



**Strategic Assessment  
2017-18**

## **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 sustainability and 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 annual priorities set out in the rolling five-year Business Plan.

The 2017-18 Strategic Assessment included three new criteria to the data driven, initial assessment; i) presence or absence of spawning and nursery areas, ii) EIFCA landings in a UK context and iii) fisheries trends.

In addition to the new criteria used in the initial assessment, a new approach was developed which better incorporates wider fisheries management needs. Previous iterations of the assessment were more species / fisheries oriented and whilst environmental and ecosystem impacts were taken into account, the 'risk scores' associated with each fishery primarily related to fisheries performance.

Due to the addition of new criteria, the outputs of the present initial assessment are not directly comparable to the 2016-17 assessment, however 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 MPAs (including 'red-risk' features, 'Amber and Green' features and in particular shrimp management in the Wash and North Norfolk Coast SAC and within the Cromer Shoal MCZ), delivery of fisheries sustainability in the crustacean and shrimp fisheries, biosecurity planning and a review of the Wash Fishery order 1992.

The additional assessment resulted in three priority work streams from the 2016-17 assessment having a lesser priority, primarily due national approaches providing some mitigation and reducing associated risk.

Five new work-streams were identified as high priority. Three of these relate to management of fisheries in Marine Protected Areas including the development of Monitoring and Control Plans which follow from the 'Amber and green' assessments. In addition, contribution to delivery of Bass Nursery Areas and an investigation into mussel die-off in The Wash were also identified as high priorities.

The outputs of the 2017-18 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, medium priorities are indicated which may be 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.

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## **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 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 which need further development.

The inshore fishing sector is relatively data-limited – the under-ten metre fishing vessels which make up the vast 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, this assessment is intended to be a live, dynamic document which will be reviewed and reissued in accordance with the best available evidence and with changing social and political drivers.

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

### **1.2 Approach**

Fisheries were identified within Eastern IFCA's district using Marine Management Organisation (MMO) landings data. Each species landed was assessed in relation to nine criteria as set out below.

*Evidence base* – an assessment of the available evidence for each species in relation to fishing effort, landings, stock health and presence of spawning and nursery areas.

*Current Regulation* – assesses species based on measures currently in place in relation to protection of pre-spawning individuals, gear management or specification and effort restrictions.

*Ecosystem impacts* – assessment considers the potential ecosystem level impacts of the main gears associated with each species (e.g. by-catch, habitat damage) and the presence or absence of spawning and nursery areas of each species.

*Fisheries performance* – considers the landed weight and value of catch from within the Eastern IFCA district, any detectable trends in landed catch, landings from within the district as a proportion of the UK total and available ICES advice.

Each species is provided a relative ‘risk’ rank for each criterion. These scores are considered separately 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. A more detailed methodology and outputs from the data driven assessment are presented in Appendix 1.

A wider assessment is then undertaken, taking into account the scores generated by the initial assessment, and wider contextual drivers and other obligations (see sections 1.2.2 and 1.2.3 below). This includes a consideration of the presence of fisheries within Marine Protected Areas (MPA) 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 (vessels mostly under 10 metres) making up the majority of the UK fishing fleet with only a fraction of the landings. 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 dynamics of a species. The assumption is that there is a greater risk to fisheries sustainability and wider ecosystem impacts where fishing effort overlaps spatially with spawning or nursery grounds.

The primary sources of spawning and nursery ground evidence is found within Ellis *et al* 2010<sup>1</sup> and 2012<sup>2</sup> and an Eastern IFCA research report on the composition of commercial catches (2014)<sup>3</sup>.

**Fisheries trends** – MMO data has been used to assess whether a trend can be observed from landings data for the period 2010-2015 (inclusive). A strong positive or

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

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

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

negative trend is associated with a higher risk and a greater priority which is considered in the context of mean annual landed weight to give a sense of proportion.

**Recreational activity** – Data on recreational activity is limited for most species. The outputs of the Angling 2012 project 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 although this is not reflected in the MMO landings figures.

The primary source of recreational angling evidence is found within Armstrong *et al.* 2013<sup>4</sup>.

**Gear related impacts** – Fishing activity has impacts beyond the effects on the targeted species. By-catch and damage to habits for example varies from gear to gear with some gears known to have greater ‘ecosystem’ level impacts than others.

Eastern IFCA is nearing the end of a project to assess the impacts of all commercial fisheries in European Marine Sites (a type of MPA) within the district. This assessment will determine where fishing activity may be having a detrimental effect on features associated with protected areas and consequently where management measures are required. The intention of this assessment is to determine ensure that fishing activities are not having an adverse effect on the integrity of the MPAs.

In addition, new MPAs have been or are in the process of being designated (such as the Greater Wash Special Protection Area). Fishing activity within these sites will also require assessment to determine the potential for adverse effects.

Protection of MPAs from the detrimental impacts of fishing activity is a fundamental obligation of Eastern IFCA outlined in the Marine and Coastal Access Act (2009) which is to be achieved above all other main duties<sup>5</sup> and as such, is afforded the highest priority.

**Ecosystem functioning** – Where Eastern is considering management measures, wider ecosystem level impacts are considered. 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 natural occurring events (such as storms etc.). Bycatch is also considered under this heading.

**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

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

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

fisheries management, landings obligations and the national implementation of Bass Nursery Areas. In some cases, the requirement to act through these drivers outweighs other perceived risks to fisheries.

**OSPAR requirements** - Considered 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 Eastern IFCA 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 Eastern IFCA commitments and planned actions under OSPAR”).

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

### **1.2.3 Fisheries management in MPAs**

The majority of the Eastern IFCA district is protected by marine protected area designations (Table 1). These sites contain a range of species and habitat features that require protection. 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 delivered a better understanding of where management is required. Assessments account for the current levels of fishing activity but these will potentially change over time.

Eastern IFCA routinely collects data to monitor fishing activity and compliance within managed areas. However, additional work is required to demonstrate Eastern IFCA’s responsive monitoring and management of fisheries in MPAs. Following the completion of fisheries assessments in MPAs, plans will be developed to show how Eastern IFCA will monitor and respond to changes in fishing activity, which could lead to significant impacts on MPAs.

The protection of MPAs from potentially damaging fishing activities is a key role and obligation of Eastern IFCA’s work. This is factored in to the additional assessment for each fishery (Section 2.1).

Table 1 (below) shows marine protected areas within the district and indicates the key fisheries management issues for each site and the priority associated with the development of Monitoring and control plans.

<b>Table 1. MPAs within Eastern IFCA's district.</b>		
<b>Site name</b>	<b>Key issues for fisheries management</b>	<b>Priority (MCP)</b>
Humber Estuary Special Protection Area (SPA) <i>and</i> Humber Estuary Special Area of Conservation (SAC)	<p>North-Eastern IFCA leading assessment of these two sites.</p> <p>Management measures in place for the protection of eelgrass (Eastern IFCA Protected Areas byelaw: Regulatory Notice 4).</p> <p>Other features have been provisionally assessed and no adverse effects determined at current levels of activity.</p> <p>Potential cockle fisheries (Horse Shoe Point) will have to take into account of bird food dynamics and bird disturbance.</p>	n/a (likely to be lead by other IFCA – dialogue ongoing).
Gibraltar Point SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	9
The Wash and North Norfolk Coast SAC	<p>Fishing activity assessments are on-going.</p> <p>Annual cockle and mussel fisheries managed under the Wash Fishery Order are assessed and managed in accordance with the site's conservation objectives.</p> <p>Management measures in place for the protection of <i>Sabellaria</i> reef (Regulatory Notice 1), cobble and boulder communities (Regulatory Notice 2) in The Wash and eelgrass on the North Norfolk Coast (Regulatory Notice 3).</p> <p>Management measures are required in relation to bottom towed gears (primarily shrimp fishing) on sensitive habitats (sub-tidal mixed sediments and sub-tidal mud).</p> <p>Management measures are also potentially required for the protection of <i>Sabellaria</i> reef and boulder and cobble communities from damaging levels of pot fishing activity.</p>	1
The Wash SPA	<p>Annual cockle and mussel fisheries managed under the Wash Fishery Order are assessed and managed in accordance with the site's conservation objectives.</p> <p>Other, non-Wash Fishery Order fisheries has been provisionally assessed and no adverse effects determined at current levels of activity.</p>	1
North Norfolk Coast SPA	Has been provisionally assessed and no adverse effect determined at current levels of activity.	1
Cromer Shoal Chalk Beds Marine	The site was designated in January 2016 – assessments are required to determine if fishing activity could have an impact on the designated	6

Conservation Zone (MCZ)	features. Any management measures would be developed through dialogue with stakeholders.	
Breydon Water SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	7
Alde, Ore & Butley Estuaries SAC	Has been provisionally assessed; no adverse effects determined at current levels of activity.	5
Alde & Ore Estuaries SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	5
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. Voluntary code of conduct in place which limits bait digging activity to less sensitive areas during winter. Eastern IFCA monitor compliance. Natural England lead on management of the bait digging activity at this site.	4
Inner Dowsing, Race Bank & North Ridge Site of Community Importance (SCI)	Eastern IFCA to manage the 0-6nm part of this site, which extends beyond 12mn offshore. <i>Sabellaria</i> reef requires protection from towed demersal gear; Eastern IFCA to implement Regulatory Notice for this purpose. Other fishing impacts (including potting) to be assessed.	2
Haisborough, Hammond & Winterton SCI	Eastern IFCA to manage the 0-6nm part of this site, which extends beyond 12mn offshore. <i>Sabellaria</i> reef requires protection from towed demersal gear; Eastern IFCA to implement Regulatory Notice 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.	n/a (leadership dialogue ongoing)

In January 2016 Defra opened consultations on the extension of the Outer Thames Estuary SPA to include the Rivers Yare, Bure and Blyth, and the designation of a new SAC for the protection of Harbour porpoise in the North Sea. In addition, it is anticipated that a new MPA to protect certain seabirds in the southern North Sea is to be announced. Each of these new/extended MPAs will require fisheries assessment and management should adverse effects be identified.

The rationale for prioritisation of Monitoring & Control Plans (MCPs) for MPAs within Eastern IFCA's district is set out below.

**Priority 1 - The Wash and North Norfolk Coast SAC, The Wash SPA,  
North Norfolk Coast SPA**

Production of one integrated MCP for these overlapping and / or contiguous sites is indicated in order to produce a Plan which is easily comprehensible to both stakeholders and managers. The area is large, with several designated features including Red Risks, and there are appreciable levels of fishing activity of several types, including metiers which are not compatible with the Red Risk features. These factors combine to place these sites at the top of the priority list.

**Priority 2 - Inner Dowsing, Race Bank & North Ridge SCI**

The area includes Red Risk features (*Sabellaria* reef); managing these will require controls on the use of bottom towed gear - shrimp beam trawling is known to occur within the site. There is also a level of potting activity within the site, and our HRAs have concluded that it is necessary to monitor the level of potting in the vicinity of *Sabellaria* reef. The requirement to manage spatially limited activity, combined with the need to continuously know the levels of potting, indicate a position high up the priority list for the production of a MCP for this site.

**Priority 3 - Haisborough, Hammond & Winterton SCI**

The area includes Red Risk features (*Sabellaria* reef); managing these will require controls on the use of bottom towed gear. Best available current evidence suggests that such fishing activity is at a very low level within the site. Levels of potting activity are also thought to be low. Therefore, the MCP for this site is likely to require monitoring of activity, and of compliance with closed areas, rather than any more interventionist management.

**Priority 4 - Stour and Orwell Estuaries SPA**

This is a relatively large area, with appreciable levels of activities which may potentially impact on the features – the most immediately apparent being bait digging. This issue is one which recurs, and indicates that a management approach should be developed.

**Priority 5 - Alde, Ore & Butley Estuaries SAC, Alde & Ore Estuaries SPA**

Production of one integrated MCP for these overlapping sites is indicated in order to produce a Plan which is easily comprehensible to both stakeholders and managers. Provisional assessment has indicated no adverse effects at current levels of activity, leading to a low level of priority.

**Priority 6 - Cromer Shoal Chalk Beds Marine Conservation Zone (MCZ)**

As the site was designated in January 2016, all management assessments and activities are less advanced than for SACs and SPAs. The site features are closely linked with a major fishery within the EIFCA district (crustacean potting), and one which

has come out as a high priority in this current Strategic Assessment. There are indications of a feature likely to be sensitive to bottom towed gear (native oyster beds). These factors place the site at a relatively high priority. Consideration will be given to the inclusion of this site with the MCP for the spatially contiguous Priority 1 sites, either at the production of that MCP, or at as early a stage as practicable.

**Priority 7 - Breydon Water SPA**

**Priority 8 - Deben Estuary SPA**

**Priority 9 - Gibraltar Point SPA**

All of these are relatively small sites, where there are thought to be low levels of activity which could impact on the designated features. This is borne out by the fact that for each site, provisional assessment has indicated no adverse effects at current levels of activity. At this level of priority, there is considerable flexibility to change the order of priority and production of MCPs, in response to specific concerns should they arise. It is likely that a bespoke MCP will be produced for each site, as they do not naturally align with any other MPAs in terms of location.

**Sites for which it is proposed Eastern IFCA do not produce Monitoring & Control Plans.**

**Humber Estuary Special Protection Area (SPA) and Humber Estuary Special Area of Conservation (SAC)**

North Eastern IFCA have taken the role of developing a MCP for this site, and they are currently (January 2017) liaising with Natural England over the form those is to take. We will communicate with NEIFCA when they have developed a draft, in order that we are informed as to the developments. However, NEIFCA will continue to lead on this site.

**Outer Thames Estuary SPA**

As the MMO have taken the lead in assessing this site, and work to date has indicated no adverse effects at current levels of activity, it would appear logical that the MMO continue their lead role and develop the MCP. This to be discussed with MMO at the earliest opportunity.

## **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 2017/18 financial year.

<b>Group: Bivalve Molluscs</b>		<b>Key Species: Cockles, Mussels</b>	<b>Overall risk: Medium</b>	
Evidence base		Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: <b>Low</b>		Initial assessment Rank: <b>Low</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>High</b>
Contextual Rank: <b>Low</b>		Contextual Rank: <b>Medium</b>	Contextual Rank: <b>High</b>	Contextual Rank: <b>High</b>
<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 Eastern IFCA regulations prohibiting the use of fishing gear without authorisation, Eastern IFCA generally has a good evidence base. That said, 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 (the Wash Fishery Order 1992) and IFCA byelaws are in place for outside of 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 the Wash Fishery Order is currently undergoing a review, work relating to which will require resource into the 2017/18 financial year.</p>	<p>Molluscs dredges (bottom towed gear) are associated with this fishery which have a high ecosystem impact rating. In addition, all bivalve fisheries occur in the same area are spawning grounds although, this is less relevant in terms of the biology of this group. However, 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 Wash Fishery Order. Development of new dredge fisheries would require an HRA.</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 is one of the few with a strong positive value. In addition, three key shellfish processing factories operate within the district which also rely in part of catch from this group. As such, catch associated with this group has wider value in providing related jobs (e.g. factory workers, delivery drivers etc.).</p>
<b>Category of works</b>	<b>Priority / rationale</b>			<b>Potential works</b>
New data / evidence acquisition	<p><b>Priority: Low</b> – the evidence base for the dominant fisheries is very well established and current mechanisms are in place to continue to gather evidence as required. Further evidence is needed in relation to recreational hand gathering</p>			<ul style="list-style-type: none"> <li>Study in relation to mussel mortality in The Wash.</li> </ul>

	but given the small scale of the fishery and low potential impact, it is still prioritised low.	
Monitor / maintenance	<b>Priority: High</b> – 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. Cockle surveys at Horse Shoe Point (Lincolnshire) are also conducted on an annual basis but significant barriers remain in relation to opening this fishery.	<ul style="list-style-type: none"> <li>• Annual cockle surveys;</li> <li>• WFO licence holder consultation.</li> <li>• Horse Shoe Point cockle Survey</li> </ul>
Regulation	<b>Priority: Medium</b> – a work stream relating to the review of the Wash Fishery Order is under way as a result of 2016/17 priorities which will require resource in the 2017/18 financial year. In addition, a recent court case involving the Le Strange fishery has led to the potential of an ‘unmanaged area’ existing between the private and the Regulated fisheries. Management of this area and within the Le Strange fishery may be required in relation to protecting designated features and cockle stocks and a request has been made by Natural England that EIFCA introduce such management measures. An emergency byelaw would be required to mitigate the risk of an unmanaged area which would be considered a higher risk as this area would be open to any fishers. General management within the Le Strange is considered less of a risk given that i) only certain fishers are permitted to fish within the site, ii) Natural England have put in place a fisheries management plan in consultation with the Le Strange estate. The Horse Shoe Point cockle fishery is currently managed through an inherited byelaw which requires review.	<ul style="list-style-type: none"> <li>• Continuation of review of WFO Regulations and Policies including dialogue with the industry;</li> <li>• Development of measures in ‘un-managed’ area;</li> <li>• Development of management measures within the Le Strange fishery;</li> <li>• Review ‘Humber Estuary Cockle Fisheries Byelaw’ inherited from North Eastern Sea Fisheries Committee.</li> </ul>
Engagement	<b>Priority: High</b> – the Wash fisheries exhibit a range of differing business models which are often in conflict. In addition, the Wash Fishery Order has a long history and is a relatively complex regulatory mechanism which has been reviewed and updated. Further dialogue with the industry is required to development Policies, fisheries management plan, Regulations and licence fees as a continuation of the 2016/17 priority work.	<ul style="list-style-type: none"> <li>• Continuation of review of WFO review – consultation with industry.</li> </ul>
Enforcement	<b>Priority: Medium</b> - Previous poor behaviours by minority of fishers has driven the development of new Regulations which require dialogue with the industry.	<ul style="list-style-type: none"> <li>• Engagement with fishers in relation to new WFO measures;</li> </ul>

		<ul style="list-style-type: none"> <li>• Enforcement of WFO measures.</li> </ul>
<p>Environment / ecosystems</p>	<p><b>Priority: High</b> – The dominant bivalve fisheries within the Wash are compliant with the Habitats Directive as demonstrated by Habitat Regulations Assessments. A 25-year HRA has been developed in relation to the hand-work cockle fishery which will require continued development (including dialogue with Natural England into the 2017/18 financial year. 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 SAC. There is the potential for fisheries not currently considered in the 25-year HRA to occur (e.g. sub-tidal seed mussel fisheries etc.) which would require additional consideration through a HRA although, the 2016 mussel survey has indicated that no intertidal mussel fisheries will take place within the Wash in 2017/18. Seed mussel fisheries have been known to occur on the N.Norfolk Coast and will be considered as part of the assessment of the Cromer Shoal Marine Conservation Zone.</p> <p>Bivalve molluscs are particularly vulnerable to biosecurity events, particularly in The Wash where aquaculture is also present. This was a prioritised work stream in 2016/17 but was subsequently re-prioritised due to lack of resources (staff time). Bivalve mollusc fisheries within The Wash are also potentially subject to impacts of aquaculture in relation to food availability – the ongoing monitoring programme (SWEEP) which was informing on potential impacts will likely have to cease due to a number of factors. 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 parasite. Partnership work with Cefas is ongoing (reflects 2016-17 priority) to detect the cause of the mortality.</p> <p>Eastern IFCA has a role in managing private fisheries which occur within MPAs. These fisheries generally relate to bivalve molluscs (aquaculture) and have not been considered within the ‘Amber and Green’ assessment and require assessment and possible management. The evidence base in relation to this</p>	<ul style="list-style-type: none"> <li>• Completion of the 25-year HRA (Hand-work cockle fisheries)</li> <li>• Development of relevant monitoring and control plans</li> <li>• Habitat Regulation Assessment for seed mussel fisheries;</li> <li>• Development of management measures (as required) for the protection of the Cromer Shoal MCZ</li> <li>• Development of Biosecurity plans (particularly in relation to aquaculture in The Wash);</li> <li>• Development of ‘food availability’ model to inform the HRA associated with aquaculture in The Wash</li> <li>• Assess impacts of private fisheries within MPAs starting with a gap analysis of available evidence</li> <li>• Investigate cause of mussel mortality in The Wash.</li> </ul>

	work is limited and as a first step, a gap analysis of activity levels and interactions is required. In particular, Natural England have requested that EIFCA undertake to manage fishing activity in the Le Strange private fishery.	
Species trends	Cockles have a strong positive trend whereas mussels have a negative trend (primarily due to a very large subtidal fishery in 2010). No emerging fisheries are detected in initial assessment.	

<b>Group: Crustaceans</b>		<b>Key Species: Brown Crab, Lobster</b>		<b>Overall risk: High</b>	
Evidence base		Current Regulation		Ecosystem impacts	
Initial assessment Rank: <b>Low</b>		Initial assessment Rank: <b>High</b>		Initial assessment Rank: <b>Low</b>	
Contextual Rank: <b>High</b>		Contextual Rank: <b>High</b>		Contextual Rank: <b>Medium</b>	
<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 does not have the spatial resolution to fully inform Eastern IFCA management measures and is of relatively low confidence due to the data collection methods. Fisheries data is also augmented by scientific (length frequency) data collection. Additional data may also be required to inform the Cromer Shoal MCZ impact assessment</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 (priority during 2016/17 assessment) which is examining the need to more effort management.</p>		<p>These fisheries are dominated by potting fisheries which score low for ecosystem impacts (low by-catch, negligible habitat damage). However, recently designated chalk bed habitats (N.Norfolk Coast) requires assessment against the interaction with potting (no evidence base at present) 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 below maximum sustainable yield.</p>	

including impacts on fishers resultant of any required measures.			
Category of works	Priority / rationale		Potential works
New data / evidence acquisition	<b>Priority: High</b> – 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. Development of MSAR forms including dialogue with Cefas and MMO will be required to prevent duplication of effort on the part of the fishers. In addition, fishing activity data in relation to potting within the Cromer Shoal MCZ is required to complete an impact assessment – higher spatial resolution data may be required to complete the assessment in relation to potting.		<ul style="list-style-type: none"> <li>• Partnership work with Cefas and MMO to develop MSAR forms (higher spatial resolution and effort data);</li> <li>• Potting activity within the Cromer Shoal MCZ to inform an impact assessment.</li> </ul>
Monitor / maintenance	<b>Priority: Medium</b> – Current levels of data collection are limited but need to be maintained and furthered to prevent any increases in risk.		<ul style="list-style-type: none"> <li>• Continue crab and lobster bio-sampling regime to inform development of MSY models.</li> </ul>
Regulation	<b>Priority: High</b> – whilst the fisheries are thought to be operating at below 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 are required to be at formal consultation by January 2018 (although an assessment is required to inform development of such). The requirements to develop management measures is a continuation of a 2016/17 priority. In addition, crustacean fisheries are known to occur within the Wash and		<ul style="list-style-type: none"> <li>• Development of management measures in relation to crab and lobster fisheries sustainability</li> <li>• Development of management measures (as required) for the protection of the Cromer Shoal MCZ</li> <li>• Development of relevant monitoring and control plans</li> </ul>

	North Norfolk Coast SAC which will need to be reflected in the associated monitoring and control plan.	
Engagement	<b>Priority: High</b> – 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"> <li>Engagement in relation to the development of measures.</li> </ul>
Enforcement	<b>Priority: Low</b> – 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.	<ul style="list-style-type: none"> <li>Continue routine engagement and compliance checks in accordance with the Compliance Risk Register and TCG.</li> </ul>
Environment / ecosystems	<b>Priority: High</b> – 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 by January 2018. 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).	<ul style="list-style-type: none"> <li>Development of relevant Monitoring and control plans</li> <li>Cromer Shoal MCZ – fishing impact assessment</li> </ul>
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 less than half a tonne during 2014 and 2015. Mixed crabs were only landed in one of the years over the period 2010 to 2015 (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.	

<b>Group: Demersal</b>	<b>Key Species: Bass, Cod</b>	<b>Overall risk: Medium</b>				
Evidence base		Current Regulation		Ecosystem impacts		Fisheries performance
Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Low</b>					

Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Medium</b>	Contextual Rank: <b>High</b>	Contextual Rank: <b>Medium</b>
<p>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 (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.</p>	<p>Eastern IFCA has only limited management measures in place however, these fisheries are heavily managed through national and European measures (including minimum sizes and effort control). 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 stocks – this is mitigated by the national development of new bass nursery areas (which will limit netting activity). Bass fisheries are uniquely at risk within this group given the seriousness of the current ICES advice, recent evidence relating to the timing of spawning aggregations within the district and the gaps</p>	<p>Demersal fishing gears include bottom-towed-gears, which score highly for potential ecosystem impacts (particularly habitat damage) and nets which have the potential to remove large number of fish very efficiently. Where these are deployed within nursery or spawning areas, there is the potential for disproportionately large impacts in wider stocks. This is compounded by the existence on 'unregulated netting'.</p>	<p>Whilst demersal 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. bass). 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.</p>

	identified within the 2017 European Bass measures.		
Category of works	Priority / rationale	Potential works	
New data / evidence acquisition	Priority: <b>Medium</b> – 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 bass nursery areas 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. Recently introduced 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 related to proposed SPA and SAC for birds and porpoises.	<ul style="list-style-type: none"> <li>• Continue to liaise with national approach re under 10m sector landing data;</li> <li>• Continue to provide evidence in relation to development of BNAs;</li> <li>• Further develop voluntary fisheries data;</li> <li>• Undertake gap analysis of fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>	
Monitor / maintenance	Priority: <b>Medium</b> – development of ‘unregulated netting’ measures was a 2016/17 priority but Eastern IFCA involvement in Bass Nursery Area 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.	<ul style="list-style-type: none"> <li>• Re-assess needs for ‘un-regulated netting’ measures in the context of BNA development.</li> </ul>	
Regulation	Priority: <b>Medium</b> – 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 (with the exception of red-risk features for which management measures are either in place or in development) due to low levels of activity using this metier. The emergence of Bass Nursery Areas within the district and the planned introduction of such reduces the risk in	<ul style="list-style-type: none"> <li>• Implementation of Emergency Bass Byelaw (pending further dialogue with fishers);</li> <li>• Dialogue with the Minister in relation to the later spawning period for bass within Eastern</li> </ul>	

	<p>relation to 'unregulated netting'. Eastern IFCA contribution to this work will mitigate the associated risk.</p> <p>Bass fisheries sustainability is in exception to the group in general, particularly in relation to the protection of spawning aggregations. Recent studies indicate that the timing of bass spawning within Eastern IFCA's district is later than in other areas (i.e. occurs into April, May and June) but European measures to protect spawning aggregations are only in place during February and March. An Emergency Byelaw is currently in development which, if made, will be in place during the next financial year. 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 Bass Nursery Areas. 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>IFCA district – influence 2018 EU bass measures;</p> <ul style="list-style-type: none"> <li>• Consideration of 2018 bass measures in relation to ICES stock assessments and local conditions;</li> <li>• Partnership working in relation to the development of Bass Nursery Areas;</li> <li>• Consider benefits of nursery / spawning area protection when developing other management measures.</li> </ul>
Engagement	<p>Priority: <b>Medium</b> – 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 bass nursery areas. Additional / more directed engagement with the RSA sector will also benefit strategic and operational decision making. Engagement is required in relation to the development of BNAs and the potential Emergency Bass byelaw.</p>	<ul style="list-style-type: none"> <li>• Engagement with RSA sector to obtain fisheries data;</li> <li>• Engagement with fishers re BNA and other bass measures.</li> </ul>
Enforcement	<p>Priority: <b>High</b> – 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. Partnership work with the MMO and intelligence gathering.</p>	<ul style="list-style-type: none"> <li>• Bass related enforcement and engagement;</li> <li>• Intel gathering and partnership working with MMO (bass).</li> </ul>

Environment / ecosystems	Priority: <b>Medium</b> – Monitoring and control plans prioritise areas where this is not a primary fishery but will ultimately be considered through plans (primarily in Suffolk estuaries). Impacts of fixed and drift netting to be considered in relation to SPA bird species and porpoises. Bottom-towed-gear management is also required in relation to ‘red-risk’ gear/habitat interactions although activity levels (of bottom-towed-gear) within this fishery are relatively low.	<ul style="list-style-type: none"> <li>• Monitoring and control plans;</li> <li>• Undertake gap analysis of impacts data relevant to assessing fishing impacts on SPA bird species and porpoises;</li> <li>• Development of management measures for any relevant ‘red-risk’ gear/feature interactions within MPAs.</li> </ul>
Species trends	A strong negative trend is seen in cod landings however this is most likely driven by EU and national level quota management. Late 2016 and early 2017 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.	

<b>Group: Dogfish and Sharks</b>		<b>Key Species: L.S.D.</b>		<b>Overall risk: Low</b>	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance		
Initial assessment Rank: <b>High</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Low</b>		
Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Low</b>		
Fisheries evidence is generally poor including effort and catch data (especially given their use as bait species).	Some species within the group are subject to no-take restricts (i.e. most sharks) but dogfish have limited regulation.	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	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 1% of UK total catch (lesser-spotted-dogfish being the		

		limited, relative to other target species.	exception at just over 1%). 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.
Category of works	Priority / rationale	Potential works	
New data / evidence acquisition	Priority: <b>Medium</b> – with the exception of 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 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"> <li>• Develop mechanism to monitor levels of LSD use as bait to gain better understanding of overall fishing mortality;</li> <li>• Undertake gap analysis of fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>	
Monitor / maintenance	Priority: <b>Low</b> – dialogue with CEFAS is warranted given the current 'Shark-by-watch' project ongoing in the district. Continuation (and some further development) of voluntary landings data work streams are beneficial particularly in relation to lesser-spotted-dogfish.	<ul style="list-style-type: none"> <li>• Partnership working with CEFAS re shark / dogfish research where possible;</li> <li>• Development of voluntary landings data.</li> </ul>	
Regulation	Priority: <b>Low</b> – none identified.	<ul style="list-style-type: none"> <li>• None identified</li> </ul>	
Engagement	Priority: <b>Low</b> – 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"> <li>• None identified</li> </ul>	
Enforcement	Priority: <b>Low</b> – there are limited regulation which can be enforced (with the exception of Tope for which there is an EIFCA byelaw).	<ul style="list-style-type: none"> <li>• Continue routine engagement and compliance checks in accordance with the Compliance Risk Register and TCG.</li> </ul>	

Environment / ecosystems	Priority: <b>Medium</b> – Monitoring and control plans prioritise areas where this is not a primary fishery but will ultimately be considered through plans (primarily in Suffolk estuaries). Impacts of fixed and drift netting to be considered in relation to SPA bird species and porpoises. Bottom-towed-gear management is also required in relation to ‘red-risk’ gear/habitat interactions although activity levels within this fishery are relatively low.	<ul style="list-style-type: none"> <li>• Development of relevant monitoring and control plans;</li> <li>• Undertake gap analysis of impacts evidence relevant to assessing fishing impacts on SPA bird species and porpoises;</li> <li>• Development of management measures for any relevant ‘red-risk’ gear/feature interactions within MPAs.</li> </ul>
Species trends	Lesser-spotted-dogfish show a strong positive trend with annual landed weight increasing from 1 tonne in 2010 to 14 tonnes in 2015. However, landed weight has been relatively steady (between 12 and 13 tonnes) over the last 3 years and looks to have levelled. 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).	

<b>Group: Flatfish</b>	<b>Key Species: Sole, Plaice, Flounder, Dab</b>	<b>Overall risk: Medium</b>	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>High</b>	Initial assessment Rank: <b>Medium</b>
Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>High</b>	Contextual Rank: <b>Medium</b>
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	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	Many species within the group are likely to have nursery areas within the district (which are thought also to be coincident with shrimp fishing).	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

<p>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>to occur (i.e. netting which is, for the most part, legal but is not regulated). 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 stocks.</p>		<p>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>
<p><b>Category of works</b></p>	<p><b>Priority / rationale</b></p>		<p><b>Potential works</b></p>
<p>New data / evidence acquisition</p>	<p>Priority: <b>Medium</b> – 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 bass nursery areas 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. Recently introduced 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 related to proposed SPA and SAC for birds and porpoises.</p>		<ul style="list-style-type: none"> <li>• Continue to liaise with national approach re under 10m sector landing data;</li> <li>• Continue to provide evidence in relation to development of BNAs;</li> <li>• Further develop voluntary fisheries data;</li> <li>• Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>

Monitor / maintenance	Priority: <b>Medium</b> – development of ‘unregulated netting’ measures was a 2016/17 priority but Eastern IFCA involvement in Bass Nursery Area 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.	<ul style="list-style-type: none"> <li>• Re-assess needs for ‘un-regulated netting’ measures in the context of BNA development.</li> </ul>
Regulation	Priority: <b>Low</b> – 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 (with the exception of red-risk features for which management measures are either in place or in development) due to low levels of activity using this metier. In addition, the emergence of Bass Nursery Areas within the district and the planned introduction of such will likely reduce the need to regulate initially to prevent ‘unregulated netting’.	<ul style="list-style-type: none"> <li>• None identified</li> </ul>
Engagement	Priority: <b>Medium</b> – 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 bass nursery areas (which may have impacts on netting for all species within some rivers and estuaries). Additional / more directed engagement with the RSA sector will also benefit strategic and operational decision making.	<ul style="list-style-type: none"> <li>• Engagement with RSA sector to obtain fisheries data;</li> <li>• Engagement with fishers re BNA.</li> </ul>
Enforcement	Priority: <b>Low</b> – Flatfish fisheries are generally marginal although some high value species present a higher enforcement risk at some times of the year.	<ul style="list-style-type: none"> <li>• Continue routine engagement and compliance checks in accordance with the Compliance Risk Register and TCG.</li> </ul>
Environment / ecosystems	Priority: <b>Medium</b> – Monitoring and control plans prioritise areas where this is not a primary fishery but will ultimately be considered through plans (primarily in Suffolk estuaries). Impacts of fixed and drift netting to be considered in relation to SPA bird species and porpoises. Bottom-towed-gear management is also required in relation to ‘red-risk’ gear/habitat interactions although activity levels within this fishery are thought to be relatively modest.	<ul style="list-style-type: none"> <li>• Monitoring and control plans;</li> <li>• Undertake gap analysis of impacts data relevant to assessing fishing impacts on SPA bird species and porpoises</li> <li>• Development of management measures for any relevant ‘red-risk’</li> </ul>

		gear/feature interactions within MPAs.
Species trends	Several species show a strong negative trend but only in relation to modest landed weights (1.6 tonnes down to less than 500kg between 2010 and 2015). Sole show a strong negative trend with landed weights reducing from 73 tonnes in 2010 to 42 tonnes in 2015 (loss circa £250,000 in value) and is relatively important in a national context (circa 3.4% of UK landings) although ICES advice indicates that the stock is in favourable condition.	

<b>Group: Cephalopods</b>		<b>Overall risk: Low</b>	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: <b>High</b>	Initial assessment Rank: <b>High</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: Low
Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>
Marginal fishery with very limited landings (less than 100 kg combined per annum).			
<b>Category of works</b>	<b>Priority / rationale</b>		<b>Potential works</b>
New data acquisition	Priority: Low – limited / marginal fishery		<ul style="list-style-type: none"> <li>None identified</li> </ul>
Monitor / maintenance	Priority: Low – limited / marginal fishery		<ul style="list-style-type: none"> <li>None identified</li> </ul>

Regulation	Priority: Low – limited / marginal fishery, additional regulation would have very limited effect.	• None identified
Engagement	Priority: Low – limited / marginal fishery	• None identified
Enforcement	Priority: Low – limited / marginal fishery	• None identified
Environment / ecosystems	Priority: Low – limited / marginal fishery	• None identified
Species trends	None identified.	

<b>Group: Pelagic</b>	<b>Key Species; Herring, Mackerel</b>	<b>Overall risk: Low</b>	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Medium</b>	Initial assessment Rank: <b>Low</b>	Initial assessment Rank: <b>Low</b>
Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>Low</b>
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 very 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	None of the species landed represent a nationally important landed weights and value of catch is relatively low. ICES advice is generally favourable with the exception of mackerel and horse mackerel.

		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.	
Category of works	Priority / rationale	Potential works	
New data acquisition	Priority: <b>Medium</b> - 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 presence of spawning and nursery areas within the district, given the changes in water temperature and the emergence of bass nursery areas 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.	<ul style="list-style-type: none"> <li>• Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>	
Monitor / maintenance	Priority: <b>Low</b> – Continuation and potential for further development of voluntary data collection from smaller scale fishers	<ul style="list-style-type: none"> <li>• Development of voluntary landings data.</li> </ul>	
Regulation	Priority: <b>Low</b> – Regulated primarily through national and European measures. Eastern IFCA regulations will have limited impacts given low levels of take. Assessments in relation to the protection of SPA bird species and porpoise may require management however, activity levels are considered low at present.	<ul style="list-style-type: none"> <li>• None identified.</li> </ul>	
Engagement	Priority: <b>Low</b> - 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 bass nursery areas (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.	<ul style="list-style-type: none"> <li>• None identified.</li> </ul>	

Enforcement	Priority: <b>Low</b> – fishery is generally marginal however, minimum landing size offences have been detected historically.	<ul style="list-style-type: none"> <li>Continue routine engagement and compliance checks in accordance with the Compliance Risk Register and TCG.</li> </ul>
Environment / ecosystems	Priority: <b>Medium</b> – Monitoring and control plans prioritise areas where this is not a primary fishery but will ultimately be considered through plans (primarily in Suffolk estuaries). Impacts of fixed and drift netting to be considered in relation to SPA bird species and porpoises.	<ul style="list-style-type: none"> <li>Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>
Key Species / Species trends	Herring landings are relatively stable and represent less than 1% UK total landings but are the dominant landed weight within the group. Horse mackerel show a strong negative trend but landings are negligible (reduced from 1 tonne in 2010 to 6kg in 2015).	

<b>Group: Shrimp / Prawns</b>		<b>Key Species: Brown Shrimp</b>		<b>Overall risk: High</b>	
Evidence base		Current Regulation		Ecosystem impacts	
Initial assessment Rank: <b>Medium</b>		Initial assessment Rank: <b>Medium</b>		Initial assessment Rank: <b>High</b>	
Contextual Rank: <b>Medium</b>		Contextual Rank: <b>Medium</b>		Contextual Rank: <b>High</b>	
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 iVMS is included in ongoing		A permit scheme is in development (and will likely be in place for 2017/18) which provides a mechanism to implement stock management measures. MPA protection measures are part of an ongoing work stream. Spatial closures introduced through the		Shrimp trawling gear exhibits a high risk in relation to both habitats damage and by-catch impacts (particularly in nursery areas). Management measures to protect MPA features are in development and are forecast to be in place in 2017/18 however, wider	
				Brown shrimp (and to a lesser extent – pink shrimp) represent significant, nationally important fisheries. Both pink shrimp and brown shrimp show strong negative trends in landings over the period 2010 to 2015.	

<p>management measure development. Additional data with regards to impacts on habitats is required as is further evidence in relation to by-catch (particularly in relation to juvenile fish). 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>'Protected Areas Byelaw' also require review.</p>	<p>ecosystem impacts (i.e. by-catch) require further development (albeit in the context of a permit mechanism having been put in place).</p>	
<b>Category of works</b>	<b>Priority / rationale</b>		<b>Potential works</b>
<p>New data acquisition</p>	<p>Priority: <b>Medium</b> – priorities set in 2016/17 have provided mechanisms for the collection of better fisheries data including the development of returns forms and provision for iVMS. Internal and partnership processes require development in relation to iVMS 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. Compliance with the EIFCA data requirements is poor and the forms require development, including fisher engagement to ensure that forms are clear and easily completed. A two-year shrimp gear impact study project plan has been developed to be undertaken with EMFF funding. The project aims to provide additional evidence in relation to the impacts of shrimp gear on sensitive features within the Wash and N.Norfolk Coast SAC.</p>		<ul style="list-style-type: none"> <li>• Develop mechanisms to store and analyse iVMS data including dialogue with partner organisations;</li> <li>• Liaise with MMO re need to capture higher resolution fisheries data;</li> <li>• Develop shrimp returns forms in consultation with fishers</li> <li>• Shrimp gear impacts research study.</li> </ul>
<p>Monitor / maintenance</p>	<p>Priority: <b>High</b> – continuation of the development of systems to analyse returns data (including the eventual analysis of iVMS data) is required. Management measures for MPA protection require completion. Once fully implemented, fishing activity will require monitoring and management in line with the 'footprint model' and flexible permit conditions.</p>		<ul style="list-style-type: none"> <li>• Continuation of 2016/17 shrimp management priorities;</li> <li>• Monitor effort in line with footprint model.</li> </ul>

Regulation	<p>Priority: <b>Medium</b> – 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 Marine Stewardship Council 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). Given that the review of Regulatory Notices does reflect that protective measures are currently in place, it is considered appropriate to re-prioritise their review to medium to further progress with work relating to ‘new’ requirements.</p>	<ul style="list-style-type: none"> <li>• Continue to implement Shrimp Permit Byelaw and MPA management measures;</li> <li>• Develop fisheries sustainability management measures (including consideration of impacts on nursery areas);</li> <li>• Review of existing spatial closures (Regulatory Notices) to reflect new evidence.</li> </ul>
Engagement	<p>Priority: <b>High</b> – 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 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.</p>	<ul style="list-style-type: none"> <li>• Continue dialogue with the industry in relation to MPA management measures (including formal consultation of permit conditions);</li> <li>• Development of associated Monitoring and control plans</li> <li>• Develop fisheries sustainability measures in consultation with the industry and taking into account outputs of MSC accreditation.</li> </ul>
Enforcement	<p>Priority: <b>Medium</b> – 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.</p>	<ul style="list-style-type: none"> <li>• Enforcement and engagement in relation to new shrimp measures;</li> <li>• Routine shrimp fishery engagement and compliance checks in accordance with the Compliance Risk Register and TCG.</li> </ul>

Environment / ecosystems	Priority: <b>High</b> – Shrimp management measures in relation to the protection of designated habitats in the Wash and North Norfolk Coast are still in development and implementation of this 2016/17 priority will carry over into the next financial year. Bottom-towed-gear management is also required in relation to 'red-risk' gear/habitat interactions and activity levels within this fishery are relatively high.	<ul style="list-style-type: none"> <li>Continuation of 2016/17 shrimp management priorities;</li> <li>Development of management measures for any relevant 'red-risk' gear/feature interactions within MPAs.</li> </ul>
Species trends	Both pink and brown shrimp show string negative trends and have significant landed weight.	

<b>Group: Skates and Rays</b>		<b>Key Species: Thornback</b>		<b>Overall risk:</b>	
Evidence base		Current Regulation		Ecosystem impacts	
Initial assessment Rank: <b>Medium</b>		Initial assessment Rank: <b>Medium</b>		Initial assessment Rank: <b>Medium</b>	
Contextual Rank: <b>Medium</b>		Contextual Rank: <b>Medium</b>		Contextual Rank: <b>Medium</b>	
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.		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.		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).	
				ICES advice is unfavourable for 'skates and rays' (i.e. as a distinct reported species but there are limited landings of these within the district). ICES advice for thornback rays is maintain at current levels. As a group they are of limited economic value but some, smaller scale fishers may have a particular dependence on them.	

Category of works	Priority / rationale	Potential works
New data acquisition	Priority: <b>Medium</b> – Kent and Essex are undertaking a joint research project with Cefas which may provide additional information. Effort and landings data are poorly understood for skates and rays. Netting activity data is required in relation to bycatch of porpoises and SPA bird species.	<ul style="list-style-type: none"> <li>• Development of voluntary landings data;</li> <li>• Actively liaise with partner organisations in relation to planned research projects;</li> <li>• Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.</li> </ul>
Monitor / maintenance	Priority: <b>Low</b> – Continuation and potential for further development of voluntary data collection from smaller scale fishers	<ul style="list-style-type: none"> <li>• Development of voluntary landings data.</li> </ul>
Regulation	Priority: <b>Low</b> – none identified	<ul style="list-style-type: none"> <li>• None identified</li> </ul>
Engagement	Priority: <b>Medium</b> – 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 favour this group and may provide additional information or a platform for developing research initiatives (tagging study, size at maturity study etc.).	<ul style="list-style-type: none"> <li>• Develop potential project plans to fill gaps in understanding of skate/ray biology and population dynamics</li> </ul>
Enforcement	Priority: <b>Low</b> – group managed primarily through the quota system.	<ul style="list-style-type: none"> <li>• Routine engagement and compliance, intel gathering and partnership working with MMO in accordance with Compliance Risk Register and TCG.</li> </ul>
Environment / ecosystems	Priority: <b>Medium</b> – Netting and trawl based fisheries have the potential to have wider ecosystem effects (habitat damage and by-catch, particularly in nursery or spawning areas). These fishers will likely be subject to lower priority monitoring and control plans by virtue of their general location (primarily Suffolk fisheries, the MPA of which have been prioritised lower). Netting fisheries are subject to assessment in relation to impacts on SPA bird species and porpoises. Bottom-towed-gear management is also required in relation to ‘red-risk’ gear/habitat interactions although activity levels within this fishery are relatively low.	<ul style="list-style-type: none"> <li>• Develop relevant monitoring and control plans;</li> <li>• Undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises;</li> <li>• Development of management measures for any relevant ‘red-risk’ gear/feature interactions within MPAs.</li> </ul>

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 stable and relatively high between 2010 and 2015 and UK proportion is 2%.
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Group: <b>Whelks</b>	Key species: <b>Whelk</b>	Overall risk: <b>Low</b>	
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Initial assessment Rank: <b>Low</b>	Initial assessment Rank: <b>Low</b>	Initial assessment Rank: <b>Low</b>	Initial assessment Rank: <b>High</b>
Contextual Rank: <b>Medium</b>	Contextual Rank: <b>Low</b>	Contextual Rank: <b>High</b>	Contextual Rank: <b>High</b>
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.	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.	Potting fisheries represent a relatively low risk in relation to ecosystem impacts although, assessments of potting activity within the Cromer Shoal MCZ is required.	The landed weight of whelks is significant within the district and one of the major whelk processing factories is situated within the district.
Category of works	Priority / rationale		Potential works
New data acquisition	Priority: <b>Low</b> – current mechanisms in place to collect required data. No new data requirements have been identified (may be influenced through development of research project).		<ul style="list-style-type: none"> <li>None identified</li> </ul>

Monitor / maintenance	Priority: <b>Medium</b> - 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.	<ul style="list-style-type: none"> <li>Continuation of Whelk research projects to develop appropriate MLS and effort management.</li> </ul>
Regulation	Priority: <b>Low</b> – 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.	<ul style="list-style-type: none"> <li>None identified</li> </ul>
Engagement	Priority: <b>Low</b> – prior to the outputs of research projects re 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.	<ul style="list-style-type: none"> <li>None identified</li> </ul>
Enforcement	Priority: <b>High</b> – 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.	<ul style="list-style-type: none"> <li>Routine whelk fishery engagement and compliance, intel gathering and partnership working with MMO in accordance with Compliance Risk Register and TCG.</li> </ul>
Environment / ecosystems	Priority: <b>High</b> – 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 by January 2018. 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).	<ul style="list-style-type: none"> <li>Development of relevant Monitoring and control plans;</li> <li>Cromer Shoal MCZ – fishing impact assessment.</li> </ul>
Species trends	Strong positive trend and significant landed weight.	

## 2.2 Eastern IFCA Priorities 2017-18

The above assessment indicates a number of actions relevant to the risks associated with fisheries within the district. Table 2 indicates the key issues and provides rationale for their allocated priority.

<b>Table 2 – High priority works for 2017-18</b>			
<b>Category</b>	<b>Work</b>	<b>Fisheries</b>	<b>Comments / Rationale</b>
To ensure that the conservation objectives of Marine Protected Areas in the district are furthered	Development of management measures for 'red-risk' gear/feature interactions.	Demersal, flatfish, Dogfish and Sharks, Skates and Rays, Shrimp and prawns	Primarily relates to shrimp trawling (although all bottom-towed-gear fisheries will be affected) within the Inner Dowsing, Race Bank and North Ridge (IDRBNR) 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 tranche 2 Marine Conservation Zone and delivering management measures (if required) by December 2017	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. 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 2016/17 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 The Wash and North Norfolk Coast SAC, the Wash SPA and the North Norfolk Coast SPA. The key fisheries within these sites are bivalve molluscs and shrimp fisheries.

	Undertake gap analysis in relation to newly designated / soon to be designated MPAs and develop plan to obtain relevant data.	Demersal, flatfish, Dogfish and Sharks, Skates and Rays, pelagic	Three MPAs are in the process of designation, the features of which include SPA bird species and porpoises which are sensitive to net-based fisheries. An assessment of the available impact and fishing activity data is required such that targeted evidence gathering can be undertaken to obtain required evidence.
	Delivering fisheries management measures for Amber and Green' designated features within European Marine Sites (EMS).	Shrimp and prawns (brown shrimp)	Primarily relates to the implementation of shrimp management measures within the Wash and North Norfolk Coast SAC. Work includes completing the development of measures to protect sensitive features (including dialogue with Natural England and the industry), formal consultation and the production of an economic impact assessment, production of stakeholder engagement material. Continued from 2015/16 priority. The associated, two-year shrimp research project will also inform this work which is of high priority.
	Develop mitigation in relation to 'food availability' risks associated with aquaculture within The Wash.	Bivalve Molluscs (mussels)	Continuation of aquaculture relies on the monitoring of indicators relevant to 'food availability' as per the model used as mitigation within the associated HRA. The monitoring of these indicators has proven to be ineffective and replacement mitigation is required.
	Introduction of an emergency byelaw to mitigate risk of damage to Wash and North Norfolk Coast SAC as necessary.	Bivalve molluscs	The court case relating to the extent of the Le Strange fishery has required the estate and local fishers to come to an agreement on the boundaries of the private fisheries. There is the potential that subsequent decisions will result in an area within The Wash which is not managed via the Wash Fishery order or the Le Strange estate. As such, emergency measures may need to be introduced pending a final decision on the boundary for the protection of the MPA.
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 proposed, the requirement on Eastern IFCA may be reduced.
	Development of management measures in relation to crab and lobster fisheries sustainability	Crustaceans (edible crabs 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
	Monitor fisheries management of bass in the context of European and national fisheries management measures and contribute to the development of Bass Nursery Areas	Demersal (bass)	The priority relates to the protection of spawning areas as may be required (in the context of a later spawning period with the Eastern IFCA district) and nursery areas within the district. Work includes the potential implementation of an Emergency byelaw (potentially Q4 of 2016/17), continued partnership working with Cefas and Defra in relation to Bass Nursery Areas, engagement and compliance monitoring in relation to European measures, continued dialogue with Defra to have later spawning period recognised in future European measures. The risk associated with bass fisheries is mitigated by European and National work streams which aim to protect bass stocks. In addition, bass fishing within the district makes up a relatively minor proportion of UK (less than 2%) and English (circa 5%) bass landings – further regulation beyond that implemented through the European Commission is unlikely to have a significant beneficial effect. However, EIFCA contribution to related work-streams is considered a priority in the context of poor stock health.
To ensure that the marine environment is protected from the effect of exploitation by reviewing	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 priority.

district wide bio-security measures including management of invasive, non-native species			
To develop management of the fisheries regulated under the WFO	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

## **2.3 'Business as Usual' – Critical Work-streams 2017-18**

The Strategic Assessment 2017-18 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.

### **Wash Fishery Order 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. 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 etc.).

### **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. In particular, 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.

### **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.

### **Database maintenance and development**

Additional fisheries data forms have been issued over the past few years and the associated data entry burden has increased. Suitable databases are required to mitigate the cost in time of entering data and subsequent analysis.

Further data is required going forward, not least in relation to electronic monitoring devices. New systems will need to be developed which can store and analyse this new source of data including the logistics of obtaining it from partner organisations (e.g. the MMO).

### **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 (an annual assessment of risk of non-compliance) and Tactical Coordinating Group meetings (which also takes into account intelligence and emerging issues).

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).

### **Authority business**

In addition to work relating to furthering the objectives of the IFCA, a significant resource is spent on general Authority business including preparation for meetings, community engagement and training. This is considered further in the 5-year Business Plan.

## 2.4 Secondary Priorities 2017-18

Given the finite resources of the IFCA, workloads are prioritised. Table 4 (below) sets out work streams relating to risks identified within the Assessment which are considered less of a priority. It is important to highlight these potential work streams as they may inform future Strategic Assessments or, opportunities may present during the year which enable additional benefit from existing or partner projects for which, these should be considered.

<b>Table 4 – Secondary Priorities</b>			
<b>Category</b>	<b>Work</b>	<b>Fisheries</b>	<b>Comments / Rationale</b>
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 relationship 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 (including as part of this assessment). 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.
	Development of mechanisms to capture data relating to fishing for Lesser Spotted Dogfish (including its use as a bait).	Dogfish and Sharks	Modest landed weights of dogfish are landed within the district (less than 20 tonnes annually over last three years) but the species has a biological vulnerability to overfishing and a proportion of fishing mortality is thought to be unrecorded as a result of it being used as bait. Development of a mechanism to capture all LSD fishing mortality will include consultation with the industry.

	Further develop the mechanism to obtain voluntary data from commercial fishers	Demersal, flatfish, skates and rays, dogfish and sharks	Existing voluntary measures are in place to obtain better fisheries data. This project could be furthered to obtain data from a wider range of fisheries.
	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 on fishers do not have the spatial resolution needed to undertake HRAs. Furthermore, effort data is rarely collected.
	Develop shrimp returns data in consultation with industry	Shrimps and prawns	Non-compliance with the requirement to return shrimp fishing data has indicated that the forms provided by Eastern IFCA should be developed to aid completion. Work includes dialogue and consultation with the industry.
	Implementation of iVMS for all fisheries	All	Notwithstanding the current work streams to implement iVMS 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 IFCAs 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 to requirement.
Delivering fisheries management in relation to private fisheries in MPAs where necessary.	Undertake a gap analysis of available evidence in relation to private fisheries, collate required data, assess fisheries and develop management as required.	Bivalve molluscs	The evidence base relating to private fisheries is limited and a gap analysis is required to determine where additional evidence is required to inform related assessments. In particular, fisheries management within the Le Strange Fishery (The Wash, Norfolk) may be required and is potential a higher risk given the use of towed gears (dredges) although no fisheries evidence is available to Eastern IFCA as a result of commercial sensitivities.

Delivering fisheries management in relation to fisheries in MPAs	Complete HRAs in relation to 'unplanned' fisheries (sub-tidal seed mussel fisheries in particular).	Bivalve molluscs	Seed mussel fisheries 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).
	Undertake a review of Regulatory Notices implemented under the Protected Areas Byelaw	All	Spatial closures for the protection of 'red-risk' features were to be reviewed in Q4 of 2016-17. A review of the Protected Areas Byelaw has led to wording changes which remove the need to review the closures as originally intended. Areas which do not currently have any protection are prioritised above the review of existing closure, given that they do represent a form of protective effect.
To ensure that sea fisheries resources are exploited sustainably and in accordance with MSFD requirements	Re-assess need to deliver 'unregulated netting' in the context of bass nursery areas.	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, Bass Nursery Areas 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
	Review the Humber estuary cockle byelaw (inherited from North Eastern Sea Fisheries Committee)	Bivalve molluscs	Fishing opportunities within this fishery are limited by an unfavourable stock assessment in 2016 (very few fishable cockles), the lack of an up-to-date shellfish water classification and difficulties relating to access via the land. The byelaw requires review to make it more transparent but with limited fishing opportunity at present, there is a limited risk of a fishery.

### 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/>).

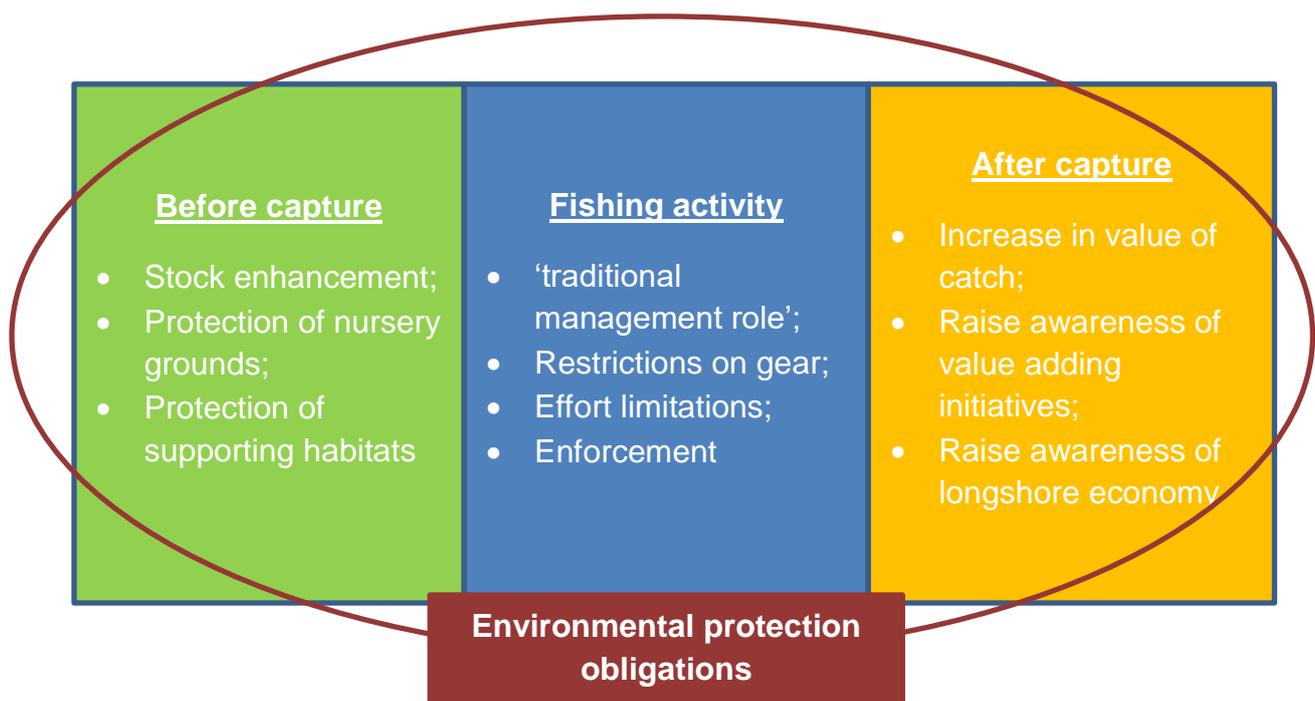
Eastern IFCA Vision - *Inshore Fisheries and Conservation Authorities will lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and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

In undertaking The Strategic Assessment 2017-18 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 takes into account 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 will deliver a formal report on its findings in March 2017 however, lessons learnt from the project are being applied and will guide our engagement with stakeholders going forward.

## 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 2016-17 priorities where work is still underway. Some work-streams identified in the 2016-17 assessment have been re-prioritised as a lesser priority which is primarily due to national programs mitigating some of the risk. In addition, new priority work-streams are identified which primarily reflect the next steps of Marine Protected Area management.