

Vision

The Eastern Inshore Fisheries and Conservation Authority will lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry



Action Item 14

33rd Eastern Inshore Fisheries and Conservation Authority meeting

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Marine Protected Areas Fishery Management Measures

Purpose of report

The purpose of this paper is to seek approval for new management measures for the shrimp beam trawl fishery and the protection of features in the Wash and North Norfolk Coast Special Area of Conservation (SAC). The new measures are set out in two Byelaws and are required to ensure that the shrimp fishery operates in a way that is compatible with the conservation objectives of the Wash and North Norfolk Coast (SAC).

Recommendations

Members are asked to:

- **Note** the content of the paper and the requirement to introduce new management to the shrimp fishery to meet conservation duties;
- **Agree** to make the Marine Protected Areas Byelaw 2018 as set out in Appendix 3;
- **Agree** to make the Shrimp Permit Byelaw 2018 as set out in Appendix 6;
- **Agree** to introduce the proposed Category One and Category Two Shrimp Permit conditions as set out in Appendices 8 and 9;
- **Agree** to introduce eligibility criteria for shrimp permits as set out in Appendix 10;
- **Direct** Officers to undertake a formal consultation for the proposed byelaws;
- **Agree** to delegate authority to the CEO, following formal consultation, to make changes to the byelaw that do not alter the intent of the management measures and to submit to the Minister for approval;
- **Note** that additional closed areas are being considered for ecological and fishery benefits, for progression at a later date.

Background

More than 95% of the Eastern IFCA district has “protected area” status – i.e. has a conservation designation. This requires the Authority, as a fisheries regulator, to ascertain what impacts fishing activities have on the habitats and species in these

sites; and where necessary, to introduce management measures to mitigate damage arising from fishing activities.

In 2012, the Department for Environment, Food and Rural Affairs (Defra) announced a revised approach to the management of commercial fisheries in European Marine Sites (EMS). The objective of this revised approach is to ensure that all existing and potential commercial fishing activities are managed in accordance with Article 6 of the Habitats Directive. This approach has been implemented using an evidence based, risk-prioritised, and phased basis. Risk prioritisation is informed by using a matrix of the generic sensitivity of the sub-features of EMS to a suite of fishing activities as a decision-making tool (Marine Management Organisation, 2014) and sub-feature activity combinations categorised according to specific definitions, as red, amber, green or blue.

Interactions identified as red risk had the highest priority for implementation of management measures by the end of 2013, to avoid the deterioration of Annex I features in line with obligations under Article 6(2) of the Habitats Directive. Those identified as amber risk required a site-level assessment to determine whether management of an activity was required to conserve site features. Activity/feature interactions identified within the matrix as green required a site level assessment if there were “in combination effects” with other plans or projects.

Towed demersal fishing activities on features: subtidal biogenic reef: *Sabellaria* spp., subtidal stony reef and intertidal seagrass beds are classified as red-risk interactions and required management measures to prevent fishing activities from having harmful effects on the environment. To address this, the Eastern Inshore Fisheries and Conservation Authority (Eastern IFCA) created the Protected Area Byelaw (now the Marine Protected Areas Byelaw 2016), to prohibit certain fishing activities across ten areas to prevent the above red-risk activity-feature interactions occurring in the district.

Towed demersal fishing activities on all other (none-red risk) features within the Wash and North Norfolk SAC were assessed as amber and green risk activity-feature interactions in the shrimp fishery Habitats Regulations Assessment for the Wash and North Norfolk Coast SAC. This identified a requirement to introduce management measures (mitigation) to reduce the impacts of this fishery on sub-tidal mud and mixed sediments. Mitigation is required because the assessment concluded that “adverse effect on site integrity” could not be ruled out. This was a precautionary conclusion based on the lack of direct evidence that impacts were not occurring – although many parts of the assessment suggested that impacts were unlikely to occur, particularly on the less sensitive features of the site. The precautionary stance is required by the Habitats Regulations. The HRA was presented to members at the 32nd Authority meeting (April 2018) where Members resolved to progress work to introduce regulation to manage shrimp fishing in the Eastern IFCA district.

The interaction of towed demersal fishing and intertidal mussel beds is described as “red risk” under the Revised Approach to the Management of Fisheries in Marine Protected Areas. Defra policy is that such red risk interactions be prevented, without need for assessment, by prohibiting such fishing activities where the red risk features occur. Intertidal mussel beds were not included in previous iterations of the Marine Protected Areas Byelaw because they have been protected by Eastern IFCA’s existing management of the Wash Fishery Order mussel fishery.

Report

When the shrimp fishery Habitats Regulations Assessment for the Wash and North Norfolk Coast SAC was presented to the Authority mitigation measures had not been developed. Subsequent to the meeting mitigation principles were identified (Fig 1. General Mitigation Principles) and used to guide the development of mitigation measures. These set out the need to be precautionary where uncertainty exists, as well as reflecting Eastern IFCA’s vision to achieve sustainable fisheries, healthy seas and a viable industry.

Three forms of mitigation are proposed:

- (1) Spatial closures – to protect the most sensitive habitats of the site by excluding towed demersal fisheries from the main areas of these habitats;
- (2) Technical (gear) restrictions – to limit the impacts from physical contact between gear and seabed features; and
- (3) Effort limits – to ensure activity in the Wash & North Norfolk Coast SAC outside the proposed closures does not exceed levels identified in the assessment.

The mitigation measures will be applied by making the Marine Protected Areas Byelaw 2018 (which will effectively replace the existing Marine Protected Areas Byelaw 2016) and making the Shrimp Permit Byelaw 2018. The mitigation section of the shrimp fishery Habitats Regulations Assessment sets out which measures relate to each sub-feature (protected habitat and/or species) where potential impact was identified. Detail of this will be presented at the 33rd Authority meeting.

Eastern IFCA will continue to monitor fishing activity within the site and use fishing activity data alongside sub-feature data to inform future reviews of the effectiveness and appropriateness of mitigation.

Updated advice from Natural England on the extent of subtidal biogenic reef of *Sabellaria spinulosa* has led to recommendations for further closure from fishing using bottom towed gear. A summary of the evidence supporting the additional closures can be found at Appendix 1.

As a consequence of updated conservation advice published by Natural England in 2017, mussel beds are specified as biogenic reefs and are therefore now

recommended for closure from fishing using bottom towed gear. A summary of the evidence supporting the additional closures can be found at Appendix 2.

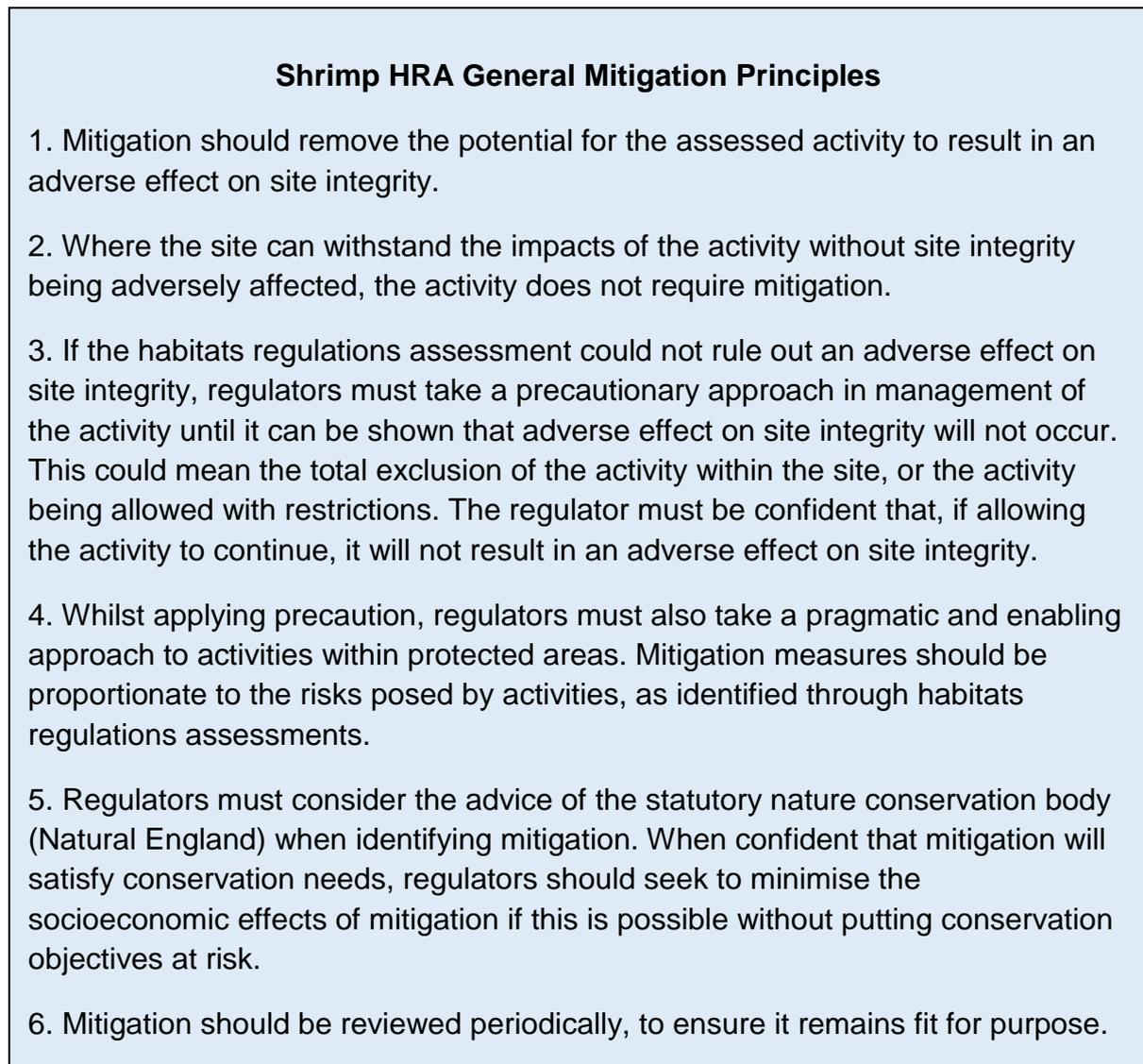


Fig 1. Shrimp HRA General Mitigation Principles

Marine Protected Areas Byelaw

The intention of the Marine Protected Areas Byelaw is to implement spatial restrictions applicable to bottom-towed-gear within the Wash and North Norfolk Coast SAC to prevent significant adverse effects on site integrity.

Summary of key provisions

- Restricted Areas 1 to 13: These relate to the protection of intertidal mussel beds (biogenic reef sub-feature). This restriction includes an exemption for fishing using bottom-towed-gear under the Authority of a Wash Fishery Order 1992 Licence.

- Restricted Areas 14 to 32: These relate to the protection of various sub-features including subtidal mud, subtidal mixed sediment and the ‘red-risk’ features *Sabellaria spinulosa* (Ross worm) reef and subtidal stony reef.
- Restricted Area 33: This relates to a spatial closure which is closed on a seasonal basis between 1st April to 15th October of each year.

It should be noted that the proposed byelaw preserves the existing provisions of the Marine Protected Areas Byelaw 2016, which includes other Restricted Areas (e.g. biogenic reef, subtidal stony reef and eelgrass). As such evidence supporting additional Restricted Areas only is included in this paper. The exemption to persons operating under a ‘right in common’ is also preserved. In addition, the requirement for fishing gear to be ‘lashed and stowed’ when transiting a Restricted Area is also maintained, as is the exemption for beam trawls under certain conditions (i.e. on the condition that the vessel was fishing up to the boundary of the restricted area or intends to fish on leaving and that gear must be clear of the water when the vessel is within the Restricted Area).

The draft Byelaw is set out in Appendix 3 and charts showing the closed areas are set out in Appendix 4.

Justification and rationale

Closed areas prevent the fishery/feature interaction occurring, eliminating all associated pressures including abrasion and removal of non-target species. This level of intervention is judged to be required for some areas of the site to protect site integrity.

Areas of The Wash & North Norfolk Coast SAC will be closed to towed demersal fishing gear, to protect significant areas of the most sensitive habitats – primarily subtidal mixed sediments, and subtidal mud. Sensitive species will also be protected within these areas.

Closed areas will not be applied to all areas of the most sensitive sub-features: unlike “red risk interactions”, it is not necessary that the full extent of the sub-feature is protected to avoid adverse effect on site integrity. Eastern IFCA has taken a feature-led and pragmatic approach to identifying the areas most appropriate for closure. Areas for closure were selected to maximise ecological benefits, through targeted protection of multiple sensitive habitats and incidental protection of less sensitive habitats.

Eastern IFCA has identified that two types of subtidal mixed sediments occur within the site, one being more vulnerable than the other, based on the type of sediment and

associated species present¹. This is evidenced in grab sample and video survey data gathered by Eastern IFCA in 2016 and 2017 (Hornbrey 2018). Closures will be focused on the more vulnerable type of subtidal mixed sediment.

Vulnerable mixed sediment is defined as angular gravel with sand and mud, supporting various epifauna and occurring in water deeper than ten metres below chart datum. The other common type of mixed sediment within The Wash is mud or sandy mud with gravel rounded by constant movement, sometimes including a layer of broken shell on the surface and supporting very little if any epifauna.

Closures will include a large area of subtidal mixed sediment (with areas of subtidal mud) in deeper water areas (vulnerable habitat) of the central Wash, and an extensive area off the central north Norfolk coast in an area of sea between Wells-next-the-Sea and the eastern boundary of the SAC at Weybourne. The central Wash closure includes areas of mosaic habitat (where there is a reasonable amount of vulnerable mixed sediment) and incorporates some “red risk” features including areas of core *Sabellaria spinulosa* reef and subtidal stony reef². Further, smaller closures will protect core areas of *Sabellaria spinulosa* reef outside of the central closure, in the north-west of The Wash (the Lynn Knock area), off the Inner Dog’s Head sandbank and in four small areas of the central Wash. Appendix 1 refers in relation to new closures for *Sabellaria spinulosa* reef.

Mitigation will also include areas closed to towed demersal fishing gear over intertidal mussel beds within the site. The assessment did not identify that these features are at risk from shrimp beam trawling, but as biogenic reef they are “red risk” features that require protection (Appendix 2 refers). Shrimp beam trawling does not occur in these areas (their locations are well known by fishers and there is no benefit in trawling over mussel beds) but the closures are required under the “Revised Approach” (Defra 2012) and will ensure these important ecological features are protected from trawling damage. It is important to note that this will not preclude future dredge mussel fisheries, which are subject to bespoke Habitats Regulations Assessments and operated within strict conditions of the Wash Fishery Order and existing Eastern IFCA byelaws.

The large closed area on the North Norfolk Coast between Wells-next-the-Sea and Blakeney includes a ‘seasonal closure’ (Restricted Area 33), which has the effect of prohibiting the use of bottom towed gear between 1st April and 15th October in each year. The area subject to the seasonal closure was identified as important fishing

¹ This information was not available at the time the assessment section (section 5) of this Habitats Regulations Assessment document was written.

² *Sabellaria spinulosa* reef and subtidal stony reef were not subject to Habitats Regulations Assessment but as “red risk” features they automatically qualify for protection from towed demersal fishing activities.

grounds during consultation with the fishing industry. This area does not coincide with the most sensitive habitats but is considered an important nursery area for juvenile fish which form part of the “water column” supporting habitat for the Annex II species, Harbour Seal. Outside of the period 1st April to 15th October, the area is considered less important in relation to juvenile fish species. It is judged that fishing in this area between 16th October and 31st March will not result in a significant adverse effect on site integrity and therefore a permanent closure of this area is not required.

An overview of the proposed closed areas and more detailed charts of the closures are presented in Appendix 4.

It is judged that the spatial closures provide sufficient mitigation to ensure no adverse effect on site integrity from shrimp beam trawl fishery interactions with subtidal mixed sediment and subtidal mud. Furthermore, the closures will provide protection to key sensitive species highlighted in the assessment where they occur within these two sub-feature habitats.

It is judged that spatial closures are not required for the remaining features, nor the remaining parts of the subtidal mixed sediment and subtidal mud sub-features of the site, but that technical restrictions and overall effort limitations are required to limit impacts in the remainder of the site and ensure adverse effects on site integrity can be ruled out.

Electricity cable placement and maintenance, and shipping anchorage

The proposed spatial closures coincide in part with sub-sea cable routes and designated anchorage areas. The cable routes are for Race Bank offshore wind farm (central Wash) and the proposed cable route for Hornsea Three offshore wind farm (off north Norfolk between Blakeney and Weybourne). Race Bank cables are already in place, but subject to periodic maintenance work, potentially including lifting, reburial and rock armouring. Hornsea Three cables are yet to be laid but are planned to bisect the existing closed area to towed demersal gear (under the Eastern IFCA’s Byelaw 12, Inshore Trawling Restriction). One *Sabellaria spinulosa* core reef closure coincides with the King’s Lynn anchorage in the central Wash.

It is likely that cable placement and maintenance, and ships’ anchoring activity will impact on seabed habitats, including in areas closed to towed demersal fishing under the Marine Protected Areas Byelaw 2018 and Inshore Trawling Restriction byelaw. This will inevitably result in frustration for fishery stakeholders. Eastern IFCA does not regulate non-fishing activities but does advise the regulator (e.g. Marine Management Organisation as the marine licensing authority) on potential fisheries and conservation effects.

Shrimp Permit Byelaw 2018

The intention of the Shrimp Permit Byelaw 2018 is to enable Eastern IFCA to implement measures which prevent shrimp fishing activity having an adverse effect on stock sustainability and on the integrity of marine protected areas. Its application to shrimp fishing throughout the district, with special provisions for fishing in the Wash and North Norfolk Coast SAC, will enable Eastern IFCA to apply proportionate management.

The proposed Shrimp Permit Byelaw 2018 is set out in Appendix 7.

Summary of key provisions

- To require shrimp fishers to obtain a Shrimp Permit: Commercial shrimp fishers must obtain a shrimp permit. Two Shrimp Permits are available; a Category One Permit for fishing within the Wash and North Norfolk Coast SAC and a Category Two Permit for fishing elsewhere within the district. Eastern IFCA can limit the number of permits issued.
- Electronic Monitoring devices: vessels must have an operational electronic monitoring device on board. This may be in the form of a Vessel Monitoring System (VMS) + device as required by the MMO for vessels 12m or over in length, or a type-approved inshore VMS device. Devices must report once every three minutes.
- Flexible permit conditions: The byelaw enables Eastern IFCA to introduce, vary or revoke technical gear requirements and other permit conditions through a proportionate process that includes consultation with the industry and the production of an impact assessment.
- Suspension of issuing permits: Eastern IFCA may suspend the issuing of shrimp permits until the following 1st August if there is a risk to site integrity (of the Wash and North Norfolk Coast SAC) or to fisheries sustainability.
- Implementation of temporary closures: Eastern IFCA can close the shrimp fishery up to the following 1st August if there is a risk to site integrity (of the Wash and North Norfolk Coast SAC) or to fisheries sustainability.
- Shrimp returns forms: requires all shrimp fishers to provide the required fisheries data to enable evidenced-based management of shrimp fisheries;
- Permit Fees: To partially recover costs associated with shrimp management measures permit fees are proposed as follows: £100 for a Category One permit, £44 for a Category Two Permit.
- Revocation of 'Byelaw XII' inherited from North Eastern IFCA: The proposed Byelaw revokes the inherited byelaw which requires fishers to

clear shrimp fishing nets on an hourly basis. The byelaw currently only has application in a circa 11 miles stretch of the Lincolnshire coast.

It is proposed to introduce the following permit conditions (which are set out in Appendix 8 and 9) in conjunction with the Shrimp Permit Byelaw 2018:

- 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 wider than 800mm.

NB – point d above was originally proposed as 500mm (as set out in the formal notification of intention³) but having considered further responses to the informal consultation and industry meetings, a limit of 800mm is proposed.

- Use of separator trawls or Sorting Grids: To require all shrimp fishers to use a separator trawl or sorting grid. This is effectively an extension of the Shrimp Fishing Nets Order 2002 which requires vessel using beam trawls with a length of 8m or more to have the same.
- Use of ticker chains: To prohibit the use of 'tickler chains' or any other attachment which penetrates the seabed;
- Use of 'shoes', skids or guides: To prohibits the use of shoes, skids or guides which are not 'flat' across their entire length

It is proposed to introduce the following eligibility criteria (which is set out in Appendix 10) in conjunction with the Shrimp Permit Byelaw:

- Ineligibility for a permit if relevant offences have been committed: To make any person who has received two financial administrative penalty for or been convicted of two relevant offences within 36 months of application, ineligible to be named on a shrimp permit

Justification and rationale

Technical restrictions

Technical measures are used to restrict the size and type of fishing gear being used in the site, which, coupled with effort control, limits the physical interactions between fishing gear and the environment.

³ Formal notification to make byelaws -

The assessment identified that, aside from the most sensitive sub-features – which are to be protected by spatial closures as set out above and in the attached chart– the site is able to withstand shrimp beam trawling – i.e. the activity does not prevent the remaining sub-features’ conservation objectives being met. This conclusion was based on the type of fishing gear and level of fishing effort being used in the site, and the various assessments presented in section 5 of the Eastern IFCA 2018 Habitats Regulations Assessment. It is important that the fishery remains within these limits so that impacts do not increase beyond the assessed levels (for example if different fishing gear was used or fishing effort increases after being displaced from other areas), which could result in adverse effects. The mechanisms for ensuring this are technical restrictions and effort limits.

Existing technical restrictions include:

- Maximum vessel length: 15.24m – EIFCA inshore trawling restriction byelaw (<http://www.eastern-ifca.gov.uk/byelaw-12-inshore-trawling-restriction/>)
- Maximum aggregate beam length: 24m – European Council regulation
- Maximum vessel engine power: 221kW – European Council regulation
- Compulsory use of riddles on board – European Council regulation
- Compulsory use of veil nets (bycatch reduction gear) for vessels using aggregate beam length of 8m or over – European Council regulation
- Cod end mesh: 16-31mm – European Council regulation
- Shrimp fishing activity reporting scheme (Wash & North Norfolk coast area only) – EIFCA development of shellfish fisheries byelaw (<http://www.eastern-ifca.gov.uk/byelaw-11-development-shellfish/>)

New technical restrictions to be associated with the Shrimp Permit Byelaw:

- Prohibition of use of tickler chains (or other gear component intended to penetrate or disturb the seabed)
- Requirement for flat beam shoes (to minimise penetration into seabed)
- Compulsory use of veil nets on all commercial shrimp fishing nets
- Compulsory use of inshore Vessel Monitoring System (to record vessel position and speed), allowing monitoring of spatial activity.

Potential additional restrictions⁴:

- Maximum weight of shrimp beam trawling gear
- Further restriction on overall size of shrimp beam trawling gear
- Further restriction on maximum vessel engine power
- Restriction on size and number of try-nets⁵ permitted to be used.

⁴ The potential additional restrictions require additional consideration and are not presented as part of the current mitigation for this Habitats Regulations Assessment.

⁵ Try-nets are small, usually hand-hauled nets with a short beam (up to 80cm) set in front of shrimp beam trawl gear and used by fishers to check whether the target species is being found, without hauling the beam trawl gear. These were not described in the assessment because their use was not widely recognised. It is judged that their use does not cause additional impact to seabed habitats since any

The restrictions will apply to all shrimp beam trawling areas i.e. the remainder of the Wash & North Norfolk Coast SAC not affected by spatial closures and the rest of the Eastern IFCA district.

It is judged that the existing and new technical restrictions – coupled with spatial closures and effort limits – will ensure that the shrimp beam trawl fishery will not result in adverse effects on site integrity.

Effort limits

“Effort” is the level of fishing activity. The assessment of impacts from the shrimp fishery was based on levels of fishing effort as it has occurred in recent years. Effort levels are reported in the assessment using MMO landings data and EIFCA shrimp returns data. There is considerable variation in effort by month and by year, including variation in the number of vessels participating in the fishery and the number of fishing trips undertaken by each vessel. The available data will be carefully considered and used to set an appropriate limit on the activity, for example a maximum number of shrimp fishing trips per year (across the fleet).

Officers have assessed that managing activity at an appropriate level is a proportionate management strategy for the area of the SAC that is not protected through spatial closures. This was based on consideration of the various assessments undertaken within the Habitats Regulations Assessment and the confidence in the evidence underpinning each assessment. This approach is precautionary, reflecting the low confidence because of data limitations, rather than definite impacts from the shrimp fishery.

It is judged that, using effort limits to ensure the level of shrimp fishing activity does not exceed that described in the assessment, coupled with spatial closures and technical restrictions (described above), the shrimp beam trawl fishery will not result in an adverse effect on the integrity of the site.

The proposed Shrimp Permit Byelaw 2018 will enable Eastern IFCA to limit effort by several means including, for example, limiting the number of permits and limiting fishing activity permitted for each vessel. The proposed byelaw will also enable Eastern IFCA to suspend the issuing of permits and temporarily close the fishery within the Wash and North Norfolk Coast SAC if there is a heightened risk to fisheries sustainability or adverse effects on site integrity.

The way effort is limited is complex and contentious. Eastern IFCA has undertaken extensive consultation with the industry over the last three years and there is little consensus on the most appropriate method, e.g. setting a maximum number of shrimp

contact area from try-nets is covered by the main shrimp net, and the light weight and small size of try-nets means they do not penetrate into the seabed.

fishing days per year across the fleet or setting a maximum number of tows per vessel in a given period. As such, the precise way of limiting effort has not been proposed at this time.

Work is also still ongoing to determine the appropriate level of fishing within the site to prevent significant adverse effects on site integrity. Although officers have concluded that effort should not exceed levels assessed in the Habitats Regulations Assessment, data on the actual level of effort are incomplete and therefore an effort limit is not proposed at this time. Further data gathering, and analysis is required to identify the appropriate threshold and the introduction I-VMS and the requirement for catch returns will make a significant contribution to this, as will ongoing engagement with the industry.

It should be noted that the proposed byelaw includes a provision which will enable Eastern IFCA to close the fishery in the Wash and North Norfolk Coast if there is a heightened risk to site integrity. As such the site will be protected as required in the intervening period and whilst officers undertake further investigation.

Fishing outside the Wash and North Norfolk Coast SAC

The majority of shrimp fishing within Eastern IFCA's district occurs within or near the Wash and North Norfolk Coast SAC. Other notable shrimp fishing grounds occur on the Lincolnshire coast.

The proposed closures and effort limitations could have the effect of displacing effort from the site into other sensitive areas which are not presently subject to this fishing pressure. Whilst it is recognised that shrimp fishing is a lower impact 'bottom-towed-gear' (than finfish beam trawl fishing), the risk of adverse effects in other marine protected areas within the district could be heightened through potential displacement.

To mitigate the risk to other marine protected areas, it is proposed that commercial shrimp fishers within the whole Eastern IFCA district require a permit and will be required to have an electronic monitoring device operating onboard a shrimp fishing vessel. This will enable Eastern IFCA to monitor fishing activity and implement additional measures as required.

To enable Eastern IFCA to implement bespoke restrictions within the Wash and North Norfolk Coast SAC, two separate permits are available; one permits fishing within the Wash and North Norfolk Coast (a Category One Permit), the other permits fishing everywhere else in the Eastern IFCA district (a Category Two Permit). Fishers may obtain both permits. It is proposed that fishers are **not** charged a fee for two permits if they opt to obtain both permits.

It is further proposed that permit conditions (i.e. technical gear requirements) and eligibility criteria apply to both permits.

Revocation of 'Byelaw XII' inherited from North Eastern IFCA

Eastern IFCA inherited Byelaw XII from North Eastern Sea Fisheries Joint Committee in 2011. The Byelaw only has effect in the area inherited from the same IFCA (i.e. a circa 11 miles stretch of coast on the Humber estuary). The byelaw requires fishers to lift and clear shrimp fishing nets every hour within this area.

Given the limited application of the byelaw and the ability of Eastern IFCA to introduce, vary or revoke permit conditions under the proposed byelaw, it is proposed that the inherited byelaw is revoked. Any future similar or related requirements can be introduced using the permit scheme and will be informed by the planned assessment of shrimp fishing sustainability.

Requirement to have electronic monitoring devices and provide shrimp returns forms

The proposed byelaw will also require fishers to have electronic monitoring devices and provide fisheries data in returns forms. This will provide the information required to assess the effectiveness of the measures in relation to the protection of the site and inform future amendments.

Eligibility criteria – relevant offences

The proposed measures include eligibility criteria which makes persons who have received a Financial Administrative Penalty or prosecution for two or more 'relevant offences' within 36 months of application ineligible for a shrimp permit. This will ensure that fishers who continually flout the mitigation required by the Authority to meet its duties are unable to continue to do so.

Natural England advice

Regulators are required to demonstrate how they have taken account of the advice of the statutory nature conservation advisor, Natural England, in regulatory decisions affecting protected areas. Officers met with Natural England to discuss the shrimp fishery Habitats Regulations Assessment (HRA) and proposed mitigation, in April and June 2018, and dialogue is ongoing.

Natural England has agreed with the conclusion of the HRA – that adverse effect on site integrity cannot be ruled out – but did not agree with some parts of the assessments presented in the HRA document. Natural England were particularly concerned that Eastern IFCA had used the results of the "Infaunal Quality Index" (IQI) assessment to demonstrate that benthic communities are, in general, in good

condition across the site⁶. Natural England's concern arises from the fact that IQI was not designed to identify the impacts of physical pressures caused by fishing on benthic communities but was designed originally to identify impacts from organic pollution. Eastern IFCA officers examined IQI and its use in detail and sought expert advice from internationally-renowned benthic ecologists and concluded that it is appropriate to use the IQI data in the way that it has been used in the shrimp HRA. Eastern IFCA officers argued that if *any* activity (or natural process) was causing a decline in the condition of benthic communities, this would be evident in IQI data. However, the IQI data shows an increase in condition of benthic communities over time. It is important to note that IQI is not the sole piece of evidence used but is one of many approaches presented in the shrimp HRA to examine the impacts of the shrimp fishery on the designated habitats and species.

Officers presented mitigation principles with rationale to Natural England in May 2018, and the mitigation section of the shrimp HRA (incorporating these principles and rationale) in late June 2018. Natural England have indicated⁷ that they agree with all the general mitigation principles and support the proposed mitigation measures of spatial restrictions, technical restrictions and overall effort limitation in the shrimp beam trawl fishery. Liaison with Natural England is ongoing, and at time of writing, Natural England is still to provide formal advice on whether the proposed mitigation measures adequately address the HRA conclusion.

Consultation with potentially impacted stakeholders

Eastern IFCA has undertaken extensive engagement with shrimp fishers over the last three years in relation to the development of shrimp management measures. Consultation with the industry has been reported to Members previously at the Regulation and Compliance Sub-Committee meeting of December 2016⁸ in addition to reports from meetings and workshops which have been published on the Eastern IFCA website⁹ (www.eastern-ifca.gov.uk).

Officers have continued to engage with the industry in the intervening period and have undertaken additional Shrimp Industry Workshops which have been reported on the Eastern IFCA website (<http://www.eastern-ifca.gov.uk/wp-content/uploads/2016/09/Shrimp-Workshop-Report.pdf>) and held a written informal consultation with the industry.

⁶ IQI was one of several assessments used by Eastern IFCA in the overall assessment of impacts of shrimp fishing on the features of the Wash & North Norfolk Coast SAC.

⁷ Email from Emma Thorpe, Senior Advisor, Natural England to Judith Stoutt, EIFCA Senior Marine Science Officer, 2nd July 2018

⁸ Action Item 5, Regulation and Compliance Sub-Committee 13th December 2016

⁹ Shrimp Industry Workshop Report of the 10th July 2015 available at <http://www.eastern-ifca.gov.uk/shrimp-workshop-focuses/> and the Shrimp Industry Workshop Report of the 26th September 2016 available at <http://www.eastern-ifca.gov.uk/shrimp-industry-workshop/>

The consultation has highlighted the main concerns of the industry which are broadly unchanged over this period. Two key areas of concern have been raised (summarised below):

Location of proposed closed areas

Fishers raised concerns about the location of some of the proposed closed areas and the impact this would have on the industry. These related to fishing grounds in the central Wash and the inshore area of the North Norfolk Coast. Where officers have had discretion, closed areas have considered important fishing grounds. In the Wash, this has included an amendment to the shape and size of the central closure where the habitat has been identified as being less sensitive to shrimp fishing activity. Areas which include 'red-risk' features (i.e. *Sabellaria* reef) and the more sensitive subtidal mixed sediment feature have not been amended as allowing fishing activity would likely have a significant adverse effect on site integrity.

Effort limitation model

Fishers have raised concerns regarding the potential implications of implementing a permit scheme for shrimp fishing. These primarily reflect the different business models which operate within the fishery and a conflict between enabling the fishery to be open to 'new blood' and young fishers whilst maintaining fishing opportunities for existing business models. A related concern is that fishing effort will increase as fishers will attempt to gain 'track record' for prosecuting this fishery under the miss held perception that this will guarantee them a permit in future year if Eastern IFCA limits numbers.

To determine the most effective and fair model to limit effort within the site, Officers intend to undertake further work to design a model and implement limitations through the Shrimp Permit Byelaw 2018. In the first instance, Officers are working towards determining what level of fishing effort is compatible with achieving the conservation objectives of the site.

Impacts on the industry

An impact assessment has been produced for each of the proposed byelaws. These are set out in Appendix 5 (MPA Byelaw 2018) and Appendix 7 (Shrimp Permit Byelaw 2018). The potential impacts associated with the measures are summarised below.

Marine Protected Areas Byelaw 2018

Impacts associated with this byelaw relate to loss of fishing grounds because of spatial closures. The scale of the impacts on the industry are not considered to pose a significant risk to business continuity. However, it is recognised that the measures will have a cost to the industry. The cost has been determined by considering shrimp

fishing returns (spatial information on fishing activity) and MMO landings data (monetary values). Although there are known limitations with each of these datasets, they are the best available data. The best estimate for costs to the industry is a loss of between 2.9% and 5.3% of the annual value of the fishery. This equates to an estimated £66,942 per annum across the industry.

The loss in fishing grounds could be offset by displacement of fishing activity from the closed areas, although it is considered unlikely that there would be significant displacement based on known fishing patterns. The measures are likely to have a beneficial effect on the ecosystem functioning of the site which could have a positive effect on fishery productivity and thus have a beneficial effect on the value of the fishery.

It should also be noted that the shrimp fishery's application for accreditation by the Marine Stewardship Council is currently under assessment. Accreditation is likely to have a beneficial effect on the value of the fishery and it is not achievable unless the fishery is operated in line with marine protected area conservation objectives.

Other costs considered relate to other species caught by bottom-towed-gear within The Wash, the monetary value of which is very low (estimated to be £874 per annum).

Shrimp Permit Byelaw

Impacts related to the Shrimp Permit Byelaw 2018 relate primarily to the permit fee (which is £100 per year for a Category One permit and £44 for a Category Two Permit) and the cost associated with electronic monitoring devices.

Permit fees are proposed which recover the cost of administering the permit (estimated at £44 per year) and, in the case of Category One Permits, contribute to the cost of proposed monitoring and research work to be undertaken by Eastern IFCA (estimated to be an additional £56 per annum).

Costs associated with electronic monitoring devices relate only to the cost of the device sending reports via mobile phone telephony. A national project utilising the European Maritime and Fisheries Fund bid will cover the cost associated with the provision of devices (in the case of vessels under 12m in length) and its installation. Vessels 12m and over in length already have devices (known as Vessel Monitoring System + devices) which are capable of reporting at the required frequencies.

The cost of sending reports is commercially sensitive but is thought to be in the region of £100 to £150 per year.

In the context of the value of the fishery on an annual basis (the average of which is £1.6m in the period 2010 to 2016), the cost to fishers is considered not likely to have a significant effect on business continuity.

A minority of fishers will also be required to fit a separator trawl or sorting grid to their fishing gear at an estimated cost of £350 per vessel.

Next steps

Byelaw making process

Once made, byelaws must be put to formal consultation as per Defra's guidance on IFCA byelaws. In addition, the Marine Management Organisation (MMO) undertakes an informal review of the byelaw to provide an indicative view on its legality. Subject to formal consultation and the consideration of objections, the byelaw can be submitted to the Defra and the MMO for formal consideration.

Additional Measures

Making the Marine Protected Areas Byelaw 2018 and the Shrimp Permit Byelaw 2018 at this point will provide mitigation required to ensure the shrimp fishery does not result in an adverse effect on the integrity of the Wash & North Norfolk Coast SAC. However, both these byelaws will require further attention in the future as Eastern IFCA develops its environmental management of the site and the wider district.

Defining effort threshold and mechanism to allocate effort

As noted above, the Shrimp Permitting Byelaw 2018 will introduce the ability to limit the amount of shrimp fishing effort which may be applied within the Wash & North Norfolk Coast SAC but will not define the level of effort nor the method to be used to allocate that effort between vessels or times of year. Work to identify an appropriate effort level is ongoing, as is consideration of a method of allocation of effort.

Determining additional technical measures

Additional technical measures are currently being considered, but we do not have sufficient information to support a decision on these at this stage. These include the weight and size of gear, vessel engine power and the use of try-nets. Officers will undertake further research into these aspects before presenting further proposals to the Authority. Should any be taken forward, they would most likely be implemented as shrimp permit conditions.

Determining suitability of closures in rivers and saltmarsh areas

Recent consultation with shrimp fishers identified that shrimp fishing in the rivers feeding The Wash occurs more often and is more important to the industry than had previously been recognised. Whilst much of the area of these rivers is outside the boundary of the designated site, Eastern IFCA's remit of responsible fisheries and environmental management requires a more detailed consideration of these areas in the near future. This will require additional consideration and consultation with fishery stakeholders.

Through the Habitats Regulations Assessment, officers identified that pioneering saltmarsh (at the edges of saltmarsh on the upper sand and mudflats) would be sensitive to bottom towed gear. This habitat does not require mitigation under current proposals as the shrimping activity does not occur in those areas, but it is proposed that future measures are developed to provide precautionary protection of pioneering saltmarsh against potential future activities.

Review of current eelgrass bed closures

Eastern IFCA have reviewed the existing closures implemented via the Marine Protected Areas Byelaw 2016. This identified that the closure at Horseshoe Point (just south of the mouth of the River Humber), closed to protect a seagrass bed, is no longer justified due to the extremely small extent of the bed and the fact that it has not expanded or developed during four years of protection by closure of an extensive area around the bed (Quinn, 2017). We anticipate that a proposal to remove this closure (by a further re-iteration of the Marine Protected Areas byelaw) will be presented to the Authority at a future date. Consultation with stakeholders will be undertaken before changes are made.

Monitoring and control

Eastern IFCA will produce a Monitoring and Control Plan for shrimp beam trawling within the Eastern IFCA district, with a focus on The Wash & North Norfolk Coast because of the importance of the shrimp fishery in this area and its environmental sensitivities. The plan will clearly define parameters to be monitored, threshold levels and feedback mechanisms, to ensure that any change in fishing effort or feature condition within the site is responded to appropriately and where required, management is adjusted accordingly. Continuous monitoring of fishing activity and data on feature condition within the site will strengthen confidence in the assessment and reduce the need for a more precautionary management approach.

Financial Implications

No significant financial implications have been identified aside from some relatively minor costs associated with formal consultation and potential provision of further legal

advice. The main cost to the Authority relates to the publishing of the formal consultation in print which has cost circa £1000 (for an advert in two separate editions of Fishing News).

Legal implications

There is limited legal risk associated with this stage of the byelaw making process. The potential for challenge against the proposed measures has been mitigated by extensive informal consultation over the past three years and the resultant proposals should already reflect the main concerns of the industry. It should also be noted that the most contentious element of the measures, the effort limitation model, is to be considered at a later stage.

Informal consultation has focussed on the fishers within the Wash as these are the most likely to be impacted by the measures, to the greatest extent. The proposed measures will apply to shrimp fishers throughout the district, including the requirement to have I-VMS and as such, additional effort will be made to identify and engage with fishers outside of The Wash during the formal consultation.

Appendices

1. Summary of evidence - *Sabellaria spinulosa*.
2. Summary of evidence - intertidal mussel beds
3. Proposed Marine Protected Areas Byelaw 2018
4. Charts of proposed spatial restrictions
5. Impact Assessment: Marine Protected Areas Byelaw 2018
6. Proposed Shrimp Permit Byelaw 2018
7. Impact Assessment: Shrimp Permit Byelaw 2018
8. Proposed Category One Shrimp Permit Conditions
9. Proposed Category Two Permit Conditions
10. Proposed Shrimp Permit Eligibility Criteria

Background papers

- Eastern IFCA, 2018 “Habitats Regulations Assessment: Commercial beam trawling for brown shrimp (*Crangon* spp.) and pink shrimp (*Pandalus montagui*) in The Wash and North Norfolk Coast Special Area of Conservation”
- Hornbrey S, 2018 “The Wash Habitat Mapping Report 2016-2017”, Eastern IFCA report
- Quinn, E. S, 2017 “Horseshoe Point Eelgrass Assessment Survey Report 2017”, Eastern IFCA report

Appendix 1

Summary of Evidence: Biogenic reef - *Sabellaria spinulosa* core reef

Proposed closed areas for *Sabellaria spinulosa* core reef are shown in the Figure below.

Selection of closed areas

The proposed *Sabellaria spinulosa* core reef closures (areas 14 to 28) were selected using:

- (i) Natural England feature extent chart (data release), January 2018
- (ii) Natural England *Sabellaria spinulosa* core reef synthesis, 2016
- (iii) Local expert knowledge.

(i) Natural England feature extent chart

Natural England release updated charts of habitat extent every six months. These inform site regulators of the distribution of features, for example to help support management decisions. The chart used to inform the selection of *Sabellaria spinulosa* core reef closed areas was the January 2018 release (the most recent available chart when closures were being drawn up).

This showed that some areas of core reef remained the same as those protected by Eastern IFCA's Protected Areas Byelaw 2013 and subsequently the Marine Protected Areas Byelaw 2016. However, overall there has been an increase in the extent of *Sabellaria spinulosa* core reef seen in the January 2018 extent chart compared with previous charts. This includes extensive areas of *Sabellaria spinulosa* core reef in the Lynn Knock area (in the north-west of the site) and in the central Wash area, and several much smaller areas in the central and south-western part of the Wash embayment.

Changes in the distribution and extent of *Sabellaria* reef are expected because the structures can be created relatively quickly by the reef-building worms and can be lost over a short period of time as a result of changes in hydrodynamics or anthropogenic damage. Core reef areas are not expected to show as much variation, because the process of identifying core reef considers variation in extent and distribution over time, by using data from multiple surveys over time rather than a single survey. The increase in area of core reef seen in the January 2018 Natural England extent data is explained by Natural England's decision to change the threshold of what constitutes "core reef" – as presented in the synthesis document explained below.

(ii) Natural England *Sabellaria spinulosa* core reef synthesis (2016)

Eastern IFCA has worked closely with Natural England for many years to identify what constitutes the Annex I feature "biogenic reef" in relation to the Ross worm, *Sabellaria spinulosa* in The Wash & North Norfolk Coast. The worm itself is a very common species. Low-lying crusts of conglomerated tube structures created by the worms are also commonly found in many UK sea areas. More stable reef, formed of higher elevations and more persistent conglomerated tube structures, is less common, but

constitutes the biogenic reef feature identified as requiring protection through the Habitats Regulations.

A threshold “score” had previously been agreed on what constitutes reef, based on physical characteristics and on the number of times reef had been identified during surveys of a given area. Eastern IFCA applied that score to identify core reef areas requiring protection at the time the Protected Areas Byelaw was in development (2012-13). In 2016, Natural England published an updated approach to managing *Sabellaria spinulosa* reef in The Wash & North Norfolk Coast¹⁰. This included a synthesis of available evidence on the distribution of reef within the site, and critically, recommended a lower threshold score for core reef. This has resulted in a greater extent of reef being identified in the subsequent feature extent charts.

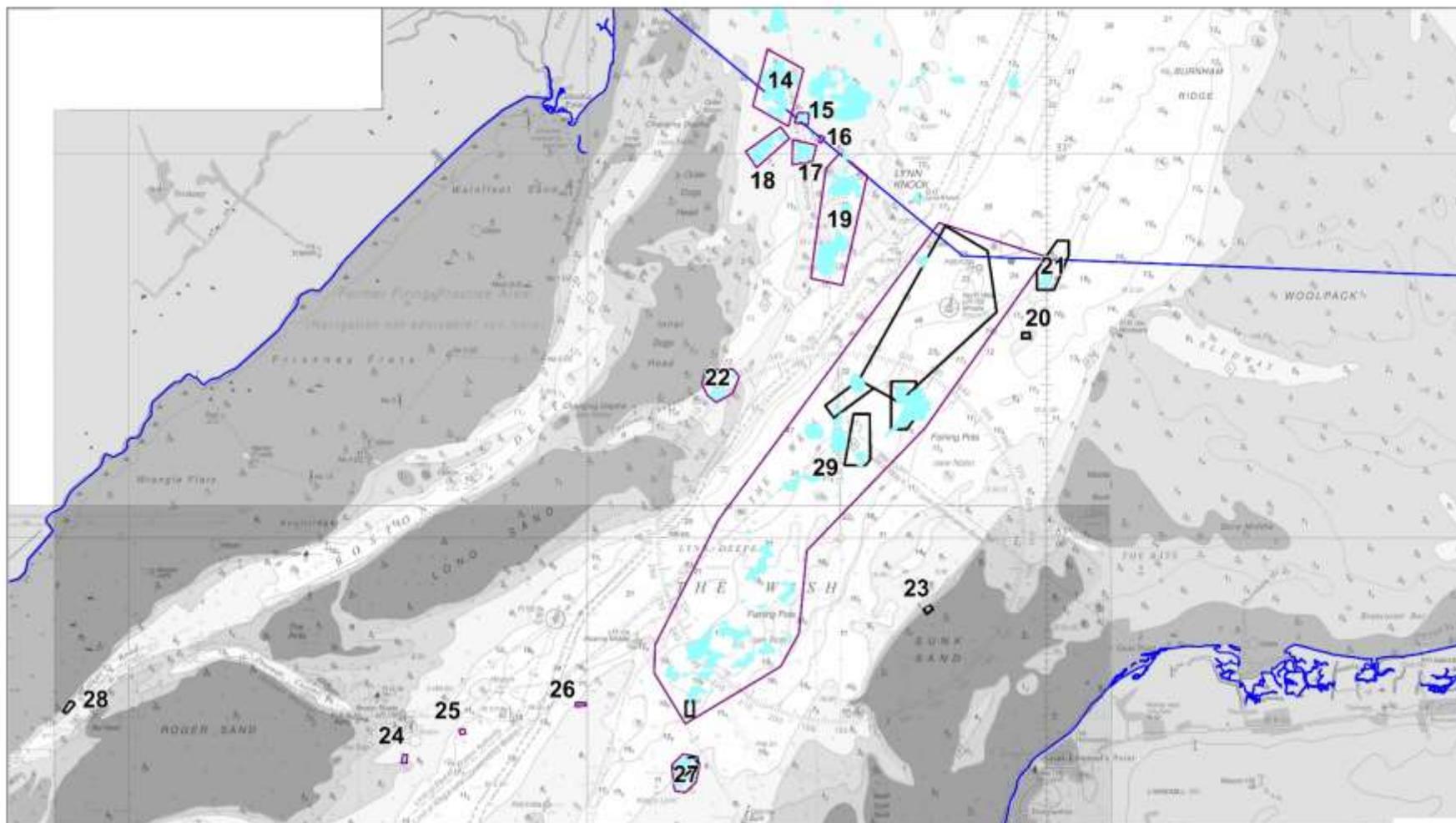
The current proposed closures for *Sabellaria spinulosa* core reef include new areas identified in the latest feature extent chart and the existing areas that were previously closed under previous iterations of the Marine Protected Areas Byelaw. The previous reef areas are also identified in the latest feature extent chart. Some of the existing closures and a significant area of new proposed closures for *Sabellaria spinulosa* core reef occur within the large closed area in the central Wash that is proposed for the protection of vulnerable subtidal mixed sediment and subtidal mud habitats (as identified through the Habitats Regulations Assessment). The same closed area also encompasses the subtidal stony reef feature (boulder & cobble) that was originally protected under the Protected Areas Byelaw 2013.

(iii) Local expert knowledge

Eastern IFCA has undertaken habitat surveys within The Wash over many years, using side scan sonar, video and camera tools and grab samples to verify sediment type and species present. This work has enabled habitat maps to be produced for many areas across the site and has provided officers with a good understanding of the type, distribution and dynamism of seabed habitats in this area. Eastern IFCA’s *Sabellaria spinulosa* evidence has not been included in Natural England’s 2016 synthesis at this stage (the Eastern IFCA habitat mapping report was produced in May 2018), but liaison between the two organisations is ongoing to identify the best way to incorporate Eastern IFCA data.

Eastern IFCA officers have been able to verify the Natural England feature extent chart to some extent using their own experience gained through undertaking surveys in the area. Local fishery stakeholders have also provided anecdotal information on sediment type in particular areas that has provided additional confidence in feature evidence. In some areas, Natural England feature extent evidence has been queried. It is intended that such areas are targeted by Eastern IFCA in future habitat surveys to provide additional evidence, which can be used to inform future iterations of the Marine Protected Areas byelaw.

¹⁰ ROBERTS, G., EDWARDS, N., NEACHTAIN, A., RICHARDSON, H. & WATT, C. 2016. Core reef approach to *Sabellaria spinulosa* reef management in The Wash and North Norfolk Coast SAC and The Wash approaches. Natural England Research Reports, Number 065.



The Wash Sabellaria Extent - Core reef 2016 approach (1+)

- Sabellaria Core Reef
- The Wash and North Norfolk Coast SAC boundary
- Existing Marine Protected Area closures
- Proposed Marine Protected Area closures

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 Feature Extent: NE Data Release 2018_01

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Appendix 2

Summary of Evidence: Biogenic reef - intertidal mussel beds

Proposed closed areas for intertidal mussel beds are shown in the Figure below.

Importantly, protection of the intertidal mussel beds through the Marine Protected Areas Byelaw would not preclude future mussel fisheries using towed demersal gear (mussel dredges), so long as those fisheries are subject to Habitats Regulations assessment and it can be demonstrated that allowing controlled fishing of the beds does not threaten the integrity of the mussel beds or of the overall site.

Selection of closed areas

The proposed mussel bed closures (areas 1 to 13) were selected using:

- (iv) Natural England feature extent chart (data release), January 2018
- (v) Eastern IFCA mussel bed survey results, 2008 – 2017
- (vi) Local expert knowledge.
- (i) Natural England feature extent chart

Natural England release updated charts of habitat extent every six months. These inform site regulators of the distribution of features, for example to help support management decisions. The chart used to inform the selection of mussel bed closed areas was the January 2018 release (the most recent available chart when closures were being drawn up). In general, the Natural England mussel bed extent data for The Wash aligned well with Eastern IFCA data.

The Natural England data included small areas of intertidal mussel bed along the north Norfolk coast. Officers considered these areas and discussed them with local fishery stakeholders. This process identified that the mussel beds either no longer existed or were private lay areas rather than naturally-occurring beds. It was therefore judged that it would not be appropriate to include these areas in the proposed closed areas.

- (ii) Eastern IFCA mussel bed surveys

Eastern IFCA (and predecessor Eastern Sea Fisheries Joint Committee) have undertaken surveys of the extent and distribution of mussel beds, and population composition within the beds, in the Wash Fishery Order area of The Wash annually since the mid-1990s. To inform the selection of closed mussel bed areas, officers examined digital records of the extent of mussel beds in The Wash from the past ten years of mussel survey data (2008 – 2017). The location of the mussel beds has been relatively stable during this period, although in some cases beds have ceased to exist over time, or new beds have emerged (e.g. Blackshore mussel bed). The area of each mussel bed does fluctuate annually. To select appropriate closed areas that protect current and likely mussel beds in the near future, officers used the ten years of data to identify the main, consistent mussel bed areas.

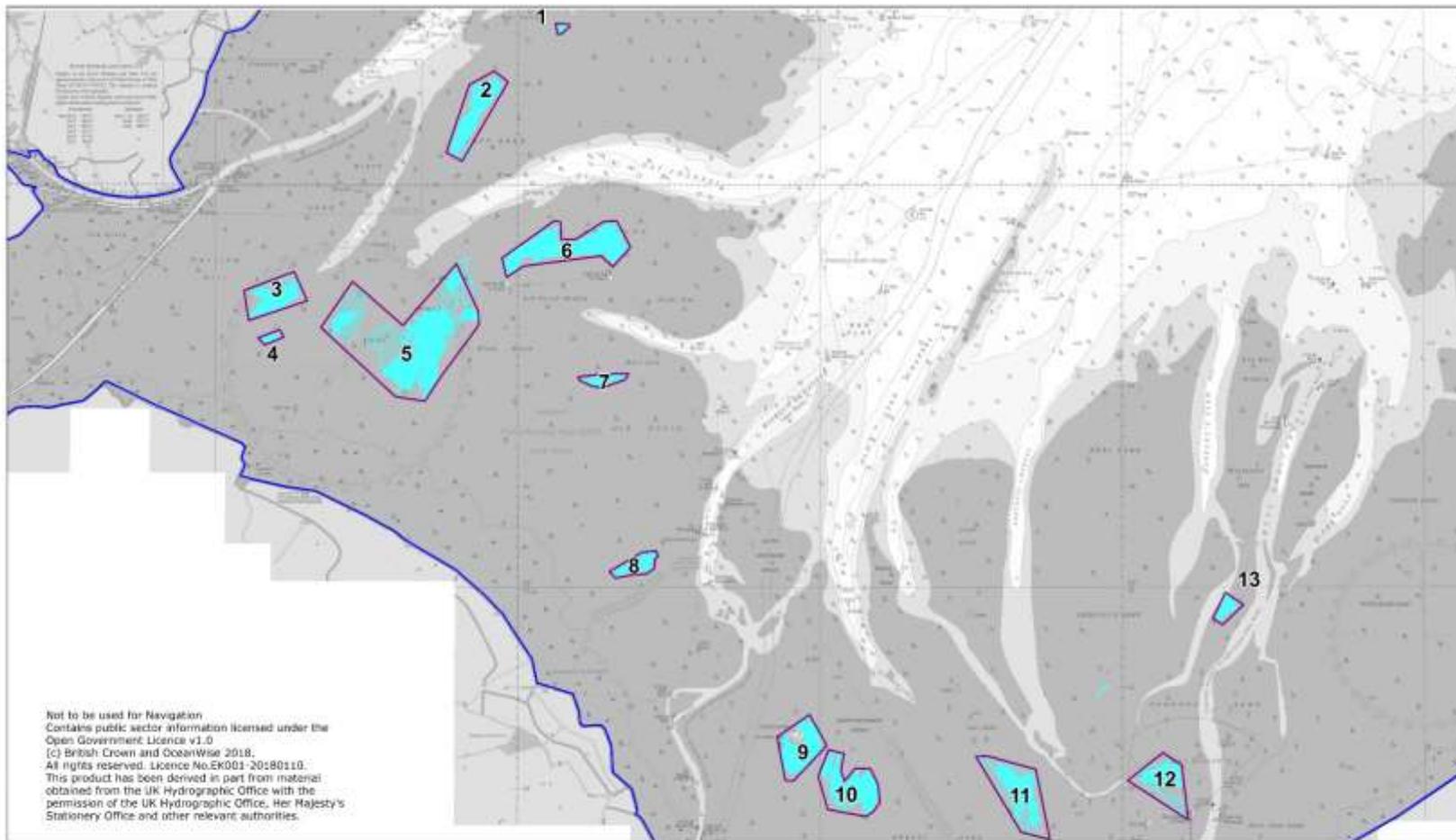
- (iii) Local expert knowledge

Expert knowledge of Eastern IFCA's Senior Marine Science Officer, Ron Jessop, was applied in relation to changes in extent and distribution of individual mussel beds over time. Where the bed could be seen to shift over consecutive annual surveys, additional space has been incorporated into the closed areas to allow for ongoing movement. In

some cases, small spurs of mussel off a main bed have been identified but excluded from the closure areas, where they are considered to be unlikely to develop into part of the main bed in future.

Closed area “boxes” were drawn around the extent of the mussel beds where they recurred most frequently and aligned with the Natural England extent data. No fixed “buffer” or “margin” distance was applied to the mussel bed closed areas, but the closures do include some spaces around and between mussel beds, to allow for natural movement of the beds and to create practical closure shapes (i.e. using straight lines rather than following the irregular shapes of the mussel beds). This resulted in a precautionary total area of 1,036 hectares included across the thirteen mussel bed closures, compared with an actual mussel bed extent of 498 hectares identified in the Natural England extent data, and 521 hectares of mussel bed identified in Eastern IFCA’s most recent mussel survey (2017).

Applying closures larger than the mussel bed extent is considered to be appropriate for the conservation reasons set out above. It is not considered that these closures would disproportionately restrict the shrimp fishery. This is because fishers do not fish using towed demersal gear over intertidal mussel beds – other than in the regulated mussel dredge fishery, which is assessed under bespoke Habitats Regulations assessment, and controlled via Wash Fishery Order regulations and Eastern IFCA byelaws.



 <p>Eastern IFCA Inshore Fisheries and Conservation Authority</p>	<h3>The Wash Mussel Bed Extents</h3> <ul style="list-style-type: none"> Natural England's 01_2018 A2.7 Wash Mussel Bed Extent EIFCA's 2017 Wash Mussel Bed Extent Proposed Marine Protected Area closures The Wash and North Norfolk Coast SAC boundary 	<p>Date: 10/07/18 Drawn by: SC Projection: Lat Long WSG84 EMS boundary: JNCC download - UK_SACs_withMarineComponents_2103821 Feature Source: NE G1 data release 2018_01 2018_07_Adm_Wash_Mussel_extent_Auth_Appendix.WOR</p>
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Appendix 3



EASTERN INSHORE FISHERIES AND CONSERVATION AUTHORITY

MARINE AND COASTAL ACCESS ACT 2009 (c. 23)

Marine Protected Areas Byelaw 2018

The Authority for the Eastern Inshore Fisheries and Conservation District in exercise of the powers conferred by sections 155, 156 and 158 of the Marine and Coastal Access Act 2009 makes the following byelaw for that District.

Interpretation

1. In this byelaw:

- a) 'the Authority' means the Eastern Inshore Fisheries and Conservation Authority as defined in Articles 2 and 4 of the Eastern Inshore Fisheries and Conservation Order 2010 (SI 2010/2189);
- b) 'the District' means the Eastern Inshore Fisheries and Conservation District as defined in Articles 2 and 3 of the Eastern Inshore Fisheries and Conservation Order 2010;
- c) co-ordinates are based on WGS 84 datum, where 'WGS 84' means the World Geodetic System, revised in 1984;
- d) 'fishing' includes:
 - (i) digging for bait;
 - (ii) shooting, setting, towing and hauling of fishing gear;
 - (iii) gathering sea fisheries resources by hand or by using a hand operated implement;
 - (iv) catching, taking or removing sea fisheries resources;
- e) 'fishing gear' includes any nets, pots, ropes, anchors, surface markers, lines, dredges, grabs, rakes or other implements used during fishing.

- f) 'Right of Common' means registered rights held by "commoners" in respect of registered "common land".

Restrictions

- 2. The restrictions set out in the schedules to this byelaw apply and contravention of such constitutes a contravention of this byelaw.

Application

- 3. This byelaw does not apply to any person performing an act which would otherwise constitute an offence against this byelaw, if that act was carried out in exercise of any right of common held by that person.

Revocations

- 4. The byelaw with the title "Marine Protected Areas Byelaw 2016" made by the Authority on 24 February 2016 and in force immediately before the making of this byelaw is revoked.

SCHEDULE 1

MANAGEMENT MEASURES FOR THE WASH AND NORTH NORFOLK COAST SPECIAL AREA OF CONSERVATION

Interpretation

1. In this schedule:
 - a) 'beam trawl' means a trawl net where the mouth or opening of the net is kept open by a beam, which is mounted at each end on guides, shoes or skids which travel along the seabed;
 - b) 'bottom towed gear' means any fishing gear designed to be towed, dragged or pushed through the water whilst in contact with the seabed;
 - c) 'Restricted Area' means any of the areas numbered 1 to 33 as defined by the co-ordinates in the tables in paragraph 7 of this schedule;
 - d) 'secured and stowed' means that fishing gear is stored in such a way that use cannot readily be made of it for any fishing activity.

Restrictions

2. A person must not fish with bottom towed gear in Restricted Areas 1 to 13 unless under the Authority of a Licence issued under Article 8 of the Wash Fishery Order 1992.
3. A person must not fish with bottom towed gear in Restricted Areas 14 to 32.
4. A person must not fish with bottom towed gear in Restricted Area 33 (Seasonal Restricted Area) between 1st April and 15th October in any year.
5. Subject to paragraph 6, when transiting through a Restricted Area bottom towed gear on vessels must be secured and stowed.
6. A vessel fishing using a beam trawl is exempt from paragraph 5 if the following apply:
 - a) it had been fishing up to the boundary of a Restricted Area or it will be fishing immediately upon leaving the Restricted Area; and
 - b) any beam is hoisted so that it is clearly visible above the sea and that no part of the fishing gear is in contact with any part of the seabed whilst the vessel is within the Restricted Area.

Restricted Areas

1. The following tables set out the co-ordinates of the Restricted Areas referred to in sub-paragraph 1(c) of this schedule:

Restricted Area 1			
Restricted Area 1 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.			
Point	Latitude	Longitude	Area (hectares)
A	52° 57'.60 N	0° 10'.62 E	3.462
B	52° 57'.60 N	0° 10'.84 E	
C	52° 57'.58 N	0° 10'.86 E	
D	52° 57'.50 N	0° 10'.71 E	
E	52° 57'.50 N	0° 10'.66 E	
F	52° 57'.60 N	0° 10'.62 E	

Restricted Area 2			
Restricted Area 2 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.			
Point	Latitude	Longitude	Area (hectares)
A	52° 57'.13 N	0° 09'.61 E	79.82
B	52° 57'.03 N	0° 09'.84 E	
C	52° 56'.24 N	0° 09'.08 E	
D	52° 56'.32 N	0° 08'.81 E	
E	52° 56'.99 N	0° 09'.19 E	
F	52° 57'.13 N	0° 09'.61 E	

Restricted Area 3

Restricted Area 3 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 54'.56 N	0° 06'.06 E	6.493
B	52° 54'.49 N	0° 06'.13 E	
C	52° 54'.41 N	0° 05'.81 E	
D	52° 54'.48 N	0° 05'.70 E	
E	52° 54'.56 N	0° 06'.06 E	

Restricted Area 4

Restricted Area 4 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 54'.95 N	0° 05'.47 E	60.70
B	52° 55'.14 N	0° 06'.30 E	
C	52° 54'.85 N	0° 06'.51 E	
D	52° 54'.65 N	0° 05'.54 E	
E	52° 54'.95 N	0° 05'.47 E	

Restricted Area 5

Restricted Area 5 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 55'.20 N	0° 08'.97 E	379.7
B	52° 54'.74 N	0° 09'.35 E	
C	52° 54'.61 N	0° 09'.36 E	
D	52° 53'.85 N	0° 08'.46 E	
E	52° 53'.89 N	0° 07'.98 E	
F	52° 54'.58 N	0° 06'.74 E	
G	52° 55'.04 N	0° 07'.26 E	
H	52° 54'.60 N	0° 08'.10 E	
I	52° 55'.20 N	0° 08'.97 E	

Restricted Area 6

Restricted Area 6 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 55'.27 N	0° 9'.74 E	123.4
B	52° 55'.64 N	0° 10'.60 E	
C	52° 55'.63 N	0° 10'.71 E	
D	52° 55'.46 N	0° 10'.72 E	
E	52° 55'.46 N	0° 10'.96 E	
F	52° 55'.64 N	0° 11'.42 E	
G	52° 55'.64 N	0° 11'.64 E	
H	52° 55'.38 N	0° 11'.87 E	
I	52° 55'.19 N	0° 11'.58 E	
J	52° 55'.29 N	0° 11'.38 E	
K	52° 55'.19 N	0° 10'.09 E	
L	52° 55'.08 N	0° 9'.82 E	
M	52° 55'.27 N	0° 9'.74 E	

Restricted Area 7

Restricted Area 7 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 54'.09 N	0° 11'.00 E	15.72
B	52° 54'.12 N	0° 11'.39 E	
C	52° 54'.13 N	0° 11'.83 E	
D	52° 54'.07 N	0° 11'.78 E	
E	52° 53'.98 N	0° 11'.40 E	
F	52° 54'.00 N	0° 11'.22 E	
G	52° 54'.09 N	0° 11'.00 E	

Restricted Area 8

Restricted Area 8 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 52'.16 N	0° 11'.52 E	24.64
B	52° 52'.35 N	0° 12'.06 E	
C	52° 52'.36 N	0° 12'.30 E	
D	52° 52'.31 N	0° 12'.33 E	
E	52° 52'.28 N	0° 12'.27 E	
F	52° 52'.19 N	0° 12'.26 E	
G	52° 52'.14 N	0° 12'.14 E	
H	52° 52'.12 N	0° 11'.85 E	
I	52° 52'.09 N	0° 11'.62 E	
J	52° 52'.16 N	0° 11'.52 E	

Restricted Area 9

Restricted Area 9 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 50'.74 N	0° 14'.83 E	64.52
B	52° 50'.43 N	0° 15'.12 E	
C	52° 50'.08 N	0° 14'.57 E	
D	52° 50'.08 N	0° 14'.43 E	
E	52° 50'.51 N	0° 14'.29 E	
F	52° 50'.74 N	0° 14'.83 E	

Restricted Area 10

Restricted Area 10 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 50'.39 N	0° 15'.14 E	89.17
B	52° 50'.35 N	0° 15'.40 E	
C	52° 50'.18 N	0° 15'.35 E	
D	52° 50'.08 N	0° 15'.41 E	
E	52° 50'.20 N	0° 15'.59 E	
F	52° 50'.20 N	0° 15'.84 E	
G	52° 50'.04 N	0° 15'.96 E	
H	52° 49'.86 N	0° 15'.99 E	
I	52° 49'.77 N	0° 15'.88 E	
J	52° 49'.72 N	0° 15'.75 E	
K	52° 49'.79 N	0° 15'.13 E	
L	52° 50'.12 N	0° 14'.97 E	
M	52° 50'.39 N	0° 15'.14 E	

Restricted Area 11

Restricted Area 11 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 50'.32 N	0° 17'.58 E	103.5
B	52° 50'.32 N	0° 17'.77 E	
C	52° 50'.19 N	0° 18'.57 E	
D	52° 49'.49 N	0° 18'.80 E	
E	52° 49'.57 N	0° 18'.33 E	
F	52° 50'.32 N	0° 17'.58 E	

Restricted Area 12

Restricted Area 12 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 50'.08 N	0° 20'.09 E	68.60
B	52° 50'.36 N	0° 20'.68 E	
C	52° 50'.23 N	0° 20'.99 E	
D	52° 49'.69 N	0° 21'.09 E	
E	52° 50'.08 N	0° 20'.09 E	

Restricted Area 13

Restricted Area 13 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A	52° 51'.69 N	0° 21'.50 E	16.19
B	52° 51'.95 N	0° 21'.71 E	
C	52° 51'.82 N	0° 22'.01 E	
D	52° 51'.63 N	0° 21'.66 E	
E	52° 51'.69 N	0° 21'.50 E	

Restricted Area 14

Restricted Area 14 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 6'.35 N	0° 23'.92 E	136.7
B.	53° 6'.09 N	0° 24'.70 E	
C.	53° 5'.35 N	0° 24'.37 E	
D.	53° 5'.61 N	0° 23'.60 E	
E.	53° 6'.35 N	0° 23'.92 E	

Restricted Area 15

Restricted Area 15 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 5'.53 N	0° 24'.58 E	8.01
B.	53° 5'.52 N	0° 24'.82 E	
C.	53° 5'.37 N	0° 24'.80 E	
D.	53° 5'.40 N	0° 24'.50 E	
E.	53° 5'.53 N	0° 24'.58 E	

Restricted Area 16

Restricted Area 16 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 5'.23 N	0° 25'.06 E	1.51
B.	53° 5'.20 N	0° 25'.17 E	
C.	53° 5'.13 N	0° 25'.07 E	
D.	53° 5'.15 N	0° 25'.03 E	
E.	53° 5'.23 N	0° 25'.06 E	

Restricted Area 17

Restricted Area 17 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 5'.18 N	0° 24'.47 E	26.78
B.	53° 5'.10 N	0° 24'.98 E	
C.	53° 4'.89 N	0° 24'.89 E	
D.	53° 4'.85 N	0° 24'.45 E	
E.	53° 5'.18 N	0° 24'.47 E	

Restricted Area 18

Restricted Area 18 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 5'.34 N	0° 24'.20 E	43.24
B.	53° 5'.19 N	0° 24'.40 E	
C.	53° 4'.81 N	0° 23'.68 E	
D.	53° 5'.02 N	0° 23'.44 E	
E.	53° 5'.34 N	0° 24'.20 E	

Restricted Area 19

Restricted Area 19 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 5.00 N	0° 25.49 E	264.7
B.	53° 4.71 N	0° 26.09 E	
C.	53° 3.28 N	0° 25.55 E	
D.	53° 3.37 N	0° 24.86 E	
E.	53° 4.80 N	0° 25.19 E	
F.	53° 5.00 N	0° 25.49 E	

Restricted Area 20

Restricted Area 20 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 03.86' N	00° 30.22' E	59.33
B.	53° 03.86' N	00° 30.48' E	
C.	53° 03.67' N	00° 30.48' E	
D.	53° 03.22' N	00° 30.15' E	
E.	53° 03.22' N	00° 29.78' E	
F.	53° 03.48' N	00° 29.78' E	
G.	53° 03.86' N	00° 30.22' E	

Restricted Area 21

Restricted Area 21 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 02.66' N	00° 29.46' E	2.726
B.	53° 02.66' N	00° 29.63' E	
C.	53° 02.59' N	00° 29.63' E	
D.	53° 02.59' N	00° 29.46' E	
E.	53° 02.66' N	00° 29.46' E	

Restricted Area 22

Restricted Area 22 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 2.18 N	0° 22.57 E	52.65
B.	53° 2.19 N	0° 23.16 E	
C.	53° 2.09 N	0° 23.30 E	
D.	53° 1.87 N	0° 23.15 E	
E.	53° 1.76 N	0° 22.80 E	
F.	53° 1.85 N	0° 22.60 E	
G.	53° 2.00 N	0° 22.49 E	
H.	53° 2.18 N	0° 22.57 E	

Restricted Area 23

Restricted Area 23 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	52° 59.11' N	00° 27.46' E	2.397
B.	52° 59.06' N	00° 27.52' E	
C.	52° 59.00' N	00° 27.38' E	
D.	52° 59.06' N	00° 27.32' E	
E.	52° 59.11' N	00° 27.46' E	

Restricted Area 24

Restricted Area 24 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	52° 57'.17 N	0° 15'.98 E	2.43
B.	52° 57'.17 N	0° 16'.08 E	
C.	52° 57'.06 N	0° 16'.06 E	
D.	52° 57'.06 N	0° 15'.94 E	
E.	52° 57'.17 N	0° 15'.98 E	

Restricted Area 25

Restricted Area 25 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	52° 57'.49 N	0° 17'.20 E	1.55
B.	52° 57'.51 N	0° 17'.31 E	
C.	52° 57'.44 N	0° 17'.34 E	
D.	52° 57'.43 N	0° 17'.23 E	
E.	52° 57'.49 N	0° 17'.20 E	

Restricted Area 26

Restricted Area 26 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	52° 57'.85 N	0° 19'.73 E	2.08
B.	52° 57'.85 N	0° 19'.96 E	
C.	52° 57'.81 N	0° 19'.96 E	
D.	52° 57'.80 N	0° 19'.74 E	
E.	52° 57'.85 N	0° 19'.73 E	

Restricted Area 27

Restricted Area 27 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	52° 57'.18 N	0° 22'.07 E	47.29
B.	52° 57'.14 N	0° 22'.40 E	
C.	52° 57'.02 N	0° 22'.44 E	
D.	52° 56'.81 N	0° 22'.35 E	
E.	52° 56'.68 N	0° 22'.13 E	
F.	52° 56'.69 N	0° 21'.90 E	
G.	52° 56'.75 N	0° 21'.88 E	
H.	52° 57'.03 N	0° 21'.83 E	
I.	52° 57'.18 N	0° 22'.07 E	

Restricted Area 28

Restricted Area 28 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	52° 57.87' N	00° 08.71' E	3.794
B.	52° 57.85' N	00° 08.81' E	
C.	52° 57.82' N	00° 08.83' E	
D.	52° 57.71' N	00° 08.65' E	
E.	52° 57.73' N	00° 08.58' E	
F.	52° 57.87' N	00° 08.71' E	

Restricted Area 29

Restricted Area 29 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 4'.10 N	0° 27'.65 E	3446
B.	53° 3'.65 N	0° 29'.98 E	
C.	53° 1'.43 N	0° 27'.35 E	
D.	52° 59'.83 N	0° 24'.77 E	
E.	52° 58'.75 N	0° 24'.60 E	
F.	52° 58'.32 N	0° 24'.20 E	
G.	52° 57'.57 N	0° 22'.13 E	
H.	52° 58'.23 N	0° 21'.45 E	
I.	52° 58'.60 N	0° 21'.47 E	
J.	53° 0'.22 N	0° 22'.83 E	
K.	53° 4'.10 N	0° 27'.65 E	

Restricted Area 30

Restricted Area 30 is defined by a straight line between points A and B in this table and the land boundary is to be taken as the mean high water springs mark.

Point	Latitude	Longitude	Area (hectares)
A.	52° 59.00' N	00° 40.03' E	51.69
B.	52° 58.63' N	00° 40.85' E	

Restricted Area 31

Restricted Area 31 is defined by a boundary drawn by a line connecting points A and B which follows the three nautical mile boundary (three nautical miles from the 1983 baseline) and a series of straight lines drawn in sequence between points B to J listed in this table.

Point	Latitude	Longitude	Area (hectares)
A.	53° 2'.58 N	0° 50'.67 E	5922
B.	53° 1'.65 N	1° 1'.57 E	
C.	52° 58'.88 N	1° 1'.60 E	
D.	52° 59'.16 N	1° 0'.06 E	
E.	52° 59'.71 N	0° 55'.55 E	
F.	52° 59'.86 N	0° 54'.90 E	
G.	52° 59'.73 N	0° 53'.81 E	
H.	52° 59'.79 N	0° 52'.44 E	
I.	52° 59'.96 N	0° 50'.70 E	
J.	53° 2'.58 N	0° 50'.67 E	

Restricted Area 32

Restricted Area 32 is defined by a boundary drawn by a line connecting points A and B which follows the land boundary which is to be taken as mean high water springs and a series of straight lines which connect points B to P.

Point	Latitude	Longitude	Area (hectares)
A.	52° 57'.47 N	0° 51'.06 E	2189
B.	52° 58'.26 N	1° 1'.60 E	
C.	52° 58'.36 N	1° 1'.60 E	
D.	52° 59'.11 N	0° 58'.39 E	
E.	52° 59'.15 N	0° 57'.26 E	
F.	52° 58'.80 N	0° 56'.52 E	
G.	52° 58'.77 N	0° 55'.57 E	
H.	52° 58'.88 N	0° 54'.81 E	
I.	52° 59'.10 N	0° 54'.22 E	
J.	52° 59'.28 N	0° 52'.96 E	
K.	52° 59'.33 N	0° 51'.90 E	
L.	52° 59'.54 N	0° 50'.90 E	
M.	52° 59'.54 N	0° 50'.71 E	
N.	52° 58'.62 N	0° 50'.76 E	
O.	52° 58'.40 N	0° 51'.03 E	
P.	52° 57'.47 N	0° 51'.06 E	

Restricted Area 33 (Seasonal Restricted Area)

Restricted Area 33 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	52° 59'.96 N	0° 50'.70 E	1217
B.	52° 59'.79 N	0° 52'.44 E	
C.	52° 59'.73 N	0° 53'.81 E	
D.	52° 59'.86 N	0° 54'.90 E	
E.	52° 59'.71 N	0° 55'.55 E	
F.	52° 59'.16 N	1° 0'.06 E	
G.	52° 58'.88 N	1° 1'.60 E	
H.	52° 58'.36 N	1° 1'.60 E	
I.	52° 59'.11 N	0° 58'.39 E	
J.	52° 59'.15 N	0° 57'.26 E	
K.	52° 58'.80 N	0° 56'.52 E	
L.	52° 58'.77 N	0° 55'.57 E	
M.	52° 58'.88 N	0° 54'.81 E	
N.	52° 59'.10 N	0° 54'.22 E	
O.	52° 59'.28 N	0° 52'.96 E	
P.	52° 59'.33 N	0° 51'.90 E	
Q.	52° 59'.54 N	0° 50'.90 E	
R.	52° 59'.54 N	0° 50'.71 E	
S.	52° 59'.96 N	0° 50'.70 E	

SCHEDULE 2

MANAGEMENT MEASURES FOR THE HUMBER ESTUARY SPECIAL AREA OF CONSERVATION

Interpretation

1. In this schedule:
 - a) 'angling' means fishing using a rod and line or a hook and line;
 - b) 'beam trawl' means a trawl net where the mouth or opening of the net is kept open by a beam, which is mounted at each end on guides or skids which travel along the seabed;
 - c) 'crab tiling' means laying artificial items or structures in intertidal areas to gather crabs for the purpose of fishing;
 - d) 'handwork' means the collection of sea fisheries resources, including bait, using the hands or handheld 'fishing gear';
 - e) 'Restricted Area' means the area 34 specified using co-ordinates in the table in paragraph 5 of this schedule.

Restrictions

2. Subject to paragraph 4, within Restricted Area 34 a person must not:
 - a) fish with bottom towed gear;
 - b) fish by handwork;
 - c) fish by crab tiling.
3. The prohibitions in paragraph 2 do not apply to angling.
4. When transiting through the Restricted Area bottom towed gear on vessels must be secured and stowed.

Restricted Areas

5. The following table sets out the co-ordinates of Restricted Area 34 referred to in subparagraph 1(e) of this schedule.

Area 34

Restricted Area 34 is defined by a boundary drawn by the series of straight lines connecting each point listed in this table to the next point in sequence.

Point	Latitude	Longitude	Area (hectares)
A.	53° 29.67 'N	00° 04.90 'E	170.8
B.	53° 30.44 'N	00° 06.29 'E	
C.	53° 29.10 'N	00° 06.04 'E	
D.	53° 29.67 'N	00° 04.90 'E	

I hereby certify that the above byelaw was made by Eastern Inshore Fisheries and Conservation Authority at their meeting on xxxxxx.

Julian Gregory

Chief Executive Officer

Eastern Inshore Fisheries and Conservation Authority

6 North Lynn Business Village, Bergen Way, Kings Lynn, Norfolk PE30 2JG

The Secretary of State for Environment, Food and Rural Affairs in exercise of the powers conferred by section 155(3) of the Marine and Coastal Access Act 2009, confirms the Protected Areas Byelaw made by the Eastern IFCA on 24th February 2016.

The said byelaw comes into force on:

Head of Marine Planning and Sustainable Fisheries

A Senior Civil Servant, for and on behalf of the Secretary of State for Environment, Food and Rural Affairs

Explanatory Note

(This note does not form part of the byelaw)

This byelaw sets restrictions for fishing activities to protect marine habitats and species within or adjacent to marine protected areas from fishing activities. Restrictions include areas restricted to specified fishing gear and types of fishing activity and restrictions related to the use of fishing gear.

Marine protected areas include;

- Special Areas of Conservation (SAC) Sites of Community Interest (SCI) and Special Protection Areas (SPA). The European network of these areas is collectively known as Natura 2000) as provided in Article 3 Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive);
- Marine Conservation Zones (MCZ) as designated by an Order under section 116 of the Marine and Coastal Access Act 2009 (c.23);
- Sites of special scientific interest within the meaning of Part 2 of the Wildlife and Countryside Act 1981 (c.69);
- National nature reserves declared in accordance with section 35 of that Act;
- Ramsar sites within the meaning under section 37A of that Act.

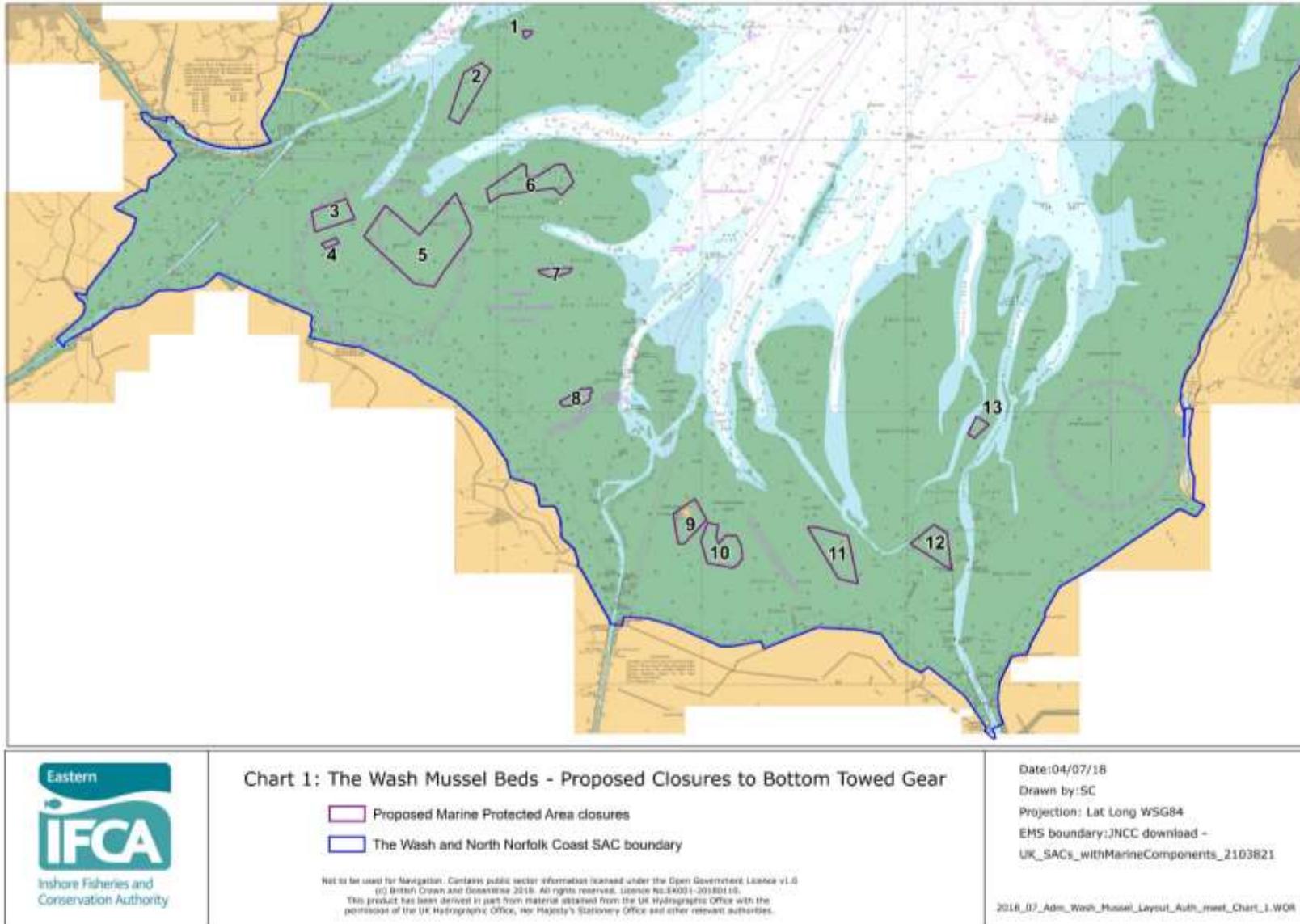
Management measures are set out in schedules 1 and 2 of this byelaw in relation to the Wash and North Norfolk Coast SAC and the Humber Estuary SAC.

Restrictions within the Wash and North Norfolk Coast SAC include Restricted Areas in relation to fishing with bottom towed gear and a requirement to have bottom towed gear lashed and stowed when a fishing vessel is inside the Restricted Areas. Fishers are exempt from the requirement to lash and stow bottom towed gear if the vessel had been fishing using a beam trawl up to the boundary of a Restricted Area or it will be fishing immediately upon leaving the Restricted Area however the gear is must be suspended clear of the water.

Restrictions in the Humber Estuary SAC include a Restricted Area in relation to fishing with bottom towed gear, fishing by hand and crab-tilling. The Restricted Area does not apply to fishing by hand when a rod and line or hook and line is used.

Paragraph 3 of this Byelaw specifically preserves personal "rights of common". These are particular, specialised and defined rights held by "commoners" in respect of registered "common land". "Rights of Common" relate only to registered common land and this Byelaw retains full force and effect against all other persons, including those exercising their common law right of fishery and any person exercising a private or several right of fishery. If you have any doubts about the applicability of this Byelaw to you, you should seek guidance from the Authority before fishing for or taking any sea fisheries resources.

Appendix 4 – Charts of proposed spatial restriction (Marine protected Areas Byelaw 2018)



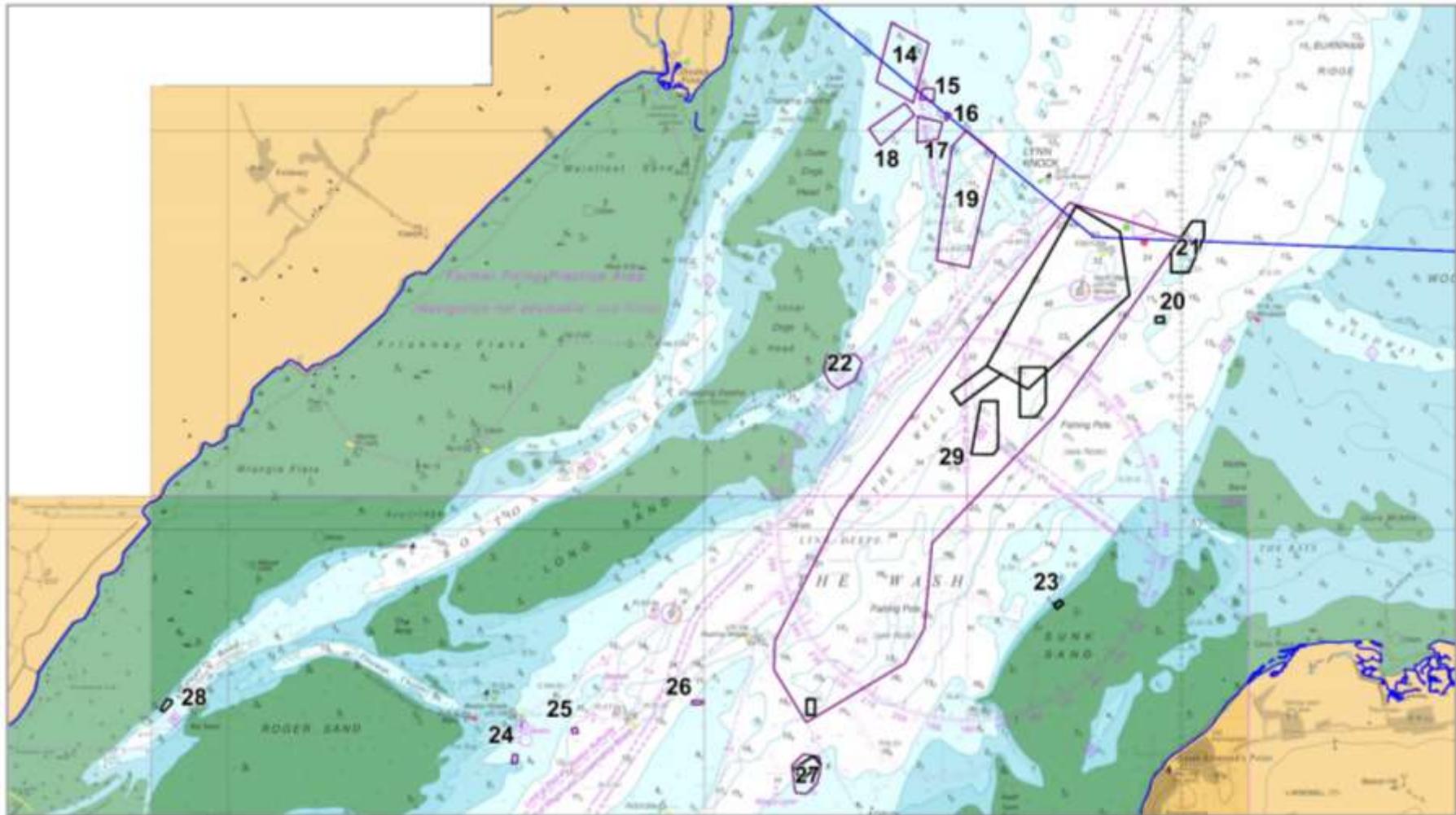


Chart 2: The Wash Central & Northern - Proposed Closures to Bottom Towed Gear

- Proposed Marine Protected Area closures
- The Wash and North Norfolk Coast SAC boundary
- Existing Marine Protected Area closures

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Date: 04/07/18
 Drawn by: SC
 Projection: Lat Long WSG84
 EMS boundary: JNCC download -
 UK_SACs_withMarineComponents_2103821

2018_07_Adm_Wash_Centrl_Layout_Auth_inwet_Chart_2.WOR

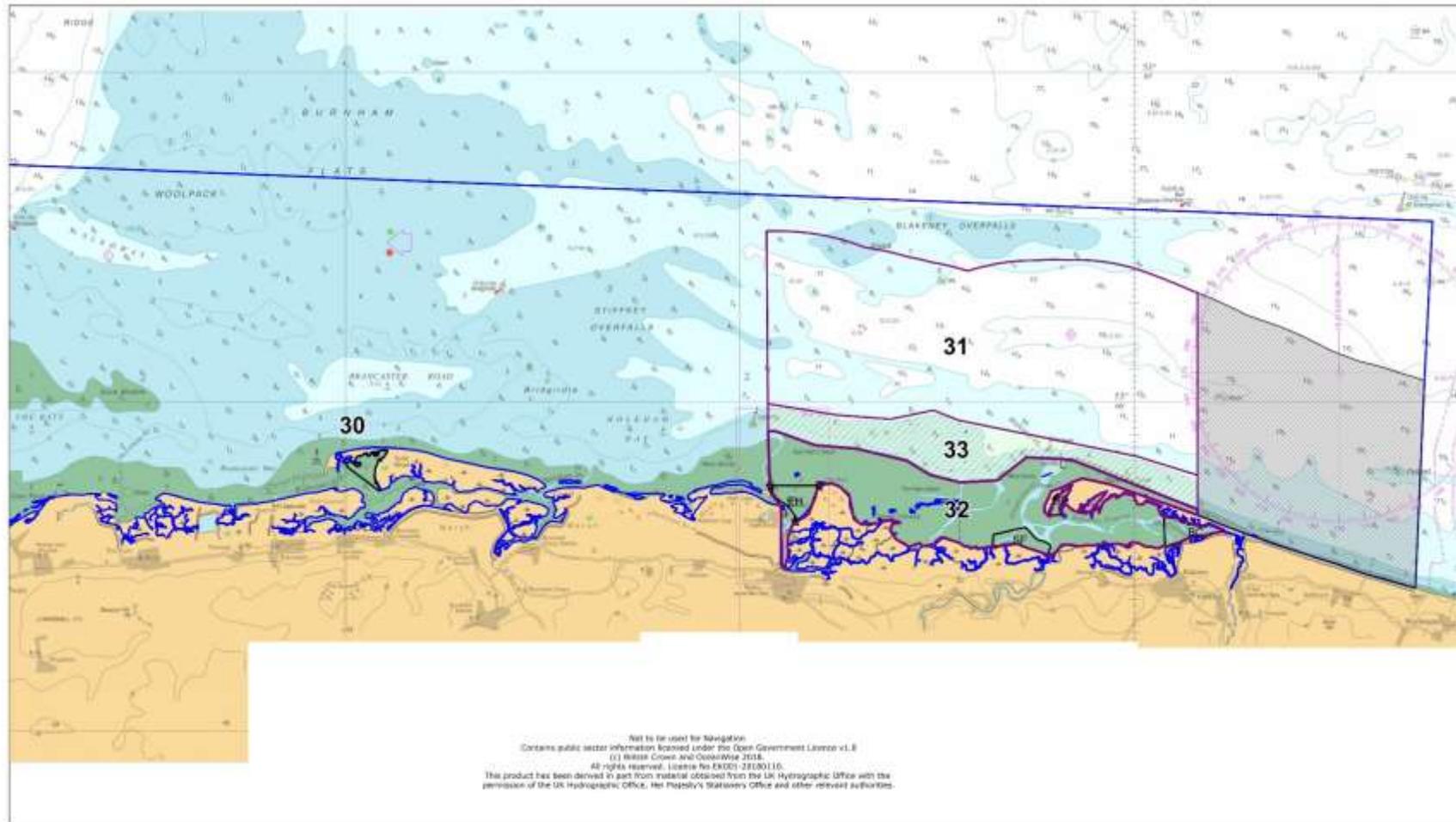


Chart 3: North Norfolk Coast Proposed Closures to Bottom Towed Gear

- Proposed Marine Protected Area closures
- Existing Marine Protected Area closures
- Proposed seasonal corridor (open to the fishery 16th October - 31st March)
- Existing Byelaw 12 Trawling Restricted Area
- The Wash and North Norfolk Coast Coast SAC boundary

Date: 04/07/18
 Drawn by: SC
 Projection: Lat Long WSG84
 EMS boundary: JNCC download -
 UK_SACs_withMarineComponents_2103821

2018_07_Adm_NNC_Layout_Auth_meet_Chart_3.WOR

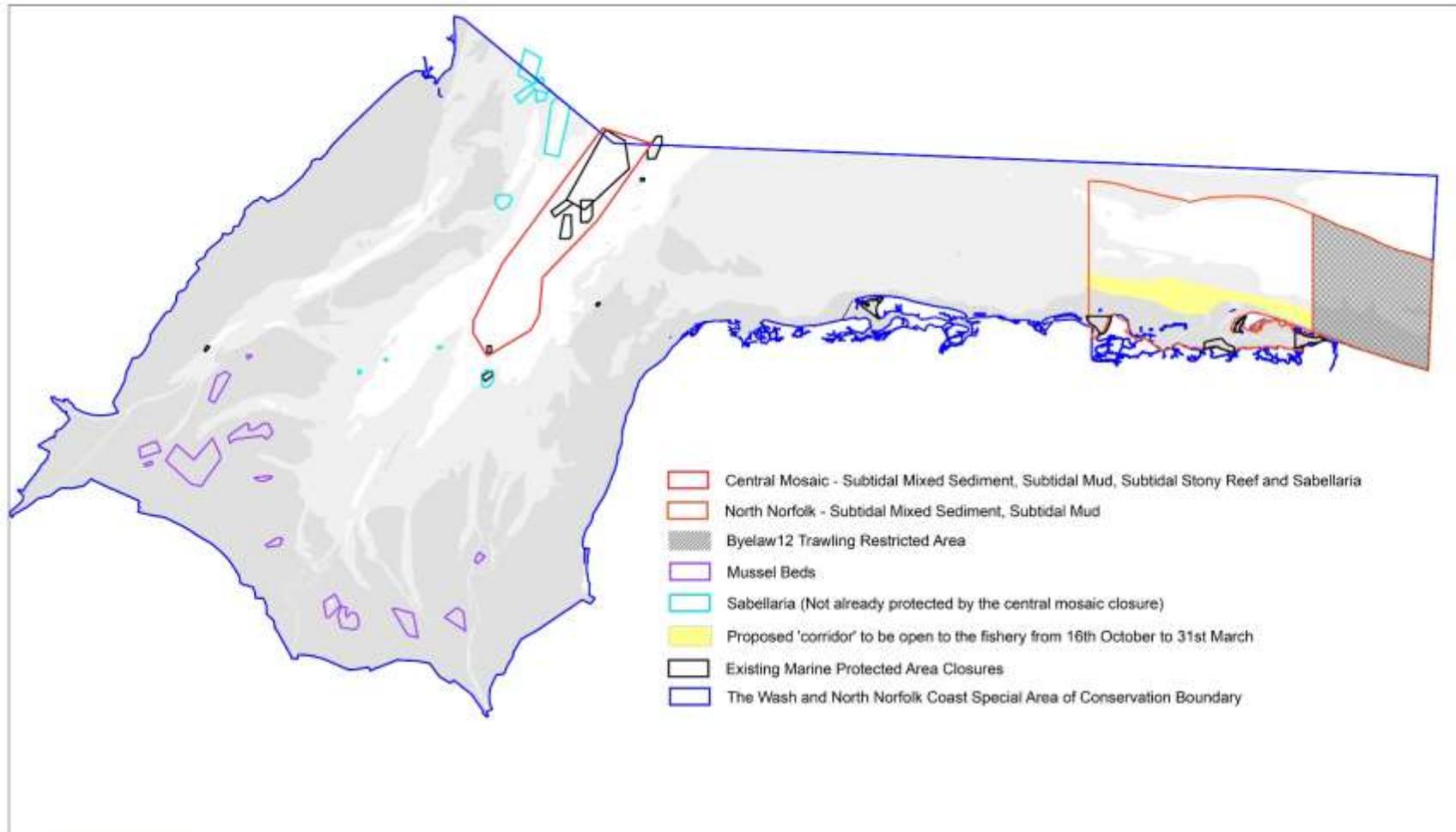


Chart 1: Wash and North Norfolk Coast
 Marine Protected Area
 Proposed Closures - by related habitat type

Date: 06/07/18 Drawn by: SC
 Projection: Lat Long WSG84
 EMS boundary: JNCC download -
 UK_SACs_withMarineComponents_2103821

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2018_06_Overview_Layout_draft Shrimp_closures.WOR

Appendix 5

Title: Marine Protected Areas Byelaw 2018 IA No: DRAFT_EIFCA006 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
£-0.69	£-0.58	£0.1	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 are proposed to 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. A separate 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 by prohibiting the use of any bottom-towed-gear (including in relation to fishing for species other than shrimp) over habitats which have been assessed as being vulnerable to this fishery.
 Intended effects: Prevent degradation and /or improve the condition of habitats vulnerable to bottom-towed-gear within the Wash and North Norfolk Coast SAC.

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. Discrete spatial closures through the Marine Protected Areas Byelaw 2018
 Option 2. Total closure
 The preferred option is option 1 – The proposed byelaw will ensure that fishing activity will not impact negatively on the conservation objectives of the Wash and North Norfolk Coast SAC.

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**

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: -4.46	High: -0.26	Best Estimate: -0.69

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0.0	£0.0	£0.3
High	0.0	£0.5	£4.5
Best Estimate	0.0	£0.1	£0.7

Description and scale of key monetised costs by ‘main affected groups’

Key monetised costs relate to the loss of fishing grounds to shrimp fishers as a result of spatial closures. The scale of the impact based on the best estimate is likely to be low to moderate in relation to the brown shrimp fishery. The actual scale of impact is likely to vary annually given the spatial variability of the shrimp fishery within the site and the potential for important fishing grounds to cooccur with proposed spatial closures.

Other key non-monetised costs by ‘main affected groups’

The closures are thought to effectively rule out any future pink shrimp fishery. There is only a limited pink shrimp fishery at present (as reflected in the monetised costs) although it had historically been worth significantly more. No data is available to accurately monetise this impact.

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	Discount rate	3.5%
Assumptions: Fishing grounds identified through Eastern IFCA catch returns data are accurate. Sensetivities / risks: Spatial closures cause displacement into other less sensitive areas with the effect of impacting site integrity (unlikely), shrimp population dynamics result in future important shrimp fisheries occur within closed areas with an increased economic impact on the industry.		

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 0.1	Benefits: 0.0	Net: -0.1	

• 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 is 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 as an adverse effect on site integrity resultant of the fishing activity could not be ruled out.

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. 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.

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FCA 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 objective(s) is as follows:

1. To ensure that the shrimp fishery within the Wash and North Norfolk Coast SAC does not have a negative on site integrity whilst minimising the economic impact on the fishing industry;

The intended effects of the measures are as follows:

- To prohibit the use bottom-towed-gear in areas which contain habitats which are likely to be damaged by their use;

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. In relation to certain areas, any level of fishing activity using bottom-towed-gear is considered likely to have a significant adverse effect.

The 'do nothing' option would have the least economic impact on stakeholders however, is not considered to adequately reduce the risk of impacts from shrimp fishing within Wash and North Norfolk Coast SAC and is therefore not considered a viable option.

Option 1 (preferred option) – Marine Protected Areas Byelaw 2018

The Marine Protected Areas Byelaw 2018 will prohibit the use of bottom-towed-gear through the implementation of discrete spatial closures in relation to certain habitats assessed as being sensitive to this activity. The proposed byelaw includes provision for limited bottom-towed-gear fisheries to cooccur with these habitats as follows:

1. In relation to the use of mussel dredges on mussel beds. An exemption is proposed to allow fisheries which are consented through the Wash Fishery Order 1992 (WFO). No significant adverse effect on site integrity will occur as a result of such fisheries as these are assessed using a Habitats Regulation Assessment prior to commencement.
2. In relation to shrimp fishing on an inshore region of the North Norfolk Coast during the period 1st April to 15th October in any year. This area will be closed seasonally so as to have the required protective effect on juvenile fish which use the area as a nursery ground.

The byelaw will also require fishers to 'lash and stow' bottom-towed gear when transiting closed areas with the exception of shrimp fishing gear in certain circumstances.

In combination with the Shrimp Permit Byelaw 2018 (proposed separately) will mitigate the risk associated with shrimp fishing activity outside of the proposed closures.

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

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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 circa 90% of the UK's catch coming from The Wash and North Norfolk Coast.

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 continued fishing activity in the areas proposed to be closed. 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 proceeding being taken against the UK.

Option 1 – Shrimp Permit Byelaw 2018

Key monetised costs

The key monetised costs associated with the proposed closures are the loss of fishing grounds.

Impacts on Shrimp Fishery

Eastern IFCA requires fishers to submit returns forms for each shrimp fishing trip within the Wash and North Norfolk Coast SAC. This data has been used to estimate the level of fishing activity within each of the proposed closed areas. MMO landings data has been used to determine the monetary impact of the closures.

Fishers provide information regarding the location of each tow during shrimp fishing activity. The resolution of this information does not allow for an exact estimate as the grid against which fishing activity does not correspond with the shape or size of closed areas (with some closed areas being smaller than a single grid box). Eastern IFCA data for 1st January to 31st December of 2016 and 2017 is used. MMO landings data from 2010 to 2016 is used to estimate economic impacts.

The low estimate considers fishing effort within closed areas except those associated with 'mussel bed closures'. Shrimp fishing activity is not thought to occur over mussel beds (except perhaps inadvertently) however, a significant amount of fishing activity occurs within the grid boxes in which mussel beds are found (which accounts for 2.89% of the fishery). The low estimate also takes into account the lowest annual landed value of brown and pink shrimps between 2010 and 2016 (which is £584,525). The low estimate is £16,907.

The low cost estimate is likely to be an overestimate given that the landed value of catch takes into account fishing activity outside of the Wash and North Norfolk Coast but the resolution of the landings data does not allow for excluding other areas from the assessment. Shrimp fishing grounds are known to vary annually as shrimps move to different areas (within the site). As such, it is conceivable that the impact of these closures in some years will be zero.

The high estimate considers closures over mussel beds in addition to other areas (which equates to 17.45% of the fishery in the Wash North Norfolk Coast SAC) and the highest annual value of landed catch (£2,668,788). The high cost estimate is therefore £465,734 per year. This is likely to be an overestimate because fishers are not thought to fish over mussel beds and because it includes landed value associated with shrimp fishing outside of the site whereas the fishing activity data only relates to fishing within the site. As above, shrimp grounds are thought to move during and between years. As such, the potential cost of the measures could be more if shrimps were to relocate into a closed area.

The best estimate takes into the average (during 2016 and 2017) fishing effort within closed areas except over closures associated with mussel beds. It also takes into account the average annual landed value of shrimps (between 2010 and 2016 inclusive). The best estimate is therefore £66,069 per year.

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Impacts on 'other' fisheries

Use of bottom-towed-gear within the Wash and North Norfolk Coast is thought to be very limited except in relation to shrimp fishing.

MMO landings data shows that between 2010 and 2016, 42 different species were caught within ICES rectangles 34F0, 34F1, 35F0 and 35F1. Excluding scallops and mussel (which are regulated through the Wash Fishery order within the MPA) and whelks (which are not caught with bottom-towed-gear – their inclusion in the MMO data is assumed to be a mistake), the average annual landed value is £21,341. The site is within these ICES rectangles although the site makes up only a small proportion of the site. The vast majority of this activity is associated with ICES Rectangle 35F0 which is likely to be a reflection of activity along the Lincolnshire Coast and outside of the site. This is consistent with anecdotal reports of fishing activity.

As such, the high estimate annual cost is £39,010 which corresponds with the highest recorded annual landed value of 'other species' within associated ICES rectangles for the period 2010 to 2016 inclusive.

The low cost is zero which reflects that it is unlikely that the MPA represents important fishing grounds for these species and that the majority are thought to be caught on the Lincolnshire coast.

It is most likely that landings of 'other' species from within the MPA are actually only by-catch of the shrimp fishery. This cannot be distinguished from that which is caught intentionally however using the MMO landings data. As such the best estimate takes into account the average annual landed value (£21,341) for these ICES rectangles and applies the same fishing activity assessment as for the shrimp fishing impacts above (i.e. the average percentage of fishing activity effected, the average of which is 4.1%) with an estimated cost of £874 annually.

Costs to Eastern IFCA

Eastern IFCA is 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.

Therefore, the total estimated monetised cost to Eastern IFCA is £13,203 annually.

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Non-monetised costs

Pink shrimp fishery

Pink shrimp fisheries are anecdotally thought to have been worth as much as brown shrimp fisheries previously. At present, there is only a limited market and pink shrimp are landed as bycatch of the brown shrimp fishery and have limited value.

Fishers have indicated that the proposed closures effectively rule out any targeted pink shrimp fishery in the future as the closures coincide with what were important pink shrimp fishing grounds. This cannot be monetised as data for this historic fishery is not available.

Changes in fishing behaviours

Displacement from the proposed closed areas may have the effect of intensifying effort on other shrimp grounds with an impact on the ecological functioning and sustainability of the shrimp fishery and associated habitats. Given that the level of fishing activity over the proposed closures is considered to be relatively low (circa 4%), displacement is likely to be limited as will be the associated impacts.

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.

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:

MMO landings data (2010 to 2017 inclusive)

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Eastern IFCA shrimp fishing database (based on returns data)

Anecdotal information provided by fishers (during informal engagement)

The analysis has considered the best available evidence to estimate monetised costs where the data will allow such. This has included extensive consultation with stakeholders who are likely to be impacted. Concerns have been raised by the shrimp fishing industry in relation to the closures and in particular, the closures associated with the North Norfolk Coast and central part of the Wash as these include some important shrimp fishing grounds. The shape and size of closures have taken the informal consultation into account where possible whilst ensuring that the mandated protective effect of the measures are not diminished.

Risks and assumptions

There are limitations in relation to the data used in the above analysis. Eastern IFCA requires shrimp fishers to provide certain fisheries data for each fishing trip however there is known to be a level of non-compliance with this requirement. This is mitigated to a degree given that the assessment only uses this information to estimate relative importance of certain areas as shrimp fishing ground (i.e. number of tows as a proportion of the total) rather than relying on the data to estimate the actual fishing effort in an area.

In addition, as set out above, shrimp fishing grounds are known to move within and between years. As such, the importance of the areas closed to fishing are likely to change over time. The data available to determine the importance of fishing grounds only relates to 2 years (2016 and 2017) and has its own limitations (as set out above) and as such the actual cost to the industry may change.

Summary and preferred option with description of implementation plan

The preferred option is Option 1 – Marine Protected Areas Byelaw 2018. This would close certain areas to use of bottom-towed-gear and require this gear to be lashed and stowed when transiting restricted areas with an exception in certain circumstances. This option would permit a mussel fishery in The Wash using dredges under the Wash Fishery Order 1992 (which would be subject to a Habitat Regulation Assessment and as such would not have an impact on site integrity) and use of bottom-towed-gear in part of the North Norfolk Coast during less sensitive periods (April to October).

These closures are in addition to the closures already implemented in the Marine Protected areas Byelaw 2016.

The proposed measures will have the effect of protecting the Wash and North Norfolk Coast SAC from the effects of shrimp fishing activity but minimise the impact on industry by closing only those areas which will be impacted. Fishing within the rest of the site will be managed through the use of a separate proposed byelaw (Shrimp permit Byelaw 2018) which will ensure there are no impacts on site integrity in relation to habitats and species outside of the restricted areas.

To implement these measures, fishers would be made aware of the additional closures. Officers will engage with the industry to educate and engage as per Eastern IFCA's Enforcement Policy and Regulation Strategy.



Eastern Inshore Fisheries and Conservation Authority

MARINE AND COASTAL ACCESS ACT 2009 (c. 23)

Shrimp Permit Byelaw 2018

The Authority for the Eastern Inshore Fisheries and Conservation District in exercise of its powers under sections 155 and 156 of the Marine and Coastal Access Act 2009 makes the following byelaw for the District.

Interpretation

1. In this byelaw:

- a) 'the Authority' means the Eastern Inshore Fisheries and Conservation Authority as defined in Articles 2 and 4 of the Eastern Inshore Fisheries and Conservation Order 2010 (SI 2010/2189);
- b) 'bottom towed gear' means any fishing gear designed to be towed, dragged or pushed through the water whilst in contact with the seabed;
- c) 'Category One Permit' means a shrimp permit issued under paragraph 8 granted for fishing for shrimps for commercial purposes within the Wash and North Norfolk Coast Special Area of Conservation;
- d) 'Category Two Permit' means a shrimp permit issued under paragraph 8 granted for fishing for shrimps for commercial purposes within the District except within the Wash and North Norfolk Coast Special Area of Conservation;
- e) 'the District' means the Eastern Inshore Fisheries and Conservation District as defined in Articles 2 and 3 of the Eastern Inshore Fisheries and Conservation Order 2010;
- f) 'fishing' includes digging for bait; the shooting, setting, towing and hauling of fishing gear; gathering sea fisheries resources by hand or using a hand operated implement; and catching, taking or removing sea fisheries resources and 'fish' is to be construed accordingly;

- g) 'fishing for commercial purposes' means fishing for sea fisheries resources for sale or reward;
- h) 'fishing gear' includes any nets, pots, ropes, anchors, surface markers, lines, dredges, grabs, rakes or other implements used for the purposes of fishing;
- i) 'flexible permit conditions' means any of the conditions determined by the Authority as provided in paragraph 21 in accordance with the procedure set out in Schedule 1;
- j) 'named representative' means a person who has been granted permission to fish from a vessel by the owner of that vessel, and has been nominated by the owner of that vessel for the purposes of paragraph 13;
- k) 'owner' means the majority shareholder of a vessel as recorded on the certificate of registry for that vessel granted under the Merchant Shipping Act 1995 (c.21) and the Merchant Shipping (Registration of Ships) Regulations 1993 (SI 1993/3138), or the certificate of registry for that vessel in the Channel Islands or Isle of Man;
- l) 'registered fishing vessel' means a vessel:
 - i. registered under Part II of The Registry of Shipping and Seaman as governed by the provisions of the Merchant Shipping Act 1995 and the Merchant Shipping (Registration of Ships) Regulations 1993, or in the Channel Islands or Isle of Man; and
 - ii. in respect of which there is a valid fishing licence issued under the Sea Fish (Conservation) Act 1967 (c.84);
- m) "remotely accessed electronic reporting device" means one of the following devices that transmits the required information;
 - i. A 'Vessel Monitoring System +' device that meets the requirements for such devices required by the Marine Management Organisation;
 - ii. A device that is listed on the Marine Management Organisation and Inshore Fisheries and Conservation Authorities Inshore Vessel Monitoring System approved products register;
- n) "required information" means the following information;
 - i. a report flag to indicate that the report is the result of the Authority's requirements and is not made under EU regulations;
 - ii. the most recent geographical position of the fishing vessel to 5 decimal places (in WGS84);
 - iii. date and time (in UTC) of the fixing of the most recent position;

- iv. the instant speed and course of the vessel (equivalent to 0.1 knots and course expressed in degrees (true not magnetic) to 0.1 degree) at the time of the report;
 - v. the unique serial number of transmitting device;
 - vi. a status code;
 - vii. a Geofence reference number.
- o) 'shrimp' means a marine organism of the species *Pandalus montagui* (commonly known as pink shrimp) or belonging to the genus *Crangon* or *Palaemon* including *Crangon crangon* (commonly known as 'brown shrimp');
 - p) 'shrimp permit' means a Category One Permit or a Category Two Permit;
 - q) 'vessel' means a ship, boat, raft or watercraft of any description and includes non-displacement craft, personal watercraft, seaplanes and any other thing constructed or adapted for floating on or being submerged in water (whether permanently or temporarily) and a hover craft or any other amphibious vehicle, used or capable or being used as a means of transportation on water;
 - r) 'Wash and North Norfolk Coast Special Area of Conservation' means the area as set out in Schedule 2.

Prohibitions

- 2. A person must not fish for or land or retain shrimps caught within the Wash and North Norfolk Coast Special Area of Conservation for commercial purposes or from a registered fishing vessel unless that person is:
 - a) the holder of a Category One Permit; or
 - b) a named representative of the holder of a Category One Permit.
- 3. A person must not fish for or land or retain shrimps caught within the District outside of the Wash and North Norfolk Coast Special Area of Conservation for commercial purposes or from a registered fishing vessel unless that person is:
 - a) the holder of a Category Two Permit; or
 - b) a named representative, of the holder of a Category Two Permit.
- 4. A person must not fish for shrimps under the authority of a shrimp permit from a vessel other than the vessel named on that shrimp permit without firstly obtaining the agreement of the Authority. Such agreement may be given in circumstances where the permit holder, named representative or the named vessel are unable to put to sea.

5. A person must not fish for shrimps, unless a fully functioning, remotely accessed electronic reporting device is on board the vessel at all times and where the required information is transmitted once in every three minutes.
6. If the remotely accessed electronic reporting device installed pursuant to sub-paragraph 5 (above), has failed to transmit the required information, for whatever reason, a person must;
 - a) if at sea, immediately cease fishing and immediately return to port or leave the Eastern IFC District;
 - b) if at port or outside the Eastern IFC District, remain there.
7. Where a remotely accessed electronic reporting device has been repaired or replaced the Permit Holder or Nominated Representative must provide a copy of the engineer's report to the Authority confirming that the equipment is fully operational before;
 - a) leaving port;
 - b) entering the area of the Eastern IFC District; or
 - c) fishing for shrimps within the Eastern IFC District.

Permits

8. The Authority may issue a shrimp permit to the registered owner of a registered fishing vessel, or to a person fishing for commercial purposes other than from a vessel.
9. A vessel may be named on a maximum of one Category One permit and one Category Two permit.
10. A person without a vessel may hold a maximum of one Category One permit and one Category Two permit.
11. Any change in legal or beneficial ownership of a registered fishing vessel after the issue of the permit will result in the cancellation of any shrimp permit issued to that vessel.
12. Shrimp permits are not transferable.
13. An application for a shrimp permit must be made using printed forms available from the Authority. These forms will require applicant and vessel details. The applicant may nominate up to 2 persons as their named representatives whose details must also be entered on the application form.
14. Permits will be valid from the date of issue until the following 1st of August.
15. The Authority may restrict the number of shrimp permits issued and may set criteria to restrict eligibility for a shrimp permit in accordance with the procedure set out in Schedule 1.

16. The Authority may suspend the issuing of Category One Permits for a period of time or for periods of time not exceeding until the following 1st August if there is an enhanced risk to stocks or if there is an enhanced risk to site integrity of the Wash and North Norfolk Coast SAC.

Temporary closures of shrimp fishing activity

17. The Authority may close the shrimp fishery within the Wash and North Norfolk Coast SAC for a period of time or for periods of time not exceeding until the following 1st August if there is an enhanced risk to stocks or if there is an enhanced risk to site integrity of the Wash and North Norfolk Coast SAC.

Shrimp permit fees

18. A fee will be charged for each shrimp permit which must be paid prior to the issuing of the permit unless a person is issued a Category One Permit and a Category Two Permit in relation to the same registered fishing vessel in which case a fee is only charged for a Category One Permit.
19. The fee for a Category One Permit is £100 and the fee for a Category Two Permit is £44.

Flexible permit conditions

20. The Authority may attach to permits flexible conditions which fall within one or more of the categories listed in paragraph 21.
21. The categories referred to in paragraph 20 are:
 - a) vessel design restrictions;
 - b) catch restrictions;
 - c) fishing gear restrictions;
 - d) fishing effort restrictions;
 - e) spatial restrictions;
 - f) time restrictions;
 - g) vessel monitoring device requirements.
22. The Authority may issue, vary or revoke flexible permit conditions following a review conducted in accordance with the procedure set out in Schedule 1.
23. Failure to comply with a flexible permit condition is an offence against this byelaw.

Catch returns

24. The holder of a shrimp permit must have on board shrimp returns forms which will be provided by the Authority which are completed with such information as is required by the Authority up to the day they are fishing and must submit such to the Authority, no later than the 10th day of each month, returns forms relating to the previous month.
25. The information referred to in paragraph 24 may include:
 - a) spatial information;
 - b) information on fishing effort;
 - c) catch data;
 - d) by-catch information;
 - e) gear information;
 - f) date and time information;
 - g) vessel information.

Revocations

26. The Byelaw with the title 'BYELAW XII. Shrimp and prawn trawling' made by North Eastern Sea Fisheries Committee in exercise of its powers under the Sea Fisheries Regulation Act 1966 and which were in force immediately before the making of this byelaw is revoked such as it applied within the District.

Schedule 1

Procedure

1. The procedure for restricting the number of shrimp permits issued and setting criteria to restrict the eligibility for a shrimp permit as referred to in paragraph 15, or issuing, varying or revoking flexible permit conditions as referred to in paragraph 22, (in this Schedule, 'the proposed changes') must include the following steps:
 - a) acquisition of relevant available evidence including:
 - i. scientific and survey data, and scientific advice provided by the Authority, the Centre for Environment, Fisheries and Aquaculture Sciences or such other persons as the Authority thinks fit;
 - ii. advice given by Natural England or other external authorities, organisations, persons or bodies as the Authority thinks fit; and
 - iii. information from any other relevant source including that which is relevant to effective enforcement;
 - b) consultation by such methods as the Authority considers appropriate with such stakeholders, organisations and persons as appear to the Authority to be representative of the interests likely to be substantially affected by the proposed changes;
 - c) undertaking an impact assessment relating to the proposed changes;
 - d) consideration by the Authority of all information arising from subparagraphs (a) to (c) above.
2. The Authority must review flexible permit conditions and restrictions of the issuing of shrimp permits no less frequently than every four years after the date that a flexible permit condition or restriction on the issuing of shrimp permits has taken effect.
3. The review of flexible permit conditions or restrictions on the issuing of shrimp permits will be in accordance with a formal operational procedure agreed by the Authority and will include the steps set out in paragraph 1.
4. Where restrictions on the issuing of permits or flexible permit conditions are issued, maintained, varied or revoked shrimp permit holders will be notified in writing.

Schedule 2

Wash and North Norfolk Coast Special Area of Conservation

The following table sets out the co-ordinates of the Wash and North Norfolk Coast Special Area of Conservation as referred to in 1 (r) of the Byelaw above.

The Wash and North Norfolk Coast Special Area of Conservation is defined by a boundary drawn by the series of straight lines connecting points A to D and a line connecting point D to E which follows the land boundary which is to be taken as mean high water springs.		
Point	Latitude	Longitude
A	53 ⁰ 07'.69 N	0 ⁰ 20'.55 E
B	53 ⁰ 03'.66 N	0 ⁰ 28'.16 E
C	53 ⁰ 02'.73 N	01 ⁰ 07'.55 E
D	52 ⁰ 57'.16 N	01 ⁰ 07'.10 E
E	53 ⁰ 07'.69 N	0 ⁰ 20'.55 E

I hereby certify that the Shrimp Permit Byelaw 2018 was made by Eastern Inshore Fisheries and Conservation Authority at their meeting on the xxxxxxxx.

A handwritten signature in black ink, appearing to read 'J. Gregory', written in a cursive style.

Julian Gregory

Chief Executive Officer

Eastern Inshore Fisheries and Conservation Authority

6 North Lynn Business Village, Bergen Way, King's Lynn, Norfolk PE30 2JG

Explanatory Note

(This note does not form part of the byelaw)

This byelaw requires people who fish for commercial purposes from a registered fishing vessel for shrimps within the District to obtain a shrimp permit. They are also required to fish in accordance with any flexible permit conditions issued by the Authority.

Shrimp permits expire on the 1st August each year and a fee is payable to the Authority for the issuing of a shrimp permit which is £100 for a Category One Permit and £44 for a Category Two Permit.

The number of shrimp permits which will be issued by the Authority can be restricted. The Authority can also set criteria to determine which applicants are eligible for a shrimp permit.

To limit the number of shrimp permits or to introduce, vary or revoke eligibility criteria the Authority will carry out a consultation with potentially affected stakeholders and produce an Impact Assessment which will be considered by the Authority.

The issuing of shrimp permits may be suspended until the following 1st August if there is an enhanced risk to stocks or if there is an enhanced risk to site integrity of the Wash and North Norfolk Coast SAC.

The shrimp fishery within the Wash and North Norfolk Coast may be closed for a period or for periods of time not exceeding until the following 1st August if there is an enhanced risk to stocks or if there is an enhanced risk to site integrity of the Wash and North Norfolk Coast SAC.

This byelaw also allows the Authority to impose flexible permit conditions which will reflect best available evidence. These permit conditions will be used to protect fisheries and the environment and to ensure long-term, sustainable fisheries.

The Authority must also review any restrictions on the issue of shrimp permits or flexible permit conditions once every four years as a minimum.

Appendix 7

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)				
<ul style="list-style-type: none"> 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 2

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 2)

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:

4. 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.
5. 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.
6. 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:

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

The intended effects of the measures are as follows:

- To require shrimp fishers to obtain a Shrimp Permit in order to prosecute shrimp fisheries;
- 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;
- To introduce, vary or revoke technical gear requirements and other permit conditions dynamically to prevent adverse effects on site integrity within MPA;
- To require all shrimp fishers to provide the required fisheries data to enable evidenced based management of shrimp fisheries;
- 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;
- 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;
- 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;
- To partially recover costs associated with shrimp management measures.

With regards to the associated permit conditions

- 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
- To require all shrimp fishers to use a separator trawl or sorting grid;
 - To prohibit the use of 'tickler chains' or any other attachment which penetrates the seabed;
 - To prohibits the use of shoes, skids or guides which are not 'flat' across their entire length

With regards to eligibility criteria

- 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) relay 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.



Eastern Inshore Fisheries and Conservation Authority

Shrimp Permit Byelaw 2018

Flexible Permit Conditions – Shrimps

These flexible permit conditions relate to Category One shrimp permits issued under the Shrimp Permit Byelaw 2018 and should be read in conjunction with that byelaw.

Permit conditions

Try-nets

1. No vessel shall carry or deploy more than one 'try net'.
2. 'Try-nets' must be deployed and hauled by hand and meet the following criteria:
 - a) be no more than 500 millimetres in length;
 - b) be no more than 20 kilograms in weight;
 - c) not have tickler chains or any other attachment designed or with the effect of penetrating the seabed except guides, skids or shoe;
3. For the purpose of 1 and 2 above, a 'try-net' is a small trawl deployed by hand from a vessel used to determine the presence or absence of shrimps.

Requirement to have a separator trawl or sorting grid

4. No vessel shall carry or deploy a net, the mesh of which measures between 16 and 31 millimetres unless:
 - a) It is a try net; or
 - b) Netting, the mesh of which measures at least twice that of the codend and no more than 70 millimetres, is fitted across the entire cross-section of the net in such a way that;

- i. Sea fish cannot reach the codend without first passing through the netting; and
 - ii. There is a hole in the net through which all sea fish that do not pass through the netting are able to escape; or
- c) A rigid grid, the spacing between the bars of which is no more than 20 millimetres, is fitted across the entire cross-section of the net in such a way that;
- i. Sea fish cannot reach the codend without first passing through the grid; and
 - ii. there is a hole in the net through which all sea fish that do not pass through the grid are able to escape

Prohibited attachments

5. No vessel shall carry or deploy a net, the mesh of which measures between 16 and 31 millimetres which has the following attachments:
- a. Tickler chains;
 - b. Any item designed or with the effect of penetrating the seabed except guides, skids or shoes.

Guides, skids and shoes

6. No vessel shall carry or deploy a net, the mesh of which measures between 16 and 31 millimetres which uses guides, skids or shoes unless the surface of such which comes into contact with the seabed is flat across its entire length.

Commencement date: xx/xx/xxxx

Latest review date: xx/xx/xxxx

Expiry date: n/a

I hereby certify that the above flexible permit conditions were made by Eastern Inshore Fisheries and Conservation Authority at their meeting on the xxxx.

The above flexible permit conditions come into effect on xx xx xxxx



Julian Gregory
Chief Executive Officer

Eastern Inshore Fisheries and Conservation Authority
6 North Lynn Business Village, Bergen Way, King's Lynn, Norfolk PE30 2JG



Eastern Inshore Fisheries and Conservation Authority

Shrimp Permit Byelaw 2018

Flexible Permit Conditions – Shrimps

These flexible permit conditions relate to Category Two shrimp permits issued under the Shrimp Permit Byelaw 2018 and should be read in conjunction with that byelaw.

Permit conditions

Try-nets

7. No vessel shall carry or deploy more than one 'try net'.
8. 'Try-nets' must be deployed and hauled by hand and meet the following criteria:
 - d) be no more than 500 millimetres in length;
 - e) be no more than 20 kilograms in weight;
 - f) not have tickler chains or any other attachment designed or with the effect of penetrating the seabed except guides, skids or shoe;
9. For the purpose of 1 and 2 above, a 'try-net' is a small trawl deployed by hand from a vessel used to determine the presence or absence of shrimps.

Requirement to have a separator trawl or sorting grid

10. No vessel shall carry or deploy a net, the mesh of which measures between 16 and 31 millimetres unless:
 - d) It is a try net; or
 - e) Netting, the mesh of which measures at least twice that of the codend and no more than 70 millimetres, is fitted across the entire cross-section of the net in such a way that;

- i. Sea fish cannot reach the codend without first passing through the netting; and
 - ii. There is a hole in the net through which all sea fish that do not pass through the netting are able to escape; or
- f) A rigid grid, the spacing between the bars of which is no more than 20 millimetres, is fitted across the entire cross-section of the net in such a way that;
 - i. Sea fish cannot reach the codend without first passing through the grid; and
 - ii. there is a hole in the net through which all sea fish that do not pass through the grid are able to escape

Prohibited attachments

11. No vessel shall carry or deploy a net, the mesh of which measures between 16 and 31 millimetres which has the following attachments:

- c. Tickler chains;
- d. Any item designed or with the effect of penetrating the seabed except guides, skids or shoes.

Guides, skids and shoes

12. No vessel shall carry or deploy a net, the mesh of which measures between 16 and 31 millimetres which uses guides, skids or shoes unless the surface of such which comes into contact with the seabed is flat across its entire length.

Commencement date: xx/xx/xxxx

Latest review date: xx/xx/xxxx

Expiry date: n/a

I hereby certify that the above flexible permit conditions were made by Eastern Inshore Fisheries and Conservation Authority at their meeting on the xxxx.

The above flexible permit conditions come into effect on xx xx xxxx



Julian Gregory

Chief Executive Officer
Eastern Inshore Fisheries and Conservation Authority
6 North Lynn Business Village, Bergen Way, King's Lynn, Norfolk PE30 2JG



Eastern Inshore Fisheries and Conservation Authority

Shrimp Permit Byelaw 2018

Eligibility Criteria

These flexible permit conditions relate to the issuing of permits under Shrimp Permit Byelaw 2018 and should be read in conjunction with that byelaw.

Criteria

Relevant offences

1. A person is not eligible to hold or be named on a shrimp permit if that person has been convicted of or has received a Financial Administrative Penalty for two relevant offences within 36 months immediately preceding application for a permit.

2. For the purpose of criteria 1, a 'relevant offence' means;
 - a) an offence under section 163(1) of the Marine and Coastal Access Act 2009 (c.23);
 - b) an offence in relation to Articles 14, 15, 16 or 25 of Council Regulation (EC) No 850/98;
 - c) an offence under section 3 of the Sea Fish Conservation Act 1967 in relation to non-compliance with The Shrimp Fishing Nets Order 2002.

Commencement date: xx/xx/xxxx

Latest review date: xx/xx/xxxx

Expiry date: n/a

I hereby certify that the above flexible permit conditions were made by Eastern Inshore Fisheries and Conservation Authority at their meeting on the xxxx.

The above flexible permit conditions come into effect on xx xx xxxx

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