



## **Strategic Assessment 2020**

## **Executive summary**

An annual assessment of Eastern IFCA fisheries is undertaken each year. The Strategic Assessment is used to identify the highest risk elements of all the fisheries in the district, including fisheries (stock) sustainability, viability and environmental impacts. The Strategic Assessment draws on a data-driven analysis (the initial assessment) and contextual knowledge of officers (the contextual assessment) to identify work-streams and assign a priority based on the risk. This informs the Business plan.

The initial assessment indicated similar risk scores as were found in the previous assessment. This reflects that work in relation to these priorities is still underway and that risk associated with these work-streams is still of priority. These include delivery of management in marine protected areas (MPAs), and delivery of fisheries sustainability in the crustacean fishery.

Potential works are considered as an output of the assessments. Viable industry is a specific category of work to reflect Eastern IFCA's role in assisting the industry in developing to meet the demands of contemporary fisheries and issues.

The majority of high priorities roll over from 2018; these relate to management of fisheries in MPAs including the development of Monitoring and Control Plans which follow from the 'Amber and green' assessments. Investigation into mussel die-off in The Wash is still identified as a high priority.

The outputs of the strategic assessment also include the identification of established work-streams which contribute to maintaining a lower risk in certain fisheries. These are highlighted to inform decisions related to resource allocation. In addition, future priorities are indicated which may reflect longer-term risk.

## Contents

- 1.0 Introduction
  - 1.1 Requirement for a strategic assessment
  - 1.2 Approach
    - 1.2.1 Initial assessment
    - 1.2.2 Priorities in the context of other drivers and additional criteria
    - 1.2.3 Fisheries management in MPAs
- 2.0 Results
  - 2.1 Fisheries assessment
  - 2.2 High priority works
  - 2.3 Continuation of crucial work
  - 2.4 Identification of future priorities 2020-2120
- 3.0 Principles applied in undertaking priorities
  - 3.1 Consideration of the complete 'fishery'
  - 3.2 Community Voice Method
  - 3.3 Industry viability
- 4.0 Conclusions

<b>Abbreviations</b>	
Bass Nursery Area	BNA
Centre for Environment, Fisheries and Aquaculture Science	Cefas
Community Voice Method	CVM
Department for Environment, Food and Rural Affairs	Defra
Eastern Inshore Fisheries and Conservation Authority	Eastern IFCA
Eastern Sea Fisheries Joint Committee	ESFJC
Habitat Regulation Assessment	HRA
International Council for the Exploration of the Sea	ICES
Inshore Fisheries and Conservation Officer	IFCO
Length Converted Catch Curve	LCCC
Landing Per Unit Effort	LPUE
Monitoring and Control Plans	MCPs
Marine Conservation Zone	MCZ
Marine Management Organisation	MMO
Marine Protected Area	MPA
Marine Strategy Framework Directive	MSFD
Maximum Sustainable Yield	MSY
Minimum Landing Size	MLS
Monthly Shellfish Activity Report	MSAR
Natural England	NE
Oslo-Paris Convention for the Protection of the Marine Environment of the North-East Atlantic	OSPAR Convention
Renaissance of East Anglia Fisheries	REAF
Relative Fluorescent Unit	RFU
Recreational Sea Angler	RSA
Special Protection Area	SPA
Special Area of Conservation	SAC
Study of the Wash Embayment, Environment and Productivity	SWEEP
Tactical Co-ordination Group	TCG
Wash Fishery Order 1992	WFO 1992

## **1.0 Introduction**

### **1.1 Requirement for a strategic assessment**

The inshore fishing sector is varied and dynamic with many different fisheries targeting a range of species with various gears. The inshore environment is also varied; the Eastern IFCA district hosts an array of marine protected areas (MPAs); it contains important spawning and nursery grounds for a variety of species and supports a wide range of industries in addition to the fishing sector. Effective fisheries regulation and conservation management requires more than simple stock management, it needs a holistic approach encompassing environmental, social and economic issues.

IFCAs strive to maintain an effective regulatory framework capable of ensuring sustainable fisheries, healthy seas and a viable industry. This Strategic Assessment is conducted to identify fisheries related issues using a risk-based approach. The focus is on commercial fisheries, but recreational fisheries issues are also included. Best available evidence is used to prioritise fisheries and environmental features which may require management and regulation.

The inshore fishing sector is relatively data-limited – the under-ten metre fishing vessels, which make up the majority of the inshore fleet, are currently exempt from carrying vessel monitoring systems and the requirement to provide landings data, although under-ten catch recording is being implemented during 2020. Unforeseen issues or events often occur outside of the annual planning cycle which cannot be accounted for. As such, whilst this document provides a fixed overview, Eastern IFCA priorities may vary based on changes to best available evidence and changing social and political drivers.

The Strategic Assessment provides an opportunity to identify any emerging issues and to assign priority to identified work streams. This is required to ensure effective planning and delivery of associated tasks. This assessment informs the rolling 5-year business plan and the compliance risk register.

### **1.2 Approach**

Fisheries were identified within Eastern IFCA's district using Marine Management Organisation (MMO) landings data. Whilst this data does have its limitations, it currently represents best available evidence. Each species landed was assessed in relation to criteria as set out below:

- *Evidence base* – an assessment of the available evidence for each species in relation to fishing effort, landings, stock health and presence of spawning and nursery areas.
- *Current Regulation* – assesses species based on measures currently in place in relation to the protection of pre-spawning individuals, gear management and effort restrictions.

- *Ecosystem impacts* – assessment considers the potential ecosystem level impacts of the main gears associated with each species (e.g. by-catch, habitat damage).
- *Fisheries performance* – considers the landed weight and value of catch from within the Eastern IFCA district, any trends in landed catch, landings from within the district as a proportion of the UK total and available ICES advice. This links to issue 3 in CVM: Need to ensure fishing sustainability and viability.

Each species is provided a relative ‘risk’ rank for each criterion. These scores are considered separately (by species) and as part of a fisheries group to identify any key issues. Species are grouped based on similarities in biology and fishing methods.

A further assessment is undertaken looking at wider contextual drivers. This includes a consideration of the presence of fisheries within MPAs, which has a significant effect on prioritisation.

### 1.2.2 Priorities in the context of other drivers and additional criteria

The initial assessment provides an indication of the risk posed by the fishing activities. To more fully explore the risk associated with each fishery, additional criteria are applied, where the data is available, and contextual issues are explored. Below is an explanation of the additional factors and contextual issues which are also considered.

**Spawning and nursery grounds** – inshore fisheries tend to be small scale, targeted by vessels under 10 metres. However, where spawning or nursery grounds occur (as is often the case for inshore areas), even small-scale fishing activities can have a disproportionate effect on the wider stock. The assumption is that there is a greater risk to fisheries sustainability and wider ecosystem impacts where fishing effort overlaps spatially with spawning or nursery grounds. The primary sources of spawning and nursery ground evidence is found within Ellis *et al* 2010<sup>1</sup> and 2012<sup>2</sup> and an Eastern IFCA research report on the composition of commercial catches (2014)<sup>3</sup>.

**Fisheries trends** – MMO data has been used to assess whether a trend can be observed from landings data for the period 2010-2018. Strong trends are associated with a higher risk and a greater priority.

**Recreational activity** – Data on recreational activity is limited for most species. The outputs of the Angling 2012 project by Armstrong *et al.* 2013<sup>4</sup> have been used to judge

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<sup>1</sup> J.R.Ellis, S.Milligan, L.Readdy, A.South, N.Taylor and M.Brown: 2010. MB5301 Mapping spawning and nursery areas of species to be considered in Marine Protected Areas (Marine Conservation Zones); Report No 1: Final Report on development of derived data layers for 40 mobile species considered to be of conservation importance.

<sup>2</sup> Ellis, J.R., Milligan, S.P., Readdy, L., Taylor, N. and Brown, M.J. 2012. Spawning and nursery grounds of selected fish species in UK waters. Sci. Ser. Tech. Rep., Cefas Lowestoft, 147: 56pp

<sup>3</sup> S. Thompson: 2014 Composition of commercial finfish catches. Eastern IFCA Research Report.

<sup>4</sup> M.Armstrong, A.Brown, J.Hargreaves, K.Hyder, S.Pilgrim-Morrison, M.Munday, S.Proctor, A.Roberts, K.Williamson: 2013. Sea Angling 2012 – a survey of recreational sea angling activity and economic value in England.

important recreational species. Recreational landings are not included in MMO landings figures, but the activity plays an important economic role within the district.

**Gear related impacts** – Fishing activity has impacts beyond the effects on the targeted species. Damage to habitats for example varies between gear, some gears have greater ecosystem impacts.

**Ecosystem functioning** – Fishing activities can result in impacts on target species, other marine life and supporting habitats. Indirect impacts could include disruption to food webs, biodiversity loss, changes in the structure of biological communities or a reduced resilience to natural or anthropogenic changes. Such impacts are more difficult to detect and manage than direct impacts, but an attempt has been made to consider this when looking at management measures.

**General biology** – General population dynamics are known for most commercially important species. Aspects of the general biology (for example age at sexual maturity) are assessed in relation to sustainability.

**Political/social context** – In addition to prioritising fisheries by risk, there are also political and social drivers for change, for example Defra’s revised approach to fisheries management and the landing obligation.

**OSPAR requirements** - Consideration has been given to obligations under the Oslo / Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention). This consideration has been based on species and habitats listed within the “List of Threatened and/or Declining Species & Habitats” in OSPAR Region 2, Greater North Sea. Requirements on Eastern IFCA are identified in Appendix 2 (“Summary of Eastern IFCA commitments and planned actions under OSPAR”).

In summary, it is evident that the existing approaches and activities of Eastern IFCA generally satisfy obligations under the OSPAR Convention, and that additional requirements are limited to informing relevant authorities should we become aware of the presence of certain, generally very rare, species or habitats.

**External Influences** – Eastern IFCA recognise that as a public body, we will be influenced by factors beyond our control that may change the strategic landscape throughout the year. This may impact workstreams and how they are prioritised. The strategic assessment therefore represents a snapshot in time of priorities and will be subject to change throughout the year should there be changes required due to external influences.

### **1.2.3 Fisheries management in Marine Protected Areas (MPAs)**

Protection of MPAs from potential impacts of fishing activity is a fundamental obligation of Eastern IFCA outlined in the Marine and Coastal Access Act (2009) <sup>5</sup>, which is

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<sup>5</sup> Marine and Coastal Access Act 2009 (c.23) s.153 and 154

afforded a high priority. This is factored into the additional assessment for each fishery (Section 2.1).

The majority of the Eastern IFCA district is protected by MPAs. These sites contain a range of species and habitat features that require protection, in order to maintain site integrity. An on-going work-stream to assess the impacts of commercial fishing activities within MPAs has identified where management is required. Assessments account for the type and current levels of fishing activity but these will potentially change over time. The intention of assessments is to ensure that fishing activities are not having an adverse effect on the overall integrity of the MPAs; this work is guided by conservation advice provided by Natural England.

Eastern IFCA routinely collects data to monitor fishing activity and compliance within managed areas. Eastern IFCA is required to demonstrate responsive monitoring and management of fisheries in MPAs. Following the completion of fisheries assessments in MPAs, monitoring and control plans will be developed to show how Eastern IFCA will monitor and respond to changes in fishing activity,

Table 1 (below) lists marine protected areas within the Eastern IFCA district and indicates the key fisheries management issues for each site and the priority associated with the potential fisheries risks in each site.

Eastern IFCA is developing monitoring and control plans (M&CPs) to demonstrate how fishing activities within the district are monitored and managed in light of changes in fishing activity. The intention is to allow responsive management. Eastern IFCA will create M&CPs for each major fishing metier in the district, where appropriate, MPA-specific controls will be specified. The order of priority is in table 2 below, priority has been based on factors including levels of fishing effort, economic importance of the fishery and potential impact of the fishery on MPA features.

<b>Table 1. MPAs within Eastern IFCA's district.</b>		
<b>Site name</b>	<b>Key issues for fisheries management</b>	<b>Priority</b>
Humber Estuary Special Protection Area (SPA), Humber Estuary Special Area of Conservation (SAC)	Majority of these two sites are within neighbouring IFCA district. North-Eastern IFCA leading assessment of these two sites. Management measures in place for the protection of eelgrass in Eastern IFCA part of SAC (Eastern IFCA Marine Protected Areas Byelaw 2016). The measures are under review in 2020/21. Potential cockle fisheries (Horseshoe Point) will have to take account of bird food dynamics and disturbance.	Low
Gibraltar Point SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity. Stakeholder interest in fishing activity interactions with protected bird species within this site.	Low
The Wash and North Norfolk Coast SAC	Annual cockle and mussel fisheries managed under the Wash Fishery Order (WFO) are assessed and managed in accordance with the site's conservation objectives. Management in place (spatial closures for bottom towed gear) for vulnerable features within The Wash embayment and along north Norfolk coast. Initial closures implemented via Marine Protected Areas Byelaw 2016 and additional closures via replacement Marine Protected Areas Byelaw 2018 and Marine Protected Areas Byelaw 2019. Additional measures to manage effort in remainder of site to be implemented via Shrimp Permit Byelaw during 2019/20. Management measures are also potentially required for the protection of <i>Sabellaria</i> reef and sub-tidal stony communities from pot fishing activity.	High
The Wash SPA	Annual cockle and mussel fisheries managed under the WFO are assessed and managed in accordance with the site's conservation objectives. Other, non-WFO fisheries has been provisionally assessed and no adverse effects determined at current levels of activity.	High
North Norfolk Coast SPA	Has been provisionally assessed and no adverse effect determined at current levels of activity.	Low
Cromer Shoal Chalk Beds Marine Conservation Zone (MCZ)	Measures progressed (to be implemented via Marine Protected Areas Byelaw 2019) to exclude towed demersal gear from vulnerable chalk and peat feature areas of site. Assessment ongoing into potential impacts from potting fisheries on chalk features. MCZ area is of huge importance to inshore potting fishery and wider North Norfolk communities. Requirement to better understand chalk feature characteristics, extent and frequency of exposure in sediment-dominant areas of site. Close liaison with Natural England to improve understanding of site features and sensitivities.	High
Breydon Water SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	Low
Alde, Ore & Butley Estuaries SAC	Has been provisionally assessed; no adverse effects determined at current levels of activity.	Low
Alde & Ore Estuaries SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	Low
Orfordness to Shingle Street SAC	Has been provisionally assessed; no adverse effects determined at current levels of activity.	Low



Deben Estuary SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	Low
Stour and Orwell Estuaries SPA	Bait digging highlighted as potential cause of disturbance to over-wintering birds; assessment to be updated following NE advice. Natural England lead on management of the bait digging activity at this site.	Low
Inner Dowsing, Race Bank & North Ridge SAC	Eastern IFCA to manage the 0-6nm part of this site, which also extends beyond 12mn offshore. <i>Sabellaria</i> reef requires protection from towed demersal gear; Eastern IFCA to implement regulation for this purpose. Other fishing impacts (including potting) to be assessed.	High
Haisborough, Hammond & Winterton SCI	Eastern IFCA to manage the 0-6nm part of this site, which extends beyond 12mn offshore. <i>Sabellaria</i> reef requires protection from towed demersal gear; measures progressed (to be implemented via Marine Protected Areas Byelaw 2019). Other fishing impacts (including potting) to be assessed.	Medium
Outer Thames Estuary SPA (including extended areas)	MMO undertook assessment of original SPA, which extends from the coast to beyond 12nm. No adverse effects identified at current levels of activity. Site extended in 2018: EIFCA has undertaken preliminary assessment of extension areas within Eastern IFCA district; no adverse effects identified.	Medium
Greater Wash SPA	Site designated in 2018. Extensive site where range of commercial fisheries take place; assessment of commercial fisheries required.	Medium
Southern North Sea SAC	Fully designated in 2019; designated for Harbour porpoise. Extensive site (largest SAC in Europe); small proportion in inshore waters off Norfolk and Suffolk. Assessment of commercial fisheries required. National approach likely to be required given size of site and mobile nature of protected species.	Medium

**Table 2. Prioritisation of monitoring and control plans**

<b>Fishery</b>	<b>Level of activity within MPAs</b>	<b>Economic value of fishery in district</b>	<b>Potential impact on MPA features</b>	<b>M&amp;CP Priority</b>
Shrimp beam trawling	H	H	H	High
Demersal towed gears (excluding shrimp beam trawling)	L	L	H	Medium
Pelagic towed gears	L	M	L	Low
Dredging	L	L	H	Low
Hand-working (access from land)	L	L	M	Low
Hand-working (access from vessel)	H	H	M	High
Static pots and traps	H	H	M	High
Netting (incl. seine nets and other)	M	M	L	Medium
Lines	L	M	L	Low
Other	L	L	L	Low

## **2. Results**

Outputs from the data driven 'initial assessment' and subsequent consideration of contextual drivers (including fisheries management in MPAs) are set out in the tables below. Each fishery is given an overall risk rating (low, medium or high) and each assessment criteria category is also given a risk rating. Key species within each group are identified to ensure that group averages do not dilute the potential issues associated with a single species.

Potential work streams are then considered in relation to various outputs (e.g. additional data acquisition etc.); this is given a priority rank which draws on both the data driven initial assessment and contextual drivers.

Potential new work streams which are considered of a high priority are considered further in section 2.2. The assessment also identifies where risk of sustainability issues is being effectively mitigated by established works streams which have become 'business as usual'. These are set out in section 2.3 and are important when considering what additional work streams can be undertaken within the finite resources of the Authority. Lesser risk work streams are considered in section 2.4 with a view to identify potential future needs, beyond the 2020/21 financial year.

## 2.1 Fisheries Assessment

Group: Bivalve Molluscs	Key Species: Cockles, Mussels	Overall risk: Medium	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: <b>Low</b>	Initial assessment Rank: <b>Low</b>	Initial assessment Rank: High	Initial assessment Rank: <b>Medium</b>
Contextual Rank: <b>Low</b>	Contextual Rank: <b>High</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>High</b>
<p>Due to Eastern IFCA regulations prohibiting the use of fishing gear without authorisation, we have a good evidence base for key species within this group. This makes the score a low risk. It is noteworthy that the evidence base for fisheries outside the Wash is poor, particularly in regard to recreational fisheries. This does not reflect in the risk on the assessment due to these being marginal fisheries, and recreational fisheries not being recorded.</p>	<p>The dominant bivalve mollusc fisheries have a significant level of regulation in place (WFO and byelaws outside the Wash, as such, the assessment scores the group as a low risk. However, Eastern IFCA byelaws relating to bivalves are yet to be reviewed (since being inherited from ESFJC) and management of fisheries outside of The Wash will be hindered by the wording of these.</p> <p>The WFO 1992 has been subject to review since 2016. Several elements have progressed and are nearing completion however, progress has been hampered by other workstreams taking priority. Crucially, work relating to the replacement of the WFO (which expires in 2023) is delayed. The</p>	<p>The high initial assessment rank score relates to Mollusc dredges (bottom towed gear) which have a high ecosystem impact rating. A suction dredge fishery is the highest risk fishery. In addition, fishing activity occurs within spawning grounds (although this is less relevant in terms of the biology of this group).</p> <p>Suction dredge cockle fisheries have not been permitted since 2008 in the Wash and regulation prohibits them without authorisation from Eastern IFCA (inside and outside of The Wash). Officers have undertaken a review of this fishery which indicates that the ecosystem impacts of such a fishery in The Wash could be mitigated. Mitigation would need to be developed and socio-economic impacts of this fishery need to be considered to determine if this would</p>	<p>Cockles dominate this category making up a high proportion of UK catch (weight and value). Cockle landings fluctuate depending on the size of the stock. Landings were high between 2016-2018, following two exceptional settlements, but are now declining again. In addition, three shellfish processing factories operate within the district which also rely, in part, on catch from this group. As such, catch associated with this group has wider value in providing shore-based jobs.</p> <p>Mussel fisheries in the district have previously contributed a significant proportion of national landings (more than 80%) but have declined significantly over the past decade. Officers have identified 'die-off' in both cockles and mussels, the cause of which</p>

	<p>high contextual risk associated with these fisheries primarily reflects the need to develop an appropriate replacement for the WFO before it expires.</p> <p>In addition, WFO Lease conditions need to be amended to reflect the conditions set out in the Wash Biosecurity plan.</p>	<p>be possible. The revised Cockle Management Plan does not have any provision for a suction dredge fishery.</p> <p>Given that Eastern IFCA have regulation in place which manages the main fisheries within this group and that use of dredges or other bottom towed gear is not permitted without completion of an appropriate assessment, the risk to ecosystems is effectively mitigated.</p> <p>The dominant fishery is by hand-working (low impact) and this is managed, through byelaws and the WFO. The main fisheries occur within MPAs and have the potential to impact on site integrity without appropriate management and compliance (which is completed and highlighted within the business-as-usual: critical workstreams section).</p>	<p>has been investigated but cannot be confirmed. It is likely that in both cases the mortalities are due to a combination of environmental stresses that could include parasitic infestations and the impacts of spawning. While regular settlements are keeping the cockle stocks at healthy levels, the mussel beds are suffering poor recruitment. This, combined with the high mortalities, has resulted in significant decline of the mussel beds.</p> <p>In addition, concern has been raised regarding a trend towards smaller (younger) cockles being targeted within the hand-work cockle fishery with impacts on industry viability (due to lower value) and wider stock sustainability impacts.</p> <p>As such, a higher contextual risk is identified than from the initial assessment to reflect the concerns in performance of these two fisheries.</p>
<p><b>Category of works &amp; priority</b></p>	<p><b>Rationale</b></p>		<p><b>Potential works</b></p>

<p>New data / evidence acquisition</p> <p><b>Medium Priority</b></p>	<p>The evidence base for the dominant fisheries is well established and mechanisms are in place to continue gathering evidence as required. A review of the sampling regime for WFO stock assessments was undertaken and no further evidence requirements were identified.</p> <p>A project is being planned with Cefas to study the condition of the inter-tidal mussels in order to identify the cause of their decline.</p>	<ul style="list-style-type: none"> <li>• Gather information regarding recreational hand gathering.</li> </ul>
<p>Monitor / maintenance</p> <p><b>High Priority</b></p>	<p>Given the high economic and cultural value of the bivalve fisheries within the Wash and North Norfolk Coast, maintenance of current levels of monitoring and evidence gathering are required. As both the cockle and mussel stocks in The Wash and the cockle stocks at Horseshoe Point have been suffering from regular high natural mortality events in recent years, regular monitoring is also important. There are significant barriers to opening a fishery at Horseshoe Point. Other work includes data entry, enforcement and SWEEP (food availability monitoring).</p>	<ul style="list-style-type: none"> <li>• Annual cockle surveys;</li> <li>• WFO licence holder consultation;</li> <li>• Horseshoe Point cockle survey;</li> <li>• Maintenance of fisheries data collection and database management</li> <li>• SWEEP</li> <li>• Review of Cockle Sampling regime, to identify whether a change to the number of sample stations could be implemented at a positive cost benefit</li> <li>• Studying condition of the mussels to identify cause of mortalities.</li> </ul>
<p>Regulation</p> <p><b>High Priority</b></p>	<p>A work stream relating to the review of the WFO licence fees, regulations and policies is ongoing and behind schedule. This will potentially include the implementation of Inshore Vessel Monitoring System (IVMS) on the associated fishing fleet.</p> <p>The WFO expires in 2023 and its replacement will require significant amounts of review, legal advice and stakeholder consultation.</p> <p>Shellfish aquaculture is also managed through the WFO within The Wash, primarily through lease conditions. New lease conditions are required to reduce the risk of</p>	<ul style="list-style-type: none"> <li>• Continuation of review of WFO Regulations, Licence fees and Policies including dialogue with the industry;</li> <li>• Implementation of new WFO Shellfish Lay lease conditions;</li> <li>• Development of WFO replacement.</li> </ul>

	<p>biosecurity issues. In addition, recent non-compliance with the lease conditions has led to a review of the conditions and found that redrafting would be beneficial to provide more clarity.</p> <p>A court case involving the Le Strange fishery led to a 'unmanaged area' existing between the private and regulated fisheries. In 2018 Eastern IFCA implemented an emergency byelaw (The Wash Emergency Byelaw 2018). This byelaw is in the process of being replaced and such replacement is anticipated to be in place prior to the expiration of the emergency byelaw.</p> <p>General management within the Le Strange is considered less of a risk given that only certain fishers are permitted to fish within the site and Natural England have put in place a fisheries management plan in consultation with the Le Strange estate. The Horseshoe Point cockle fishery is currently managed through an inherited byelaw which requires review.</p>	<ul style="list-style-type: none"> <li>• Review 'Humber Estuary Cockle Fisheries Byelaw' inherited from North Eastern Sea Fisheries Committee.</li> </ul>
<p>Engagement</p> <p><b>High Priority</b></p>	<p>The Wash fisheries are exploited by a range of differing business models which are often in conflict. In addition, the WFO has a long history and is a relatively complex regulatory mechanism. Further dialogue with the industry is required to develop policies to replace the interim measures currently in place.</p> <p>A revised biosecurity plan has been developed and new lease conditions are in draft to implement identified actions, but this is subject to consultation prior to implementation.</p>	<ul style="list-style-type: none"> <li>• Continuation of WFO review – policy consultation with industry;</li> <li>• Implementation of new WFO lease conditions</li> <li>• Awareness raising and education regarding biosecurity</li> </ul>
<p>Enforcement</p> <p><b>Medium Priority</b></p>	<p>Previous poor behaviours by a minority of fishers has driven the development of new regulations which are pending confirmation by the Minister. Implementation of additional education and awareness raising has reduced non-compliance with WFO Shellfish Lay Lease conditions.</p>	<ul style="list-style-type: none"> <li>• Engagement with fishers in relation to new WFO measures;</li> <li>• Enforcement of WFO measures;</li> <li>• Enforcement of WFO Shellfish Lay lease conditions.</li> </ul>
<p>Environment / ecosystems</p>	<p>The dominant bivalve fisheries within The Wash are compliant with the Habitats Directive as demonstrated by Habitat Regulations Assessments. Monitoring and Control plans are required to ensure continued compliance with the Directive. The</p>	<ul style="list-style-type: none"> <li>• Development of cockle fishery (suction dredge) and mussel fishery management plans for the WFO 1992 fisheries.</li> </ul>

<p><b>High Priority</b></p>	<p>hand-work cockle fishery management plan (the dominant fishery within the district and The Wash) was completed and is in place.</p> <p>Wild Bivalve molluscs are vulnerable to biosecurity events, particularly in The Wash where aquaculture is also present. Non-compliance with lease requirements to notify Eastern IFCA of shellfish movements has been addressed and reduced risk in this area.</p> <p>Bivalve mollusc fisheries within The Wash are also potentially subject to impacts of aquaculture in relation to food availability – the ongoing monitoring programme (SWEEP) is informing on potential impacts and is still ongoing. In addition, mussel beds within the Wash have been exhibiting unexpected mortality, thought to be linked to a number of environmental stresses which could include the presence of a parasite and the impact of spawning behaviour. Partnership work with Hull university has been completed, but no conclusions could be drawn from the work. Eastern IFCA are continuing the work and detecting the cause of mortality remains a priority. A project is currently being planned with Cefas to study the condition of the mussels to help identify possible causes.</p> <p>Habitat Regulations Assessments for private bivalve fisheries have been completed by a partner organisation (Cefas) therefore no further input is required.</p>	<ul style="list-style-type: none"> <li>• Development of relevant monitoring and control plans</li> <li>• Implementation of new lease conditions identified as necessary within the Wash Biosecurity Plan</li> <li>• Continued monitoring of Chlorophyll RFU values and mussel meat counts (SWEEP project) to inform the HRA associated with aquaculture in The Wash</li> <li>• Continue to investigate cause of mussel mortality in The Wash.</li> </ul>
<p><b>Viable Industry</b></p> <p><b>High Priority</b></p>	<p>The review of the WFO will have significant implications on industry viability, particularly in relation to the issuing of licences to fish within WFO fisheries. The current system has inhibited new entrants into the fishery whilst enabling others to maintain a licence which is effectively used by another person, circumventing Eastern IFCA's management of the system. In addition, concerns have been raised about lower value, smaller cockles being dominant in The Wash and the targeting of these by a majority of fishers. This in part reflects the 'die-off' of adult cockles on many beds after spawning. This has led to concerns regarding the viability of the hand-work fishery for larger vessels with higher operating costs in</p>	<ul style="list-style-type: none"> <li>• Enabling lay activity</li> <li>• Investigation into mussel die off</li> <li>• Economic assessment of hand-work cockle fishery viability</li> <li>• Review of WFO as highlighted in other sections.</li> </ul>

	<p>the context of the fishery having a two-tonne daily quota (i.e. with the lower value of cockle, two tonnes per day makes the fishery unviable). It should be noted that concerns for hand-work viability is not a view commonly shared.</p> <p>Further, continued viability of WFO lays is of increased importance given the continued declines of wild mussel beds.</p>	
Species trends	<p>Cockle stocks were at high levels between 2016-2018 (primarily due to exceptional cockle settlements in 2014 and 2016. These declined in 2019 but remained above the average. Mussels have a negative trend (primarily due to a very large subtidal fishery in 2010 setting a high benchmark, followed by high mortalities and poor recruitment on the regulated inter-tidal beds). No landings of mussel have occurred. No emerging fisheries are detected in initial assessment.</p>	



<b>Group: Crustaceans</b>		<b>Key Species: Brown Crab, Lobster</b>		<b>Overall risk: High</b>	
<b>Evidence base</b>		<b>Current Regulation</b>		<b>Ecosystem impacts</b>	
Initial assessment Rank: <b>Low</b>		Initial assessment Rank: <b>Low</b>		Initial assessment Rank: <b>Low</b>	
<b>Contextual Rank: High</b>		<b>Contextual Rank: High</b>		<b>Contextual Rank: High</b>	
<p>The group scores low in the initial assessment which reflects a high level of data collection (including effort data). However, the current evidence base associated with the two-main species (edible crab and lobster) does not have the spatial resolution to fully inform management and is of relatively low confidence due to the data collection methods (fishery dependent). MSAR data is also augmented by scientific (length frequency) data collection although this has been found to be insufficient in relation to lobsters. Additional data is required to inform the Cromer Shoal MCZ impact assessment including social and economic impacts on fishers if management measures are required.</p>		<p>The majority of species within this group are not regulated but reflect marginal fisheries. The two dominant species (crabs and lobsters) do have associated national and IFCA management measures in place covering two key areas (minimum sizes and capacity limitation).</p> <p>These management measures are subject to an ongoing review which reflects that the measures in place are insufficient to conclude that the fisheries are operating at maximum sustainable yield. Stakeholders have also indicated need for additional measures, although there is no clear consensus as to what the measures should be.</p>		<p>These fisheries are dominated by potting fisheries which score low for ecosystem impacts.</p> <p>However, the assessment of pot-based fisheries within Cromer Shoal is ongoing and new evidence has indicated that there is the potential for damage to occur although the scale and potential for impact on the conservation objectives are still unknown. The higher risk associated with this fishery reflects this.</p>	
				Landed value and weight is high for two key species (brown crab and lobster) and scientific advice (CEFAS) indicates that both stocks are being exploited at levels exceeding maximum sustainable yield.	
				The initial assessment score for this group is medium, but this is largely due to species that have been landed but in low weights. Weights for key species Brown crab and Lobster are 3 <sup>rd</sup> and 6 <sup>th</sup> respectively. Value of catch ranked 1 <sup>st</sup> and 3 <sup>rd</sup> respectively.	
				In addition, some fishery stakeholders have raised concerns about excessive fishing effort (particularly on the North Norfolk Coast) including the landing of poor-quality female crabs over autumn and winter primarily to be sold as bait for other fishers.	
<b>Category of works &amp; Priority</b>		<b>Rationale</b>			<b>Potential works</b>

<p>New data / evidence acquisition <b>High Priority</b></p>	<p>Further fishing activity data is needed in general but particularly in relation to potting within the Cromer Shoal MCZ to complete an impact assessment.</p> <p>Under ten catch recording has replaced the Monthly Shellfish Catch Recording forms (MSARs) and this system is likely to provide better data by virtue of it being entered by fishers directly into the database via a smart phone app (i.e. reducing level of human error during input). However, additional spatial information is required to undertake Eastern IFCA assessments and this is subject to dialogue with the MMO and Cefas.</p> <p>In addition, further evidence is required to assess the lobster fisheries productivity.</p>	<ul style="list-style-type: none"> <li>• Partnership work with Cefas and MMO to develop under ten reporting (which replaced MSAR forms) as higher spatial resolution and effort data is needed;</li> <li>• Additional length frequency data needed for lobsters to inform MSY models;</li> <li>• Potting activity within the Cromer Shoal MCZ to inform an impact assessment.</li> </ul>
<p>Monitor / maintenance <b>Medium priority</b></p>	<p>Current levels of data collection are limited but need to be maintained and furthered to prevent any increases in risk.</p>	<ul style="list-style-type: none"> <li>• Continue crab and lobster bio-sampling regime to inform development of MSY models;</li> <li>• Develop sampling regime to potentially collect information about catches (rather than landings) and collect information about weight and the length/weight relationship.</li> <li>• Monitor effort levels to assess if increases are occurring.</li> </ul>
<p>Regulation <b>High Priority</b></p>	<p>Whilst the fisheries are thought to be operating at levels exceeding those required for maximum sustainable yield, they are not currently thought to be in imminent danger of collapse and the fisheries are already regulated more than other fisheries.</p> <p>That said, recent increases in potting effort (reported anecdotally) has increased risk in this context, with no current regulation in place to limit effort in terms of pot numbers. Subject to the outcomes of the assessment of potting within the MCZ, regulation may also be required for the protection of features within the MCZ.</p>	<ul style="list-style-type: none"> <li>• Development of management measures in relation to crab and lobster fisheries sustainability</li> <li>• Development of management measures (as required) for the protection of the Cromer Shoal MCZ</li> <li>• Development of relevant monitoring and control plans</li> </ul>

<b>Engagement High Priority</b>	The crab and lobster fisheries on the N. Norfolk coast are not only of high economic importance but also cultural importance. Engagement is required to develop fisheries sustainability measures and management of potting activity within the Cromer Shoal MCZ (as required) both of which have the potential to impact on fishing activity.	<ul style="list-style-type: none"> <li>• Engagement to gather information for the MCZ assessment;</li> <li>• Engagement to develop management measures;</li> </ul>
<b>Enforcement Low Priority</b>	Compliance in relation to the key species is generally good. Current levels of presence/engagement need to be maintained to deter non-compliance. If new measures are introduced, enforcement risk and priority would likely increase to reflect compliance engagement and education.	<ul style="list-style-type: none"> <li>• Continue routine engagement and compliance checks in accordance with the Compliance Risk Register and TCG.</li> <li>• Development / training in relation to berried lobster ban for IFCOs.</li> </ul>
<b>Environment / ecosystems High Priority</b>	An assessment of impacts of fishing activity in relation to the Cromer Shoal MCZ needs to be undertaken. Monitoring and control plans will be required as this activity takes place predominantly within MPAs. There have been issues raised in relation to biosecurity for this fishery particularly in relation to the bait used in pots.	<ul style="list-style-type: none"> <li>• Development of relevant Monitoring and control plans</li> <li>• Cromer Shoal MCZ – fishing impact assessment</li> </ul>
<b>Viable Industry High Priority</b>	<p>The development of crab and lobster sustainability measures will include extensive dialogue with the industry to ensure that the short-term impacts of any measures on fishing viability are understood. Initiatives started by the industry are being considered including the use of escape gaps. In addition, the use of any ‘edible’ crab as bait is presently restricted under an Eastern IFCA byelaw. Other IFCA’s make an exception for cooked offal which would otherwise go to waste. This will be reviewed alongside the development crab and lobster measures.</p> <p>The Marine Conservation Society have assessed the Southern North Sea edible crab and lobster fisheries as ‘fishery requires improvement’ as part of their ‘good fish guide’. This rating has the potential to limit the market that the fishery can supply, with some buyers reportedly only buying in accordance with this guide. In the first instance, dialogue is needed with the producers of the guide to ensure that</p>	<ul style="list-style-type: none"> <li>• Engagement in relation to the development of measures.</li> <li>• Dialogue with Marine Conservation Society regarding ‘Good Fish Guide’ assessment for <i>Cancer pagurus</i> and <i>Homarus gammarus</i> in Southern North Sea</li> <li>• Facilitation of the development of a Fisheries Improvement Plan.</li> </ul>

	<p>the assessments reflect the best available evidence. The assessment does however broadly align with the Eastern IFCA assessment, i.e. that stocks assessments indicate that the stock is approaching or at maximum sustainable yield and that there are limited management measures in place to compliment national measures.</p> <p>Development of a Fisheries Management Plan (FIP) will be of benefit to industry viability as retailers have identified that such plans bring consumer confidence. These are effectively a 'pre-assessment' of a fishery against the criteria set out in the MSC accreditation process and which identifies areas where the fishery can improve sustainability. Such a plan would be analogous with Eastern IFCA's process for identifying and implementing management measures and there is potential that a FIP would be of wider benefit, effectively implementing voluntary measures which have effect outside of the Eastern IFC District.</p>	
Species trends	<p>Velvet swimming crabs show a negative trend. Annual landed weights of velvet swimming crabs have declined from a peak (20 tonnes) in 2011 to 1.1 tonnes in 2018 (This is possibly due to environmental factors. -e.g. warm winter, favouring velvet crabs in 2010-2011, resulting in an increased abundance). Catches have also always been very variable and can be dependent on fluctuating markets. Green Crab shows a positive trend, prior to 2018, when there were no landings. The weight landed is low and this is seen as a marginal fishery.</p> <p>Brown Crab show a strong positive trend, with 2018 having particularly high landings at 3211 tonnes. This is over double the average for the 8 year period and represents the 3<sup>rd</sup> largest landing of any species in 2018. Lobster displays a relatively stable trend throughout the 8 year period, although the landed weight in 2018 is the lowest seen during this period, however this is only marginally so.</p>	

<b>Group: Demersal</b>	<b>Key Species: Bass, Cod</b>	<b>Overall risk: Medium</b>	
<b>Evidence base</b>	<b>Current Regulation</b>	<b>Ecosystem impacts</b>	<b>Fisheries performance</b>
Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Low</b>
Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Medium</b>
<p>The evidence base in relation to demersal fisheries is limited, particularly in relation to effort data. That said, many of the species represented have ICES stock assessments undertaken which provide a strong evidence base. In addition, under ten-metre vessels are now required to submit catch returns which will resolve the gap in catch data. Further activity data is required in relation to the levels of use of gear in relation to ecosystem impacts and protection of MPA features although this is mitigated in part by the under ten catch recording. Netting activity data is potentially required at a</p>	<p>Eastern IFCA has only limited management measures in place however, these fisheries are heavily managed through national and European measures.</p> <p>European measures were amended significantly in 2019 to reflect the new Common Fisheries Policy and particularly the landing obligation. As a result of the amendments, European measures (including minimum landing sizes and mesh requirements for nets) no longer apply to non-commercial fishers. This has increased the contextual risk associated with this category as fishing mortality from non-commercial fishing activity can be high for some species (for example bass and cod). In addition, this compounds the risk associated with 'unregulated netting' particularly which was perceived as a risk in any-</p>	<p>Demersal fishing gears include bottom-towed-gears, which score highly for potential ecosystem impacts (particularly habitat damage) and nets which have the potential to remove large number of fish very efficiently. Where these are deployed within nursery or spawning areas, there is the potential for disproportionately large impacts in wider stocks. This is compounded by the existence on 'unregulated netting' and the absence of any designated 'bass nursery areas' within the Eastern IFCA District despite their presence being known.</p> <p>Potential impacts on MPAs have been mitigated through continued development of restricted areas to protect designated features and sub-features at risk from this activity. Whilst some of these are yet to be implemented (as they are still subject to the byelaw making processes) and</p>	<p>Whilst demersal fisheries are low risk in the initial assessment a proportion of economic value is not thought to be detected by the MMO landings data used in the assessment (under ten catch recording was implemented end of 2019 so cannot inform this assessment). In addition, some species are particularly valuable even in small quantities (e.g. bass). This is thought to be particularly relevant in Suffolk where many small-scale fishers land small amounts and sell direct to the public. Therefore, the economic importance of these fisheries is potentially underestimated. Figures</p>

<p>higher resolution in relation to bycatch of porpoises, seals and seabirds. Catch recording also does not fill the data gap of unregulated and recreational netting.</p>	<p>case, especially in the context of fishing with nets in rivers and estuaries due to the unknown scale of such activities. This has been mitigated in part (for minimum landing sizes) through the implementation of an emergency byelaw, the replacement for which is in the process of being made. However, this exercise also highlighted that many minimum sizes set out in European legislation have only a limited effect in any case – often they do not represent the size that the species become mature. Whilst this increases risk, the current minimum sizes do still have some protective effect and so risk is not considered high.</p>	<p>others may need to be implemented (in relation to Inner Dowsing, Race Bank and North Ridge particularly), this does represent significant mitigation against this risk. This mitigation is responsible for downgrading the associated risk to medium overall.</p> <p>Risk on MPA features and sub-features still exists in relation to birds and cetaceans as these are yet to be assessed.</p>	<p>do not include recreational activity which has wider ranging economic benefit. These species have a high value at certain times of the year which can mean that they are a very important fishery on an individual basis if not in a broader economic sense. Possible increase in number of vessels targeting mullet, which should be monitored as would increase risk in relation to this species.</p>
<b>Category of works/ Priority</b>	<b>Rationale</b>		<b>Potential works</b>
<p>New data / evidence acquisition</p> <p><b>Medium Priority</b></p>	<p>Effort and fisheries data are not necessarily required from a ‘stock management’ perspective but is required for MPA management and fishing in spawning and nursery areas. Further evidence is potentially required in relation to the presence of spawning and nursery areas within the district, given the changes in water temperature increasing importance of BNA. Collection of better fisheries data in relation to these fisheries was given a medium priority in 2016/17 but initial work streams proved unsuccessful. Collection of catch reporting data for the under 10m vessels is being led by the MMO and is now implemented which has reduced risk associated with this element however data is still required at a higher spatial resolution than is presently available to inform MPA assessments. Additional data collection related to netting</p>		<ul style="list-style-type: none"> <li>• Continue to support the MMO regarding the implementation of under 10 catch reporting.</li> <li>• Continue to provide evidence in relation to development of BNAs;</li> <li>• Review the applicability and utility of collecting voluntary fisheries data.</li> </ul>

	<p>activity (both recreational and commercial) would bring benefits across multiple workstreams.</p>	<ul style="list-style-type: none"> <li>• Undertake gap analysis of fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>
<p>Monitor / maintenance</p> <p><b>Medium Priority</b></p>	<p>Development of ‘unregulated netting’ measures was a 2016/17 priority but Eastern IFCA involvement in BNA development is likely to have a similar benefit (in relation to the impacts of netting in estuaries and rivers) although, any gaps left by the BNA work will need to be identified through the continuation (or re-evaluation) of unregulated netting.</p> <p>In other areas around England live wrasse fisheries have come under increasing pressure due to their use as cleaner fish in fish farms. Wrasse take a long time to reach sexual maturity and therefore are vulnerable to over exploitation. It is not thought that the required habitat for this species is extensive on the coast of this district which will limit the fishery.</p>	<ul style="list-style-type: none"> <li>• Re-assess needs for ‘unregulated netting’ measures in the context of BNA’s.</li> <li>• Monitor uptake of Wrasse fisheries.</li> </ul>
<p>Regulation</p> <p><b>Medium Priority</b></p>	<p>Demersal species are heavily regulated by national and European measures. Whilst monitoring and control plans are necessary for bottom-towed-gears, impacts from their use are mitigated through the development of restricted areas where the gear is prohibited.</p> <p>Unregulated netting is thought to occur within the district at unknown levels. Nets are very effective methods of capturing fish and as such, pose a risk to stocks particularly when occurring in nursery or spawning areas. This issue is highlighted as part of the Angling Trust’s Dossier on Inshore Netting Reform. The emergence of BNA within the district and the planned introduction of such reduces the risk in relation to ‘unregulated netting’ however this Defra-led workstream has not progressed in the last two years Eastern IFCA contribution to this work will mitigate the associated risk once the workstream continues again. In addition, recently imposed bass regulations (European Commission measures) have reduced the associated risk in a strategic sense as both commercial and recreational fishers are heavily restricted.</p>	<ul style="list-style-type: none"> <li>• Consideration of 2020 bass measures in relation to ICES stock assessments and local conditions;</li> <li>• Partnership working in relation to the development of BNA;</li> <li>• Implement Minimum Sizes Byelaw 2019;</li> <li>• Investigate need for increased minimum sizes for fish and shellfish and application of net mesh requirements to non-commercial fishers.</li> </ul>

	<p>Risk is upgraded to medium to reflect the significant gap in European regulations resultant of the recent amendments to technical conservation measures and having identified that the minimum sizes set out therein have a limited protective effect in some cases. A workstream to mitigate this started in 2019/20 including the drafting of a byelaw to maintain the protective effect lost as a result of the amendments. Further work will be required in 2020/2021 to implement the byelaw and consider what further measures may be required (including if applying net mesh size requirements on non-commercial fishers is required).</p>	
<p>Engagement <b>Medium Priority</b></p>	<p>Consultation will be required to implement the Minimum Sizes Byelaw 2019 and to consider appropriate minimum sizes and net mesh requirements.</p>	<ul style="list-style-type: none"> <li>• Engagement with RSA to obtain fisheries data;</li> <li>• Engagement with fishers regarding BNA and other bass measures;</li> <li>• Consultation for Minimum Sizes Byelaw 2019;</li> </ul>
<p>Enforcement <b>High Priority</b></p>	<p>Compliance with European bass measures is of high risk given the unfavourable state of the bass stocks. Engagement with commercial and recreational fishers is required to ensure understanding of the measures. Further enforcement may be required to ensure compliance with the landing's obligation.</p> <p>Enforcement (including education and engagement) of new closed areas will be required as these are implemented through 2020. That said, these closures primarily effect shrimp fishing activity rather than demersal trawling for finfish.</p>	<ul style="list-style-type: none"> <li>• Bass related enforcement and engagement;</li> <li>• Intel gathering and partnership working with MMO (bass and landing obligation).</li> </ul>
<p>Environment / ecosystems  <b>Medium Priority</b></p>	<p>Impacts of fixed and drift netting to be considered in relation to SPA bird species and porpoises. Bottom-towed-gear management in relation to 'red-risk' gear/habitat interactions has progressed during 2019 and are nearing completion to the effect that risk has reduced. Implementation is pending byelaw making procedures rather than development of proposed closures.</p>	<ul style="list-style-type: none"> <li>• Monitoring and control plans;</li> <li>• Undertake gap analysis of impacts data relevant to assessing fishing impacts on SPA bird species and porpoises;</li> <li>• Implementing management measures for 'red-risk'</li> </ul>



		gear/feature interactions within MPAs.
<b>Viable Industry</b> <b>Medium Priority</b>	Certain fishers rely almost entirely on a limited number of species (cod, bass, sole, skate) which are presently either in a poor state or heavily regulated. Any potential works which could reduce reliance on these few species would likely be of benefit to the viability of the industry and the fisheries in the long-term. In particular, there is significant latent capacity in the herring fishery of East Anglia which was once a prominent fishery. Eastern IFCA is engaging with the REAF which aims to resolve some of the issues identified in this regard.	<ul style="list-style-type: none"> <li>• Explore initiatives to invigorate the herring fishery;</li> <li>• Continue to work with the REAF project.</li> </ul>
Species trends	<p>A strong negative trend is seen in cod landings however this is most likely driven by EU and national level quota management. Late 2016, 2017 and 2018 saw very low abundance of cod, missing its usual winter peak. No other species show strong trends in addition to appreciable landed weights. No high-risk trends are detected.</p> <p>Bass landings in 2018 were appreciably higher than any of the previous 7 years at 19.5 tonnes (average of 7 years previous 12.85 tonnes). National landings of this species remain stable (following EU bass measure implementation).</p> <p>Cod and Bass respectively are 8<sup>th</sup> and 13<sup>th</sup> with regards to landed weight. They are also 8<sup>th</sup> and 9<sup>th</sup> respectively for economic value. The economic reliance on these two species is high for certain fishers. MMO landing figures for Bass show that within our district fishing mortality has gone up slightly from 2016 to 2017 and into 2018. The aim of the EU measures was a 50% reduction in fishing mortality. This has not been the case in our district. Therefore, there was potentially a lot of latent capacity with the management measures that were implemented in our district.</p>	

<b>Group: Dogfish and Sharks</b>	<b>Key Species: L.S.D.</b>	<b>Overall risk: Low</b>
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Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: <b>High</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Low</b>
Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>
<p>Fisheries evidence is poor including effort and catch data (especially given their use as bait species). This will be mitigated to an extent through catch recording requirements for under ten-metre fishing vessels.</p> <p>However, the level of catch retained for the purpose of using it as bait is not well understood and as such a risk remains.</p>	<p>Some species within the group are subject to no-take restricts (i.e. most sharks). Dogfish have limited regulation and are thought to be biologically vulnerable to recruitment over-fishing although it is recognised that they have a higher survivability than other species, reducing their vulnerability. Fishing mortality is thought to be relatively low within the district, according to landings data.</p> <p>Eastern IFCA byelaw 14 prohibits the removal of Tope.</p>	<p>Most fishing is conducted via longlines and nets which have limited ecosystem impacts although some are caught as unintended by-catch via trawls. Given the small proportion of UK landings taken from within the district, impacts on spawning and nursery areas are likely to be limited, relative to other target species.</p>	<p>ICES advice is generally favourable for dogfish but poor for sharks (sharks are however generally subject to no-take restrictions). None of these fisheries are particularly important from an economic perspective and, with one exception represent less than 0.02% of UK total catch (lesser-spotted-dogfish LSD) being the exception at 0.65% which is decreased since previous years). Many dogfish species are likely to be more important as bait for other fisheries (and may be under recorded as a result). ICES advice is currently favourable for lesser-spotted-dogfish.</p> <p>Activity within the district is relatively limited, does not represent a significant proportion of UK landings and is within ICES advice. A key message that came from fishers is that catches of spurdog are very high and they should be able to land them.</p>
<b>Category of works/Priority</b>	<b>Rationale</b>		<b>Potential works</b>
New data / evidence acquisition <b>Low Priority</b>	Except for LSD, all the species are marginal with regards to landed weight, have favourable ICES advice or are no-take species. LSD are an important bait species within other fisheries (e.g. crab and lobster) and as such, landed weight		<ul style="list-style-type: none"> <li>• Develop mechanism to monitor levels of LSD use as bait to gain better understanding of overall fishing mortality;</li> </ul>

	indicated from MMO data is potentially an underestimate of catch.	<ul style="list-style-type: none"> <li>• Undertake gap analysis of fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>
Monitor / maintenance <b>Low Priority</b>	Eastern IFCA are involved with the Cefas led Elasmobranch Steering Group, which might at some stage conduct some research into the impacts of windfarm cables on elasmobranchs. Continuation (and some further development) of voluntary landings data work streams are beneficial particularly in relation to lesser-spotted-dogfish. This work requires review in the context of national changes to legislation to see if it is still required.	<ul style="list-style-type: none"> <li>• Partnership working with CEFAS re shark / dogfish research where possible;</li> <li>• Review/development of voluntary landings data.</li> </ul>
Regulation <b>Low Priority</b>	None identified.	<ul style="list-style-type: none"> <li>• None identified</li> </ul>
Engagement <b>Low Priority</b>	Given the limited available data, dialogue with the industry is important to detect changes in activity levels or emerging fisheries. However, the levels of fishing activity are considered low within the district which reflects the lower priority.	<ul style="list-style-type: none"> <li>• None identified</li> </ul>
Enforcement <b>Low Priority</b>	There is limited regulation which can be enforced (except for Tope for which there is an Eastern IFCA byelaw).	<ul style="list-style-type: none"> <li>• Continue routine engagement and compliance checks in accordance with the compliance risk register and TCG.</li> </ul>
Environment ecosystems <b>Medium Priority</b>	Monitoring and control plans prioritise areas where this is not a primary fishery but will ultimately be considered through plans (primarily in Suffolk estuaries). Impacts of fixed and drift netting to be considered in relation to SPA bird species and porpoises. Bottom-towed-gear management is also required in relation to 'red-risk' gear/habitat interactions although activity levels within this fishery are relatively low.	<ul style="list-style-type: none"> <li>• Development of relevant monitoring and control plans;</li> <li>• Undertake gap analysis of impacts evidence relevant to assessing fishing impacts on SPA bird species and porpoises;</li> <li>• Implement management measures for 'red-risk' gear/feature interactions within MPAs.</li> </ul>
Viable Industry <b>Medium Priority</b>	Spurdog catches can be very high at certain times of the year, in certain locations (currently a zero TAC species). Fishers have reported that they have to discard large amounts, and this	<ul style="list-style-type: none"> <li>• Work with partner organisations to report this issue from fishers.</li> </ul>

	<p>is both time consuming and makes long lining unfeasible at certain times of the year. The high abundance of spurdog is a phenomenon local to the south east of the North Sea, with overall low stocks. The possibility of a “Sentinel Fishery” approach (as used of the SW of England) will require continued interaction of the industry with the CEFAS project for some time.</p>	
<p>Species trends</p>	<p>LSB show a strong positive trend with annual landed weight increasing from 1 tonne in 2010 to 9 tonnes in 2016 which dropped to 4 tonnes in 2017 and 1.4 tonnes in 2018. Whilst this is a modest annual landed weight (and circa 1% of UK landed weight). It is also important to note that a certain amount of catches of these species will not be reported due to its use as bait in potting fisheries. Smoothound landings are the other species of note within this group. Landings have been consistent with no strong trend. However, this is likely to be due to quota/fisheries management rather than species trends.</p>	

<b>Group: Flatfish</b>	<b>Key Species: Sole, Plaice, Flounder, Dab</b>	<b>Overall risk: Medium</b>	
<b>Evidence base</b>	<b>Current Regulation</b>	<b>Ecosystem impacts</b>	<b>Fisheries performance</b>
Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>High</b>	Initial assessment Rank: <b>Medium</b>
Contextual Rank: <b>Low</b>	Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Medium</b>
<p>Eastern IFCA evidence base in relation to flatfish fisheries is limited, particularly in relation to effort data. That said, many of the species represented have ICES stock assessments undertaken which provide a strong evidence base. In addition, under ten-metre vessels are now required to submit catch returns which will resolve the gap in catch data. Further activity data is required in relation to the levels of use of gear in relation to ecosystem impacts and protection of MPA features although this is considered of a lower risk given relatively low activity levels. Netting activity data is potentially required in relation to bycatch of</p>	<p>Eastern IFCA has only limited management measures in place however, these fisheries are generally managed through national and European measures. However, due to gaps in the national legislative system, 'unregulated netting' is thought to occur. This tends to be undertaken by small scale fishers but when undertaken in nursery or spawning areas, does have the potential to have disproportionately large impacts on wider stocks.</p>	<p>Demersal fishing gears include bottom-towed-gears, which score highly for potential ecosystem impacts and nets which have the potential to remove a large number of fish very efficiently. Where these are deployed within nursery or spawning areas, there is the potential for disproportionately large impacts in wider stocks. This is compounded by the existence on 'unregulated netting'.</p> <p>Potential impacts on MPAs have been mitigated through continued development of restricted areas to protect designated features and sub-features at risk from this activity. Whilst many of these are yet to be implemented (as they are still subject to the byelaw making processes) and others may need to be implemented (in relation to Inner Dowsing, Race Bank and North Ridge particularly), this does represent significant mitigation against this risk. This mitigation is responsible for downgrading the associated risk to medium overall.</p>	<p>Whilst flatfish fisheries are not detected as a particularly high risk within the initial assessment, a proportion of economic value is not thought to be detected by the current MMO landings data. In addition, some species are particularly valuable even in small quantities (e.g. sole). This is thought to be particularly relevant in Suffolk where many small-scale fishers land small amounts and sell direct to the public. Therefore, the economic importance of these fisheries is potentially underestimated, particularly when considering the that a large proportion of fishing activity is also recreational which tends to generate a wider ranging economic</p>

<p>porpoises and SPA bird species. Any unregulated and recreational netting occurring in the district will persist as a data gap.</p>		<p>Risk on MPA features and sub-features still exists in relation to birds and cetaceans as these are yet to be assessed. Entangling nets used also have a relatively high ecosystem impact score given the high levels of bycatch, particularly in relation to the mixed fisheries.</p>	<p>benefit. ICES advice is favourable for the highest landed weight species (including sole).</p>
<b>Category of works / Priority</b>	<b>Rationale</b>		<b>Potential works</b>
<p>New data / evidence acquisition <b>Low Priority</b></p>	<p>The implementation of under ten catch recording has mitigated risk in relation to this element to an extent. Whilst no data is available for 'unregulated netting' (i.e. from non-commercial fishing activity) it is thought to be less relevant and as such less of a risk to this group than for demersal and pelagic round fish. This includes in relation to the amendments to European regulation which have removed mesh size requirements in relation to non-commercial fishing which is again more relevant to other groups. Data of higher spatial resolution may be required for assessment of netting impacts on SPA bird species.</p>		<ul style="list-style-type: none"> <li>• Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises;</li> <li>• Development of sole fishing activity data (data sharing agreement with MMO).</li> <li>• Collect information around amount of bycatch of these species</li> </ul>
<p>Monitor / maintenance <b>Low Priority</b></p>	<p>The development of BNA has stalled nationally however, this has not increased risk in relation to this group as it is more relevant to other demersal fish species. Bottom-towed-gear activity has been assessed for relevant MPAs and no other work-streams are currently associated with this group which reflects the reduction in priority.</p>		<ul style="list-style-type: none"> <li>• Re-assess needs for 'unregulated netting' measures in the context of BNA development.</li> </ul>
<p>Regulation <b>Medium Priority</b></p>	<p>Flatfish species are generally regulated by national and European measures however, amendments to European Regulation have removed application of minimum size requirements to non-commercial fishers and mesh size requirements. Given that sole are a commercially important species within this group which are subject to a minimum size and which are targeted by recreational fishers, risk increases in relation to</p>		<ul style="list-style-type: none"> <li>• None identified</li> </ul>

	regulation. The priority has been increased to medium as a consequence. Whilst monitoring and control plans are necessary for bottom-towed-gears, it is unlikely that regulation will be required initially in relation to these fisheries due to low levels of activity using this metier. In addition, development of restricted areas where use of bottom towed gear is prohibited has almost concluded and several such restrictions are implemented which reduces risk in relation to MPA management.	
<b>Engagement</b> <b>Medium Priority</b>	Additional fisheries data from under ten catch recording has reduced risk for this element but activity in relation to 'unregulated netting' and recreational activity in general is still dependant on engagement with stakeholders. In addition, engagement will be required in relation to determining if minimum sizes are appropriate.	<ul style="list-style-type: none"> <li>• Engagement with RSA sector to obtain fisheries data;</li> <li>• Engagement with fishers regarding BNA.</li> </ul>
<b>Enforcement</b> <b>Medium Priority</b>	Flatfish fisheries are generally marginal although some high value species present a higher enforcement risk at certain times of the year. Given the full implementation of the Landing Obligation and under ten catch recording and recent changes to European technical measures (particularly in relation to gear requirements) education and engagement will be a priority element at peak fishing periods. Collaborative work with the MMO is also required.	<ul style="list-style-type: none"> <li>• Continue routine engagement and compliance checks in accordance with the Compliance Risk Register and TCG;</li> <li>• Educate and engage in relation to 'new' measures.</li> </ul>
<b>Environment / ecosystems</b> <b>Low Priority</b>	Ecosystem impacts related to use of bottom towed gear for this group are largely mitigated through the development of restricted areas to protect MPAs. Use of static and drift nets for this group has the potential to impact on cetaceans and SPA bird species although activity levels from a commercial perspective are thought to be low. Non-commercial fishing with nets in this group is likely to be more relevant and this will be addressed through development of monitoring and control plans.	<ul style="list-style-type: none"> <li>• Monitoring and control plans;</li> <li>• Undertake gap analysis of impacts data relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>
<b>Viable Industry</b> <b>Low Priority</b>	Certain fishers rely almost entirely on a limited number of species (cod, bass, sole, skate) which are presently either in a poor state or heavily regulated. Any potential works which could reduce reliance on these few species would likely be of benefit to the viability of the industry and the fisheries in the long-term. In particular, there is significant latent capacity in the herring fishery of East Anglia which was once a prominent fishery.	<ul style="list-style-type: none"> <li>• Explore initiatives to invigorate the herring fishery.</li> <li>• Continue to work with the REAF project.</li> </ul>

Species trends	Several species show a strong negative trend but only in relation to modest landed weights (1.6 tonnes down to less than 500kg between 2010 and 2015). Sole show a strong negative trend with landed weights reducing from 73 tonnes in 2010 to 30 tonnes in 2017 and 33 tonnes in 2018(loss circa £250,000 in value) and is relatively important in a national context (circa 3.4% of UK landings) although ICES advice indicates that the stock is in favourable condition.		
<b>Group: Cephalopods</b>		<b>Overall risk: Low</b>	
<b>Evidence base</b>	<b>Current Regulation</b>	<b>Ecosystem impacts</b>	<b>Fisheries performance</b>
Initial assessment Rank: <b>High</b>	Initial assessment Rank: <b>High</b>	Initial assessment Rank: Low	Initial assessment Rank: Low
Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>
Marginal fishery with very limited landings (less than 300 kg combined per annum).			
<b>Category of works/ Rational</b>	<b>Rationale</b>		<b>Potential works</b>
New data acquisition <b>Low Priority</b>	Priority: Low – limited / marginal fishery		• Maintain a watching brief on landings and fishing trends
Monitor / maintenance <b>Low Priority</b>	Priority: Low – limited / marginal fishery		• None identified
Regulation <b>Low Priority</b>	Priority: Low – limited / marginal fishery, additional regulation would have very limited effect.		• None identified
Engagement <b>Low Priority</b>	Priority: Low – limited / marginal fishery		• None identified
Enforcement <b>Low Priority</b>	Priority: Low – limited / marginal fishery		• None identified
Environment / ecosystems <b>Low Priority</b>	Priority: Low – limited / marginal fishery		• None identified
Viable Industry <b>Low Priority</b>	Priority: Low – limited / marginal fishery		• None identified
Species trends	None identified due to either no or very small landings of all species across this group		



Group: Pelagic	Key Species; Herring, Mackerel, Sprat	Overall risk: Low	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Low</b>
Contextual Rank: <b>Low</b>	Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>
<p>Netting activity data is required in relation to bycatch of porpoises and SPA bird species, but low levels of activity reduce the associated risk.</p> <p>Risk is further reduced as a result of the implementation of under ten catch recording.</p>	<p>European measures were amended in 2019 to reflect the new Common Fisheries Policy and particularly the landing obligation. As a result of the amendments, European measures (including minimum landing sizes and mesh requirements for nets) no longer apply to non-commercial fishers (or commercial fishing from an unpowered vessel). This has increased the contextual risk associated with this category as fishing mortality from non-commercial fishing activity is significant for some species (and particularly mackerel for this group). Whilst this compounds the risk associated with ‘unregulated netting’ this is not thought to be an important metier for this group and is more relevant for other species.</p> <p>This has been mitigated in part (for minimum landing sizes) through the implementation of an emergency byelaw, the replacement for which is in the process of being made. However, this exercise also highlighted that many minimum sizes for set out in European legislation have only a limited effect– often they do not represent the size that the species are mature. The Southern North Sea is a known spawning / nursery area for mackerel which is reflected in the minimum size being 30cm (rather than</p>	<p>Spawning aggregations can be targeted very effectively in these fisheries and this does represent a potential risk. EU measures are in place to reduce this impact. Associated gear is generally not considered to have impacts on MPA features but the development of MCPs will be necessary as will assessments of potential impacts in relation to purposes and SPA bird species. Fishers have reported issues regarding high levels of disturbance caused by seals. Reports have focused on seals damaging nets but particularly in relation to</p>	<p>None of the species landed represent nationally important landed weights and value of catch is relatively low. ICES advice is generally favourable except for mackerel and horse mackerel.</p> <p>The herring fishery is exploited far below MSY due to the low market demand and value of the fishery.</p> <p>Historically there has been a winter sprat fishery in the district. This supplied bulk orders for fish meal etc. Poor market prices limited this fishery, but an increase in value or displacement from the brown shrimp fishery could see vessels target this fishery again where fishers</p>

	20cm for other parts of the UK). Levels of activity for other species in this group are thought to be low which lowers the associated risk.	bass rather than species within this group.	have retained the associated licence.
<b>Category of works &amp; Priority</b>	<b>Rationale</b>		<b>Potential works</b>
New data acquisition <b>Low Priority</b>	Under ten meter catch recording has mitigated risk associated with this element. Additional information may be required to assess impacts on Cetaceans and SPA bird species. The relatively low levels of commercial catch further reduce risk and the priority has been downgraded as a low to reflect this.		<ul style="list-style-type: none"> <li>• Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>
Monitor maintenance <b>Low Priority</b>	There are no current workstreams relevant to this element. Introduction of under ten catch recording has mitigated the need to gather voluntary catch returns.		<ul style="list-style-type: none"> <li>• None identified.</li> </ul>
Regulation <b>Low Priority</b>	Regulated primarily through national and European measures. Eastern IFCA regulations will have limited impacts given low levels of take. Assessments in relation to the protection of SPA bird species and porpoise may require management however, activity levels are considered low at present.		<ul style="list-style-type: none"> <li>• None identified.</li> </ul>
Engagement <b>Low Priority</b>	Previous years have shown that recreational fishers are often unaware of larger minimum sizes in the North Sea ecoregion, therefore there is a requirement for a greater amount of engagement.		<ul style="list-style-type: none"> <li>• Continued dialogue with fishers to identify fishing trends</li> </ul>
Enforcement <b>Low Priority</b>	Fisheries in this group are generally marginal however; MCRS offences have been detected historically for mackerel. This is due to a higher MCRS in the Southern North Sea and the area being a spawning area.		<ul style="list-style-type: none"> <li>• Continue routine engagement and compliance checks in accordance with TCG process.</li> </ul>
Environment ecosystems <b>Medium Priority</b>	Monitoring and control plans prioritise areas where this is not a primary fishery but will ultimately be considered through plans. Impacts of fixed and drift netting to be considered in relation to SPA bird species and porpoises.		<ul style="list-style-type: none"> <li>• Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>
Viable Industry <b>Medium Priority</b>	Fishers within The Wash who historically targeted sprat have lost licences (issued by MMO) as a result of non-activity in that regard. This highlights the need of the industry to diversify and the potential unintended impacts of limiting		<ul style="list-style-type: none"> <li>• Eastern IFCA to Continue to engage with REAF project</li> </ul>

	<p>access to fisheries, even when applying relatively wide qualification because some fisheries can be effectively dormant for in excess of a decade before they are exploited again. Priority in this regard is low as licencing of these fisheries is not in Eastern IFCA's control. The inability to diversify into this fishery may impact on other species which are targeted instead.</p> <p>Significant numbers of herring are landed at certain times of the year. Fishers can easily obtain a large quantity of this fish. However, market demand is minimal and price reflects this. The impact is that it is not usually economically viable for fishers to target this fishery. The REAF project is seeking to address this and Eastern IFCA is contributing to and engaging with this initiative.</p>	<ul style="list-style-type: none"> <li>• Explore initiatives to invigorate the herring fishery.</li> </ul>
<p>Key Species / Species trends</p>	<p>Herring landings are relatively stable/increasing and represent less than 1% UK total landings but are the dominant landed weight within the group in the Eastern IFCA district. Horse mackerel show a strong negative trend, but landings are negligible (reduced from .8 of a tonne in 2010 to 20kg in 2016). There have been no recent sprat fisheries. Mackerel landings have remained low in the last 3 years following a peak in landings in 2014 and 2015.</p>	

<b>Group: Shrimp / Prawns</b>	<b>Key Species: Brown Shrimp</b>	<b>Overall risk: High</b>	
<b>Evidence base</b>	<b>Current Regulation</b>	<b>Ecosystem impacts</b>	<b>Fisheries performance</b>
Initial assessment Rank: Low	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>High</b>	Initial assessment Rank: <b>Medium</b>
Contextual Rank: <b>High</b>	Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Medium</b>	Contextual Rank: <b>High</b>
<p>Eastern IFCA now has access to higher special resolution shrimp activity data including VMS data which has supported the assessment of fishing effort levels within The Wash and North Norfolk Coast SAC. This has substantially mitigated the risk previously identified.</p> <p>However, proposed management measures for effort limitation will require further data to be collected. In particular, data relating to the number of tows undertaken per trip needs to be collected to inform effort management models and ensure the fishery does not impact on site integrity. In the interim, mandatory returns will be required although compliance with such has previously been</p>	<p>The Shrimp Permit Byelaw 2018 is undergoing formal QA with the MMO and a permit scheme to implement measures to protect site integrity of the Wash and North Norfolk Coast SAC are in development.</p> <p>Measures for sustainable fishing is yet to be developed but officers have participated in the industry led, Marine Stewardship Council accreditation which is now in place. The degree to which this mitigates the risk of limited regulation is subject to review and will ultimately inform</p>	<p>Shrimp trawling gear exhibits a high risk in relation to both habitat damage and by-catch impacts (particularly in nursery areas).</p> <p>Potential impacts on MPAs have been mitigated in part through continued development of restricted areas to protect designated features and sub-features at risk from this activity. Whilst many of these are yet to be implemented (as they are still subject to the byelaw making processes) and others may need to be implemented (in relation to Inner Dowsing, Race Bank and North Ridge particularly), this does represent significant mitigation against this risk. This mitigation is responsible for downgrading the associated risk to medium overall.</p> <p>In addition, the Shrimp Permit Byelaw 2018 will enable Eastern IFCA to manage levels of fishing effort over less sensitive habitats. Such habitats are assessed as not being sensitive to current levels of fishing activity and so the objective of the effort limitation is</p>	<p>Brown shrimp (and to a lesser extent – pink shrimp) represent significant, nationally important fisheries.</p> <p>Landings of Pink shrimp have shown a strong negative trend over the last 6 years. This is in part thought to represent the lack of market demand however, pink shrimp are also strongly associated with <i>Sabellaria</i> reef which has been protected with restricted areas by Eastern IFCA which effectively rules out a potential fishery.</p> <p>Landings of brown shrimps have fluctuated greatly in the last 6 years (due to the biology of the species and market demands) therefore</p>

<p>poor. This will be supplemented by I-VMS as this project develops.</p> <p>A gap is identified in the very small-scale shrimp fisheries which are thought to exist on the North Norfolk Coast and Suffolk, some of which target shrimp only as bait. These are not captured in the MMO data sets. The Shrimp Permit Byelaw 2018 will mitigate this associated risk as mandatory return forms will be required from these fisheries also.</p>	<p>whether Eastern IFCA should implement any of the voluntary measures as regulation.</p>	<p>to ensure no increases in effort. This byelaw is awaiting consent from the Secretary of State and the effort limitation model (and associated permit conditions) will be implemented after formal consultation. The risk associated with this element cannot be reduced until the measures are in place.</p> <p>There are potentially issues with bycatch within this fishery, although it is thought that this will likely be addressed through the MSC accreditation in The Wash, which is where the majority of shrimps are caught within the district.</p> <p>It is thought that there are also several fishers that target this fishery in the Suffolk estuaries where there is potential for the fishery to have a disproportionate negative effect.</p>	<p>there is no strong trend and changes are reported as within the normal range. This is also influenced by the availability of other fisheries (primarily cockles). The 2019 fishery was reportedly poor in relation to productivity and market value.</p> <p>This fishery still contributes a significant proportion of total first sale value of catch within the Eastern IFCA district and the vast majority of UK landings of brown shrimp come from the Eastern IFCA district.</p>
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Category of works/Priority	Rationale	Potential works
<p>New data acquisition</p> <p><b>High Priority</b></p>	<p>Risk identified previously has been mitigated to an extent through the acquisition of additional data from the MMO. However, Eastern IFCA effort limitation models are reliant on further data. This can be obtained via catch recording, but I-VMS is considered the best data to manage this fishery. Additional work may be required to introduce this to address the remaining risk.</p>	<ul style="list-style-type: none"> <li>• Develop mechanisms to collect, store and analyse I-VMS data including dialogue with partner organisations;</li> </ul>
<p>Monitor / maintenance</p> <p><b>High Priority</b></p>	<p>Continuation of the development of systems to analyse returns data including I-VMS data is required. Once fully implemented, fishing activity will require monitoring and management in line with measures</p>	<ul style="list-style-type: none"> <li>• Monitor effort in line with effort limitation model</li> </ul>

	highlighted in the HRA, management plan, Monitoring and Control Plan and flexible permit conditions.	
<b>Regulation</b> <b>High Priority</b>	<p>Mitigation in relation to impacts on designated habitats has been developed and is pending implementation. Risk cannot be reduced until this is in place, not least because the associated byelaws require the consent of the Secretary of State and formal QA which can lead to delays in its implementation.</p> <p>Priority in relation to sustainability measures is considered to be less because of the industry led initiative to achieve Marine Stewardship accreditation. Whilst some of these measures may require implementation as regulations, risk is considerably lower following the voluntary measures in place. As such, it is considered that a separate priority of medium is appropriate for this element.</p> <p>In addition, implementation of I-VMS requirements (including for vessels over 12m to increase reporting rates) will be required to address the evidence requirement gap. This may require regulation from Eastern IFCA.</p>	<ul style="list-style-type: none"> <li>•Implement Shrimp Permit Byelaw and MPA management measures;</li> <li>•Develop fisheries sustainability management measures (including consideration of impacts on nursery areas);</li> <li>•Implementation of I-VMS throughout shrimp fishing fleet.</li> </ul>
<b>Engagement</b> <b>High Priority</b>	MPA management measures have been subject to significant consultation and engagement but are still strongly opposed by some in the industry, particularly in relation to the manner in which effort is limited within The Wash. Subject to formal consultation, implementation of the proposed measures will likely require a significant engagement resource. Further dialogue is required in relation to the development of stock management.	<ul style="list-style-type: none"> <li>•Continue dialogue with the industry in relation to MPA management measures (including formal consultation of permit conditions);</li> <li>•Develop fisheries sustainability measures in consultation with the industry and considering outputs of MSC accreditation.</li> </ul>
<b>Enforcement</b> <b>Medium Priority</b>	The implementation of the new measures will require enforcement and engagement to familiarise fishers with additional requirements (e.g. obtaining a permit, permit application process). Compliance with existing measures (mesh size requirements etc.) is generally considered good.	<ul style="list-style-type: none"> <li>•Enforcement and engagement in relation to new shrimp measures;</li> <li>•Routine shrimp fishery engagement and compliance checks in accordance with the Compliance Risk Register and TCG.</li> </ul>

<p>Environment / ecosystems</p> <p><b>Medium Priority</b></p>	<p>Voluntary management measures have been developed and are in the process of being implemented via the industry lead MSC accreditation of the brown shrimp fishery. Via a MOU with the group certificated by MCS (Shrimp Producers Organisation Ltd), Eastern IFCA will undertake monitoring of compliance with the voluntary measures and reporting such to the group.</p>	<ul style="list-style-type: none"> <li>•Continue to implement associated MPA management measures;</li> </ul>
<p>Viable Industry</p> <p><b>Medium Priority</b></p>	<p>Limiting effort within The Wash and North Norfolk Coast SAC has raised concerns from the industry regarding the viability of the fishery. Whilst the ethos behind the measures is effectively to maintain the status quo, some fishers have indicated a preference to protect the business models as they exist by limiting access to the fishery based on current track record. Significant resource has been committed to consultation in this regard and there is a trade-off identified being that such a system would have the effect creating additional barriers to diversification, a mainstay of the inshore fisher. The model used to manage effort is subject to formal consultation where this concern will be addressed.</p> <p>In addition, there are concerns within the industry that the MSC accreditation scheme may create a closed system and prevent new entrants to the fishery.</p>	<ul style="list-style-type: none"> <li>•Consider balance between existing business models and the ability to 'diversify' across fisheries in development of permit scheme.</li> <li>•Maintain Eastern IFCA involvement in the MSC accreditation scheme.</li> </ul>
<p>Species trends</p>	<p>Pink shrimp showing strong negative trends (with no reported landings in 2017 and 2018). Brown shrimp highly variable with landings being high in 2018, which exceeds any recording since 2010 although not drastically.</p>	

Group: Skates and Rays		Key Species: Thornback		Overall risk: Low			
Evidence base		Current Regulation		Ecosystem impacts		Fisheries performance	
Initial assessment Rank: <b>Medium</b>		Initial assessment Rank: <b>Medium</b>		Initial assessment Rank: <b>Medium</b>		Initial assessment Rank: <b>Low</b>	
Contextual Rank: <b>Low</b>		Contextual Rank: <b>Medium</b>		Contextual Rank: <b>Medium</b>		Contextual Rank: <b>Medium</b>	
<p>Skates and rays suffer from poor identification and are often reported as 'skate and ray' or unintentionally misreported as the wrong species. The Quota system does distinguish between some species now, but this is hampered by the difficulties in identifying species. ICES advice is limited due to a paucity of data. Implementation of the Landing Obligation has in theory reduced risk associated with data gaps where this group is used as bait and under ten catch recording has further mitigated risk.</p>		<p>Eastern IFCA has no regulation in place specifically in relation to this group which is managed primarily through European quotas. In addition, Kent and Essex IFCA (neighbouring district) have minimum sizes in place which also increases risk.</p>		<p>Skates and rays are primarily targeted using long-lines but also gillnets and demersal trawls. Gillnets and trawls have a greater ecosystem impact and where this occurs in sensitive areas (nursery or spawning grounds or designated habitats), ecosystem impacts could occur. However, activity levels are not very high (with skate quotas often restricting activity to a single trip per month for non-sector vessels).</p>		<p>ICES advice is unfavourable for 'skates and rays' (i.e. as a distinct reported species but there are limited landings of these within the district). ICES advice for thornback rays is maintain at current levels. As a group they are of limited economic value but some, smaller scale fishers may have a dependence on them.</p>	
Category of works		Priority / rationale				Potential works	
<p>New data acquisition</p> <p><b>Low Priority</b></p>		<p>Risk has been mitigated to an extent as a result of landing obligation (which required reporting of catch used as bait) and under ten catch recording.</p> <p>K&amp;E IFCA are undertaking a joint research project (SUMARIS) with Cefas which may provide additional information. Netting activity data is required in relation to bycatch of porpoises and SPA species.</p>				<ul style="list-style-type: none"> <li>Actively liaise with partner organisations in relation to planned research projects;</li> <li>Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>	
<p>Monitor / maintenance</p> <p><b>Low Priority</b></p>		<p>No workstreams are in place for this group.</p>				<ul style="list-style-type: none"> <li>None identified</li> </ul>	



Regulation <b>Medium Priority</b>	There are no minimum sizes in place for this group nationally. However, Kent and Essex IFCA have identified a need for such. This reflects the vulnerability of the species to overfishing by removal of pre-spawning individuals. This risk is in part mitigated by the limited level of landings into the Eastern IFCA district.	<ul style="list-style-type: none"> <li>• Review need for minimum size for 'skates and rays' as part of wider review of minimum sizes</li> </ul>
Engagement <b>Low Priority</b>	Catch from recreational fisheries is still not well understood although this is considered of less a risk compared to the gap previously identified for commercial fisheries.	<ul style="list-style-type: none"> <li>• Engagement with RSA clubs to gather evidence/data</li> </ul>
Enforcement <b>Low Priority</b>	Group managed primarily through the quota system for which IFCOs have no powers.	<ul style="list-style-type: none"> <li>• Routine engagement and compliance, intel gathering and partnership working with MMO in accordance with Compliance Risk Register and TCG.</li> </ul>
Environment / ecosystems <b>Low Priority</b>	Netting and trawl-based fisheries have the potential to have wider ecosystem effects (habitat damage and by-catch, particularly in nursery or spawning areas) however this has been mostly mitigated through the development of restricted areas for use of bottom towed gear although some are still to be implemented. These fishers will likely be subject to lower priority monitoring and control plans by virtue of their general location (primarily Suffolk fisheries). Netting fisheries are subject to assessment in relation to impacts on SPA bird species and porpoises. Bottom-towed-gear management is also required in relation to 'red-risk' gear/habitat interactions although activity levels within this fishery are relatively low.	<ul style="list-style-type: none"> <li>• Develop relevant monitoring and control plans;</li> <li>• Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises;</li> <li>• Implementation of management measures for any relevant 'red-risk' gear/feature interactions within MPAs.</li> </ul>
Viable Industry <b>Medium Priority</b>	Fishers have reported to Eastern IFCA that at certain times of the year large quantities of skate (and ray species) are on the ground and are available to be caught however the quota is not available. Eastern IFCA has no control over the allocation of quota but takes this into account when considering management of other fisheries to maximise fishing opportunity generally and enable diversification to mitigate this issue.	<ul style="list-style-type: none"> <li>• To engage at a national level regarding the allocation of quota in a way that works for smaller vessels;</li> <li>• To consider displacement and diversification into other fisheries</li> </ul>
Key species / Species trends	The majority of species within this group are marginal with less than 1 tonne average landed per year over the last 8 years. An exception to this is thornback ray for which an average of 57 tonnes is landed per year. This species shows a marginal negative trend. Eastern IFCA landings as a proportion of UK landings is 1.7%.	

<b>Group: Whelks</b>	<b>Key species: Whelk</b>	<b>Overall risk: High</b>	
<b>Evidence base</b>	<b>Current Regulation</b>	<b>Ecosystem impacts</b>	<b>Fisheries performance</b>
Initial assessment Rank: <b>Low</b>	Initial assessment Rank: <b>Low</b>	Initial assessment Rank: <b>Low</b>	Initial assessment Rank: <b>High</b>
Contextual Rank: <b>High</b>	Contextual Rank: <b>Medium</b>	Contextual Rank: <b>High</b>	Contextual Rank: <b>High</b>
<p>Whelk fisheries data has been collected over the last three years in conjunction with the Emergency Whelk Byelaw and its permanent replacement. A current research project is ongoing to determine an effective minimum landing size and effort restrictions the context of MSY. Continuation of current collection is considered sufficient to provide data for the research project.</p>	<p>A permit mechanism is now in place which enables the introduction of measures as required. Effort, gear and minimum size are all currently managed and an ongoing research project will inform of any required changes. In the context of a recent increase in effort, the risk associated with this element is increased.</p> <p>Suffolk fishers have raised concerns that the minimum size is too high and effectively makes the fishery inshore unviable. Permit conditions require review during 2020. Other fishers are concerned that overfishing is occurring both inside and outside the district.</p>	<p>Potting fisheries represent a relatively low risk in relation to ecosystem impacts although, assessments of potting activity within the Cromer Shoal MCZ is required.</p> <p>Additional, higher resolution spatial data is required to effectively assess potting impacts within the Cromer Shoal MCZ. A stock assessment is still required, and risk is increased in the context of increased fishing effort during 2019.</p>	<p>The landed weight of whelks is significant within the district and one of the major whelk processing factories is situated within the district.</p> <p>In 2016 the number of vessels fishing inside the district was the same as 2014. The landed weight has remained consistently high since 2014 and peaked in 2016. As a result of improving market conditions and a lack of other fishing opportunities, additional fishing effort has been observed during 2019.</p>
<b>Category of works/ Rational</b>	<b>Rational</b>		<b>Potential works</b>
New data acquisition	Additional biological data is needed to inform work relating to the MCRS implemented through the Whelk Permit Byelaw 2016. Review of permit conditions is required during 2020 and in the context of increased fishing		<ul style="list-style-type: none"> <li>• Increase scope of research project and voluntary gathering of whelk samples.</li> </ul>

<b>High Priority</b>	effort, a stock assessment is of a greater priority to inform if further restrictions are required.	<ul style="list-style-type: none"> <li>• Undertake stock assessment and assessment of size at sexual maturity</li> </ul>
Monitor / maintenance <b>Medium Priority</b>	Continuation of research project in relation to minimum size and Maximum Sustainable Yield. Size of Maturity (SOM) studies appear to indicate the MLS is appropriate for the district, but difficulties sourcing samples mean study is limited in spatial extent. Priority should be to sample from additional areas if samples can be found. Four years of landings data enable annual trends in LPUE to be monitored to determine if fishery is stable. Additional bio sampling and more complex models will be required to assess MSY.	<ul style="list-style-type: none"> <li>• Continuation of Whelk research projects to develop appropriate minimum size and effort management.</li> </ul>
Regulation <b>Medium Priority</b>	Current Permit conditions require review during 2020. In the context of reports of increased effort and the lack of a stock assessment, risk that the measures currently in place are not sufficient increases. However, those in place are still likely to be having some protective effect. Completion of the review and stock assessment will inform if further measures are required.	<ul style="list-style-type: none"> <li>• To be determined by associated stock assessment, minimum size review and permit conditions review</li> </ul>
Engagement <b>Medium Priority</b>	Engagement will be required during the year as part of the review of permit conditions and potentially as a result of a stock assessment and assessment of the minimum size.	<ul style="list-style-type: none"> <li>• Review of permit conditions</li> </ul>
Enforcement <b>High Priority</b>	Non-compliance with the Emergency Whelk Byelaw and the Whelk Permit Byelaw 2016 was detected during 2019 as with in most years. In addition, the favoured bait species for whelks are edible crab ( <i>Cancer pagurus</i> ). Eastern IFCA has a byelaw in place to prevent the use of edible crab as bait, in response to fishers using undersize crabs. Risk in relation to non-compliance increased during 2019 as a result of a greater reliance on the species in The Wash as fishers diversified into the fishery due to poor shrimp catches and market influences.	<ul style="list-style-type: none"> <li>• Routine whelk fishery engagement and compliance, intel gathering and partnership working with MMO in accordance with Compliance Risk Register and TCG.</li> </ul>
Environment / ecosystems <b>High Priority</b>	An assessment of impacts of fishing activity in relation to the Cromer Shoal MCZ needs to be undertaken. Monitoring and control plans will be required, this activity takes place predominantly within MPAs for which MCPs have been prioritised (namely the Wash and North Norfolk Coast SAC).	<ul style="list-style-type: none"> <li>• Development of relevant Monitoring and control plans;</li> <li>• Cromer Shoal MCZ – fishing impact assessment.</li> </ul>
Viable Industry	Some whelk fishers (primarily in Suffolk) are of the view that the minimum size is too high to make the fishery viable on these grounds. This is reflected	<ul style="list-style-type: none"> <li>• Further research on size of maturity, focusing on sampling from a variety of</li> </ul>

<b>Medium</b>	<p>in the ongoing workstream to determine what an appropriate minimum size should be.</p> <p>The Marine Conservation Society have assessed the whelk fishery within the Eastern IFCA alongside the Kent and Essex IFCA fishery and separately from the wider Southern North Sea stock. This reflects the additional management in place in the two IFCA districts compared to nationally. The rating is as 'fishery requires improvement' as part of their 'good fish guide' which is an improved score compared to that nationally. This rating has the potential to limit the market that the fishery can supply, with some buyers reportedly only buying in accordance with this guide. In the first instance, dialogue is needed with the producers of the guide to ensure that the assessments reflect the best available evidence. Within the assessment, the 'requires improvement' score is primarily as a result of there not being a stock assessment for this fishery.</p>	<p>different locations to ensure the MLS is appropriate.</p> <ul style="list-style-type: none"> <li>• Continued monitoring of LPUE data to determine trends.</li> <li>• Biosampling to help inform LCCC models.</li> </ul>
Species trends	There was initially a strong upward trend in this fishery in 2011/12. Following this, landings have been relatively steady, peaking in 2016. This broadly reflects the trend seen throughout the UK.	

### Consideration of engagement during 2019

Eastern IFCA records messages from stakeholders on a 'message system' to allow for analysis and consideration. Messages come from the full spectrum of stakeholders. In addition, key engagement themes identified during patrols are reported. By capturing this information, Eastern IFCA can more effectively report against the key concerns of our stakeholders. The key themes emerging from the messages are set out below:

Table 3. Themes and context of engagement

Theme and Context	Eastern IFCA consideration
Whelk Permit Byelaw <ul style="list-style-type: none"> <li>• Gear Conflict</li> <li>• Permit tags being lost</li> </ul>	Throughout the year the whelk permit byelaw was discussed with officers frequently.

<ul style="list-style-type: none"> <li>• Queries about how the permit works</li> <li>• Difficult to change tags annually</li> <li>• Vessels keep running over gear</li> <li>• Discussions about methodology for carrying out whelk inspections</li> <li>• The permit byelaw does not work</li> <li>• Concern about the high landings that are occurring from the offshore grounds</li> <li>• Cooked crab should be allowed as bait</li> </ul>	<p>This was due to the high value and overall economic importance of the fishery and perceived issues with the byelaw.</p> <p>As a consequence of this during the year we undertook informal consultation of the byelaws permit conditions. This is currently an ongoing workstream and will continue into the 2020-21 year.</p>
<p>Shrimp Permit Byelaw</p> <ul style="list-style-type: none"> <li>• Various queries about how the shrimp permit byelaw will be administered.</li> <li>• Concerns about how a permit scheme will be managed</li> </ul>	<p>This work was considered as a wider informal consultation, of which many members of the industry have been well engaged with Eastern IFCA.</p>
<p>Seaweed Farm</p>	<p>Many fishermen engaged with Eastern IFCA regarding a proposal for an offshore seaweed farm. Eastern IFCA engaged with the industry and the MMO through the Marine planning process.</p>
<p>Landing Obligation</p>	<p>Eastern IFCA received various queries and reports related to the landing obligation and its implementation. Eastern IFCA play a supporting role in this MMO led regulation and will continue to do so moving forward.</p>
<p>Seals</p> <ul style="list-style-type: none"> <li>• Reports of High Numbers</li> <li>• Reports of Dead Seals Washing up on the beach</li> <li>• Use of Seal Deterrents (ID people for trial)</li> </ul>	<p>Eastern IFCA have previously been aware of these issues as reported by the fishing industry. Eastern have engaged regarding the issue at both a national and local level and will continue to do so where opportunities present themselves.</p>
<p>Wash Fishery Order Cockle fishery</p> <ul style="list-style-type: none"> <li>• Concerns about how small the TAC is likely to be (received early in the season)</li> <li>• Concerns over the management measures for the year and how the survey is carried out (to end up with what was perceived as a large TAC)</li> <li>• The licencing system is unfair and is not managed properly</li> </ul>	<p>Issues that have arisen in relation to the WFO cockle fishery are reported to the authority annually. Many of the concerns raised by stakeholders are subject to high and medium priority workstreams over the coming year and will therefore be addressed.</p>

<ul style="list-style-type: none"> <li>• The yield of cockles is very poor, this is affecting the viability of the fishery.</li> <li>• Concern over quantities of small cockles being landed (change bed, bring in MCRS, close fishery)</li> <li>• Bird closures ineffective (birds are not disturbed by fishermen.</li> <li>• TAC between WRA and WFO should be combined</li> </ul>	
<p>Biosecurity</p> <ul style="list-style-type: none"> <li>• A lot of whelk are being landed with slipper limpets on.</li> </ul>	<p>Eastern IFCA has set up an active monitoring mechanism for biosecurity concerns.</p>
<p>Recreational Angling</p> <ul style="list-style-type: none"> <li>• New Charter boats</li> <li>• Recreational angling shop closures x2</li> </ul>	<p>Eastern IFCA to consider recreational angling as part of review following release of EU bass measures. Investigation has shown that although there have been closures of some angling shops, others have opened.</p>
<p>Crab and Lobster sustainability</p> <ul style="list-style-type: none"> <li>• High amounts of berried lobster around during the year</li> <li>• High quantities of poor quality crab are being landed.</li> </ul>	<p>A consultation is ongoing into crab and lobster fishing and intends to tackle sustainability issues in due course.</p>
<p>Marine Protected Areas Byelaw and Closed area Byelaw</p> <ul style="list-style-type: none"> <li>• Closures are a positive thing due to protective effect</li> <li>• Concerns about the closures (primarily in relation to the north Norfolk coast). This covers important grounds</li> <li>• Current closed areas need to be reviewed and possibly opened</li> <li>• Eastern IFCA should not be bringing in more closures</li> <li>• New proposed closed areas will impact on mussel seed grounds.</li> </ul>	<p>All closed areas are subject to extensive consultation and review as part of their implementation. Review periods are being established and will likely occur following the completion of the other high priority workstreams.</p>
<p>Mussel fisheries</p> <ul style="list-style-type: none"> <li>• Areas available are not good</li> <li>• New mussel bed found by fishing industry</li> <li>• Queries about how the Welland Wall fishery is administered</li> </ul>	<p>The majority of these issues have been included as high priority workstreams and as such will be addressed in the following year.</p>

Lack of fishing opportunity and diversification options in Norfolk	Eastern IFCA's understanding of this is reflected in the industry viability section of the strategic assessment where we look to find workstreams where we can support industry.
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## 2.2 Eastern IFCA Priorities 2020-21

The above assessment indicates many actions relevant to the risks associated with fisheries within the district. Table 4 indicates the key issues and provides rationale for their allocated priority.

<b>Category</b>	<b>Work</b>	<b>Fisheries</b>	<b>Comments / Rationale</b>
To ensure that the conservation objectives of Marine Protected Areas in the district are furthered	Development of management measures for 'red-risk' gear/feature interactions.	Demersal, flatfish, Dogfish and Sharks, Skates and Rays, Shrimp and prawns	Primarily relates to shrimp trawling (although all bottom-towed-gear fisheries will be affected) within the Inner Dowsing, Race Bank and North Ridge (IDRBNR) SAC. 'Red-risk' interactions require immediate management. Work includes development of spatial closures within the IDRBNR SAC, dialogue with Natural England and the industry, formal consultation of regulations, an economic impact assessment and production of engagement material for stakeholders. Continued from 2016/17 priority. It is also required that we continue the implementation of the Shrimp Permit Byelaw and MPA management measures.
	Assessing the impact of fishing activities on the Cromer Shoal Chalk Beds (MCZ) and delivering management measures (if required).	Crustaceans, Whelks, Shrimp and prawns, bivalve molluscs	Work to include a gap analysis of available evidence (impacts and fisheries activity) to inform an environmental impact assessment. Further habitat mapping information may also be required. Subsequent work will include development of management measures (as necessary), dialogue with the industry including formal consultation and the production of an impact assessment. Continued from 2017/18 priority. Partnership work with Cefas and MMO to develop under ten reporting (which replaced MSAR forms) as higher spatial resolution and effort data is needed.
	Development of priority Monitoring and Control plans.	Bivalve molluscs, shrimp and prawns	The highest priority Monitoring and control plans relate to Shrimp beam trawling and pots and traps. Where these occur in MPA's the risk is increased, and this will be the focus of monitoring and control plans.

	Completion of amber/green gear/feature interactions and development of management measures where required.	Demersal, flatfish, Dogfish and Sharks, Skates and Rays, pelagic	Undertake and complete assessments for all amber/green assessments within the district including for the three new MPA's within the district (noting that other organisations may lead on the development of management measures for the harbour porpoise SAC). For the new MPA's an assessment of fishing activity data and impacts is required as further evidence may need to be obtained.
To ensure that sea fisheries resources are exploited sustainably and in accordance with MSFD requirements	Development of management measures in relation to shrimp fisheries sustainability	Shrimp and prawns (brown shrimp)	The shrimp fishery is of high economic importance and is a nationally important fishery. Work includes development of management measures in consultation with the industry (including outputs from the MSC accreditation scheme), development of impact assessments and formal consultation with the industry. The priority of the work may be influenced by outputs of the MSC accreditation scheme – if suitable voluntary measures are adopted successfully, the requirement on Eastern IFCA may be reduced. Some actions have already progressed in relation to sustainability (veil nets). Eastern IFCA to monitor effort in line with effort limitation model.
	Development of management measures in relation to crab and lobster fisheries sustainability	Crustacea (edible crab and lobsters)	The crab and lobster fisheries are of high economic and cultural value and represent nationally important fisheries. The immediate risk to the fishery is moderate in relation to crabs but higher in relation to lobsters, however neither are thought to be operating at MSY. Work includes a significant amount of informal consultation to develop measures, collection and analysis of relevant evidence (including fisheries data and economic impacts) including development of data collection mechanisms from fishers. The Whelk Byelaw 2016 would also benefit from a review, as consultation will need to take place with the same fishers, by adding this byelaw into the consultation process there will be added benefit, with little additional work. It will also reduce the effect of stakeholder fatigue.
	Increase scope of research project and voluntary	Whelk	To inform further management measures, more information needs to be collected and research reports completed. This is required due to the increasing reliance of fishers on this fishery and a lack of information about the stock and overall sustainability of the fishery.



	gathering of whelk samples. Undertake stock assessment and assessment of size at sexual maturity		
To ensure that the marine environment is protected from the effect of exploitation by reviewing district wide bio-security measures including management of invasive, non-native species	Implementation of WFO Shellfish Lay lease conditions	Bivalve molluscs	Work in relation to ensuring compliance with WFO lease conditions (putting on and removing shellfish). Education and engagement in relation to biosecurity and the transfer of Invasive non-native species.
To develop management of the fisheries regulated under the WFO (regulated and several fishery)	Development of cockle fishery and mussel fishery management plans following their review for the WFO 1992 fisheries. Implementation of, fisheries management plan and Regulations.	Bivalve molluscs	Work includes formal consultation with WFO licence holders and other concerned and potentially impacted stakeholders in relation to proposed measures and implementation pending consent from the Minister (including production of engagement material for fishers).
	Continued development of WFO policies.	Bivalve molluscs	Work includes informal consultation with WFO licence holders to develop policies which relate to the key concerns of fishers and appropriate management
	Replacement of WFO 1992	Bivalve molluscs	The Wash fisheries exhibit a range of differing business models which are often in conflict. In addition, the WFO has a long history and is a relatively complex

			regulatory mechanism that will require significant amounts of review, legal advice and stakeholder consultation. This workstream will extend across multiple years but will need to begin in 2020-21.
Viable Industry	Investigation into mussel die off	Bivalve molluscs	Since 2010 the inter-tidal mussel beds have suffered unusually high-levels of mortality that has led to the decline of the beds and the mussel fishery. The beds are now in a very poor condition and unable to support a viable fishery. The actual cause of the mortalities is currently unknown, making the situation difficult to manage. A multi-disciplinary investigation will be required to gain a better understanding of what is causing the mortalities, informing more effective management of the situation.
	Economic assessment of hand-work cockle fishery viability	Bivalve molluscs	Required to help inform the review of the WFO in the coming years to enable informed decision making which ensures that industry viability is accounted for.
Obtaining better fisheries data	Implementation of iVMS for all fisheries	All	Notwithstanding the current work streams to implement I-VMS requirements within the cockle and shrimp fisheries, a national approach is underway to deliver a requirement for all fishing vessels to have a form of electronic monitoring device. Input from the IFCA is required to develop the necessary Statutory Instrument. There is also direction from the Authority that, should a national approach not succeed, IFCA byelaws would be used to implement the requirement.

### **2.3 'Business as Usual' – Critical Work-streams 2020-21**

The Strategic Assessment indicates where risks in relation to a fishery or species are mitigated because of established work streams. The cessation of such work streams has the potential to increase risk associated with a fishery. Such identified work streams are set out below to provide context for the identified 'new' priorities identified through the Strategic Assessment.

#### **SWEEP**

The SWEEP project has been reviewed and it has been determined that evaluating the food carrying capacity is beyond our resources/capability. We will continue monitoring the chlorophyll and cockle and mussel meat yields required by the model used as mitigation within the associated HRA. New sondes have been purchased to conduct this monitoring regime.

#### **WFO surveys**

Annual surveys of cockle and mussel stocks within The Wash are a significant undertaking. These surveys do, however provide a level of fisheries evidence which is not reflected in any other fishery within the district. There is currently a review ongoing regarding the type and extent of sampling regime required. The associated fisheries are considered a low risk primarily because of our understanding of stock dynamics but also reflect the mechanism in place for managing the fisheries (The Wash Fishery order) and its associated tools (Fisheries Management Plan).

#### **Risk of conflicts with other marine users**

The present assessment focusses on sustainability issues which are within Eastern IFCA's envelope of influence. Other marine users also compete for space and resource within the marine environment and such activity is increasing over time.

Eastern IFCA is a statutory consultee within the Marine Licencing System. Where new plans or projects are proposed within the district, Eastern IFCA highlights potential conflicts with fisheries sustainability.

#### **Enforcement**

Enforcement activity is primarily driven through the Compliance Risk Register and Tactical Coordinating Group meetings (which considers intelligence, emerging issues, fishing trends and the monthly risk profile). Enforcement activity is influenced by the outputs of the Strategic Assessment as this identifies the fisheries most at risk of sustainability issues (and by extension, those potentially most vulnerable to negative impacts through non-compliance).

#### **Complete HRAs in relation to 'unplanned' fisheries**

Mussel fisheries (sub-tidal seed mussel fisheries in particular) have the potential to occur throughout the year. Where such a fishery is detected by fishers, officers have a limited amount of time to develop management measures and a HRA for the fishery

(particularly in sub-tidal fisheries which are ephemeral). In the event one does occur, the economic benefit of the fishery is relatively high (as mussel is usually used in local aquaculture).

### **Monitoring of district wide biosecurity risk**

Previously this workstream has been identified as a high priority workstream, as such steps have been taken to progress the workstream. These generally have been completed, however due to the nature of the project in order to keep risk reduced it must become an ongoing piece of work, therefore it is now included as business as usual. A monitoring plan for biosecurity issues had been implemented, with a lead officer coordinating this. Officers have been briefed about reporting biosecurity concerns, and if these occur potential actions will be considered. It is recognised that the spread and control of Invasive non-native species is outside of Eastern IFCA's remit and we may be limited to reactionary actions only, but this is not a primary function. Officers implement mitigation measures on an ad hoc basis, including education and engagement, in relation to identified risks.

### **2.4 Identification of future priorities 2020-21**

Given the finite resources of the IFCA, workloads are prioritised. Table 5 (below) sets out work streams relating to risks identified within the assessment which are considered less of a priority. It is important to highlight these potential work streams as they may inform future Strategic Assessments or, opportunities may present during the year which enable additional benefit from existing or partner projects for which, these should be considered.

<b>Category</b>	<b>Work</b>	<b>Fisheries</b>	<b>Comments / Rationale</b>
Obtaining better fisheries data	Continue dialogue with MMO in relation to securing data from the new under 10m vessel reporting.	All (focus on finfish species)	Risk associated with this work-stream is mitigated through national approaches and partnership working. Work primarily includes partnership working with this national piece of work including influencing the outcomes to solve IFCA data deficiencies.
	Development of relationships with RSA to obtain more fisheries data.	All (focus on finfish species)	Finfish species are relatively data poor within the district, but RSA data will be useful in determining trends to detect issues. Development of the IFCA's relationship with the RSA sector will further our available evidence and enable better integration of RSA activity into the Strategic Assessment.
	Further develop the mechanism to obtain voluntary data from commercial fishers in light of possible changes to important commercial species (reduced ability to depend on Bass and Cod).	Demersal, flatfish, skates and rays, dogfish and sharks	Existing voluntary measures are in place to obtain better fisheries data. This project needs a full review into its possible applications and whether it is still required in context of new national under 10m catch reporting.
	Continue dialogue with MMO and other partner organisations to develop 'joined-up' approach to gathering fisheries data from fishers.	Demersal, skates and rays, flatfish, dogfish and sharks	In order to obtain better fisheries evidence without duplicating effort on the part of the fishers, a collaborative approach is required. In particular, MMO data requirements do not have the spatial resolution needed to undertake HRAs. Furthermore, effort data is rarely collected.
	Gather information regarding recreational hand gathering.	Bivalve Molluscs	This is identified as a data gap throughout the district and may have an impact on stocks in certain areas.
Delivering fisheries management in relation to fisheries in MPAs	Re-assess need to deliver 'unregulated netting' in the context of BNA.	Demersal, flatfish, skates and rays, dogfish and sharks	The assessment of the potential impacts and scale of 'unregulated netting' was undertaken during the last financial year as a priority. Subsequently, BNA have been proposed and Eastern IFCA has provided evidence towards the development of these. The establishment of BNA diminishes the requirement to implement independent 'unregulated netting measures' in most areas.

	Review the Humber estuary cockle byelaw (inherited from North Eastern Sea Fisheries Committee)	Bivalve molluscs	Fishing opportunities within this fishery have previously been limited by an unfavourable stock assessment (e.g. 2016 survey found very few fishable cockles), the lack of an up-to-date shellfish water classification and difficulties relating to access via the land. The byelaw requires review to make it more transparent and to enable a fishery from the sea. Fishers have more recently indicated a will to fish the area and there may be a relatively simple solution to enable this to be explored. In order for the area to get water classification the local council have indicated that they would need a call from industry directly, rather than through Eastern IFCA.
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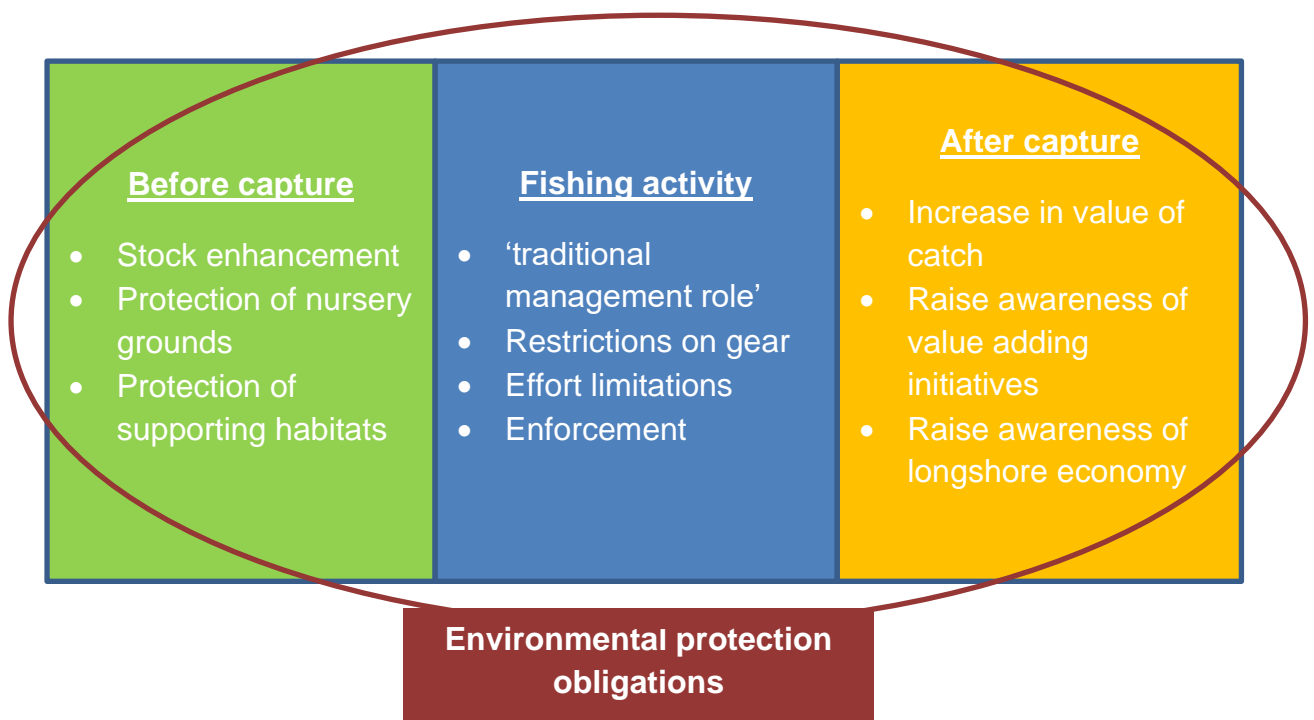
### 3. Principles applied in undertaking priorities

The Strategic Assessment focusses on 'what' is required to further fisheries sustainability and the conservation objectives of MPAs. The 'how' work is undertaken is driven primarily by our vision statement and our published policies and strategies. In undertaking The Strategic Assessment two important principles were identified which are set out below.

#### 3.1 Consideration of the 'complete fishery'

Fisheries consist of more than just the fish and fishing gear which capture them. The productivity of a fishery can be influenced by the protection of habitats associated with the prey of a target species or by the strength of the market into which they are sold.

Eastern IFCA regulations tend to focus on the mechanisms of catching fish and shellfish, for example; restrictions on the number of whelk pots and daily quotas of cockles. However, our management of these fisheries considers the complete fishery and, where it is achievable and appropriate, Eastern IFCA endeavours to get additional benefit from management measures by taking this consideration into account.



#### 3.2 Community Voice Method

Stakeholder engagement is fundamental to the delivery of Eastern IFCA objectives. Our commitment to engagement is set out in the annual Engagement Plan. From drawing on local knowledge - listening to and working with fishermen to develop management measures - to engaging with young people about the benefits of the marine environment, Eastern IFCA commits a significant resource to communication.

In 2016, we undertook an innovative community engagement project called the 'Community Voice Project'. The aim of the project was to engage with a diverse range

of stakeholders using new methods, to understand what is important to them in relation to the inshore environment. The project delivered a formal report on its findings in October 2017. The data has been used to inform the contextual information within the assessment.

#### **4. Conclusions**

Outputs focus on work-streams rather than a fishery or a species. In particular, the management of MPAs features more cohesively as part of the assessment, resulting in outputs which cover the entirety of Eastern IFCA's remit.

The outputs of the assessment largely reflect the 2019-20 priorities where work is still underway. Some work-streams identified in the 2019 assessment have been re-prioritised as a lesser priority which is primarily due to national programs mitigating some of the risk.