



Strategic Assessment 2019

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 objectively identify potential work-streams and assign a priority based on the risk. This is used to inform the priorities set out in 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), delivery of fisheries sustainability in the crustacean and shrimp fisheries, biosecurity planning and a review of the Wash Fishery Order 1992.

Potential works are considered as an output of the initial and contextual assessments. An additional category of work was added in 2018: 'viable industry'. This has been kept for 2019. This reflects Eastern IFCA's role in assisting the industry in developing to meet the demands of contemporary fisheries and issues.

All 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 was also 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. Where value can be added to existing work-streams or partnership working, the work-streams identified in the high and lesser priorities are considered.

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 2019-20
- 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

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 using a spectrum of fishing 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, although recreational fishing activity is recognised for its importance in the district and issues relating to recreational fisheries have been incorporated into the assessment. Best available evidence is used to prioritise fisheries and environmental features which may require management measures and regulations.

The inshore fishing sector is relatively data-limited – the under-ten metre fishing vessels, which make up the majority of the inshore fleet, are exempt from completing log books and carrying vessel monitoring systems. In addition, unforeseen issues or events often occur outside of the annual planning cycle which cannot be accounted for in preparation. As such, whilst this document provides a snap shot in time, EIFCA priorities may vary based on changes to best available evidence and changing social and political drivers.

The Strategic Assessment provides an annual opportunity to identify any emerging issues and to assign priority to identified work streams. In the context of finite resources, this is required to ensure effective planning and delivery of associated tasks. This assessment informs the rolling 5-year business plan.

1.2 Approach

Fisheries were identified within Eastern IFCA's district using Marine Management Organisation (MMO) landings data. 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. This links to issue 1 of the Community Voice Method (CVM) project: Need better information guiding management.

Current Regulation – assesses species based on measures currently in place in relation to protection of pre-spawning individuals, gear management and effort restrictions. This links to issue 2 in CVM: Need fair and effective regulation monitoring and enforcement.

Ecosystem impacts – assessment considers the potential ecosystem level impacts of the main gears associated with each species (e.g. by-catch, habitat damage). This links to issue 5 in CVM: Need to improve understanding of the environment.

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 within the fisheries. Species are grouped into broad fisheries based on similarities in biology and fishing methods. Methodology and outputs can be found at Appendix 1.

A further assessment is undertaken, taking into account the scores generated by the initial assessment, and wider contextual drivers (see sections 1.2.2 and 1.2.3 below). 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 on a limited number of criteria. To more fully explore the risk associated with each fishery, additional criteria are applied where the data is available for a fishery and other contextual issues are explored. Below is an explanation of the additional factors and contextual issues which are also taken into consideration.

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* 2010¹ and 2012² and an Eastern IFCA research report on the composition of commercial catches (2014)³.

Fisheries trends – MMO data has been used to assess whether a trend can be observed from landings data for the period 2010-2017. Strong trends are associated

¹ 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.

² 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

³ S. Thompson: 2014 Composition of commercial finfish catches. Eastern IFCA Research Report.

with a higher risk and a greater priority. This is considered in the context of mean annual landed weight.

Recreational activity – Data on recreational activity is limited for most species. The outputs of the Angling 2012 project by Armstrong *et al.* 2013⁴ have been used to judge important recreational species. Recreational landings are not included in MMO landings figures however recreational landings are thought to contribute a significant amount of fishing mortality to certain species. Furthermore, recreational fishing 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, a reduction in the range of species present (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. Protection of seabed habitats are likely to result in higher levels of fisheries productivity and a greater resilience to climate change, other anthropogenic impacts and naturally occurring events.

General biology – General population dynamics are known for most commercially important species. Aspects of the general biology (for example age at sexual maturity) are also taken into account as an indicator of 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), how proposed EIFCA work streams fit into these and any gaps which could lead to potential work in the future. This consideration has been based on species and habitats listed within “List of Threatened and/or Declining Species & Habitats” within OSPAR Region 2, Greater North Sea. Requirements on Eastern IFCA are identified in Appendix 2 (“Summary of EIFCA commitments and planned actions under OSPAR”).

In summary, it is evident that the existing approaches and activities of EIFCA in general satisfy obligations under OSPAR, and that additional requirements are limited to

⁴ 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.

informing relevant authorities should we become aware of the presence of certain, generally very rare, species or habitats.

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) ⁵, which is afforded a high priority. This is factored in to the additional assessment for each fishery (Section 2.1).

The majority of the Eastern IFCA district is protected by MPAs (Table 1). These sites contain a range of species and habitat features that require protection, in order to maintain site integrity. IFCAs have a duty to ensure fisheries are managed in accordance with MPA conservation objectives. 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 the statutory nature conservation advisor, Natural England.

EIFCA routinely collects data to monitor fishing activity and compliance within managed areas. EIFCA is required to demonstrate responsive monitoring and management of fisheries in MPAs. Following the completion of fisheries assessments in MPAs, “fisheries monitoring and control plans” will be developed to show how EIFCA will monitor and respond to changes in fishing activity, which could lead to significant impacts on MPAs.

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.

⁵ Marine and Coastal Access Act 2009 (c.23) s.153 and 154

Site name	Key issues for fisheries management	Priority
Humber Estuary Special Protection Area (SPA) <i>and</i> 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 measure in place for the protection of eelgrass in EIFCA part of SAC (EIFCA Marine Protected Areas Byelaw 2016). The measures are under review in 2019. Potential cockle fisheries (Horse Shoe Point) will have to take account of bird food dynamics and disturbance.	5
Gibraltar Point SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity. Stakeholder interest in fishing activity within this site.	7
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. Implemented via Marine Protected Areas Byelaw 2016 (to be replaced by Marine Protected Areas Byelaw 2018). Additional measures to manage effort in remainder of site to be implemented via Shrimp Permit Byelaw during 2019/20. Consideration of protection for additional feature (circalittoral rock) in 2019/20. Review of initial protection of most sensitive features is underway; recommendations to be considered in 2019/20. Management measures are also potentially required for the protection of <i>Sabellaria</i> reef and sub-tidal stony reef communities from damaging levels of pot fishing activity.	1
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.	1
North Norfolk Coast SPA	Has been provisionally assessed and no adverse effect determined at current levels of activity.	7
Cromer Shoal Chalk Beds Marine	Assessment identified requirement to exclude towed demersal gear from vulnerable chalk feature areas of site: intention to progress management under Marine Protected Areas byelaw. Assessment ongoing	2

Conservation Zone (MCZ)	into potential impacts from potting fisheries on chalk features. Requirement to better understand chalk feature characteristics, extent and frequency of exposure in sediment-dominant areas of site.	
Breydon Water SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	8
Alde, Ore & Butley Estuaries SAC	Has been provisionally assessed; no adverse effects determined at current levels of activity.	6
Alde & Ore Estuaries SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	6
Orfordness to Shingle Street SAC	Has been provisionally assessed; no adverse effects determined at current levels of activity.	9
Deben Estuary SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	8
Stour and Orwell Estuaries SPA	Bait digging highlighted as potential cause of disturbance to over-wintering birds; assessment to be updated following NE advice. Voluntary code of conduct in place which limits bait digging activity to less sensitive areas during winter. Natural England lead on management of the bait digging activity at this site.	4
Inner Dowsing, Race Bank & North Ridge SAC	Eastern IFCA to manage the 0-6nm part of this site, which extends beyond 12nm 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.	3
Haisborough, Hammond & Winterton SCI	Eastern IFCA to manage the 0-6nm part of this site, which extends beyond 12nm 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.	3
Outer Thames Estuary SPA	MMO undertook assessment of this site, which extends from the coast to beyond 12nm. No adverse effects identified at current levels of activity. Site extended in 2018: assessment required for extension areas within EIFCA district.	4
Greater Wash SPA	Site designated in 2018. Assessment of commercial fisheries required.	4
Southern North Sea candidate SAC	Became candidate SAC in 2017. Extensive site; small proportion in inshore waters off Norfolk and Suffolk. Assessment of commercial fisheries required.	5

Eastern IFCA is developing fisheries 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 that includes sufficient precaution without resulting in a disproportionate cost to fisheries viability. EIFCA will create fisheries 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 multiple factors such as: levels of activity within the district, economic importance of fishery and potential impact of the fishery on MPA features.

Table 2. Prioritisation of monitoring and control plans

Plans	Priority
1) Shrimp beam trawling	1
2) Demersal towed gears (excluding shrimp beam trawling)	4
3) Pelagic towed gears	5
4) Dredges	3
5) Hand-working (access from land)	3
6) Hand-working (access from vessel)	1
7) Static pots and traps	2
8) Netting (inc. seine nets and other)	3
9) Lines	5
10) Other	5

2. Results

Outputs from the data driven 'initial assessment' and subsequent consideration of contextual drivers (including fisheries management in MPA) 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 an important consideration 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 2019/20 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: Low	Initial assessment Rank: Low	Initial assessment Rank: High	Initial assessment Rank: Medium	
Contextual Rank: Low	Contextual Rank: High	Contextual Rank: High	Contextual Rank: High	
<p>The key species within this group are low risk with regards to available evidence, the other species which make up the group are marginal fisheries. Due to EIFCA regulations prohibiting the use of fishing gear without authorisation, EIFCA has a good evidence base. That said, the evidence base associated with levels of effort in hand gathering bivalve fisheries outside of The Wash (particularly recreationally) is poor.</p>	<p>The dominant bivalve mollusc fisheries have a significant level of regulation in place (WFO) and IFCA 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 (particularly Horseshoe Point and potentially the Suffolk rivers). The WFO is currently undergoing a review, work relating to which will require resource into the 2019/20 financial year and beyond.</p> <p>Many fishers raised comments on how they felt the WFO cockle fishery should be managed, including changes in the daily quota. Restricting the daily quota to two bags rather than a weight. There were also comments that the fishery went on for too long, and dredging was required. Others commented that it was</p>	<p>Molluscs dredges (bottom towed gear) are associated with this fishery which have a high ecosystem impact rating. A suction dredge fishery is the highest risk fishery. A study is being undertaken looking at the impacts of the fishery. In addition, fishing activity occurs within spawning grounds although, this is less relevant in terms of the biology of this group. The dominant fishery is by hand-working (low impact) and this is managed, along with the use of bottom-towed-gears through Eastern IFCA byelaws and the WFO. The main fisheries occur within MPAs and have the potential to impact on site</p>	<p>Cockles and mussels dominate this category making up a very high proportion of UK catch and high landed weights and values. The trend in cockle landings has a strong positive value. 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. Mussel fisheries in the district have previously contributed a significant proportion of national landings (more than 80%). A small relaying mussel fishery took place in 2018. There are concerns regarding the</p>	

	<p>good to have a long season despite the yield being poor toward the end.</p> <p>The WFO is due to expire in 2023, it therefore needs review and the replacement to be designed and implemented. It is expected that this will take a high amount of officer time with significant amounts of stakeholder consultation.</p> <p>The WRA emergency byelaw needs replacing during 2019.</p>	<p>integrity without appropriate management and compliance.</p>	<p>likely productivity of next years fishery.</p> <p>The relaying mussel fishery in 2018 was reported as productive with relayed mussels growing on well, although very few fishers operated in this fishery.</p>
Category of works & priority	Rationale		Potential works
<p>New data / evidence acquisition</p> <p>Low Priority</p>	<p>The evidence base for the dominant fisheries is well established and mechanisms are in place to continue gathering evidence as required. Further evidence is needed in relation to recreational hand gathering but due to low scale and impact of the fishery the priority is low. A review is currently ongoing regarding potential changes to the sampling regime, the priority of this work is in relation to other business planning (vessel replacement and therefore does not impact of the overall priority score.</p>		<ul style="list-style-type: none"> • Review WFO cockle and mussel sampling regime
<p>Monitor / maintenance</p> <p>High Priority</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 is required to prevent the fishery from increasing in risk. 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 as the stocks vary considerably on an annual basis. Cockle surveys at Horseshoe Point are also conducted on an annual basis but significant barriers remain in relation to opening this fishery. Potentially commercially exploitable levels of cockles have been reported in the Suffolk rivers, survey work would be required to determine whether they are. Other work includes data entry, enforcement and SWEEP (food availability monitoring).</p>		<ul style="list-style-type: none"> • Annual cockle surveys; • WFO licence holder consultation; • Horseshoe Point cockle survey; • Maintenance of fisheries data collection and database management • SWEEP

<p>Regulation</p> <p>High Priority</p>	<p>A work stream relating to the review of the WFO licence fees, regulations and policies is under way and behind schedule so will require resource in the 2019/20 financial year. This will include the implementation of Inshore Vessel Monitoring System (IVMS) on the associated fishing fleet.</p> <p>The WFO expires in 2023, the WFO is a complex regulatory assessment, 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 2019-20.</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 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 EIFCA implemented an emergency byelaw (Wash Emergency Byelaw). This byelaw only remains in force until the 26 July 2019 and will need to be reviewed/extended before this date.</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"> • Continuation of review of WFO Regulations, Licence fees and Policies including dialogue with the industry; • Implementation of new WFO Shellfish Lay lease conditions; • Development of WFO replacement. • Development of management measures within the Le Strange fishery; • Review 'Humber Estuary Cockle Fisheries Byelaw' inherited from North Eastern Sea Fisheries Committee. • Study regarding feasibility of a dredge fishery.
<p>Engagement</p> <p>High Priority</p>	<p>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. Further dialogue with the industry is required to develop policies, a fisheries management plan, regulations and licence fees as a continuation of the 2017/18 priority work. Further engagement needed around issues related with biosecurity, primarily engagement on how to limit the spread of invasive non-native species particularly in relation to shellfish aquaculture in The Wash.</p>	<ul style="list-style-type: none"> • Continuation of review of WFO review – consultation with industry; • Awareness raising and education regarding biosecurity

<p>Enforcement</p> <p>Medium Priority</p>	<p>Previous poor behaviours by minority of fishers has driven the development of new regulations which require dialogue with the industry. Non-compliance with WFO Shellfish Lay Lease conditions (particularly in relation to the movement of shellfish and the 'sharing' of Lays. In addition, cockles have been settling in WFO Lays which has resulted in an increase in the number of reports of fishers unlawfully removing shellfish from lays and potentially using lays to circumvent WFO Regulations.</p>	<ul style="list-style-type: none"> • Engagement with fishers in relation to new WFO measures; • Enforcement of WFO measures; • Enforcement of WFO Shellfish Lay lease conditions.
<p>Environment / ecosystems</p> <p>High Priority</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 – such plans have been assessed as a priority in the Wash and N.Norfolk Coast. There is the potential for fisheries not currently considered in the Wash HRA to occur.</p> <p>Bivalve molluscs are vulnerable to biosecurity events, particularly in The Wash where aquaculture is also present. In recent years there has been low compliance with fishers pre-notifying the authority regarding shellfish movements on their lays. Eastern IFCA have worked on this as an engagement priority and compliance has subsequently improved, although some further work is likely to be required.</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 is still ongoing. As the aquaculture is subject to the Habitats Regulations, further work is required. In addition, mussel beds within the Wash have been exhibiting unexpected mortality which is thought to be linked to a disease or a parasite. Partnership work with Hull university has 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.</p>	<ul style="list-style-type: none"> • Development of cockle fishery and mussel fishery management plans for the WFO1992 fisheries. • Development of relevant monitoring and control plans • Development of management measures (as required) for the protection of the Cromer Shoal MCZ • Development of Biosecurity plans (particularly in relation to aquaculture in The Wash); • Continued monitoring of Chlorophyll RFU values and mussel meat counts (SWEEP project) to inform the HRA associated with aquaculture in The Wash • Assess impacts of private fisheries within MPAs

		<p>starting with a gap analysis of available evidence</p> <ul style="list-style-type: none"> • Investigate cause of mussel mortality in The Wash.
<p>Viabile Industry</p> <p>High Priority</p>	<p>Various works ongoing in relation to viability as covered in previous sections.</p>	<ul style="list-style-type: none"> • Enabling lay activity • Investigation into mussel die off
<p>Species trends</p>	<p>Cockles have a strong positive trend (primarily due to an exceptional cockle settlement in 2014) whereas 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 emerging fisheries are detected in initial assessment.</p>	

Group: Crustaceans	Key Species: Brown Crab, Lobster	Overall risk: High		
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance	
Initial assessment Rank: Low	Initial assessment Rank: Low	Initial assessment Rank: Low	Initial assessment Rank: Medium	
Contextual Rank: High	Contextual Rank: High	Contextual Rank: Medium	Contextual Rank: High	
<p>The group scores low in the initial assessment which reflects a high level of data collection (including effort – MSAR 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 EIFCA management and is of relatively low confidence due to the data collection methods. 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 may also be required to inform the Cromer Shoal MCZ impact assessment including impacts on fisher's if management measures are required.</p>	<p>The majority of species within this group are not regulated however the two dominant species (crabs and lobsters) do have associated national and IFCA management measures in place. These management measures are subject to an ongoing review which is examining the need for more effort management. Stakeholders have indicated need for additional measures. Many comments and suggestions of how the fishery should be regulated have been received, although different operators have generally had very different ideas.</p>	<p>These fisheries are dominated by potting fisheries which score low for ecosystem impacts (low by-catch, negligible habitat damage). However, recently designated Cromer MCZ habitats (requires assessment) against the interaction with potting and the dominant fishery on the N.Norfolk coast is thought to coincide with the youngest crabs of the relevant stock before they migrate along the east coast.</p>	<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 those required for maximum sustainable yield.</p> <p>The score for this group has been reduced, but this is largely due to new species that have been landed but in low weights. Weights for key species Brown crab and Lobster are 3rd and 5th respectively. Value of catch ranked 2nd and 3rd respectively.</p> <p>Fishers felt that 2018 was a bad year (low landings) following highs in 2017.</p>	
Category of works & Priority	Rationale		Potential works	
New data / evidence acquisition	<p>Fisheries sustainability data collection is currently underway but additional data is required to assess the fisheries in more detail and to inform the development of management measures (including impacts on the industry) in relation to MSY.</p>		<ul style="list-style-type: none"> Partnership work with Cefas and MMO to develop MSAR forms 	

High Priority	Development of MSAR forms including dialogue with Cefas and MMO will be required to prevent duplication of effort for fishers. In addition, fishing activity data in relation to potting within the Cromer Shoal MCZ is required to complete an impact assessment. It is not thought that information with higher spatial confidence is required at this stage. Further habitat mapping surveys required to inform any management measures.	(higher spatial resolution and effort data); <ul style="list-style-type: none"> • Additional length frequency data needed for lobsters to inform MSY models; • Potting activity within the Cromer Shoal MCZ to inform an impact assessment.
Monitor / maintenance Medium priority	Current levels of data collection are limited but need to be maintained and furthered to prevent any increases in risk. Velvet swimming crabs – reports of an increase on the ground. Fisheries for this species could have impact on implementation of escape gaps.	<ul style="list-style-type: none"> • Continue crab and lobster bio-sampling regime to inform development of MSY models; • Monitor effort levels to assess if increases are occurring.
Regulation High Priority	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. Management measures in relation to the protection of the Cromer Shoal MCZ (if required) will be required to go to formal consultation this year. These measures have not yet been developed, therefore this is a continuation of a 2016/17 priority. In addition, crustacean fisheries are known to occur within the Wash and North Norfolk Coast SAC/ other SAC's which will need to be reflected in the associated monitoring and control plans. There is also a push for more regulation from within some sections of the industry.	<ul style="list-style-type: none"> • Development of management measures in relation to crab and lobster fisheries sustainability • Development of management measures (as required) for the protection of the Cromer Shoal MCZ • Development of relevant monitoring and control plans
Engagement High Priority	The brown 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. Due to the paucity of data in relation to the fishery, anecdotal evidence from the industry is highly valuable.	<ul style="list-style-type: none"> • Engagement in relation to the development of measures; • Development of voluntary 'v-notching' scheme; • Engagement in relation to berried lobster ban
Enforcement Low Priority	Compliance in relation to the key species (i.e. Crab and Lobster) is generally good. No new measures are likely to be implemented within the next financial year. Focus for compliance should be on the 'berried lobster ban' including development of	<ul style="list-style-type: none"> • Continue routine engagement and compliance checks in

	associated SOPs in relation to using lobster 'scrubbing detection kits'. Current levels of presence / engagement needs to be maintained to deter non-compliance.	<p>accordance with the Compliance Risk Register and TCG;</p> <ul style="list-style-type: none"> • Development / training in relation to berried lobster ban for IFCOs.
<p>Environment / ecosystems</p> <p>High Priority</p>	An assessment of impacts of fishing activity in relation to the Cromer Shoal MCZ needs to be undertaken and management measures (as required) put to formal consultation. Monitoring and control plans will be required and 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"> • Development of relevant Monitoring and control plans • Cromer Shoal MCZ – fishing impact assessment
<p>Viable Industry</p> <p>Low Priority</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 EIFCA byelaw. Other IFCA's make an exception for cooked offal which would otherwise go to waste. This will be reviewed alongside the development of crab and lobster measures.	<ul style="list-style-type: none"> • Engagement in relation to the development of measures.
Species trends	Velvet swimming crabs and 'mixed crabs' show a strong negative trend. Annual landed weights of Velvet swimming crabs have declined from a peak (20 tonnes) in 2011 to 3.9 tonnes in 2017 (This is possibly due to environmental factors. -e.g. warm winter, favouring velvet crabs in 2010-2011, resulting in an increased abundance) Mixed crabs were only landed in one of the years over the period 2010 to 2016 (inclusive) and is not thought to be reflective of a genuine trend. Green crabs have shown a strong positive trend over the same period although the peak landing over the period (2015) was all of 200 kg, which shows this is a marginal fishery. Brown crab shows a strong positive trend in landings. Green Crab also show a strong positive trend, this is due to very low landings before 2017.	

Group: Demersal	Key Species: Bass, Cod	Overall risk: Medium	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: Medium	Initial assessment Rank: Medium	Initial assessment Rank: Medium	Initial assessment Rank: Low
Contextual Rank: Medium	Contextual Rank: Low	Contextual Rank: High	Contextual Rank: Medium
Eastern IFCA 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. 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. Netting activity data is potentially required in relation to bycatch of porpoises, seals and seabirds.	Eastern IFCA has only limited management measures in place however, these fisheries are heavily managed through national and European measures. European measures have become stricter in 2019 and landings have remained consistent since management measures have been implemented. Due to gaps in the national legislative system, 'unregulated netting' is thought to occur (i.e. netting which is, for the most part, legal but is not regulated in any way). This tends to be undertaken by small scale fishers but, particularly when undertaken in nursery or spawning areas, does have the potential to have disproportionately large impacts on wider. Bass fisheries are the most at-risk species within this group, ICES advice is negative, but has improved this year. CVM actions: Protection of spawning areas with a focus on bass (95.5% support). Maximum landing size Bass (54.5% support).	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'. Several reports from commercial fishers, stating that pulse fishing has been detrimental to these fisheries and has resulted in high fishing mortality.	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. 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 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.

Category of works/ Priority	Rationale	Potential works
<p>New data / evidence acquisition</p> <p>Medium Priority</p>	<p>Effort and fisheries data is not necessarily required from a 'stock management' perspective but is of a priority in relation to 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, EIFCA will support this workstream when possible. Voluntary measures require review in the context of other national work occurring. Additional dialogue with the RSA community would be beneficial.</p> <p>Additional data collection related to netting activity (both recreational and commercial) would bring benefits across multiple workstreams.</p>	<ul style="list-style-type: none"> • Support the MMO regarding the development and implementation of under 10 catch reporting. • Continue to provide evidence in relation to development of BNAs; • Review the applicability and utility of collecting voluntary fisheries data. • Undertake gap analysis of fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises.
<p>Monitor / maintenance</p> <p>Medium Priority</p>	<p>Development of 'unregulated netting' measures was a 2016/17 priority but Eastern IFCA involvement in Bass Nursery Area (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 in the context of BNA. Monitor displacement into other fisheries.</p>	<ul style="list-style-type: none"> • Re-assess needs for 'un-regulated netting' measures in the context of BNA development.
<p>Regulation</p> <p>Low Priority</p>	<p>Demersal species are heavily regulated by national and European measures. 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 in relation to fisheries impacts.</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</p>	<ul style="list-style-type: none"> • Consideration of 2019 bass measures in relation to ICES stock assessments and local conditions; • Partnership working in relation to the development of BNA; • Consider benefits of nursery / spawning area protection when developing other management measures.

	<p>of BNA within the district and the planned introduction of such reduces the risk in relation to 'unregulated netting'. Eastern IFCA contribution to this work will mitigate the associated risk. 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. This does however raise the risk of non-compliance and increases the importance of engagement and education from an operational perspective.</p> <p>Bass sustainability is in exception to the group in general, particularly in relation to the protection of spawning aggregations. In 2016/17 Eastern IFCA developed and consulted on an Emergency Byelaw. Through consultation and information gathering Eastern IFCA determined that the costs (to the fishing industry) would be disproportionate compared to the benefit.</p> <p>Whilst bass stocks are considered to be in a very poor state, the risk associated with bass fisheries is mitigated by the implementation of European management measures and a national work-stream related to BNA. EIFCA contribution to the related work-streams will further reduce the associated risk and should be considered as a higher priority than the group in general.</p> <p>Given the importance of nursery and spawning areas in relation to this group, protection of these areas should be considered as a potential added benefit of other management measures (for example, closed areas in relation to the protection of EMS could include some areas of importance for nursery / spawning areas where appropriate).</p>	
<p>Engagement Medium Priority</p>	<p>Given the lack of formal fisheries data, there is a reliance on engagement to detect changes in activity levels. Wide engagement will be required in relation to BNA. Additional / more directed engagement with the RSA sector will also benefit strategic and operational decision making. Fishers to be made aware and education to be completed around the landing's obligation regulation and on new bass measures. In addition, there is a lack of consistency across IFCA's and the</p>	<ul style="list-style-type: none"> • Engagement with RSA sector to obtain fisheries data; • Engagement with fishers regarding BNA and other bass measures; • RSA regarding MCRS and collaborative / standardising • Landing obligation education

	MMO in relation to the application of MCRS to RSA. Some RSA are not aware of MCRS within the district.	
Enforcement High Priority	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 landings obligation.	<ul style="list-style-type: none"> • Bass related enforcement and engagement; • Intel gathering and partnership working with MMO (bass and landing obligation).
Environment / ecosystems Medium Priority	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 (of bottom-towed-gear) within this fishery are relatively low.	<ul style="list-style-type: none"> • Monitoring and control plans; • Undertake gap analysis of impacts data relevant to assessing fishing impacts on SPA bird species and porpoises; • Development of management measures for any relevant 'red-risk' gear/feature interactions within MPAs.
Viable Industry Medium Priority	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"> • Explore initiatives to invigorate the herring fishery.
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>Cod and Bass respectively are 7th and 12th with regards to landed weight. They are also 14th and 10th 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 (provisionally). 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>	

Group: Dogfish and Sharks		Key Species: L.S.D.	Overall risk: Low	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance	
Initial assessment Rank: High	Initial assessment Rank: Medium	Initial assessment Rank: Low	Initial assessment Rank: Low	
Contextual Rank: Low	Contextual Rank: Low	Contextual Rank: Low	Contextual Rank: Low	
<p>Fisheries evidence is poor including effort and catch data (especially given their use as bait species).</p> <p>The gaps in data are now mostly identified. ICES advice is to maintain at current levels of exploitation.</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 however fishing mortality is relatively low within the district.</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 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.</p> <p>A key message that came from fishers is that catches of spurdog are very high and they should be able to land them.</p>	
Category of works/Priority	Rationale		Potential works	
New data / evidence acquisition	Except for lesser-spotted-dogfish (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		<ul style="list-style-type: none"> Develop mechanism to monitor levels of LSD use as bait to gain better understanding of overall fishing mortality; 	

Low Priority	fisheries (e.g. crab and lobster) and as such, landed weight indicated from MMO data is potentially an underestimate of catch.	<ul style="list-style-type: none"> • Undertake gap analysis of fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises.
Low Priority / Monitor maintenance	EIFCA 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"> • Partnership working with CEFAS re shark / dogfish research where possible; • Review/Development of voluntary landings data.
Low Priority Regulation	None identified.	<ul style="list-style-type: none"> • None identified
Low Priority Engagement	Given the limited available data, dialogue with the industry is important to detect changes in activity levels or emerging fisheries.	<ul style="list-style-type: none"> • None identified
Low Priority Enforcement	There is limited regulation which can be enforced (except for Tope for which there is an EIFCA byelaw).	<ul style="list-style-type: none"> • Continue routine engagement and compliance checks in accordance with the compliance risk register and TCG.
Medium Priority Environment ecosystems /	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. The Eastern IFCA district is potentially a refuge for these species and this should be reflected within a monitoring and control plan.	<ul style="list-style-type: none"> • Development of relevant monitoring and control plans; • Undertake gap analysis of impacts evidence relevant to assessing fishing impacts on SPA bird species and porpoises; • Development of management measures for any relevant 'red-risk' gear/feature interactions within MPAs.
Medium Priority Viable Industry	Spurdog catches can 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 is both time consuming and makes long lining unfeasible at certain times of the year.	<ul style="list-style-type: none"> • Work with partner organisations to report this issue from fishers. • Possibility of involvement in the spurdog avoidance programme, however unlikely to occur in the next year as data will need to be collected in advance.

Species trends	Lesser-spotted-dogfish show a strong positive trend with annual landed weight increasing from 1 tonne in 2010 to 8 tonnes in 2016 which dropped to 4 tonnes in 2017. Whilst this is a modest annual landed weight (and circa 1% of UK landed weight) LSD are thought to show a biological vulnerability to over fishing (slow growth, low fecundity). Smoothound are the only other species in this group that have landings over a tonne. Landings have been consistent with no strong trend. However, this is likely to be due to quota rather than species trends.
----------------	---

Group: Flatfish	Key Species: Sole, Plaice, Flounder, Dab		Overall risk: Medium	
Evidence base		Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: Medium		Initial assessment Rank: Medium	Initial assessment Rank: High	Initial assessment Rank: Medium
Contextual Rank: Medium		Contextual Rank: Low	Contextual Rank: High	Contextual Rank: Medium
<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. Further activity data is required in relation to the levels of use of gear in relation to ecosystem impacts (including within spawning and nursery areas) 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 porpoises and SPA bird species.</p>		<p>Eastern IFCA has only limited management measures in place however, these fisheries are generally managed through national and European measures (including minimum sizes and effort control). 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>The implementation of the demersal landing obligation will likely impact on these fisheries, particularly in relation to 'choke species' which will potentially inhibit fishing activity and increase non-compliance.</p>	<p>Many species within the group are likely to have nursery areas within the district (which are thought also to be coincident with shrimp fishing). Fishing gear includes bottom-towed-gear which has a high ecosystem impact and (abrasion) although activity levels are thought to be low. 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>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 MMO landings data used in the assessment. 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 direct to the public (and is not captured in MMO data as a result). 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 benefit. ICES advice is favourable for the highest landed weight species (including sole).</p>

Category of works / Priority	Rationale	Potential works
<p>New data / evidence acquisition</p> <p>Medium Priority</p>	<p>Effort and fisheries data is not necessarily required from a 'stock management' perspective but is of a priority in relation to 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 and the emergence of BNA in recent years. Collection of better fisheries data in relation to these fisheries was given a medium priority in 2016/17 but initial work streams proved unsuccessful. Voluntary measures would benefit from further development and additional dialogue with the RSA community would be beneficial. National measures to obtain additional landings data from the under 10m sector will also address the 2016/17 work stream in the longer term. Additional spatial activity data may be required to inform HRA's.</p> <p>There have been reports of a lack of flounders within Suffolk Estuaries over recent years which is anecdotally thought to be a result of potters (crab, lobster, whelk) catching it to use as bait. This could also be a result of climate change as they are still found in northern estuaries.</p>	<ul style="list-style-type: none"> • Continue to liaise with national approach re under 10m sector landing data; • Continue to provide evidence in relation to development of BNAs; • Further develop voluntary fisheries data; • Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises; • Development of sole fishing activity data (data sharing agreement with MMO).
<p>Monitor / maintenance</p> <p>Medium Priority</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 in the context of BNA.</p>	<ul style="list-style-type: none"> • Re-assess needs for 'un-regulated netting' measures in the context of BNA development.
<p>Regulation</p> <p>Low Priority</p>	<p>Flatfish species are generally regulated by national and European measures. 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, the emergence of BNA within the district and the planned introduction of such will likely reduce the need to regulate initially to prevent 'unregulated netting'. Landing obligation limits ability to add management.</p>	<ul style="list-style-type: none"> • None identified

<p>Engagement</p> <p>Medium Priority</p>	<p>Given the lack of formal fisheries data, there is a reliance on strong relationships to detect changes in activity levels. Wide engagement will be required in relation to BNA. Additional / more directed engagement with the RSA sector will also benefit strategic and operational decision making. Messages from fishers have indicated that there is an increased amount people targeting these species due to lack of cod and bass.</p>	<ul style="list-style-type: none"> • Engagement with RSA sector to obtain fisheries data; • Engagement with fishers regarding BNA.
<p>Enforcement</p> <p>Medium Priority</p>	<p>Flatfish fisheries are generally marginal although some high value species present a higher enforcement risk at sometimes of the year.</p>	<ul style="list-style-type: none"> • Continue routine engagement and compliance checks in accordance with the Compliance Risk Register and TCG.
<p>Environment / ecosystems</p> <p>Medium Priority</p>	<p>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 thought to be relatively modest.</p>	<ul style="list-style-type: none"> • Monitoring and control plans; • Undertake gap analysis of impacts data relevant to assessing fishing impacts on SPA bird species and porpoises • Development of management measures for any relevant 'red-risk' gear/feature interactions within MPAs.
<p>Viable Industry</p> <p>Low Priority</p>	<p>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.</p>	<ul style="list-style-type: none"> • Explore initiatives to invigorate the herring fishery.
<p>Species trends</p>	<p>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 42 tonnes in 2015 and 2016 and 30 tonnes in 2017 (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.</p>	

Group: Cephalopods		Overall risk: Low	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: High	Initial assessment Rank: High	Initial assessment Rank: High	Initial assessment Rank: Low
Contextual Rank: Low	Contextual Rank: Low	Contextual Rank: Low	Contextual Rank: Low
Marginal fishery with very limited landings (less than 300 kg combined per annum).			
Category of works/ Rational	Rationale		Potential works
New data acquisition Low Priority	Priority: Low – limited / marginal fishery		<ul style="list-style-type: none"> • Maintain a watching brief on landings and fishing trends
Monitor / maintenance Low Priority	Priority: Low – limited / marginal fishery		<ul style="list-style-type: none"> • None identified
Regulation Low Priority	Priority: Low – limited / marginal fishery, additional regulation would have very limited effect.		<ul style="list-style-type: none"> • None identified
Engagement Low Priority	Priority: Low – limited / marginal fishery		<ul style="list-style-type: none"> • None identified
Enforcement Low Priority	Priority: Low – limited / marginal fishery		<ul style="list-style-type: none"> • None identified
Environment / ecosystems Low Priority	Priority: Low – limited / marginal fishery		<ul style="list-style-type: none"> • None identified
Viable Industry Low Priority	Priority: Low – limited / marginal fishery		<ul style="list-style-type: none"> • None identified
Species trends Low Priority	None identified.		

Group: Pelagic	Key Species; Herring, Mackerel, Sprat	Overall risk: Low	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: Medium	Initial assessment Rank: Medium	Initial assessment Rank: Medium	Initial assessment Rank: Low
Contextual Rank: Medium	Contextual Rank: Low	Contextual Rank: Low	Contextual Rank: Low
Netting activity data is required in relation to bycatch of porpoises but low levels of activity reduce the associated risk.	This group is managed through European and national measures. In addition, given the small contribution to UK landings, EIFCA regulation would have limited benefit.	Spawning aggregations can be targeted very effectively by metiers associated with these fisheries and does represent a potential risk, particularly in relation to mackerel in the Southern North Sea however, EU measures are currently in place to reduce the impact of targeting these aggregations. 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 higher levels than usual of disturbance caused by seals. Reports have focused on seals damaging nets and following vessels.	<p>None of the species landed represent a 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 (particularly around the Wash). 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.</p>
Category of works & Priority	Rationale		Potential works
New data acquisition Medium Priority	Effort and fisheries data is not necessarily required from a 'stock management' perspective but is potentially of import in relation to spawning and nursery areas. Further evidence is potentially required in relation to the		<ul style="list-style-type: none"> Undertake gap analysis of fishing activity relevant to

	presence of spawning and nursery areas within the district, given the changes in water temperature and the emergence of BNA in recent years. Continuation of voluntary data collection from smaller scale fishers. Netting activity data is required in relation to bycatch of porpoises and SPA bird species.	assessing fishing impacts on SPA bird species and porpoises.
Monitor / maintenance Low Priority	Continuation and potential for further development of voluntary data collection from smaller scale fishers	<ul style="list-style-type: none"> • Development of voluntary landings data.
Regulation Low Priority	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"> • None identified.
Engagement Low Priority	Given the lack of formal fisheries data, there is a reliance on strong relationships to detect changes in activity levels. Wide engagement will be required in relation to BNA (which may have impacts on netting for all species within some rivers and estuaries but these will likely be limited for this fishery given low landed weights and values). Additional / more directed engagement with the RSA sector will also benefit strategic and operational decision making. Previous years have shown that RSA's are unaware of larger minimum conservation reference size (MCRS) in the North Sea ecoregion, therefore there is a requirement for a greater amount of engagement. There has been a lack of consistency between different IFCA's and the MMO on this issue.	Further development of RSA engagement material
Enforcement Low Priority	Fishery is generally marginal however; MCRS offences have been detected historically. This is due to a higher MCRS In the Southern North Sea and the area being a spawning area. Shoals of sprat have potential to include high proportions of juvenile herring. Species will be subject to the landing obligation.	<ul style="list-style-type: none"> • Continue routine engagement and compliance checks in accordance with the Compliance Risk Register and TCG.
Environment / ecosystems Medium Priority	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.	<ul style="list-style-type: none"> • Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.

<p>Viable Industry</p> <p>Medium Priority</p>	<p>Significant numbers of herring are landed at certain times of the year. Fishers can easily obtain a large quantity of this fish with minimal effort. 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. This may be compounded by the issue of unregulated netting activity.</p> <p>Sprat fishery not currently targeted due to low market value. Displacement from brown shrimp fishery could see increased interest.</p>	<ul style="list-style-type: none"> • EIFCA to identify if opportunities exist to work with partner organisation's or individuals (including fishers) to increase the market demand of these species (primarily herring).
<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 within the EIFCA 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.</p>	

Group: Shrimp / Prawns	Key Species: Brown Shrimp	Overall risk: High	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: Low	Initial assessment Rank: Medium	Initial assessment Rank: High	Initial assessment Rank: Medium
Contextual Rank: Medium	Contextual Rank: Medium	Contextual Rank: Medium	Contextual Rank: High
<p>Data in addition to that which can be obtained from existing MMO data requests is required to manage the fishery in the context of protecting designated features of MPAs. Fishers are required to complete returns forms and the implementation of I-VMS is included in ongoing management measure development. Additional data with regards to impacts on habitats is required. Internal processes in relation to processing and analysing associated data is required. Further dialogue with the MMO is required to avoid duplication of effort on the part of the fishers.</p> <p>There is a requirement for further information on bycatch and survivability, this data is currently being collected through the CEFAS Observer programme and discards survival trial.</p>	<p>A permit scheme is in development (and will likely be in place for 2019/20) which provides a mechanism to implement stock management measures. MPA protection measures are part of an ongoing work stream. Spatial closures introduced through the 'Protected Areas Byelaw' also require review.</p>	<p>Shrimp trawling gear exhibits a high risk in relation to both habitat damage and by-catch impacts (particularly in nursery areas). Management measures to protect MPA features are in place (pending final sign off) although they may be subject to further review.</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>Although the focus is generally on The Wash, 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. The marine protected areas byelaw and shrimp permit byelaw will mitigate a lot of the risk as sensitive features will be protected and we will have a better understanding of fisheries activity.</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. Reasons for this are well understood.</p> <p>Landings of brown shrimps have fluctuated greatly in the last 6 years (due to the biology of the species) therefore 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).</p>

Category of works/Priority	Rationale	Potential works
<p>New data acquisition</p> <p>Medium Priority</p>	<p>Priorities set in 2016/17 have provided mechanisms for the collection of better fisheries data including the development of returns forms and provision for I-VMS. Internal and partnership processes require development in relation to I-VMS data analysis and capture. Some vessels currently complete return forms for the MMO (vessels 12m and over), dialogue with the MMO is required to reduce duplication of effort.</p>	<ul style="list-style-type: none"> •Develop mechanisms to store and analyse I-VMS data including dialogue with partner organisations; •Liaise with MMO re need to capture higher resolution fisheries data; •Develop shrimp returns forms in consultation with fishers •Development of monitoring regime through Monitoring and Control Plan.
<p>Monitor / maintenance</p> <p>High Priority</p>	<p>Continuation of the development of systems to analyse returns data Including the analysis of I-VMS data is required. Once fully implemented, fishing activity will require monitoring and management in line with measures highlighted in the HRA, management plan and subsequent Monitoring and Control Plan and flexible permit conditions.</p>	<ul style="list-style-type: none"> •Continuation of 2016/17 shrimp management priorities; •Monitor effort in line with Monitoring and Control Plan •Write report on the applicability of using I-VMS data for the monitoring of activity (as part of wider I-VMS trial).
<p>Regulation</p> <p>Medium Priority</p>	<p>Notwithstanding the priority work stream in relation to MPA measures, stock management measures represent a priority carried over from the 2016/17 priorities. Whilst a mechanism to implement such measures is in place, development of specific measures is required and is intended to be informed by the ongoing MSC Accreditation Scheme work being undertaken by the industry. Spatial closures which primarily relate to shrimp fishing are currently in place in The Wash. These require review to reflect new evidence in relation to the extent of the 'red-risk' features which they protect. However, the closures currently in place have less of a risk associated with them than in the case where management is required and there is none (i.e. amber and greens management).</p>	<ul style="list-style-type: none"> •Continue to implement Shrimp Permit Byelaw and MPA management measures; •Develop fisheries sustainability management measures (including consideration of impacts on nursery areas); •Implementation of I-VMS throughout shrimp fishing fleet.
<p>Engagement</p>	<p>Proposed MPA management measures are complicated and structured engagement with the industry is required. The structure of the industry itself is complicated and exhibits differing business models. Further</p>	<ul style="list-style-type: none"> •Continue dialogue with the industry in relation to MPA management measures

Medium Priority	dialogue is required in relation to the development of stock management measures and the associated impacts on the industry. Development of Monitoring and Control Plans are required in relation to this gear as relatively minor increases in activity levels have the potential to have detrimental impacts on MPA features and activity is a dominant fishery in a high priority MPA.	(including formal consultation of permit conditions); <ul style="list-style-type: none"> •Development of associated Monitoring and Control Plans •Develop fisheries sustainability measures in consultation with the industry and considering outputs of MSC accreditation.
Enforcement Medium Priority	The implementation of the new measures will require enforcement 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"> •Enforcement and engagement in relation to new shrimp measures; •Routine shrimp fishery engagement and compliance checks in accordance with the Compliance Risk Register and TCG.
Environment / ecosystems Medium Priority	Management measures have now been developed and are in the process of being implemented. Further review of the effectiveness of management measures will be required. Further review will also be required in the context of new evidence and information.	<ul style="list-style-type: none"> •Continuation of 2016/17 shrimp management priorities; •Development of management measures for any relevant 'red-risk' gear/feature interactions within MPAs.
Viable Industry Medium Priority	Concerns that MSC accreditation scheme may create a closed system and prevent new entrants to the fishery.	<ul style="list-style-type: none"> •Maintain EIFCA involvement in the planning and preparation of the MSC accreditation scheme.
Species trends	Pink shrimp showing strong negative trends. Brown shrimp highly variable but within their normal range in the last two years.	

Group: Skates and Rays		Key Species: Thornback		Overall risk: Low	
Evidence base		Current Regulation		Ecosystem impacts	
Initial assessment Rank: Medium		Initial assessment Rank: Medium		Initial assessment Rank: Low	
Contextual Rank: Medium		Contextual Rank: Medium		Contextual Rank: Medium	
<p>Skates and rays suffer from poor identification and are often reported as 'skate and ray' or unintentionally misinterpreted. 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.</p>		<p>Eastern IFCA has no regulation in place specifically in relation to this group which is managed primarily through European quotas. Notably, there is a lack of minimum landing size regulation for skates and rays despite having relatively low fecundity.</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>	
Category of works		Priority / rationale		Potential works	
<p>New data acquisition</p> <p>Medium Priority</p>		<p>K&E IFCA are undertaking a joint research project with Cefas which may provide additional information. Effort and landings data is poorly understood for skates and rays. Netting activity data is required in relation to bycatch of porpoises and SPA species.</p>		<ul style="list-style-type: none"> • Review/Development of voluntary landings data in the context of national workstreams; • Actively liaise with partner organisations in relation to planned research projects; • Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises. 	
<p>Monitor / maintenance</p>		<p>Continuation and potential for further development of voluntary data collection from smaller scale fishers.</p>		<ul style="list-style-type: none"> • Development of voluntary landings data. 	

Low Priority		
Regulation	None identified	<ul style="list-style-type: none"> • None identified
Low Priority		
Engagement	Given the lack of formal fisheries data, there is a reliance on strong relationships with the industry and the RSA to detect changes in activity levels or potential emerging issues. The RSA sector favours this group and may provide additional information or a platform for developing research initiatives (tagging study or size at maturity study).	<ul style="list-style-type: none"> • Develop potential project plans to fill gaps in understanding of skate/ ray biology and population dynamics; • Engagement with RSA clubs to gather evidence/data
Medium Priority		
Enforcement	Group managed primarily through the quota system.	<ul style="list-style-type: none"> • Routine engagement and compliance, intel gathering and partnership working with MMO in accordance with Compliance Risk Register and TCG.
Low Priority		
Environment / ecosystems	Netting and trawl-based fisheries have the potential to have wider ecosystem effects (habitat damage and by-catch, particularly in nursery or spawning areas). 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"> • Develop relevant monitoring and control plans; • Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises; • Development of management measures for any relevant 'red-risk' gear/feature interactions within MPAs.
Medium Priority		
Viable Industry	Fishers have reported to the IFCA that at certain times of the year large quantities of Skate are on the ground and are available to be caught however the quota is not available.	<ul style="list-style-type: none"> • EIFCA to lobby at a national level regarding the allocation of quota in a way that works for smaller vessels.
Medium Priority		
Key species / Species trends	Significant negative trends are identified but only in relation marginal species (landed weights less than 100 kg). Thornback ray landed weights have remained relatively stable (although they peaked in 2014 and have remained slightly lower than previously). EIFCA landings as a proportion of UK landings is 1.8%.	

Group: Whelks	Key species: Whelk	Overall risk: Low	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: Low	Initial assessment Rank: Low	Initial assessment Rank: Low	Initial assessment Rank: High
Contextual Rank: Medium	Contextual Rank: Low	Contextual Rank: High	Contextual Rank: High
<p>Whelk fisheries data has been collected over the last three years in conjunction with the Emergency Whelk Byelaw and its permanent replacement. Whilst data is collected, a current research project is ongoing to determine an effective MLS and effort restrictions the context of MSY. Continuation of current collection is sufficient to provide data for the research projects.</p>	<p>A permit mechanism is now in place which enables the introduction of measures as required. Effort, gear and MLS are all currently managed and an ongoing research project will inform of any required changes.</p> <p>Suffolk fishers have raised concerns that the MCRS is too high and effectively makes the fishery inshore unviable.</p> <p>Byelaw review due in 2019/20.</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>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. The level of exploitation and landings may be too high. In previous years there has been concern that the level of exploitation is too high. This message was not received during 2017-18.</p>
Category of works/ Rational	Rational		Potential works
New data acquisition Medium Priority	Additional biological data is needed to inform work relating to the MCRS implemented through the Whelk Permit Byelaw 2016.		<ul style="list-style-type: none"> Increase scope is associated research project and voluntary gathering of whelk samples from fishers. Eastern IFCA to be involved with national collaboration between the IFCA's and CEFAS.

<p>Monitor / maintenance</p> <p>Medium Priority</p>	<p>Continuation of research project in relation to MLS and MSY. MSY assessment likely to require several years of fisheries data. Engagement with the industry to make them aware of permit byelaw.</p>	<ul style="list-style-type: none"> • Continuation of Whelk research projects to develop appropriate MLS and effort management. • Assessment of permit data – MSY • Assessment of MLS
<p>Regulation</p> <p>Low Priority</p>	<p>Current regulations are thought to be sufficient to reduce risk of fisheries collapse. Mechanism in place to modify measures in line with best available evidence – to be informed by ongoing research project. Byelaw review due in 2019/20, as byelaw will have been in place for 4 years, possible changes and recommendations have often been raised by stakeholders and this can be included in the crab and lobster measures in order to achieve added benefit to an ongoing workstream</p>	<ul style="list-style-type: none"> • None identified
<p>Engagement</p> <p>Low Priority</p>	<p>Prior to the outputs of research projects regarding MLS and MSY no additional engagement is required (noting that current levels of engagement are required to inform fishers about the measures). To be informed by the associated research project. Further engagement is required to get buy in to the management process, including submission of accurate returns and the importance these have regarding future management of the fishery.</p>	<ul style="list-style-type: none"> • None identified • More engagement to follow new MLS / MSY work
<p>Enforcement</p> <p>High Priority</p>	<p>Compliance with the Emergency Whelk Byelaw and the Whelk Permit Byelaw 2016 has been poor. MSY models rely on data provided by permit holders however, compliance with data returns has also been poor. In addition, the favoured bait species for whelks are edible crab (<i>Cancer pagurus</i>). Eastern IFCA has a byelaw in place to prevent its use which was in response to fishers using undersize crabs.</p>	<ul style="list-style-type: none"> • Routine whelk fishery engagement and compliance, intel gathering and partnership working with MMO in accordance with Compliance Risk Register and TCG.
<p>Environment / ecosystems</p> <p>High Priority</p>	<p>An assessment of impacts of fishing activity in relation to the Cromer Shoal MCZ needs to be undertaken and management measures (as required). Monitoring and control plans will be required, and this activity takes place predominantly within MPAs for which MCPs have been prioritised (namely the Wash and North Norfolk Coast SAC).</p>	<ul style="list-style-type: none"> • Development of relevant Monitoring and control plans; • Cromer Shoal MCZ – fishing impact assessment.

Viable Industry	Priority: Low Reports of the MLS being too high inside the EIFCA district and the grounds being fished out, due to high effort within the inshore grounds. Therefore, there is a requirement for further research and implementation of findings.	<ul style="list-style-type: none"> • Further research on effort and SOM to ensure the long-term sustainability of the fishery.
Low Priority		
Species trends	Strong positive trend and significant landed weight.	

Consideration of engagement during 2018

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	EIFCA Consideration
<p><i>Winter storms impacting gear and fishing grounds in 2018</i> – the 'beast from the East' damaged fishing gear, particularly pots (crab, lobster and whelk fisheries), left at sea over the winter periods. Fishers have also reported a less productive crab fishery this year and that fewer crabs have been 'seen on the ground'. Notably, hundreds of lobsters were washed up within the North Eastern IFCA district some of which were returned to sea by fishers. There are concerns about 'knock-on' effects of the storms on future sustainability.</p>	<p>Crab and lobster stock management is a high priority workstream (as carried over from previous years). Through this project, we intend to ensure a resilient crab and lobster stock which can withstand natural pressures and phenomenon.</p>
<p><i>Plastic pollution incl fishing gear</i> – the impacts of plastics in the marine environment drew huge media attention during 2018. This has prompted many fishers to consider the impacts of their fishing practices and the materials used which may end up in the sea. This has included:</p> <ul style="list-style-type: none"> • Concerns raised about using plastic bottles (i.e. fizzy drink bottles') to mark fishing grounds within the WFO cockle fishery; 	<p>Eastern IFCA has been exploring potential funding for a project concerned with testing crab and lobster fishing pots with no plastic.</p> <p>Eastern IFCA likely to support initiatives from the industry where possible including in relation to reducing plastic waste.</p>

<ul style="list-style-type: none"> • Concerns about the use of plastic evidence tags and whelk permit tags which may enter the marine environment; • Concerns about use of plastic whelk pots. 	
<p><i>Paralytic Shellfish Poisoning incidents</i> – incidents of dog deaths as a result of eating dead animals containing Paralytic Shellfish Toxins (PST) were widely reported in early 2018. EIFCA led a coordinated response to the issue including undertaking monitoring, sample collection and delivering messages to the public through Operation Blake. The risk to public health was low to nil given that no PST had been found at harmful levels in ‘edible’ species however, a monitoring programme has been developed to ensure risk to the public remains low. Funding is being sought to deliver this programme. Fishers responded very positively to Operation Blake.</p>	<p>Operation Blake has been awarded an offer of grant for a long-term monitoring programme which also aims to investigate the source of the PST.</p>
<p><i>Shrimp fishing sustainability</i> – several fishers have raised concerns this year about the small size of some shrimp being landed. In addition, smaller-scale shrimp fisheries on the North Norfolk Coast are reportedly impacted by larger scale fishing pressures.</p>	<p>Development of shrimp sustainability measures (as required) is a high priority work-stream for this financial year.</p>
<p><i>EU Exit</i> – towards the end of 2018 particularly, fishers raised concerns about the impact of EU Exit on their industry and in particular in the event of a ‘no deal Brexit’ and the readiness of the industry.</p>	<p>Eastern IFCA has been publicising government guidance to aid industry preparations for EU Exit.</p>
<p><i>Spurdogs</i> – As in previous years, fishers have reported large numbers of spurdog present on fishing grounds and difficulties in catching ‘target species’ due to their abundance. The industry has suggested that the prohibition on landing the species be lifted given the high abundance of the fish.</p>	<p>Whilst this issue is outside of Eastern IFCA’s remit (with quota for this species being controlled by the European Council), Eastern IFCA has engaged with a Cefas initiative which is investigating spurdog retention as by catch.</p>
<p><i>Eastern IFCA shrimp permit scheme</i> – Eastern IFCA has been consulting on the implementation of a permit scheme for several years and this has highlighted polarisation within the industry on the best approach and how this may impact different business models.</p>	<p>Recognising the potential impacts and complexities of a permitting scheme for shrimp fishing, Eastern IFCA is dedicating a separate consultation with industry to investigate the most effective way to manage effort in this fishery.</p>

<p><i>Crab / lobster measures</i> – Eastern IFCA have been in dialogue with crab and lobster fishers throughout the district with regards to management measures for a number of years. The development and implementation of such has been on hold due to other priorities for a number of years and some fishers have voiced frustration about the lack of progress. More positively, the industry has generally been in favour of Eastern IFCA intervention, particularly in relation to an increase in Minimum Conservation Reference Size within the district. Numerous and varied suggestions have been made and recorded.</p>	<p>Developing management measures for crab and lobster fisheries are a priority work-stream carried over from previous years.</p>
<p><i>Wash Fishery Order 1992 cockle fishery</i> - generally positive feedback on measures during the 2018 fishery however some concerns remain regarding daily catch restrictions from larger business models.</p>	
<p><i>Inshore Vessel Monitoring System (I-VMS)</i> – 2018 included the consultation for national requirements for vessels under 12m to have I-VMS and consultations for the same through Eastern IFCA byelaws. There has been a mixed reception to the proposals with some fishers expressing concerns about privacy and cost whilst others consider the technology necessary for a well-managed fishery, identifying benefits including greater traceability of catch.</p>	<p>Eastern IFCA has been active in setting out the benefits of I-VMS to the industry.</p>
<p><i>Seal abundance increases</i> – Seal populations within the district are known to have increased over recent years. Fishers have expressed concerns about an increased level of impact on fishing gears and fish stocks and in particular bass. Suggestions include an organised cull of seals. Seals also form part of several MPA within the district and are a protected species in their own right.</p>	<p>Eastern IFCA has engaged with the national workstream which is considering non-lethal methods of managing seal behaviours.</p>
<p><i>Negative impact of pulse trawling</i> – This occurs outside of the district, but it is reported as having a negative impact on stocks within the district. Reported in messages and patrol reports. Also discussed during fisheries meetings. Issues reported have generally related to this causing widespread ecosystem impacts and causing the declines in demersal fish, flatfish and whelks. This is a politically sensitive issue and is locally of high profile.</p>	<p>The Authority have considered this issue and wrote to Defra to express their concerns. The European Council has upheld a full ban on the activity during February of this year with the prohibition likely coming into effect over the next few years.</p>

2.2 Eastern IFCA Priorities 2019-20

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.

Table 4 – High priority works for 2019-20			
Category	Work	Fisheries	Comments / Rationale
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) SCI, and the Haisborough, Hammond & Winterton SCI. 'Red-risk' interactions require immediate management. Work includes development of spatial closures within the IDRBNR SCI, 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.
	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.
	Development of priority Monitoring and Control plans.	Bivalve molluscs, shrimp and prawns, crustacean and whelks	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. Development of	Demersal, flatfish, Dogfish and Sharks,	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

	management measures where required.	Skates and Rays, pelagic	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).
	Development of management measures in relation to crab and lobster fisheries sustainability	Crustaceans (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.
To ensure that the marine environment is protected from the effect of exploitation by reviewing district wide bio-security	Development of district wide biosecurity measures	All (focus on bivalve molluscs)	Primarily relates to the bivalve mollusc fisheries (which are of high economic importance) but is applicable to all fisheries within the district. Continued from 2015/16 as a priority.
	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.

measures including management of invasive, non-native species			
To develop management of the fisheries regulated under the WFO (regulated and several fishery)	Implementation of proposed licence fees, fisheries management plan and Regulations.	Bivalve molluscs	Work includes formal consultation with WFO licence holders 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 2019-20.
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 2019-20

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).

Whelk management / research

The risk associated with the Whelk fisheries was high during the 2015 Strategic Assessment. Subsequent development of management measures has significantly reduced the risk associated with the fishery.

Data collection and research projects associated with stock assessments are ongoing and are established work streams intended to continue over time. Work relating to the size at maturity (to inform an appropriate minimum landing size) and analysis of effort and landings data (to inform the appropriate number of pots per vessel) is required to mitigate residual risk associated with the fishery. Review of the whelk permit byelaw is required.

Crab and lobster research

Analysis of Monthly Shellfish Activity Reports (MSAR) data in relation to crustacean management is undertaken routinely. This data is augmented by 'bio-sampling' data which is also routinely collected by officers in the field. Whilst the current dataset relating to this requires development (as highlighted in the assessment) the continuation of the established processes is needed to prevent risk from increasing.

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).

Landings Obligation

Work around education and engagement with regards to the landing obligation. (supporting role). This is because the landing obligation is resulting in changes to how fisheries in the district operate.

2.4 Identification of future priorities 2019-20

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.

Category	Work	Fisheries	Comments / Rationale
Obtaining better fisheries data	Continue dialogue with MMO in relation to development of 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.
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	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

	North Eastern Sea Fisheries Committee)		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.
--	--	--	---

3. Principles applied in undertaking priorities

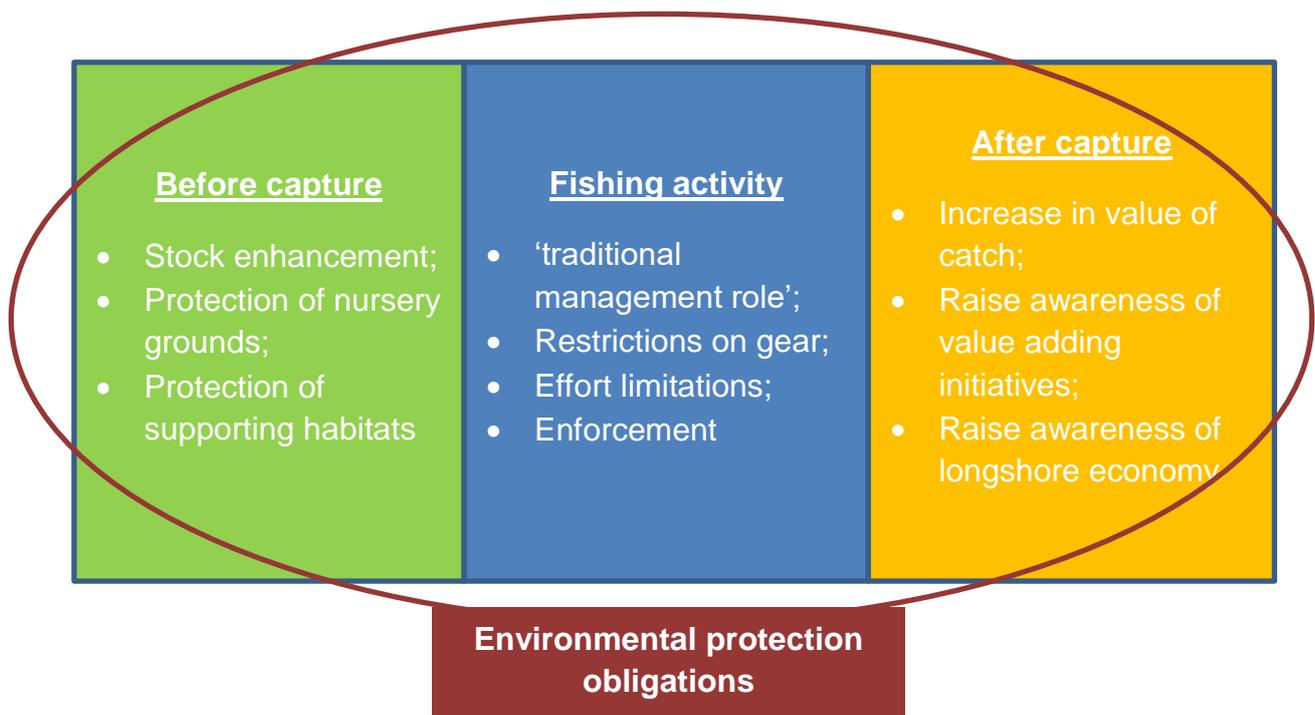
The Strategic Assessment focusses on 'what' is required to further fisheries sustainability and the conservation objectives of MPAs. The 'how' work is undertaken is driven primarily by our vision statement and our published policies and strategies (for example the Enforcement Policy and Data Strategy - these can be found online at <http://www.eastern-ifca.gov.uk/publications/>).

Eastern IFCA Vision - *Inshore Fisheries and Conservation Authorities will lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry.* 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 and our commitment to it is set out in the annual Engagement Plan. From drawing on local knowledge to develop management measures which suit a particular fishery, to engaging with young people about the benefits of the marine environment, Eastern IFCA commits a significant resource on communication.

In 2016, we undertook an innovative community engagement project called 'Community Voice Project'. The aim of the project was to engage with the full 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, but lessons learnt from the project were being applied and were guiding our engagement with stakeholders during 2017-18. The data has been used to inform the contextual information within the assessment.

Industry viability

An additional category of works has been added into each species assessment covering industry viability. This is in line with the Eastern IFCA remit and in recognition of the fact that most of the business models within the district are small and will have a limited ability for business promotion on a large scale. Therefore, where possible Eastern IFCA will seek to identify ways for the industry to improve its viability. This may include ensuring authorities are aware of specific issues that affect industry.

4. Conclusions

The additional criteria and new approach have resulted in outputs which are more holistic, and 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 2018-19 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.