Norfolk Coast SAC for the protection of certain habitats. Fishing activity outside of these closures (within the site) is considered not to be having an adverse effect on site integrity based on the level of effort and fishing practices over the last 10 years. So as to ensure that fishing activity and behaviours do not change with the effect of an adverse effect on site integrity, Eastern IFCA proposes to implement a permit scheme so as to dynamically manage the fishery in-line with the conservation objectives of the MPA and sustainability of fisheries. Without a mechanism to control effort in particular, shrimp fishing in The Wash and North Norfolk Coast poses a risk to site integrity.

Outside of the Wash and North Norfolk Coast MPA, a permit scheme will enable Eastern IFCA to redress any potential displacement resultant of measures in the Wash and North Norfolk Coast MPA.

Further information (particularly through the implementation of electronic monitoring devices) will aid decision making to enable Eastern IFCA to meet conservation objectives of MPA and minimise the impact on the fishing industry.

Option 2 – Closure of Wash and North Norfolk Coast to shrimp fishing

Closure of the site would meet the conservation objectives of the site but have disproportionate impacts on the industry and effectively end the UK's contribution to the markets in relation to brown shrimp, with some 90% of the UK's catch coming from The Wash.

Monetised and non-monetised costs and benefits

Option 0 – Do nothing option

There are no monetised costs associated with the 'do nothing' option.

The key non-monetised costs relate to the impacts on ecosystem functioning resultant of increases in fishing effort and changes in fishing behaviours (e.g. use of more damaging fishing gear). Impacts on ecosystem function is likely to lead to impacts on the sustainability of the fishery and its productivity.

In addition, the 'do nothing' option is not in keeping with the requirements of the Habitats Directive and as such may lead to infraction on the UK.

Option 1 – Shrimp Permit Byelaw 2018

The key monetised costs associated with the fishery relate to the requirement for vessels to have electronic monitoring devices and the permit fee as set out below.

There is also a transitional cost associated with the requirement for all vessels to use separator trawls or sorting grids on shrimp fishing gear.

Key monetised costs

Electronic monitoring devices

iVMS and VMS+ installation costs – Eastern IFCA intends to implement the requirement to install iVMS alongside a funding bid to cover the cost of iVMS installation. It is intended that the cost of requiring additional units will be mitigated entirely through a combination of EMFF funding and Eastern IFCA funding support. The 'low', 'high' and 'best' estimate for this requirement (transitional cost) is therefore £0.

Vessels over 12m in length will not require installation of electronic monitoring devices under this regulation as VMS+ devices are already required by the MMO.

iVMS and VMS+ reporting costs – The cost of reporting via iVMS is currently commercially sensitive therefore costs are estimated based on VMS+ billing rates using the General Packet Radio Service (GPRS). A VMS+ report is currently charged at £0.02 but can also be paid for as part of a monthly or yearly contract which could reduce the associated costs. Informal dialogue with the MMO has indicated that the annual cost of a subscription is between £100 and £150.

The differences in the estimated costs for this requirement are primarily a reflection of the number of vessels operating within the shrimp fishery and level of cost associated with the reporting.

The low estimate takes into account the lowest number of vessel which have landed shrimp within the Eastern IFC District in any given year since 2010 (29 vessels) and the lowest potential cost (being £100 per annum). The low estimate is therefore £2,900 per annum.

The high estimate takes into account the higher potential reporting cost and the total number of different vessels which have landed shrimp within Eastern IFCA's district since 2010 (80 vessels). The high estimate is therefore £12,000.

The best estimate takes into account the mean number of vessels fishing for shrimp per year since 2010 (which is 44 vessels) and the mean potential cost of reporting (i.e. £125). The 'best' estimate is therefore £5,500 per annum.

The 'best' estimate is likely to be an overestimate given that the majority of fishers will not operate within the shrimp fishery all year and other fisheries may have requirements to use electronic monitoring devices (for example, it is proposed that Wash Fishery order 1992 (WFO) licence holders will require iVMS to operate within that fishery). As such, the annual cost for reporting (i.e. £100 to £150) is likely to contribute to more fisheries than the shrimp fishery only.

Costs associated with permit fees

The proposed fee for a category one shrimp permit is £100 per annum. This cost reflects cost recovery for administering permits and data entry (£44) which is set out in Table 1 below and an additional contribution to research, monitoring and enforcement undertaken with regards to the measures (£56). The fee for a category two permit is £44.

| Unit | Unit cost | Number of units | Total cost |
|--------------------|------------------|------------------------|-------------------|
| Return book | £6.50 | 1 | £6.50 |
| pre-paid envelope | £0.60 | 14 | £8.40 |
| Admin Officer time | £11.54 | 2.5 | £28.85 |
| | | Total | £43.75 |

The estimated costs for the permit fees are a reflection of the different number of vessels you operate under a permit and as set out in the calculations for electronic monitoring costs above.

Therefore, the low cost is estimated as £2,900 per annum, the high cost is estimated as £8,000 per annum and the best estimate is estimated as £4,400 per annum).

It should be noted that the fee is the same across both permits (i.e. a Category 1 and Category 2 permit both have a fee of £100). In addition, whilst fishers can obtain both permits on a single vessel, the associated cost will only be £100 (i.e. fishers only pay the permit fee once).

Installation of 'veil nets' (separator trawl) or sorting grid (Permit condition)

The permit conditions associated with this byelaw require all shrimp fishing nets to have a separator trawl (commonly referred to as veil nets) or sorting grid. This is essentially an extension of the same requirement in place under the Shrimp Fishing Nets Order 2002 which only applies to fishing gear where the aggregate beam length or head rope is over 8 meters. The permit condition will require gear of all sizes to meet these requirements.

Five vessels have been identified as not presently meeting these requirements with aggregate beam lengths ranging from 6.46 to 8 meters and as such a cost will be incurred with regards to having to install a separator trawl or sorting grid. This cost is thought to be circa £350 as determined through dialogue with net manufacturers. Concern has been raised by the industry however that the installation of these separators on smaller nets will reduce the efficiency of the fishing gear inasmuch as more commercial catch of shrimp would be lost.

A Dutch net manufacturer *C.I.V. Den Oever U.A.* (who supply the majority of shrimp nets in the Wash based shrimp fishing fleet) expressed a view that, in their experience, veils in smaller nets are likely to be less effective. SeaFish were also contacted however, the advice given was that a separator could be scaled down to work effectively. In terms of design, the key issue is the length of the veil which would need to be shorter in a shorter net.

The alternative to veil nets is a 'separator grid' although these are not routinely used. It has been suggested that weed often gets caught on the grid effectively making a barrier to the net and increasing drag.

The cost of installation has been estimated as £350 per vessel based on consultation with one manufacturer and this is scaled up to include the five vessels identified and included as a transitional cost. Wider impacts to the industry resulting from this requirement are not monetised as the impact is

unknown. Fishing gear experts have however indicated that a veil could be produced which would work effectively on a smaller net.

Costs to Eastern IFCA

Eastern IFCA will incur costs associated with administering a permit scheme including through processing applications and inputting data from return forms. These are set out in Table 1 above.

In addition, Eastern IFCA intends to undertake monitoring to support the conclusions of the Habitat Regulation Assessment and ensure that adverse effects are not occurring within the site open to fishing. The associated cost cannot be monetised as ultimately the level of monitoring is likely to change annually. These have been included in the non-monetised costs.

Eastern IFCA is also likely to incur a cost associated with enforcing the new measures. Costs associated with minor non-compliance are considered in the non-monetised costs section below.

Additional Enforcement activities will be required in addition to education and engagement. The cost of these are estimated to be £10,208 based on six additional sea patrols and 4 additional shore patrols. This is likely to be an underestimate with regards to the initial implementation of the measures during which time the risk of non-compliance is higher. In addition, the number of patrols will increase if risk associated with the fishery increases as directed through the Tactical Coordinating Group.

Taking enforcement action in relation to more serious or persistent non-compliance will also incur additional costs. In the period 2015 to 2018 (4 years) Eastern IFCA has issued 5 Financial Administrative Penalties and taken court proceedings in relation to non-compliance of the Whelk Permit Byelaw 2016. The cost associated with producing a case file for the issuing of a FAP or court proceeding is estimated at £2,995 per case. The best estimate for this cost therefore takes into account the average number of case files per year (1.5) and the cost per file. Therefore, the best estimate is £4,492 per annum.

It is anticipated that the permit fee partially recovers these costs. Therefore, including the partial cost recovery, the total cost to Eastern IFCA is £12,236 annually.

Non-monetised costs

Provision of catch data

Fishers will be required to return catch data as required by Eastern IFCA in accordance with the proposed byelaw. There will be a minimal cost associated with completing and returning these forms in terms of lost time.

Gear modifications – ‘shoes’ and skids

There is a marginal cost associated with fishers having to ensure that shrimp fishing gear is compliant with permit condition 5, i.e. that the ‘shoes’ on shrimp gear must be ‘flat across its entire length’. This may require some fishers to add additional plates to the bottom of shoes which have ‘heels’ (the presence of which acts as a ‘wear plate’). Informal dialogue with fishers has indicated that the associated cost will be minimal, and fishers are generally not concerned about this measure.

Changes in fishing behaviours

One of the main concerns raised in the informal consultation relates to additional fishing effort from vessels which have not previously prosecuted the fishery. In particular, that a permit scheme will drive a behaviour for fishers to obtain a permit so as to get ‘track record’ for the fishery in the event that Eastern IFCA limit the number of permits. This would be on the mistaken perception that this will ensure them a permit in the future.

The proposed byelaw includes provision for Eastern IFCA to limit the number of permit and the fishing effort per vessel however, Eastern IFCA does not intend to implement this system until further work has been undertaken. The proposed byelaw would enable Eastern IFCA to implement such

restrictions in accordance with the process set out in the schedule of the byelaw which includes consultation with impacted stakeholders and the production of an Impact Assessment.

The proposed byelaw also includes a provision for Eastern IFCA to close the fishery for periods of time not exceeding the permit year (i.e. until the following 1st August) for the protection of MPA or fisheries sustainability. As such, if fishing effort did increase significantly, Eastern IFCA may close the fishery with impacts on the industry.

It should be noted that if fishing activity remains within the levels identified over the past 10 years, there would not be a need to close the fishery. Therefore, there is a risk that the fisher could be closed if 'new' fishers enter the fishery with impacts on the fishery. This cannot however be monetised in any reliable way.

Costs to Eastern IFCA

Eastern IFCA is likely to incur a cost associated with the enforcement of the measures. Enforcement of new measures includes a significant allocation of resources to engagement and education in the first instance in line with Eastern IFCA's Enforcement Policy. During the period May 2015 to June 2018, Eastern IFCA has taken enforcement action up to a formal written warning on 18 occasions in relation non-compliance with the Whelk Permit Byelaw 2016 (and the original Emergency Byelaw). The cost of education, engagement and minor enforcement actions have not been monetised because of the difficulties in estimating the actual cost however the cost is considered to be significant.

Eastern IFCA has also committed significant resource to shrimp management measures development in its 5-year business plan and a significant proportion of resource has been allocated to shrimp management research projects including continued monitoring of the sites condition and development of fisheries sustainability measures. It is anticipated that these costs are offset slightly by the permit fee.

Option 2 – Total closure of Wash and North Norfolk Coast MPA to bottom-towed-gear

Key monetised costs

The pink and brown shrimp fisheries in the Eastern IFCA district are worth between £584,525 and £2,668,788 per annum. The vast majority of these fisheries are thought to occur within the Wash and North Norfolk Coast although other notable areas are off the Lincolnshire coast and north of the MPA.

Eastern IFCA has undertaken an assessment of the impacts of shrimp fishing within the MPA and found that some habitats are very sensitive to shrimp fishing activity and require closure (to all bottom-towed-gear). Other habitats are found to be less sensitive although it is thought that fishing activity could impact these habitats if activity increased.

The potential impact of this option is likely to be underestimated by the landed value of catch. The factories which process the shrimp caught (both of which are based in King's Lynn) rely to a large degree on the shrimp market. The market price for the processed shrimp is likely to be much higher than the landed value and which includes a significant amount of export to foreign markets (primarily Holland). There are a significant number of tertiary jobs associated with this fishery and these processing factories (i.e. engineers, factory workers, delivery drivers).

Only a minor increase in fishing effort is anticipated as a result of displacement from the closed areas and fishing at the current levels is assessed to be in keeping with the conservation objectives of the site. Closure of the whole site would meet the conservation objectives however, it is likely to cause a large impact on stakeholders with little or no additional benefit to site integrity. As such, it is considered disproportionate to close the entire site to shrimp fishing activity as the associated risks to site integrity can be adequately mitigated through effort limitations as required.

Rationale and evidence that justify the level of analysis used in the IA (proportionality approach)

This assessment has used the following information:

- Fisheries / catch returns data supplied by the shrimp fishing industry to Eastern IFCA and the Marine Management organisation
- Feedback from extensive informal consultation with the shrimp fishing industry;
- Expert knowledge from SeaFish and C.I.V. Den Oever U.A (net manufacturer)
- Information provided by the iVMS project board and suppliers

There is a notable limitation to Eastern IFCA catch returns for the shrimp fishing industry as there has been non-compliance at times with the requirement to provide this information.

Landed weights and values for shrimp landings primarily rely on Marine Management Organisation data for the years 2010 to 2016. Data for 2017 is still provisional and as such has not been included.

The scale of the potential impacts with regards to the proposed measures are small in comparison to the worth of the fishery to individuals and the industry as a whole. Therefore, the level of analysis is considered appropriate.

Potential impacts of fisheries closures or effort limitations which are not included in the current proposal are likely to have a greater degree of impact, including unintended. These impacts will be considered in an impact assessment and through consultation with the fishing industry as per the process set out in schedule 1 of the proposed byelaw.

Risks and assumptions

Cost of reporting using iVMS and VMS+

Fishers will be required to report certain information using an electronic monitoring device. Vessels of less than 12m will be required to obtain and use an iVMS device. In the case of vessel which are 12m or above, this will be the VMS+ device which they are required to have under MMO licence conditions. Presently these devices make reports at a much lower rate (2 hours) than will be required by this byelaw and as such there will be an associated cost.

Fishers have raised a concern that the suppliers of the electronic monitoring devices will increase costs of reporting at some point in the future. iVMS units must be type approved to be used but any company can get a device type approved. Under this model, market forces will mitigate against price increases as different companies vie for business. VMS+ however operate under a sole supplier model i.e. there is only one supplier permitted to provide the device and service for reporting. As such, there is no mitigation against this supplier increasing costs significantly in the future.

Changes in behaviour

Fishers have raised concerns about a permitting scheme changing the behaviour of fishers. In particular that the shrimp fishery will quickly become over-prescribed as fishers attempt to build 'track-record' to mitigate not being able to fish in the future if Eastern IFCA implemented a limitation. To mitigate against this, Eastern IFCA intends to communicate a clear policy that 'track-record' cannot be obtained in relation to any permits issued under this byelaw.

Summary and preferred option with description of implementation plan

The preferred option is Option 1 – Shrimp permit Byelaw 2018. This will require fishers to obtain a permit to fish for shrimp in Eastern IFCA's district. A specific permit will be required to fish within the Wash and north Norfolk Coast SAC so as to enable Eastern IFCA to implement permit conditions and / or permit limitations for the protection of the site if required. This dynamic approach to managing the fishery is required given the dynamic nature of the fishery.

Implementation of the byelaw will include engagement with the industry to raise awareness of the requirements under the byelaw and permit conditions.