



Strategic Assessment 2023

Executive Summary

As a small organisation with a large area to cover, a broad remit and finite resources, Eastern IFCA needs to carefully plan and prioritise annual workstreams and ensure that resources are targeted where they are needed most. Each year an assessment is carried out using best available evidence to identify the highest risk elements of all the fisheries in the district, including risks to fisheries (stock) sustainability, ecosystems and industry viability. The Strategic Assessment combines a data-driven analysis (the initial assessment) and the contextual knowledge of officers (the contextual assessment) to identify workstreams and assign a priority based on the risk. This informs the rolling 5-year Business Plan.

Many of the high priorities for the previous financial year have rolled over as high priorities for the 2023-2024 financial year. This includes workstreams relating to the transition to the Wash Cockle and Mussel Byelaw 2021 and the ongoing implementation of an Adaptive Risk Management approach in Cromer Shoal Chalk Beds Marine Conservation Zone. The implementation of the Closed Areas Byelaw 2021 will introduce new restricted areas within five Marine Protected Areas in the district where no bottom-towed fishing will be permitted (undergoing formal consultation).

The Strategic Assessment also highlights workstreams that have become established as business critical annual workstreams, the cessation of which could potentially lead to significant increases in risk to the fisheries and/or areas to which they relate. Often these arise from the completion of high priority workstreams, for example ongoing whelk monitoring and more recently, the administration of the shrimp effort limitation scheme to mitigate impacts of shrimp fishing on associated MPAs. Potential future workstreams are also identified, recognising that these may inform future assessments and that opportunities or developments may present during the year which would enable their undertaking or increase their priority.

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Abbreviations			
Bass Nursery Area	BNA	Marine Strategy Framework Directive	MSFD
Centre for Environment, Fisheries and Aquaculture Science	Cefas	Maximum Sustainable Yield	MSY
Community Voice Method	CVM	Marine Stewardship Council	MSC
Department for Environment, Food and Rural Affairs	Defra	Minimum Conservation Reference Size	MCRS
Eastern Inshore Fisheries and Conservation Authority	Eastern IFCA	Minimum Landing Size	MLS
Eastern Sea Fisheries Joint Committee	ESFJC	Monthly Shellfish Activity Report	MSAR
Environment Agency	EA	Natural England	NE
European Marine Site	EMS	Oslo-Paris Convention for the Protection of the Marine Environment of the North-East Atlantic	OSPAR Convention
European Union	EU	Renaissance of East Anglia Fisheries	REAF
Fisheries Improvement Project	FIP	Relative Fluorescent Unit	RFU
Habitats Regulations Assessment	HRA	Recreational Sea Angler	RSA
International Council for the Exploration of the Sea	ICES	Royal Yachting Association	RYA
Inshore Fisheries and Conservation Officer	IFCO	Size of Maturity	SOM
Inshore Vessel Monitoring System	IVMS	Special Protection Area	SPA
Length Converted Catch Curve	LCCC	Special Area of Conservation	SAC
Landing Per Unit Effort	LPUE	Site of Special Scientific Interest	SSSI
Maritime and Coastguard Agency	MCA	Sustainable management of rays and skates	SUMARIS
Marine and Coastal Access Act 2009	MaCCA 09	Study of the Wash Embayment, Environment and Productivity	SWEEP
Monitoring and Control Plans	MCPs	Tactical Co-ordination Group	TCG
Marine Conservation Society	MCS	Vessel Monitoring System	VMS
Marine Conservation Zone	MCZ	Wash Fishery Order 1992	WFO 1992
Marine Management Organisation	MMO	Wash & North Norfolk Marine Partnership	WNNMP
Marine Protected Area	MPA		

1. Introduction: Requirement for a strategic assessment

The inshore fishing sector is varied and dynamic with many different fisheries targeting a range of species with various gears. The inshore environment is similarly diverse: a hotspot for biodiversity, inshore areas contain important spawning and nursery grounds for numerous marine species, and critical sites for migratory, over-wintering and breeding seabirds. This is true for the Eastern IFCA district which encompasses the counties of Lincolnshire, Norfolk and Suffolk, stretching from Haile Sand Fort in the North to Felixstowe in the South, and extending 6 nautical miles out to sea. Almost all of the Eastern IFCA district (96%) is afforded protection through one or more Marine Protected Area (MPA) designations. This includes Special Protection Areas (SPA), Special Conservation Areas (SACs), Ramsar sites, Sites of Special Scientific Interest (SSI) and Marine Conservation Zones (MCZ).

In this complex environment, ensuring effective regulation of fisheries and conservation requires going beyond stock management, and implementing a holistic approach which considers environmental, social, and economic issues. IFCAs have a statutory responsibility to fully engage with both local and national stakeholders to manage the exploitation of sea fisheries resources in the district, balancing the social and economic benefits of exploiting resources with the need to protect the marine environment, or help it recover from past exploitation. In carrying out these duties, IFCAs must seek to ensure that the conservation objectives of MPAs are furthered and that fishing activity in such areas is managed to avoid an adverse impact upon conservation objectives.

To help meet these objectives, Eastern IFCA undertakes a strategic assessment of all commercial fisheries in the district each year to identify fisheries-related risks to stocks, the environment and industry viability. While the focus is on the commercial sector, recreational fisheries and aquaculture are also taken into account to an extent. The assessment uses best available evidence to identify fisheries, environmental features and areas within the district which may require management and regulation to be implemented or reviewed to maintain an effective regulatory framework capable of ensuring sustainable fisheries, healthy seas, and a viable industry. This is used to identify priority workstreams for the financial year and to inform the rolling five-year Business Plan.

2. Approach

Fisheries within Eastern IFCA's district are identified using Marine Management Organisation (MMO) landings data. Key species for the district are identified within each species group,¹ and an initial quantitative assessment is made using MMO data and Eastern IFCA's own returns, to identify any emergent trends or issues. A qualitative analysis is then used to assess fisheries in relation to the following four criteria:

1. *Evidence base* – the assessment identifies and considers the available evidence for each species in relation to fishing effort, landings, stock health and presence of spawning and nursery areas. Limited data and/or low confidence in the data available is associated with higher risk, particularly where landings into the district are high.
2. *Current Regulation* – for each fisheries group and the key species within that group, the assessment identifies and considers any measures currently in place in relation to the protection of pre-spawning individuals, gear management and effort restrictions. While limited measures are generally associated with a higher risk, this is considered in the context of landings in the district and the value of the fishery.
3. *Ecosystem impacts* – the assessment considers the potential ecosystem level impacts of the main gears associated with each species (e.g. by-catch, habitat damage). Typically, higher-impact gear like bottom-towed gears are associated with higher risk.
4. *Fisheries performance* – the assessment considers the landed weight and value of catch from within the Eastern IFCA district, any trends in landed catch, landings from within the district as a proportion of the UK total and available ICES advice. This links to our duties in relation to industry viability.

Each fisheries group is provided a relative 'risk' rank for each criterion to identify specific issues, and these are then combined into an overall score for each fisheries group. Risk ranks and scores are then used to identify and assign levels of priority to workstreams.

2.1 Initial Assessment

The initial assessment involves a data-driven analysis of a combination of MMO landings data and Eastern IFCA's own returns-driven data. While this currently represents best available evidence, there are some noteworthy limitations. In particular, the MMO data is based on sales notes and does not capture landed fish

¹ Species are grouped based on similarities in biology and fishing methods.

sold directly to the public (common for inshore fisheries, like the local crab and lobster fishery), while returns data is better for catch amounts, but does not include sales price. Moreover, while the data set available to Eastern IFCA at the time of writing captures landings for the entirety of 2022, the latter months are still provisional.

Previous assessments have considered data since 2010. However, the nature of reporting has changed in this time, especially in the context of the MMO's Monthly Shellfish Activity Report having been replaced by Under-10m Catch Recording, which Eastern IFCA does not have access to, as well as the development of internal Eastern IFCA catch reporting. As such, to avoid comparing datasets with significantly different data capture methods, the data viewed has been limited to 2017-2022, with a focus on any observable shifts and emerging trends in landings into the district and price-per-kilo. Strong trends are associated with a higher risk and a greater priority.

2.2 Contextual assessment

The initial assessment is purely quantitative and is in place to track trends and identify changes that may not be apparent during normal operations. To more fully explore the risk associated with each fishery, a contextual assessment is then undertaken. This considers the presence of fisheries within MPAs (Section 2.2.1 below) which significantly affects the prioritisation of management for those fisheries and areas, as well as additional criteria and drivers (Section 2.2.2) where information is available.

The contextual assessment draws on the knowledge and expertise of officers from the marine science and marine protection teams, intelligence gathered in partnership with the Marine Management Organisation, messages received from the fishing industry and the general public, and research work of relevance undertaken by other organisations.

2.2.1 Fisheries management in Marine Protected Areas (MPAs)

Protection of MPAs from potential impacts of fishing activity is a fundamental obligation of Eastern IFCA outlined in the Marine and Coastal Access Act (2009).² Accordingly, this obligation is a key consideration in the assessment of risk for each fishery.

The majority (96%) of the Eastern IFCA district is protected by MPAs. These sites contain a range of species and habitat features that require protection, in order to maintain site integrity. An on-going workstream to assess the impacts of commercial fishing activities within MPAs has identified where management is required. Assessments account for the type and current levels of fishing activity but these will potentially change over time. The intention of assessments is to evaluate the type and scale of pressures caused by fishing on protected habitats and species, and whether these pressures are likely to be hindering the conservation objectives of the MPAs.

² Marine and Coastal Access Act 2009 (c.23) s.153 and 154.

Management is required if the pressures are likely to hinder the conservation objectives. This work is guided by conservation advice from Natural England.

Eastern IFCA routinely collects data to monitor fishing activity and compliance within managed areas and is required to demonstrate responsive monitoring and management of fisheries in MPAs. Following the completion of fisheries assessments in MPAs, Monitoring and Control Plans (M&CPs) will be developed for each major fishing gear type in the district to demonstrate the monitoring and management that is applied, and where appropriate, MPA-specific controls will be specified. The intention is to implement responsive management in relation to MPA objectives.

Table 1 below lists MPAs within the Eastern IFCA district, indicating the key fisheries management issues for each site and the priority associated with management in each site.

Table 2 then assigns a level of priority to the development of M&CPs in relation to the major fisheries in the district based on the level of activity within MPAs, the potential impact on MPA features, and the economic value of the fishery in the district. The Shrimp Beam Trawling M&CP has been completed and is now a working document to be updated annually

Table 1: MPAs within Eastern IFCA's district and management priority levels		
Site name	Key issues for fisheries management	Priority
Humber Estuary Special Protection Area (SPA), Humber Estuary Special Area of Conservation (SAC)	Majority of these two sites are within neighbouring IFCA district. North-Eastern IFCA leading assessment of these two sites. Management measures are in place for the protection of eelgrass in Eastern IFCA part of SAC (Eastern IFCA Marine Protected Areas Byelaw 2018). This was reviewed during 2020 and is complete, and will be implemented when the Closed Areas Byelaw 2021 comes into effect. Potential cockle fisheries (Horseshoe Point) will have to take account of bird food dynamics and disturbance, there are also other significant barriers to opening this fishery. Potential for Eastern IFCA involvement in habitat restoration project at the site.	Low
Gibraltar Point SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity. Stakeholder interest in fishing activity interactions with protected bird species within this site.	Low
The Wash and North Norfolk Coast SAC	Annual cockle and mussel fisheries transitioning from the WFO 1992 to the WCMB 2021 are assessed and managed in accordance with the site's conservation objectives. Management in place (spatial closures for bottom towed gear) for vulnerable features within The Wash embayment and along north Norfolk coast. Initial closures implemented via Marine Protected Areas Byelaw 2016 and additional closures via replacement Marine Protected Areas Byelaw 2018, Marine Protected Areas Byelaw 2019 and Closed Areas Byelaw 2021. Additional measures to manage effort in remainder of site are implemented via the Shrimp Permit Byelaw.	Medium
The Wash SPA	Annual cockle and mussel fisheries transitioning from the WFO 1992 to the WCMB 2021 are assessed and managed in accordance with the site's conservation objectives. Other, non-WFO fisheries have been provisionally assessed and no adverse effects determined at current levels of activity. A study to review the current 'bird food model' has been undertaken by Natural England, information from this will be used to update HRA's. Thresholds did not change as a result of this study.	Medium
North Norfolk Coast SPA	Has been provisionally assessed and no adverse effect determined at current levels of activity.	Low
Cromer Shoal Chalk Beds Marine	Measures progressed (to be implemented via Closed Areas Byelaw 2021) to exclude towed demersal gear from vulnerable chalk and peat feature areas of site. The assessment of unforeseen artisanal shrimp fisheries identified through the process has concluded that current levels of	High

Conservation Zone (MCZ)	<p>activity do not hinder the conservation objectives of the site. Assessment into the potential impacts from potting fisheries on chalk features, specifically in rugged chalk areas, is progressing. To carry out the assessment one of the key requirements is to understand the significance of impacts of potting on rugged chalk as well as activity levels. The MCZ area is of huge importance to the inshore potting fishery and wider North Norfolk communities. Following advice from Natural England there is a requirement to better understand chalk feature characteristics and the extent and frequency to which they are exposed across the site. Eastern IFCA are liaising closely with Natural England and fishermen to improve our understanding of fishing activities and site features and their sensitivities and to implement an adaptive risk management approach to fishing activity on rugged chalk.</p> <p>Voluntary measures have been instated under a code of best practice to improve gear handling and minimise gear impact on chalk features, and a permit byelaw is in development to further control activity.</p>	
Breydon Water SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity. Third parties have raised concern over potential disturbance of SPA species by bait collection activities; Eastern IFCA are investigating with Natural England.	Low
Alde, Ore & Butley Estuaries SAC	Has been provisionally assessed; no adverse effects determined at current levels of activity.	Low
Alde & Ore Estuaries SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	Low
Orfordness to Shingle Street SAC	Has been provisionally assessed; no adverse effects determined at current levels of activity.	Low
Deben Estuary SPA	Has been provisionally assessed; no adverse effects determined at current levels of activity.	Low
Stour and Orwell Estuaries SPA	Bait digging highlighted as potential cause of disturbance to over-wintering birds; assessment to be updated following NE advice. Natural England lead on management of the bait digging activity at this site.	Low
Inner Dowsing, Race Bank & North Ridge SAC	Eastern IFCA to manage the 0-6nm part of this site, which also extends beyond 12nm offshore. <i>Sabellaria</i> reef has had closures implemented (although not currently in force) through the Closed Areas Byelaw 2021 for towed commercial gear in areas in which Eastern IFCA are satisfied with the supporting reef evidence. Eastern IFCA undertook additional features surveys during 2021	High

	and 2022 to examine additional advised reef areas; results will be used to inform Eastern IFCA's consideration of the need for further spatial management areas.	
Haisborough, Hammond & Winterton SAC	Eastern IFCA to manage the 0-6nm part of this site, which extends beyond 12nm offshore. <i>Sabellaria</i> reef requires protection from towed demersal gear; measures have been progressed for areas in which Eastern IFCA are satisfied with the supporting reef evidence and will be implemented through the Closed Area Byelaw 2021. Remaining lower confidence 'red risk' areas to be reviewed/monitored.	Medium
Outer Thames Estuary SPA (including extended areas)	MMO undertook assessment of original SPA, which extends from the coast to beyond 12nm. No adverse effects identified at current levels of activity. Site extended in 2018: EIFCA has undertaken preliminary assessment of extension areas within Eastern IFCA district; no adverse effects identified. Liaison with MMO required (to be considered in MMO Tranche 4 MPA programme).	Medium
Greater Wash SPA	Site designated in 2018. Extensive site covering parts of Eastern IFCA and North-Eastern IFCA district and area beyond 6nm where range of commercial fisheries take place; assessment of commercial fisheries required; NE to provide conservation advice following feature surveys. Liaison with MMO required (to be considered in MMO Tranche 4 programme).	Medium
Southern North Sea SAC	Fully designated in 2019; designated for Harbour porpoise. Extensive site (largest SAC in Europe); small proportion in inshore waters off Norfolk and Suffolk. Assessment of commercial fisheries required. National approach likely to be required given size of site and mobile nature of protected species. Liaison with MMO required (to be considered in MMO Tranche 4 programme).	Medium

Table 2: Prioritisation of Monitoring and Control Plans for fisheries in Eastern IFCA's district				
Fishery	Level of activity within MPAs	Economic value of fishery in district	Potential impact on MPA features	M&CP Priority
Shrimp beam trawling	High	High	High	High
Demersal towed gears (excluding shrimp beam trawling)	Low	Low	High	Medium
Pelagic towed gears	Low	Medium	Low	Low
Dredging	Low	Low	High	Low
Hand-working (access from land)	Low	Low	Medium	Low
Hand-working (access from vessel)	High	High	Medium	High
Static pots and traps	High	High	Medium	High
Netting (incl. seine nets and other)	Medium	Medium	Low	Medium
Lines	Low	Medium	Low	Low
Other	Low	Low	Low	Low

2.2.2 Additional drivers

Where information is available, other drivers are considered to inform the risk rank for each fishery. These and the rationale behind their consideration are outlined below.

Spawning and nursery grounds: Inshore fisheries tend to be small-scale, targeted by vessels under 10 metres in length, although the relatively large fleets in The Wash consist of slightly larger vessels, averaging 13-14m. However, where spawning or nursery grounds occur (as is often the case for inshore areas), even small-scale fishing activities can have a disproportionate effect on the wider stock. The assumption is that there is a greater risk to fisheries sustainability and wider ecosystem impacts where fishing effort overlaps spatially with spawning or nursery grounds. The primary sources of spawning and nursery ground evidence is found within Ellis *et al* 2010³ and 2012⁴ and an Eastern IFCA research report on the composition of commercial catches (2014)⁵.

Recreational activity: Data on recreational fishing activity is limited for most species. The outputs of the Angling 2012 project (Armstrong *et al.* 2013⁶) and 'Participation, effort, and catches of sea anglers resident in the UK in 2018 & 2019' (Hyder *et al.* 2020⁷) have been used to judge important recreational species. Recreational landings are not included in MMO landings figures, but the activity plays an important economic role within the district. Unregulated recreational netting is known to occur in the district and where this overlaps with known spawning and nursery grounds, there is potential for disproportionate effects on wider stocks.

Gear-related impacts: Fishing activity has impacts beyond the effects on the targeted species. Damage to habitats for example varies between gear, some gears have greater ecosystem impacts. This is an important consideration when assessing risk.

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

³ 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.

⁴ 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

⁵ S. Thompson: 2014 Composition of commercial finfish catches. Eastern IFCA Research Report.

⁶ 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.

⁷ K. Hyder, A. Brown, M. Armstrong, B. Bell, S.A. Hook, J. Kroese, & Z. Radford; 2020. Participation, effort, and catches of sea anglers resident in the UK in 2018 & 2019

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

Political/social/legislative context: In addition to prioritising fisheries by risk, there are also political, social and legislative drivers for change which need to be taken into account and which may affect organisational priorities and/or workstreams. This includes Defra's revised approach to fisheries management, and more recently, the Fisheries Act 2020 which sets overarching objectives for fisheries management in the UK. Fisheries Management Plans under the Fisheries Act 2020 are being developed. These will set out the policy framework for securing the long-term sustainability in relation to different stocks based on geography. When adopted, these will necessarily inform management for the Eastern IFCA district and will need to be considered in strategic planning.

OSPAR requirements: Consideration has been given to obligations under the Oslo / Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention). This consideration has been based on species and habitats listed within the "List of Threatened and/or Declining Species & Habitats" in OSPAR Region 2, Greater North Sea. In summary, it is evident that the existing approaches and activities of Eastern IFCA generally satisfy obligations under the OSPAR Convention, and that additional requirements are limited to informing relevant authorities should we become aware of the presence of certain, generally very rare, species or habitats.

2.3 Limitations

The Strategic Assessment has a number of limitations which require reflection.

Firstly, the inshore fishing sector is relatively data limited: i-VMS has not yet been introduced for under-12 metre vessels which make up the majority of the inshore fleet and although under-10 catch recording was implemented in 2020, Eastern IFCA has not yet been granted access to this data.

As highlighted in Section 2.1 above, MMO landings data on which the initial quantitative assessment is based is generated through sales notes and does not capture landed fish sold directly to the public. Direct sales to the public are common for inshore fisheries and this means that there are substantial gaps in landings data for certain significant local fisheries like the local crab and lobster fishery. MMO landings data also does not capture cockles fished using hand raking which is the predominant fishing method for the local Wash-based fishery (though this gap in data is mitigated by Eastern IFCA's own evidence base, discussed in further detail in the Bivalve Mollusc Fishery Assessment under Section 3.1 below). It is also believed that a proportion of economic value in relation to some fisheries is undetected by MMO landings data. For instance, some species like bass and sole are particularly valuable in small quantities, or have a fluctuating value throughout the year, and fishermen in

the district are known to have a dependence on these. Thus, the initial assessment cannot fully capture or detect the economic importance of certain fisheries locally, nor can it reliably draw conclusions as to the causes or meaning of any changes. Instead, its purpose is to highlight potential issues for further investigation.

Additionally, the MMO data set available to Eastern IFCA at the time of writing on which the 2023 Assessment is based captures the whole year, but the latter months are still provisional and subject to a degree of change.

The data-driven analysis which forms the initial assessment is used to supplement a contextual analysis which draws on the knowledge and expertise of officers from the Marine Science and Marine Protection teams, intelligence gathered in partnership with the Marine Management Organisation, messages received from the fishing industry and the general public, and research work of relevance undertaken by other organisations.

Another limitation relates to the emergence of unforeseen issues or events which by their very nature cannot be accounted for in the annual planning cycle which the Strategic Assessment informs. As a public body, it is inevitable that Eastern IFCA will occasionally be influenced by factors beyond our control. As such, while the Strategic Assessment provides a useful fixed overview of priorities for the year, it is possible that these may vary because of changes to best available evidence or social, political, legislative or economic drivers.

3. Results

The combined outputs from the data-driven initial assessment and subsequent consideration of contextual drivers are set out in the sections below.

Section 3.1 outlines the results in relation to fisheries groups and key species within those groups which are identified to ensure that group-based analysis does not dilute the potential issues associated with a single species. Each fishery is given an overall risk rating (low, medium, or high) based on its risk rankings for the four assessment criteria – evidence base, current regulation, ecosystem impacts and fisheries performance. Potential work streams are then considered and assigned one of three priority levels – high priority workstream, business critical, or future workstream.

As highlighted in the sections below, high priority workstreams are those which are considered crucial to ensuring that Eastern IFCA is able to meet its statutory duties in relation to maintaining sustainable fisheries, healthy seas and a viable industry. The business critical category relates to established workstreams which have become ‘business as usual’ for the organisation, the cessation of which has the potential to significantly increase the risk associated with the fisheries and/or areas to which they relate. Future workstreams represent the lowest priority workstreams in terms of targeting organisational resources. These are outlined recognising that they may inform future Strategic Assessments and that opportunities or developments may present during the year which would enable their undertaking or increase their priority.

Section 3.2 outlines the results of an analysis of Eastern IFCA’s ‘Message System’ which records messages from stakeholders. The analysis is carried out as part of the contextual assessment and identifies the key concerns of stakeholders reported to Eastern IFCA during 2022.

Finally, Section 3.3 brings together previous sections to outline workstreams for the 2023-2024 financial year, in order of priority, according to the categories and their definitions as outlined above (high priority, business critical and future).

3.1 Fisheries assessments

The tables below outline the outputs of the Strategic Assessment in relation to the main fisheries groups and key species for the Eastern IFCA district identified within those groups. Key species are identified to ensure that group averages do not dilute the potential issues associated with a single species. Risk ranks for each of the four assessment criteria (evidence base, current regulation, ecosystem impacts and fisheries performance) are combined to produce an overall risk score.

Group: Bivalve Molluscs	Key Species: Cockles, Mussels	Overall risk: High
Initial Quantitative Assessment		
<p>The dataset used for Cockles and Mussels is drawn from Eastern IFCA's own reporting, which does not include sale price of catch.</p> <p><u>Cockles</u></p> <p>Landings for cockles from 2017-2021 show a downward trend, though the decrease is small between 2019 and 2021. While the 2022 data is still provisional, it shows a reduction in landed weight, from 3500 tonnes in 2021 to 1500 in 2022 (nearly 60% decrease). Given the degree of this drop, it is worth noting that significant differences in annual recruitment of cockles drive the variability of the fishery.</p> <p><u>Mussels</u></p> <p>The data for the mussel fishery is limited, as the fishery is managed around stock targets and the landings are dependent on allowed TAC. This prevents any practical data analysis.</p> <p><u>Non-Key Species</u></p> <p>The only other species numerically of note is scallops, which are not caught in the district but are landed and are highly variable, though are on average showing a higher landed weight than Mussels (16.55 tonnes a year compared to 11.76). This peaked in 2020 at 61 tonnes, a significant rise from 2019's 8.5. 2021 dropped to 22 tonnes, and the provisional data for 2022 shows barely any activity.</p>		

Contextual Assessment			
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Risk rank: Low	Risk rank: High	Risk rank: Low	Risk rank: High
<p>Due to Eastern IFCA regulations prohibiting the use of fishing gear without authorisation, we have a good evidence base for key species within this group. This makes the score a low risk. It is noteworthy that the evidence base for fisheries outside the Wash is poor, particularly in regard to recreational fisheries. This does not reflect in the risk on the assessment due to these being marginal fisheries, and recreational fisheries not being recorded.</p> <p>A full cockle survey was not carried out during 2020 increasing the risk score due to decreased confidence in the data. However, surveys were conducted in 2021 and 2022,</p>	<p>The key wild capture bivalve mollusc fisheries (i.e. cockles and mussels in The Wash) have a significant level of regulation in place in accordance with the associated Fisheries Management Plans. These were previously administered under the WFO 1992 (which expired 3 January 2023), and these will be implemented under the replacement Byelaw (Wash Cockle and Mussel Byelaw 2021 and under the interim arrangement using the Temporary Closure Byelaw).</p> <p>However, it is apparent that within the cockle fishery, a combination of atypical mortality and the removal of small cockles are impacting on the viability of the fishery</p>	<p>Fishing activity occurs within spawning grounds (although this is less relevant in terms of the biology of this group).</p> <p>Suction dredge cockle fisheries have not been permitted since 2008 in the Wash (except for a small private fishery outside of Eastern IFCA management) and regulation prohibits them without authorisation from Eastern IFCA (inside and outside of The Wash). The revised Cockle Management Plan and the WCMB do not have any provision for a suction dredge fishery, and therefore it is anticipated that a handwork fishery will be the only permitted cockle fishery in the Wash into the future, although there is some pressure from industry for a dredge fishery.</p>	<p>Cockles dominate this category making up a large proportion of the total UK catch (weight and value). Cockle landings fluctuate depending on the size of the stock. In addition, three shellfish processing factories operate within the district which also rely, in part, on catch from this group. As such, catch associated with this group has wider value in providing shore-based jobs.</p> <p>Mussel fisheries in the district have previously contributed a significant proportion of national landings (more than 80%) but have declined significantly over the past decade. Officers have identified 'die-off' in both cockles and mussels, the cause of which has been investigated but cannot be confirmed. It is</p>

<p>with capability for reduced capacity due to COVID-19.</p> <p>The 2022 fishery primarily focussed on the 2021 class of cockles, due to poor density of earlier classes. This has potential ramifications for the health of the fishery going forward.</p> <p>The need to do a completely new HRA each year has resulted in some pressure from industry regarding the ability to be reactive in the fishery, and so consideration is being given to moving to an ongoing HRA process, with updates rather than replacements to the HRA.</p>	<p>annually, with limited 'sizeable' cockle available in 2022 and which accounted for the low catches during this year. Current measures which seek to mitigate risks of taking small cockles (primarily use of closed areas containing high densities) are only partially effective and further consideration on the matter is required, potentially supported by a wider review of the associated FMP.</p> <p>Outside of The Wash, management of bivalve species is limited to inherited byelaws and, particularly in the case of the fishery in the Humber, the wording of these byelaws could inhibit effective fisheries management if a fishery was identified.</p> <p>In addition to wild capture fisheries, progress has been made in developing the Wash Several Order which is being applied for to manage the private aquaculture areas (lays) in the Wash, which were previously managed under the</p>	<p>Given that Eastern IFCA have regulation in place which manages the main fisheries within this group and that use of dredges or other bottom towed gear is not permitted without completion of an appropriate assessment, the risk to supporting habitats is effectively mitigated.</p> <p>The dominant fishery (cockles) is by hand-working (low impact) and this is managed in accordance with the associated FMP. The fishery occurs within MPAs and has the potential to impact on site integrity without appropriate management and compliance (which is completed and highlighted within the business-as-usual: critical workstreams section).</p> <p>Management of the Wash cockle and mussel fisheries accounts for bird food requirements, informed by the updated bird food model, stock surveys and bird counts, so risk</p>	<p>likely that in both cases the mortalities are due to a combination of environmental stresses that could include parasitic infestations and the impacts of spawning. While regular settlements are keeping the cockle stocks at healthy levels, the mussel beds are suffering poor recruitment. This, combined with the high mortalities, has resulted in significant decline of the mussel beds. Furthermore the lack of mussel stocks can interact with the bird food model leading to a reduced TAC overall. Eastern IFCA contributed to a multi-disciplinary investigation in partnership with Cefas to gain a better understanding of what is causing mortalities and inform more effective management of the situation.</p> <p>Concern has been raised regarding a trend towards smaller (younger) cockles being targeted within the hand-work cockle fishery with impacts on industry viability (due to lower value) and wider stock</p>
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	<p>WFO 1992. However, current lay holders have indicated their intention to object to the application which has also been delayed as a result of legal complexities around issuing and withdrawing leases. This new situation warrants a review of the 'need' to manage private fisheries as the grantee of an Order and potentially additional work to address the concerns of industry.</p>	<p>to shellfish-dependent bird species is low. Furthermore, management considers the potential for hand-worked fisheries to disturb birds and seals in The Wash, informed by bird counts and seal counts. The decline in Harbour seal numbers in The Wash since 2018 (thought to be linked to massive growth in grey seal populations) has resulted in Natural England advising a more precautionary stance when mitigating against disturbance of Harbour seals. The Sea Mammal Research Unit has advised that there is no evidence that current fisheries have an adverse effect on seal populations, but this has not been empirically proven.</p> <p>Low yields in open cockle beds and pressures driven by production have encouraged the taking of smaller cockles which is likely to have a cumulative impact on the overall stock with potential for wider ecosystem impacts (e.g.</p>	<p>sustainability impacts. This trend is being addressed and additional stock management methods are being considered.</p>
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		<p>availability of food resource for designated bird species).</p> <p>Further research is required to consider the potential for further stock management methods such as an MLS. Engagement with processors and fishermen required to better understand situation and support with information.</p>	
Workstreams 2023/24		Priority level and status	
Confirmation of the Wash Cockle and Mussel Byelaw to enable management of wild capture fisheries		<p>High priority workstream Underway: The Wash Cockle and Mussel Byelaw 2021 is at the final stages of formal QA with the MMO prior to being considered by the SoS. Interim measures are in place to enable continued management of fisheries during the transition between the WFO92, which expired on 3 January 2023 and the new byelaw coming into effect.</p>	
Implementation of Wash Cockle and Mussel Byelaw access policies (transition)		<p>High priority workstream Underway: The WCMB Eligibility Policy was agreed by the Authority in September 2022 and the transition from WFO licenses to permits under the WCMB began in November. Effectively administering the transition is crucial to ensuring the continuity of businesses reliant on the associated fisheries.</p>	
Management of private shellfish aquaculture (Wash Several Fisheries).		<p>High priority workstream Underway: The WFO92 provided rights for several (private) fisheries (i.e., the lays). Interim management of the lays is in place to ensure continuity of access to the private stock after the expiry of the WFO92. A replacement Several Order has been in</p>	

	development, including through consultation with lay holders who have indicated an intention to object to the Authority's management proposals for the lays. As a consequence, additional consideration is required to determine if it is appropriate for the Authority to make a Several Order application before continuing this work.
Annual stock assessment	Business critical Underway: Annual cockle and mussel surveys are required to inform the management of the 2023 fishery. This is a critical workstream as the assessments are needed to inform the HRAs and allow the fisheries to be opened each year.
Habitats Regulations assessment (HRA)	Business critical Underway: HRAs to assess impacts of Wash cockle and mussel fisheries on protected habitats and species inform management of these fisheries. Developing a longer term HRA for Wash cockle fisheries during 2023 to reduce annual resource required for assessment (will still require annual updates with stock and feature data).
Development of engagement plan and Wash forum, including engagement with processors to understand market for small cockles	Business critical Upcoming: Development of improved communication strategies with Wash industry is important to facilitate not only existing issues such as the targeting of small cockles, but to mitigate future risks. These could include emergent risks to the fishery, as well as reputational risks associated with the perception of unilateral management.
Engagement with stakeholders in relation to new WFO regulations and fee increases.	Business Critical Ongoing: Further dialogue to continue prior to 2023 cockle fishery opening as part of routine engagement with fishing industry. There are persistent concerns from industry regarding the transition from the WFO 1992 to the Wash Cockle and Mussel Byelaw.

	Engagement is critical to reassure fishery stakeholders and ensure a smooth transition.
Enforcement of WFO regulations, code of best practice, and Shellfish Lay lease conditions.	Business critical Ongoing: part of ongoing enforcement approach to management of the Wash fisheries.
CEFAS collaborative project to study the condition of inter-tidal mussels and identify the cause of their decline.	Future workstream Underway: Results are anticipated in Q4 of 2022/23. Depending on the outputs of the Cefas investigation, further work may be required. Since 2010 the inter-tidal mussel beds have suffered unusually high levels of mortality that has led to the decline of the beds and the mussel fishery. The beds are now in a very poor condition and unable to support a viable fishery. The actual cause of the mortalities is currently unknown, making the situation difficult to manage. A multi-disciplinary investigation is ongoing to gain a better understanding of what is causing the mortalities, informing more effective management of the situation. Development of mussel fishery management plans for the WCMB 2021 fisheries will be informed by outcomes from the atypical mortality study.
Gather information about recreational hand gathering	Future workstream
Refined use of data in under 10s reporting app	Future workstream
Review Humber Estuary Fisheries Byelaw inherited from North Eastern Sea Fisheries Committee.	Future workstream
Review district-wide bivalve management	Future workstream
Review of mussel fishery management plans	Future workstream Pending the outcome from atypical mortality study.

Development of Monitoring and Control Plans	<p>Future workstream Monitoring and control of the key bivalve fisheries are included in business-critical workstream (above), although these have not yet been formulated into a dedicated Monitoring and Control Plan.</p>
Review of cockle fishery management plan in line with WCMB and 2021 regulation changes.	<p>Future workstream</p>
Study to examine interactions between hand-worked fisheries and seals in The Wash	<p>Future workstream In response to increasingly precautionary conservation advice relating to Harbour seals, better understand is needed to demonstrate interactions between hand-worked fishers and Harbour seals.</p>

Group: Crustaceans	Key Species: Brown Crab, Lobster	Overall risk: High
Initial Quantitative Assessment		
With the loss of MSAR reporting, and without access to under-10m catch recording to replace it, the data for these fisheries is limited.		
<u>Crab</u>		
MMO landings data shows the fishery as largely stable, averaging 616 tonnes a year ($r=-0.17$), and a 5% drop year-on-year between 2021 and 2022. Prices have been climbing ($r=0.8$), with a 17% increase between 2021 and 2022.		
<u>Lobster</u>		
The overall trend shows a negative trend ($r=-0.8$), however this is likely driven by an unusually high level of landings in 2017 (90.5 tonnes), while the average sits at 70.7 tonnes. Further, the year-on-year change between 2021 and 2022 is upward, with a 24% increase. Price per kilo held largely stable until 2021, where it sharply increased to £17.36 from £12.89. It lowered slightly in 2022, to £16.50.		
<u>Other Species</u>		
The only other point of interest within the crustacean data is that 2022 sales notes include very low levels of Spider Crabs, which do not have any previous landings data.		

Contextual Assessment			
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Risk rank: High	Risk rank: High	Risk rank: High	Risk rank: Medium
<p>The current evidence base for brown crab and lobster still lacks sufficient spatial resolution to fully inform management within the district. It is also of relatively low confidence due to the data collection methods. Eastern IFCA does not yet have access to the data from the catch-recording (e-reporting) service for the under-10m fleet. This e-reporting service replaces the previous MSAR paper method.</p> <p>Work being done in the context of Adaptive Risk Management</p>	<p>The majority of species in this group are not regulated due to being marginal fisheries. The key species, crab and lobster, are covered by national (e.g. MLS and a limitation on the issuing of new commercial licences) and IFCA-level management measures.</p> <p>However, current measures are generally insufficient to conclude that exploitation is at MSY levels. Stakeholders (fisheries and others) have indicated the need for additional measures to ensure</p>	<p>Potting fisheries generally score low for ecosystem impacts, because of limited contact between gear and habitats, and low levels of bycatch. However, the contextual risk is high due to the nature of the seabed within one MPA in the Eastern IFCA district, the Cromer Shoal Chalk Beds MCZ. Ecosystem impacts are higher in rugged chalk areas in the inshore parts of the MCZ, where potting effort is believed to be concentrated.</p> <p>In 2022, Eastern IFCA's assessment of the impacts of the</p>	<p>The landed weight and value of both crab and lobster is high. The Marine Strategy Framework Directive required that Good Environmental Status (GES) be achieved for all commercially exploited stocks by 2020. GES requirements include that stocks are fished at MSY.</p> <p>However, for most shellfish stocks GES has not yet been achieved or their status is uncertain and Cefas advice indicating that crab⁸ and lobster⁹ stocks are being</p>

⁸ Cefas Stock Status Report 2019: Edible crab (*Cancer pagurus*), available at: [*Edible crab \(Cancer pagurus\) Cefas stock status report 2019 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/821113/Edible-crab-Cancer-pagurus-Cefas-stock-status-report-2019.pdf).

In relation to brown crab in the Southern North Sea region, the report concludes at page 10: Exploitation level of Edible Crab in the Southern North Sea is high for both sexes and, although stable, is above the level required for Maximum Sustainable Yield. The spawning stock biomass is between the reference target and limit for both males and females, increasing in recent years for both sexes. The status of the stock has not changed since the last assessment in 2017. Anecdotal information suggests a recent expansion of fishing activity in both pot numbers and distribution. These factors are likely to be partially responsible for the large increase in landings which the model interprets as an increase in spawning stock. The spawning stock status should therefore be treated with caution.

⁹ Cefas Stock Status Report 2019: Lobster (*Homarus gammarus*), available at: [CP017-04-F5 Cefas Report Template \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/821113/CP017-04-F5-Cefas-Report-Template.pdf).

<p>for Cromer Shoal Chalk Beds MCZ is also expected to significantly improve the evidence base for the crab and lobster fisheries. Research using trackers on fishing vessels was launched in 2021 and is ongoing to inform our understanding of fishing activity on and off the rugged chalk, with 15 vessels currently involved. Moreover, the anticipated introduction of i-VMS will improve data quality and quantity however, evidence for gear density (particular within Cromer Shoal MCZ) is crucial to the associated assessment and additional data collection may be needed to facilitate this.</p> <p>A study is being developed to assess the economic value of the rugged chalk for the fishery to better inform our understanding of the potential social and economic impacts</p>	<p>sustainability. However, there continues to be no consensus on what these should be and limited data to underpin justification for specific measure. Suggestions include a closed season during winter months, effort limitation, and restricting the 3nm zone to beach launched vessels only. A framework byelaw is being developed to allow measures to be introduced and adapted as necessary, in the context of the Adaptive Risk Management Process within the Cromer Shoal MCZ. A flexible byelaw like this would significantly improve the current gap in regulation.</p> <p>Pursuant to the Fisheries Act 2020, it is also anticipated that a Fisheries Management Plan for crabs and lobsters in English waters is being developed. The FMP will set out the policy framework for</p>	<p>potting fishery in the MCZ concluded it was not possible to rule out the fishery hindering conservation objectives in the long term, but with mitigation via the Adaptive Risk Management (ARM) approach, this could be ruled out.</p> <p>A Project Board, a Research and Development Task and Finish Group, a Management Task and Finish Group and a Stakeholder Group have been established to work together to implement the ARM approach to mitigate risks to the protected chalk feature. Some voluntary measures have been adopted by the MCZ fleet to reduce the impact of potting on rugged chalk (in relation to lost and stored gear), nevertheless, the risk remains high primarily due to the uncertainty of the scale and significance of the impact. Consideration of potential management measures to mitigate impacts is ongoing.</p>	<p>exploited at levels beyond MSY has not been updated. However, The 2020 Eastern IFCA stock assessment for the fishery from which occurs within the district indicates that the fishery is generally stable and not under immediate threat. No stock assessment was carried out for 2021 due to a shortage of data, but one will be carried out for 2022.</p> <p>Information has been received about an increase in market demand for crab containing roe and the potential for impacts to stock sustainability, and future fisheries performance. This increases the risk in relation to fisheries performance as individuals are potentially being taken out of the fishery before having a chance to spawn once. Officers have also raised concerns about a trend to target crabs, even those under MLS,</p>
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In relation to lobster in East Anglia, the report concludes at page 12: The exploitation status of the stock of lobster in East Anglia is high, above the maximum reference point limit for both sexes, although decreasing since 2017. Fishing pressure is particularly high around the Minimum Landing Size. The spawning stock biomass of both sexes is low, below the minimum reference point limit. Low sampling levels make the uncertainty on stock status high for this stock. No assessment is presented for 2015–2016 due to insufficient sampling.

<p>of any required management measures on industry, with data having been collected in 2021 and 2022.</p> <p>A study has also been instigated to assess the social value of the Cromer Crab fishery, with work being undertaken by Marine Conservation Society, building on the successful 2016 Community Voice project.</p> <p>While these developments go some way towards mitigating risk, more information is needed on levels and locations of activity throughout the whole district, including unlicensed activity and that of vessels not based in the district (e.g. Grimsby).</p>	<p>securing the long-term sustainability of crab and lobster stocks, including in the Eastern IFCA district. It is anticipated that future regulation will increasingly take environmental considerations into account, and not only stock management. Progress in the adoption of the Fisheries Improvement Plan (FIP) for the fishery has been slow. The Phase 1 Assessment (pre-assessment) is complete, but the stewardship council that would progress Phase 2 is at capacity, so this is unlikely to progress further in the near future.</p>	<p>ROV surveys have been carried out at 170 stations during 2021 and 2022, to enable mapping out the extent of the rugged chalk feature within inshore areas. Taken together with data from trackers, this will further inform our understanding of the ecosystem and habitat impacts of potting on protected features and in relation to the conservation objectives of the site.</p> <p>There is potential for a study on natural disturbance, allowing the anthropogenic impacts on the MCZ to be positioned within the context of natural disturbance, thus helping understand the significance of impacts from potting.</p> <p>Targets for achieving favorable condition within the UK MPA network by 2042, set within the 25 year Environment Plan, are based on halting all damaging activities by 2024.</p> <p>Current pressures on bait, with very high prices, carry the risk</p>	<p>at the wrong time of the year for use as cheap bait in the whelk fishery.</p> <p>Outside of the fishery, die-offs have been occurring in North Eastern IFCA's district, with active debate about the causes. There is currently no indication Eastern IFCA's district will be affected in any way, but the severity of the die-off warrants attention.</p> <p>There have been reports of unusual species in the fishery, in particular spider crabs coming further north than typical. The degree to this being a novel change is not yet verified.</p>
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		that bait used in this fishery could be unsustainably sourced, which could have a knock-on impact for other fisheries.	
Workstreams 2023/24		Priority level and status	
Conduct further surveys in relation to potting activity to map the distribution and intensity of potting in the MCZ and throughout the district		<p>High priority workstream Underway: Ongoing research using trackers to inform our understanding of fishing effort and where fishing is concentrated in the MCZ. More information is needed on levels and locations of activity throughout the whole district, including unlicensed activity and that of vessels not based in the district. This workstream is afforded high priority as it is integral to the ongoing Adaptive Risk Management approach to this fishery and the ongoing development of measures to ensure that risks to the conservation objectives of the site are being effectively mitigated.</p>	
Habitat mapping to understand the location and extent of rugged chalk in the MCZ		<p>High priority workstream Underway: Ongoing habitat mapping work using BlueROV 2. As above, this workstream is a high priority as it is integral to the ongoing Adaptive Risk Management approach to this fishery and the ongoing development of measures to ensure that risks to the conservation objectives of the site are being effectively mitigated. Mapping the extent of chalk features alongside potting features will inform more appropriate management as well as our understanding about the impact of potting on the chalk.</p>	
Evaluate the occurrence of impacts on rugged chalk from current potting activities, and understand their significance in relation to		<p>High priority workstream Underway: Analysis ongoing of video footage will take place throughout the year.</p>	

naturally-occurring damage to rugged chalk and the MCZ conservation objectives	This is a high priority workstream as there is very little literature about the impacts of static gear on chalky seabed. This is necessary in the context of the ongoing Adaptive Risk management approach to the MCZ.
Monitor effort levels to assess if increases are occurring	High Priority Workstream Implementation of management to monitor fishing activity levels is required to manage the risk of potting on the MCZ. This is likely to be achieved via the implementation of I-VMS requirements nationally but additional measures to monitor and manage numbers of pots would further reduce risk. It will also help inform the effectiveness of measures under ARM.
Continue (and possibly revise) crab and lobster bio-sampling regime. Potentially include the collection of information about catches (rather than landings) and about weight and the length/weight relationship	High priority workstream Upcoming: Need to devise a methodology to assess value on and off the rugged chalk. It appears that potting activity in the MCZ tends to be concentrated inshore and linked to the rugged chalk. Information received from industry suggests that these areas are more productive and further research into this is required as a high priority in the context of the ongoing Adaptive Risk management Approach.
Develop and introduce management for stored and lost pots	High priority workstream Underway: A code of best practice for lost and stored gear has been developed and deployed. A gentlemen's agreement on recovery and disposal is under development. This is a high priority workstream as the conservation advice of Natural England flags lost gear as posing a high risk to protected features.
Development of crab and lobster permitting byelaw (framework byelaw) and permit conditions (effort limitation/technical requirements/gear tagging etc. as required)	High priority workstream Upcoming: Development of byelaw and permit conditions is underway and is anticipated to be presented to the Authority in March.

	The development of a framework byelaw is a high priority workstream to enable responsive management as our understanding of the interaction between potting and sensitive features and mitigative measures develops. This is critical to the effective implementation of the Adaptive Risk Management approach.
Review inherited crab byelaws (Prohibition on use of edible crab (<i>Cancer pagurus</i>) for bait; Berried (egg-bearing) or soft-shelled crab (<i>Cancer pagurus</i>) or lobster (<i>Homarus gammarus</i>); Parts of shellfish; Whitefooted edible crab (<i>Cancer pagurus</i>))	High priority workstream Upcoming: Review of the byelaws is underway and a single replacement byelaw to cover these restrictions in a single place is being developed.
Engagement to gather information for the MCZ assessment and to develop management measures (including education and engagement in relation to any new measures)	Business critical Engagement with industry is a business critical workstream as industry participation and collaboration is essential to the development and implementation of effective management of the site.
Continue routine engagement and compliance checks	Business critical
Acquire additional length frequency data for lobsters	Future workstream Note: This could potentially be incorporated into the study on the value of crab on and off the rugged chalk
Development of Monitoring and Control Plans	Future workstream Development of a Monitoring and Control Plan within the Cromer Shoal MCZ is unnecessary at this time whilst ARM is used to mitigate risks to designated features. Plans will be required for the fisheries in other MPAs but such will be informed by the outputs from the 'Amber and Greens' workstream (which is regarded as high priority). As a reflection, this workstream has been moved from 'high priority' to 'future priorities'.
Refined use of data in under 10s reporting app	Future workstream

Assess and where possible mitigate for impacts from cross-over from MSARs to catch returns in order to minimise data loss	Future workstream
Continue to support any progress and developments with the Fisheries Improvement Plan	Future workstream

Group: Shrimp / Prawns	Key Species: Brown Shrimp (<i>Crangon spp</i>)	Overall risk: Medium	
Initial Quantitative Assessment			
<u>Brown Shrimp</u>			
<p>The numbers of the brown shrimp fishery are highly variable with a peak in 2020 of 1149 tonnes landed and a low in 2019 of 340. 2017-2021 is too variable to show a trend, but 2022 shows a new record low of 270 tonnes, although again the data is provisional, to give a mild negative trend ($r=-0.31$), with a 43% year-on-year decrease from 2021, which itself was the second lowest landed weight in the data available. Price per kilo has fluctuated with a high of £4.70 in 2017 and a low of £2.35 in 2020, which has recovered to £3.69 in 2022, putting the price in the upper end of the range.</p>			
<u>Other Species</u>			
<p>The only other species captured in the landings data in this category is the Aesop shrimp or pink shrimp (<i>Pandalus montagui</i>), which showed no landings from 2017 until 2 tonnes were landed in 2021, which increased to 10.9 tonnes in 2022, with a price comparable to brown shrimp (£3.52 per kilo).</p>			
Contextual Assessment			
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance

Risk rank: High	Risk rank: Medium	Contextual Rank: Medium	Contextual Rank: Medium
<p>Eastern IFCA has access to the VMS+ data from the whole fleet, but many of the devices are still on two-hour pings, limiting data resolution, though i-VMS (with 3-minute pings) is expected to be installed on all vessels over 6m.</p> <p>As part of the MSC accreditation for the brown shrimp fishery, a provisional agreement is in place for processors to provide Eastern IFCA with processing data, although the data so far has not been reliably received.</p> <p>New returns forms came into effect on 1 January 2022. Under the new requirements returns must be submitted for every day of the year, even where no fishing has occurred, and information must be provided for each tow undertaken per trip. Weekly returns are required for shrimp</p>	<p>The Shrimp Permit Byelaw 2018 has been confirmed by the Secretary of State. Since formal submission of the Byelaw to the MMO, we have further developed the permit conditions using the process under the Byelaw so that management can be implemented as required.</p> <p>Return form monitoring is now an ongoing workstream to monitor fishery effort. Returns must be submitted even where no fishing has occurred, and every day of the year must be accounted for on a return form. Fishermen fishing in the Wash and North Norfolk Coast must submit weekly returns. Otherwise, return forms must be submitted monthly.</p>	<p>As a bottom-towed gear fishery, shrimp trawling presents a high risk in relation to both habitat damage and by-catch impacts, especially in nursery areas.</p> <p>Potential impacts on MPAs in the district have been mitigated in part through the continued development of restricted areas to protect designated features and sub-features that are at risk for this activity.</p> <p>Closed areas have been implemented under the Marine Protected Areas Byelaw 2018, protecting the most sensitive habitat features from bottom towed gear impacts in parts of The Wash and North Norfolk Coast SAC (where the main shrimp fishery takes place) and the Humber Estuary SAC/SPA. The Closed Areas Byelaw 2021 will introduce additional restricted areas within 5 MPAs</p>	<p>Landings of Pink shrimp have been negligible in recent years. This is in part thought to represent the lack of market demand. However, pink shrimp are also strongly associated with <i>Sabellaria</i> reef which has been protected with restricted areas by Eastern IFCA. This effectively rules out a potential fishery. However, landings did increase in 2022, though the data suggests this was a case of increased bycatch, rather than targeting pink shrimp.</p> <p>The Wash brown shrimp fishery is a nationally significant fishery, which accounts for around 95% of the brown shrimp fished in UK waters. Landings of brown shrimp have fluctuated greatly in the last 6 years, with peaks in 2018 and 2020. This is thought to be a result of market demands as well as the biology of the species, however 2022 showed very low landings.</p>

<p>fishing in the Wash and North Norfolk Coast, otherwise, monthly returns are required. This development significantly mitigates risk as it allows us to monitor effort in relation to the identified effort threshold¹⁰. It will also mitigate the risk previously identified in relation to very small-scale shrimp fisheries along the North Norfolk and Suffolk coast, some of which target shrimp only as bait.</p> <p>A new returns database has been developed and is now in active use. Although there will be lag to some extent as returns will only be received as the season progresses, weekly returns from the Wash and North Norfolk Coast SAC are expected to minimize that. Monthly meetings are taken to monitor the fishery.</p> <p>Between shrimp returns and improving officer expertise,</p>		<p>in the district, where no bottom-towed fishing will be permitted. Whilst the new restricted areas are yet to be implemented, this does represent a significant mitigation of risk.</p> <p>The Shrimp Permit Byelaw 2018 enables Eastern IFCA to implement both effort limitations and gear restrictions to further mitigate risks to species and habitats.</p> <p>The MSC accreditation further mitigates risk, requiring regular inspection of the fishery and commitments to manage to maintain sustainability in relation to stocks, ecosystem and governance.</p> <p>Officers have reported recreational beam trawling activity in estuaries around Suffolk which increases the contextual risk. Where fishing activity, even at a recreational scale takes place in known spawning and nursery grounds,</p>	<p>The 2020 fishery was reported as good in terms of both productivity and market value despite the COVID-19 pandemic having a negative impact on processing factories. 2021 and 2022 both set new record lows for landings, but officers believe these years to be an anomaly and largely the result of very limited market demand and competition from Dutch fleets. In general, fluctuations are also believed to be influenced by the availability of other fisheries (primarily cockles).</p> <p>If MSC accreditation requirements are adhered to, it is expected that good fisheries performance will be maintained in the brown shrimp fishery.</p>
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¹⁰ Effort threshold identified as compatible with meeting the conservation objectives of The Wash & North Norfolk Coast SAC, alongside other management measures including discrete closed areas and gear specifications

awareness of this fishery is improving.		there is an increased risk for a disproportionate impact on ecosystems.	
Workstreams 2023/24		Priority level and status	
Implement Shrimp Permit Byelaw 2018		<p>High priority workstream Underway: The Byelaw has been signed off and will be implemented this year. This is a high priority workstream because the Byelaw and associated permit conditions are the key mechanisms for managing the fishery. However, it is noteworthy that the current levels of shrimp fishing within the Wash and North Norfolk Coast MPAs is significantly lower than 'normal' and as such, the immediate risk is lower.</p>	
Implement Shrimp Permit conditions		<p>High priority workstream Underway: The permit conditions have been developed using the process under the Byelaw so that these are ready to come into effect when the Byelaw does. This is a high priority workstream because the Byelaw and associated permit conditions are the key mechanisms for managing the fishery.</p>	
Continue to implement management measures to protect MPA features and mitigate ecosystem impacts		<p>High priority workstream Underway: Closed Areas Byelaw 2021 will be implemented this year. The Byelaw will introduce restricted areas in 5 MPAs within the district where no bottom-towed fishing will be permitted. Additionally, much of the required management has been covered through the</p>	

	implementation of the MSC accreditation in the Wash. Effort and gear restrictions, also identified as mitigation against impacts to MPAs, will be implemented via the Shrimp Permit Byelaw 2018.
Implementation of i-VMS throughout the shrimp fishing fleet	High priority workstream The data from i-VMS will significantly improve our evidence base. Depending on how the I-VMS is implemented nationally, additional measures may need to be implemented by Eastern IFCA to ensure we can enforce the measures and there are consistent reporting times across all vessels engaged in the fishery.
Gather information about levels of activity outside of the Wash (focus on Suffolk estuaries)	Future workstream Reports received by officers indicate previously unknown recreational beam trawling activity in estuaries around Suffolk. Where fishing activity, even at a recreational scale takes place in known spawning and nursery grounds, there is an increased risk for a disproportionate impact on ecosystems. Further information is critical to better understand activity levels and ecosystem impacts. This will in part be addressed through the implementation of the new shrimp return forms and I-VMS roll-out.
Monitor effort and administer permits in line with effort limitation model	Business critical The effort monitoring scheme has been established and is ongoing. Management can be implemented as required via the Shrimp Permit Byelaw 2018 (which was confirmed by the SoS in 2022). This is a business critical workstream to ensure that effort does not surpass limits necessary to ensure that the fishery does not pose a risk to site integrity (Wash and North Norfolk Coast SAC).
Engagement and enforcement in relation to new shrimp measures	Business critical This is a business critical workstream to ensure that new measures and their rationale are understood by fishery stakeholders.

Routine engagement and compliance checks in accordance with the Compliance Risk Register and TCG	Business critical This is a business critical workstream, in line with Eastern IFCA's Regulation and Compliance Strategy and Enforcement Policy.
Continue MSC accreditation gear inspections and effort calculations/ Maintain Eastern IFCA involvement in the MSC accreditation scheme	Business critical This is a business critical workstream in line with Eastern IFCA's commitments to facilitate the MSC accreditation.
Monitoring and Control Plans	Future workstreams The Monitoring and control plan for shrimp fishing within the Wash and North Norfolk Coast SAC is effectively in place albeit not finalised. Plans will be required for the fisheries in other MPAs but such will be informed by the outputs from the 'Amber and Greens' workstream (which is regarded as high priority). As a reflection, this workstream has been moved from 'high priority' to 'future priorities'.
Development of fisheries sustainability management measures (including consideration of impacts on nursery areas)	Future workstream
Refined use of data in under 10s reporting app	Future workstream
Continue engagement with industry on MSC endangered, threatened and protected species list for the fishery	Future workstream

Group: Whelks	Key species: Whelk	Overall risk: Medium	
Initial Quantitative Assessment			
<p>One of the largest fisheries in the district by weight, whelk landings show a high degree of variability, with a peak in 2019 of 3651 landed tonnes and a low (prior to 2022) of 1984 tonnes in 2018.</p> <p>2021 showed a drop from the previous year, from 3324 tonnes to 2185 tonnes, and 2022 showed a further 31% decrease, to 1515 tonnes. Across the 2017-2022 dataset there is not a strong trend ($r=-0.15$), but the last three years shows a substantial downward trend ($r=-0.99$), with a 54% decrease in landed weight across the three years.</p> <p>Price has been very stable ($r=-0.09$), with only a -4% change between 2021 and 2022, sitting at £1.08 per kilo against a 2017-22 average of £1.17</p>			
Contextual Assessment			
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Risk rank: Medium	Risk rank: Medium	Risk rank: Medium	Risk rank: High
<p>Whelk fisheries data has been collected over the last five years. However, the evidence base for this fishery remains relatively limited. This is in part due to limitations which have emerged with respect to data collection/entry.</p>	<p>A permit mechanism (Eastern IFCA whelk permit byelaw) is in place which enables the introduction of measures as required. Effort, gear and MLS are all currently managed.</p> <p>A formal consultation on Eastern IFCA's whelk</p>	<p>Generally, potting fisheries represent a relatively low risk in relation to ecosystem impacts. Assessments in relation to potting activity within Cromer Shoal Chalk Beds MCZ have been completed.</p>	<p>The landed weight of whelk is significant within the Eastern IFCA district where one of the major whelk processing factories is situated.</p> <p>The landed weight of whelks peaked in 2019 and has been steadily declining since then.</p>

<p>Two projects, one relating to Landings Per Unit Effort (LPUE) and another to Size of Maturity (SOM), are currently underway to improve the evidence base for this fishery. LPUE is being monitored to prevent over-exploitation. Initial issues with data entry have improved, but still have an impact on data quality.</p> <p>Moreover, although Eastern IFCA has LPUEs for the district and various areas within in, LPUE has limitations as a proxy for stocks on the ground. This is mainly due to LPUE being based on long-term trends and there being a lag between actual impact and the emergence of a downward trend/decrease in LPUE. However, internal reporting and monitoring has moved from an annual to a monthly basis, partially mitigating the risk.</p>	<p>management was undertaken, but a priority shift driven by concerns regarding sustainability and in the context of the upcoming Fishery Management Plans means this workstream is not a priority as the situation is liable to change significantly as FMPs are developed.</p> <p>Suffolk fishermen have raised concerns that the MLS is too high, effectively making the inshore fishery in that part of the district unviable.</p>	<p>However, these assessments are largely in relation to the crab and lobster fishery, as areas likely to be used for whelk fishing are mostly characterized by soft substrate. The MCZ potting assessment has attempted to assess the amount of whelk potting activity in the area as this is less well known than for crab and lobster. However, more information is still needed.</p> <p>Crab is a favoured bait for this fishery, raising a risk of IUU fishing for crab to use as bait.</p> <p>Environmental impacts will be assessed by the upcoming FMP.</p>	<p>Moreover, LPUE has started to decline since 2020 which can be a cause for concern as the low mobility and reproductive trends of whelk makes them vulnerable to over-fishing and slow to recover. Stocks are continuously monitored using monthly landings data.</p> <p>The accessibility of the whelk fishery also carries a risk of displacement into the fishery from other underperforming fisheries, such as shrimp.</p>
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<p>More data is still required for the SOM study to inform appropriate Minimum Landing Sizes (MLS). As a result of difficulties in procuring samples from more than a dozen stations, the data set is still insufficient.</p>			
Workstreams 2023/24		Priority level and status	
<p>Development of measures to address the sustainability of whelk stocks</p>	<p>Business Critical workstream Underway: A monitoring programme is established to enable identification of risks to the fishery, for example decreasing LPUE or sudden increases in effort, which may require mitigation in the form of management. Completing the stock assessment is necessary to inform the review of whelk permit conditions. The priority of this workstream is increased in the context of the low mobility and reproductive trends of whelk which makes them vulnerable to over-fishing and slow to recover. Completing the SOM study is also a priority in relation to industry viability to ensure that minimum sizes are appropriate. This is a high priority workstream as it is necessary to ensure that management measures are effective and proportionate.</p>		
<p>Engagement, enforcement intel gathering and partnership working with MMO</p>	<p>Business Critical Workstream Any new measures are likely to increase enforcement issues. Moreover, compliance with whelk measures has generally been low and enforcement is a high priority for this fishery.</p>		

Development of Monitoring and Control Plans	Future workstream Monitoring and Control Plans will be required but such will be informed by the outputs from the 'Amber and Greens' workstream (which is regarded as high priority). As a reflection, this workstream has been moved from 'high priority' to 'future priorities'.
Refined use of data in under 10s reporting app	Future workstream

Group: Demersal	Key Species: Bass; Flatfish: Sole, Plaice, Flounder, Dab	Overall risk: Medium
Initial Quantitative Assessment		
<p data-bbox="159 411 248 443"><u>Bass</u></p> <p data-bbox="159 483 2069 595">Bass landings have been increasing since 2017 ($r=0.76$), from 13.55 tonnes landed in 2017 to 25.79 in 2021. This dropped slightly in 2022 with 22.85 tonnes, but nonetheless bass shows the strongest growth in landed weights of any species in this fishery group. Price remains stable, with an average price in 2022 of £10.63 per kilo, against an average since 2017 of £10.60</p> <p data-bbox="159 635 241 667"><u>Sole</u></p> <p data-bbox="159 707 2033 818">Sole are the most landed species in this group by weight, averaging 30 tonnes over the past 6 years. Trend is downwards ($r=-0.71$), but the decline is gentle, with a peak of 32.7 tonnes in 2018 and a low of 26.59 tonnes in 2021. 2022 showed a slight recovery with 27.72 tonnes landed, possibly driven by a price per kilo increase of 28% from £7.83 to £10.88.</p> <p data-bbox="159 858 264 890"><u>Plaice</u></p> <p data-bbox="159 930 2051 1042">The plaice fishery had high but variable landings in the early years of the dataset (37 tonnes landed in 2017, 24 in 2019, 12 in 2018 and 2020. However, the fishery has sharply dropped in 2021, with only 5.71 tonnes landed, and further in 2022, with 2.3 tonnes. This is against a steady increase in price ($r=0.61$), with a 29% price rise between 2021 and 2022.</p> <p data-bbox="159 1082 304 1114"><u>Flounder</u></p> <p data-bbox="159 1153 2078 1265">Landings of flounder peaked in 2018 and 2019 at 6 and 7 tonnes landed respectively, before dropping to 3 tonnes in 2020, where it has remained mostly stable. Price has gently climbed between 2017 and 2021, but had a 39% increase between 2021 and 2022 (£0.75 per kilo to £1.22)</p> <p data-bbox="159 1305 237 1337"><u>Dab</u></p>		

A very low weight fishery, with an average of 0.7 tonnes landed per year. Particularly low landings in 2022, with 0.31t landed. Price is largely stable (r=-0.22).

Other Fisheries

While a lot of demersal species are caught in the district in small numbers, the only other species numerically of note is whiting, which showed a substantial increase in landings in 2021 (2.11t to 6.56t), then dropped sharply to 0.68t in 2022 despite a 32% increase in price per kilo.

Contextual Assessment

Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Risk rank: Medium	Risk rank: Medium	Risk rank: Medium	Contextual Rank: Medium
<p>The evidence base for demersal fisheries in the district is limited, particularly in relation to effort data. However, many of the species represented have ICES stock assessments which provide a strong evidence base overall.</p> <p>ICES advice for bass, sole, plaice and flounder is generally favourable. Conversely, the advice for cod indicates that this is an at-risk species.</p>	<p>Eastern IFCA has only limited management measures in place, in particular the Minimum Sizes Byelaw 2019 which came into effect on 1st March 2021 (applicable to both commercial and recreational fishing). However, demersal fisheries are heavily regulated through national measures.</p> <p>Pursuant to the Fisheries Act 2020, it is expected that Fisheries Management Plans will be published for bass in English waters, and for</p>	<p>Demersal fishing gear includes bottom-towed gears which score highly for ecosystem impacts, particularly in relation to habitat damage. Moreover, species impacts are high due to the ability of nets to remove large numbers of fish very effectively.</p> <p>Where such gear types are deployed within nursery or spawning areas there is a risk for disproportionately large impacts on stocks. Bottom-towed gears represent a risk</p>	<p>It is likely that a proportion of economic value is undetected by the MMO landings data used to inform the assessment. Some species like bass and sole are particularly valuable even in small quantities and this is especially relevant for Suffolk where many small-scale fishermen land small amounts and sell directly to the public. As such, the economic importance of these fisheries locally is potentially underestimated.</p>

<p>Finfish fisheries in the district are generally undertaken by small scale operators and as a result, activity often passes under the radar.</p> <p>MMO landings data also tends to be unrepresentative of activity in the district. However, it is anticipated that under-10m catch recording will mitigate this data gap.</p> <p>Further activity data is required to inform an understanding of the levels of gear use in relation to ecosystem impacts and the protection of MPA features, though this is also partially mitigated by under-10 catch recording.</p> <p>Netting has been considered in HRAs for MPAs in Eastern IFCA district. There is very little info available on bycatch of porpoises, seals and seabirds in the district but no indications that these types of bycatch occur anything more than rarely.</p>	<p>Southern North Sea and Eastern Channel Mixed Flatfish fisheries (including plaice, sole, flounder and dab).</p> <p>Additionally, gaps in national legislation have also resulted in the occurrence of unregulated netting activity.</p> <p>Changes to national legislation will allow a small amount of bass to be landed as bycatch.</p> <p>Defra's proposed designation, in summer 2023, of a Highly Protected Marine Area beyond 12nm off the Lincolnshire coast carries some risk of activity displacement, and will be monitored going forward.</p>	<p>not only to targeted species (including their young) but also to many other species and habitat features.</p> <p>The local risk is compounded by the known occurrence of unregulated and recreational netting activity in the district. Moreover, officers have reported recreational beam trawling activity in estuaries around Suffolk which increases the contextual risk.</p> <p>Potential impacts to MPAs will be mitigated significantly by the Closed Areas Byelaw 2021, which will introduce restricted areas in 5 MPAs within the district where no bottom-towed fishing will be permitted. However, some of these restricted areas are yet to be implemented.</p> <p>Targets for achieving favorable condition within the UK MPA network by 2042, set within the 25 year Environment Plan, are based on halting all damaging activities by 2024.</p>	<p>The Eastern IFCA district is also an important area for recreational fishing which likely has a wider benefit to the local economy.</p> <p>Furthermore, the value of these species tends to increase at certain times of the year which may mean that they are hugely important to individual fishermen, if not in a broader economic sense.</p> <p>Officers have noted that sole often presents as the most reliable source of income for East coast fishermen in the summer. Concerns have been raised about pressure to this fishery and the local impacts of a boom-and-bust fishery. In particular, stocks appear to face periods of sudden, heavy pressure which result in noticeable drops in catches after a 2-week period and push fishermen to fish further out from the shore. It is believed that this trend is local and not a wide-scale issue (favourable ICES advice for sole),</p>
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<p>A further data gap for recreational sea angling and unregulated / recreational netting in the district. Broader studies have provided an insight into recreational fishing at a national / regional scale however there is limited data locally.</p>		<p>Three extensive MPAs that cover part of Eastern IFCA's district plus waters beyond the district protect cetaceans and birds. MMO is leading on assessment and management of fishing in these straddling sites, although Eastern IFCA will be required to input local knowledge for the inshore parts of these MPAs.</p>	<p>potentially requiring a consideration of local management.</p> <p>Temperature change and overfishing have removed the presence of Cod from the district, driving the species further North and effectively ruling out a local fishery.</p>
Workstreams 2023/24		Priority level and status	
<p>Re-assessment of amber/green impacts in MPAs (including an analysis of gaps in fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises)</p>	<p>High priority workstream Underway: The re-assessment is ongoing. The re-assessment is a high priority workstream in the context of Eastern IFCA's statutory duties to ensure the protection of MPAs from potential impacts of fishing activity.¹¹</p> <p>Particular priority is given to this workstream given that the 25-year Environment Plan's target of achieving favourable condition within MPAs by 2042 is based on halting damaging activities by 2024.</p>		
<p>Implementing management measures for 'red-risk' gear/feature interactions within MPAs</p>	<p>High priority workstream Underway: Closed Areas Byelaw 2021 (at formal QA with MMO) will introduce restricted areas in 5 MPAs within the district where no bottom-towed fishing will be permitted. This is a high priority workstream in the context of Eastern IFCA's statutory duties to</p>		

¹¹ Marine and Coastal Access Act 2009 (c.23) s.153 and 154.

	ensure the protection of MPAs from potential impacts of fishing activity. ¹²
Contribute to development of associated Fisheries Management Plan	High priority workstream Contribute to the development of bass Fisheries Management Plan.
Engagement on and monitoring compliance with the Minimum Sizes Byelaw 2019 (for both commercial and recreational fishing)	Business critical This is a business critical workstream, particularly in view of the popularity of the district for recreational fishing to ensure that stakeholders are aware of the applicable minimum sizes in the Eastern IFCA district.
Bass-related engagement with fishers regarding BNAs and other bass measures	Business critical This is a business critical workstream, part of routine engagement with stakeholders, in view of known existence of important but still undesignated BNAs in the district and the increased risks to ecosystems posed by netting.
Bass-related enforcement and intel gathering and partnership working with the MMO (bass and landing obligation)	Business critical This is a business critical workstream that is an important part of partnership working and information sharing to ensure compliance with measures.
If required, we will provide evidence and support in relation to the designation of BNAs in the district	Future workstream Note: BNAs have been proposed for the district but not designated.
Collect fit-for-purpose data and assess the needs for 'unregulated netting' measures (including all potentially commercial-level activity)	Future workstream
Obtain further information on the scale of non-commercial activity and investigate the need for increased minimum sizes for fish and shellfish and the application of net mesh requirements for non-commercial fishers	Future workstream

¹² Marine and Coastal Access Act 2009 (c.23) s.153 and 154.

Development of Monitoring and Control Plans	<p>Future workstream Monitoring and Control Plans will be required but such will be informed by the outputs from the 'Amber and Greens' workstream (which is regarded as high priority). As a reflection, this workstream has been moved from 'high priority' to 'future priorities'.</p>
Engagement with RSA to obtain fisheries data	<p>Future workstream Note: Engagement in the past but the data has not been obtained</p>
Refined use of data in under 10s reporting app	<p>Future workstream</p>
Continue to support REAF project	<p>Future workstream</p>

Group: Dogfish and Sharks	Key Species: Lesser Spotted Dogfish (Small spotted catshark) (<i>Scyliorhinus canicular</i>).	Overall risk: Low	
Initial Quantitative Assessment			
<p><u>Lesser Spotted Dogfish</u></p> <p>Lesser Spotted Dogfish has not been landed in any significant weight since 2017, when 4.44 tonnes were reported. Since then, the average landed weight has been 0.62t, with no landings reported in 2021 and only 0.25t in 2022, although the price per kilo in 2022 was significantly higher than in previous years (£1.74 per kilo against a previous high of £0.65 in 2020).</p> <p><u>Other Species</u></p> <p>Smoothhound has an average of 1.46t landed per year, and a strong but gentle positive trend (r=0.94, 14% increase year on year between 2021 and 2022)</p>			
Contextual Assessment			
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Risk rank: Medium	Contextual Rank: Low	Contextual Rank: Low	Risk rank: Low
Fisheries evidence is poor including effort and catch data. Under-10 catch recording will mitigate this to an extent. However, the level of catch retained for the purpose of using it as bait is not well	Some species within the group are subject to no-take restrictions (i.e. most sharks). Dogfish have limited regulation and are thought to be biologically vulnerable to recruitment over-fishing although it is recognised that they have a higher survivability than other species.	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	ICES advice is generally favourable for dogfish but poor for sharks (sharks are however generally subject to no-take restrictions). Due to limited data, ICES has not been able to assess the stock and exploitation status for lesser

<p>understood and as such a risk remains</p>	<p>Fishing mortality is thought to be relatively low within the district, according to landings data.</p> <p>Eastern IFCA byelaw 14 prohibits the removal of Tope.</p> <p>Pursuant to the Fisheries Act 2020, a Southern North Sea Non-Quota Demersal Species Fisheries Management Plan will be published by 2024. This will cover the key species for the Eastern IFCA district – lesser spotted dogfish.</p> <p>There is potential for a spurdog fishery with limited TAC to be opened in the district.</p>	<p>within the district, impacts on spawning and nursery areas are likely to be limited, relative to other target species.</p>	<p>spotted dogfish relative to maximum sustainable yield and precautionary approach reference points because these reference points are undefined.</p> <p>None of these fisheries are particularly important from an economic perspective and, with the exception of lesser spotted dogfish represent less than 0.02% of UK total catch.</p> <p>Many dogfish species are likely to be more important as bait for other fisheries (and may be under recorded as a result).</p> <p>Fishermen from the district have made representations to Eastern IFCA that catches of spurdog are very high and they should be able to land them. However, this species is very susceptible to overfishing because of their long gestation period (up to 22 months) and late sexual maturity (around 10 years for males and 15 years for females).</p>
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			The fishery suffers from misidentification issues, risking under or misreporting of catch.
Workstreams 2023/24		Priority level and status	
Re-assessment of amber/green impacts in MPAs (including an analysis of gaps in fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises)		<p>High priority workstream Underway: The re-assessment is ongoing. This is a high priority workstream in the context of Eastern IFCA's statutory duties to ensure the protection of MPAs from potential impacts of fishing activity.¹³</p> <p>Particular priority is given to this workstream given that the 25-year Environment Plan's target of achieving favourable condition within MPAs by 2042 is based on halting damaging activities by 2024.</p>	
Engagement and compliance activity in accordance with the compliance risk register and TCG		<p>Business critical This is a business critical workstream in line with Eastern IFCA's Regulation and Compliance Strategy and Enforcement Policy.</p>	
Implement management measures for 'red-risk' gear/feature interactions within MPAs		<p>High priority workstream Underway: The Closed Areas Byelaw 2021 is at formal QA with MMO. The Byelaw will introduce restricted areas in 5 MPAs within the district where no bottom-towed fishing will be permitted. This is a high priority in the context of Eastern IFCA's statutory duties to ensure the protection of MPAs from potential impacts of fishing activity.¹⁴</p>	
Partnership working with Cefas to explore the possibility of a "sentinel fishery" approach to spurdog		<p>Future workstream</p>	

¹³ Marine and Coastal Access Act 2009 (c.23) s.153 and 154.

¹⁴ Marine and Coastal Access Act 2009 (c.23) s.153 and 154.

	Note: Spurdog catches can be very high at certain times of the year, in certain locations. Fishers have reported that they have to discard large amounts, and this is both time consuming and makes long lining unfeasible at certain times of the year. The high abundance of spurdog is a phenomenon local to the south east of the North Sea, with overall low stocks.
Develop mechanism to monitor levels of Lesser Spotted Dogfish use as bait to gain better understanding of overall fishing mortality	Future workstream
Partnership working with CEFAS re shark / dogfish research where possible	Future workstream
Development of Monitoring and Control Plans	Future workstream Monitoring and Control Plans will be required but such will be informed by the outputs from the 'Amber and Greens' workstream (which is regarded as high priority). As a reflection, this workstream has been moved from 'high priority' to 'future priorities'.
Review/development of voluntary landings data	Future workstream
Refined use of data in under 10s reporting app	Future workstream

Group: Pelagic	Key Species; Herring, Mackerel, Sprat	Overall risk: Low	
Initial Quantitative Assessment			
<p><u>Herring</u></p> <p>Herring is easily the most landed species in this category, with an average landing of 55.7t between 2017 and 2021. However, in 2022, data shows a 263% increase in landings, going from 62.44t in 2021 to 226.93t in 2022. Price has remained largely stable.</p> <p><u>Mackerel</u></p> <p>A variable, low weight fishery, ranging from a high of 1.4t in 2021 to a low of 0.11t in 2018. 2022 showed a landed weight of 0.33t, placing it on the low end of the range. Price is stable.</p> <p><u>Sprat</u></p> <p>Very similar to Mackerel, with a high of 1.54t landed in 2020 and a low of 0.15t in 2018. 0.45t in 2022 again places it in the lower end of the range, while prices have dropped sharply from £3.66 per kilo in 2021 to £2.52 per kilo in 2022.</p>			
Contextual Assessment			
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Risk rank: Low	Risk rank: Low	Risk rank: Low	Contextual Rank: Low

<p>These are marginal fisheries locally and the evidence base for them is limited. However, this will be mitigated by data from under-10 catch recording. ICES advice is favourable for both herring and sprat.</p> <p>Netting activity data is required in relation to bycatch of porpoises and SPA bird species, however, low levels of activities reduce the associated risk.</p>	<p>Eastern IFCA has only limited management measures in place, in particular the Minimum Sizes Byelaw 2019 (applicable to both commercial and recreational fishing).</p> <p>Research by Kent & Essex IFCA suggests that many minimum sizes originally set out in European legislation have only a limited protective effect as they do not represent the size at which species are mature. However, generally low activity levels for species in this group lowers the associated risk.</p> <p>Net size restrictions effectively prevent sprat fishing as the minimum size is still too large to effectively catch sprat.</p>	<p>Associated gear is generally not considered to have impacts on MPA features as gear is in the water column. The development of MCPs and assessments of potential impacts in relation to porpoises and SPA bird species could further inform our position, but are not currently priority workstreams.</p> <p>Spawning aggregations can be targeted very effectively in these fisheries and this does represent a potential risk.</p>	<p>None of the species landed represent nationally important landed weights and the value of catch is relatively low.</p> <p>Officers have indicated that the local herring fishery tends to fluctuate both in activity and in availability, with greater availability observed south of Lowestoft.</p> <p>The herring fishery is exploited far below MSY due to the low market demand and value of the fishery. It is the only fishery in this group that has landed weight of any note.</p> <p>Fishermen have reported high levels of disturbance caused by seals which has the potential for significant impact on fisheries performance. An increase in colonies establishing/spreading has the potential to significantly impact on fishing habits.</p>
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			Potential exists for pressure on this fishery due to the current price of bait.
Workstreams 2023/24		Priority level and status	
Re-assessment of amber/green impacts in MPAs (including an analysis of gaps in fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises)		<p>High priority workstream Underway: The re-assessment is ongoing The re-assessment is a high priority workstream in the context of Eastern IFCA's statutory duties to ensure the protection of MPAs from potential impacts of fishing activity.¹⁵</p> <p>Particular priority is given to this workstream given that the 25-year Environment Plan's target of achieving favourable condition within MPAs by 2042 is based on halting damaging activities by 2024.</p>	
Conduct engagement and compliance checks in accordance with the compliance risk register and TCG		<p>Business critical This is a business critical workstream in line with Eastern IFCA's Regulation and Compliance Strategy and Enforcement Policy.</p>	
Implement management measures for 'red-risk' gear/feature interactions within MPAs		<p>High priority workstream Underway: The Closed Areas Byelaw 2021 is at formal QA with MMO. The Byelaw will introduce restricted areas in 5 MPAs within the district where no bottom-towed fishing will be permitted.</p>	
Development of Monitoring and Control Plans		<p>Future workstream Monitoring and Control Plans will be required but such will be informed by the outputs from the 'Amber and Greens' workstream (which is regarded as high priority). As a reflection, this workstream has been moved from 'high priority' to 'future priorities'.</p>	

¹⁵ Marine and Coastal Access Act 2009 (c.23) s.153 and 154.

<p>Continue dialogue with recreational fishers to identify fishing trends and raise awareness about minimum sizes</p>	<p>Future workstream Note: Previous years have shown that recreational fishers are often unaware of larger minimum sizes in the North Sea ecoregion, therefore there is a requirement for a greater amount of engagement.</p>
<p>Continue to support the REAF project</p>	<p>Future workstream</p>
<p>Explore initiatives to invigorate the herring fishery through participation in promotional/awareness raising campaign</p>	<p>Future workstream Note: Certain fishers rely almost entirely on a limited number of species (cod, bass, sole, skate) which are presently either in a poor state or heavily regulated. Any potential works which could reduce reliance on these few species would likely be of benefit to the viability of the industry and the fisheries in the long-term. In particular, there is significant latent capacity in the herring fishery of East Anglia which was once a prominent fishery.</p>
<p>Refined use of data in under 10s reporting app</p>	<p>Future workstream</p>

Group: Skates and Rays	Key Species: Thornback	Overall risk: Medium	
Initial Quantitative Assessment			
<p><u>Thornback</u></p> <p>Landings peaked in 2018 at 51t and have been decreasing since ($r=-0.85$). 2022 continued the downward trend with a 31% year on year decrease, with 16.26t reported. Conversely, price has been steadily increasing ($r=0.76$), with a 30% increase between 2022 and 2021, with prices now at £3.05 per kilo.</p>			
Contextual Assessment			
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Risk rank: Medium	Risk rank: Medium	Risk rank: Medium	Risk rank: Medium

<p>Poor identification of species means that they are often reported as 'skate or ray' or unintentionally misreported as the wrong species. Under-10 catch reporting will potentially mitigate the risks from the data gap in relation to these species.</p> <p>Risk is in theory mitigated further as the quota system distinguishes between some species, requiring catches of blonde ray, cuckoo ray, thornback ray and spotted ray to be reported separately. However, this will likely be hampered by identification issues.</p> <p>ICES advice is limited due to a paucity of data.</p>	<p>Eastern IFCA has no regulation in place specifically in relation to this group. Management is primarily through negotiated quotas with the EU and Norway. Kent & Essex IFCA (neighboring district) have MLS in place for skates and rays which increases risk as effort could potentially be displaced to the Eastern IFCA district where no minimum sizes apply, although none has yet been seen.</p> <p>Pursuant to the Fisheries Act 2020, a Southern North Sea and Channel Skates and Rays Fisheries Management Plan will be published by 2024. This will cover a number of species including thornback ray, blonde ray, undulate ray, skates and rays, small-eyed ray, spotted ray, cuckoo ray, and starry ray</p>	<p>Skates and rays are primarily targeted using long-lines but also gillnets and demersal trawls. MMO landings data suggests an increase in the use of gillnets to land Thornback Ray since 2017.</p> <p>This needs to be monitored as gillnets and trawls have greater ecosystem impacts and the risk is increased where this type of fishing occurs in sensitive areas like nursery and spawning grounds.</p> <p>Moreover, an EU-funded project (fishPi project, 2016) analysed risk from various gears to seabirds and marine mammals and determined that observations were most needed in fisheries using set gillnets, trammel nets, driftnets, and bottom trawls.</p>	<p>Due to a paucity of data, ICES has not been able to assess the stock and exploitation status relative to maximum sustainable yield (MSY) and precautionary approach (PA) reference points because the reference points are undefined for most species.</p> <p>Populations of smaller skate and ray species are concentrated primarily in the Southern North Sea and skates are very susceptible to fishing pressure. However, landings of these species in the district are very low which minimises associated risk.</p> <p>As a group, skates and rays are of limited economic value but some smaller scale fishermen are known to have a dependence on them as a supplementary fishery.</p> <p>2022 showed very little activity in this fishery,</p>
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			though whether this was due to fishery condition or market pressure is not currently clear
Workstreams 2023/24		Priority level and status	
Re-assessment of amber/green impacts in MPAs (including an analysis of gaps in fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises)		<p>High priority workstream Underway: The re-assessment is ongoing. The re-assessment is a high priority workstream in the context of Eastern IFCA’s statutory duties to ensure the protection of MPAs from potential impacts of fishing activity.¹⁶</p> <p>Particular priority is given to this workstream given that the 25-year Environment Plan’s target of achieving favourable condition within MPAs by 2042 is based on halting damaging activities by 2024.</p>	
Implementation of management measures for any relevant ‘red-risk’ gear/feature interactions within MPAs		<p>High priority workstream Underway: Closed Areas Byelaw 2021 (at formal QA with MMO) will introduce restricted areas in 5 MPAs within the district where no bottom-towed fishing will be permitted. This is a high priority workstream in the context of Eastern IFCA’s statutory duties to</p>	

¹⁶ Marine and Coastal Access Act 2009 (c.23) s.153 and 154.

	ensure the protection of MPAs from potential impacts of fishing activity. ¹⁷
Engagement and enforcement, intel gathering and partnership working with MMO in accordance with Compliance Risk Register and TCG	Business critical This is a business critical workstream as partnership working and information sharing is key to meeting Eastern IFCA's Regulation and Compliance Strategy and Enforcement Policy.
Review need for minimum size for 'skates and rays' as part of wider review of minimum sizes	Future workstream
Development of Monitoring and Control Plans	Future workstream Monitoring and Control Plans will be required but such will be informed by the outputs from the 'Amber and Greens' workstream (which is regarded as high priority). As a reflection, this workstream has been moved from 'high priority' to 'future priorities'.
Refined use of data in under 10s reporting app	Future workstream
Actively liaise with partner organisations in relation to planned research projects	Future workstream
Engagement with RSA clubs to gather evidence/data on recreational fishing activity	Future workstream

¹⁷ Marine and Coastal Access Act 2009 (c.23) s.153 and 154.

Group: Cephalopods		Overall risk: Low	
Initial Quantitative Assessment			
<p>Very marginal fishery. In 2020 common octopus and squid did show higher landings, with 1.97t and 1.7t respectively. However, octopus has not shown any landings since, and while squid increased its landings in 2021 with 1.94t landed, the price per kilo fell massively that year, from £9.45 in 2020 to £0.73 in 2021. Subsequently, only 0.03t of squid were reported as landed in 2022, although this showed recovered price per kilo at £9.41.</p>			
Contextual Assessment			
Evidence base	Current Regulation	Ecosystem impacts	Fisheries performance
Risk rank: Low	Risk rank: Low	Risk rank: Low	Risk rank: Low
Marginal fishery with very limited landings (less than 300 kg combined per annum).			
Species trends	None identified due to either no or very small landings of all species across this group		
Future workstreams			
Monitor for any increase in interest in fishing for cuttlefish by fishermen. Cuttlefish are likely to be fished using pots, in areas like Cromer where there is ongoing research into the impacts of potting on the ecosystem.			

3.2 Consideration of Eastern IFCA Message System (Stakeholder Engagement during 2022)

Eastern IFCA uses a message system to log officer engagement with stakeholders so that key concerns and information are recorded and considered. A consideration of the messages logged in 2022 is summarised in the table below by topic (e.g., fishery) and key themes or issues and shows that stakeholder concerns mostly align with the priorities identified in the previous section.

It is noteworthy however, that the message system does not reflect the full range and extent of stakeholder engagement that occurs throughout the year. Rather it is most commonly used by officers to record information that is considered of particular importance. This may be affected by officer bias including a tendency to report on issues generally agreed to be high priority, as informed by the Strategic Assessment. As such, there is a risk of creating a positive feedback loop and de-emphasising other issues which needs to be acknowledged.

Topic	Key themes and issues:
Cockles	There was extensive engagement with stakeholders about The Wash cockle fishery throughout 2022. The two main discussions regarded the replacement of the Wash Fishery Order 1992, particularly as regards the transition process, the temporary closure to bridge the gap, and the application process regarding the upcoming Wash Cockle and Mussel Byelaw 2021; and the opening of cockle beds in 2022, in particular whether beds should be opened and how much notice fishermen need for the opening of beds. A lot of engagement focussed on the increased tendency to land small cockles and how this could be managed.
Crab and lobster	Engagement was focused on management measures and stock sustainability. There has been significant dialogue regarding the proposed permit byelaw for the Cromer MCZ and potentially the whole district. Concern has been expressed about perceived increases in fishing effort throughout the district but particularly in North Norfolk and Suffolk, and the potential for MCZ management measures to displace effort into other areas. There have also been a number of reports of spider crab landings either increasing or occurring where they previously would not.
Whelk	A main concern in 2022 has been controlling activity, particularly in relation to displacement into the whelk fishery as a result of poor performance in other fisheries.
Industry viability	Industry viability is a recurring theme in engagement with fishery stakeholders. Generally, there is a concern about local industry decline due to the lack of species in the Eastern IFCA district, limiting the options of inshore fishermen to diversify in the context of rising costs and poor performance of some key fisheries. In particular, a combination of a limited cockle fishery and poor performance of the shrimp fishery in The Wash has reportedly led to a number

	of experienced skippers and crew leaving the fishing industry. Stakeholders have repeatedly cited spatial squeeze presenting a significant threat to viability, because of the ongoing increase in offshore developments such as wind farms and seaweed farms, coupled with spatial restrictions relating to MPA designations.
Communication	2021 had frequent engagement about communication including confusion over proposed measures and frustration that communication is not as frequent or in a form that some stakeholders would like (e.g., large meetings). 2022 shows far fewer complaints of this nature, suggesting that stakeholders' perceptions of our communication have improved.
Miscellaneous	Includes reports on disturbance as a result of bait digging, crab tiling, planning permission issues, health and safety and navigation issues.

3.3 Additional considerations: Recreational Sea Angling and Aquaculture

Although the Strategic Assessment is focused on commercial fisheries, other activities are taken into consideration to the extent possible. Two significant activities outside of commercial fisheries but involving the exploitation of sea fisheries resources have been identified as recreational sea angling and aquaculture. These are considered in brief below and potential workstreams are identified.

1. Recreational sea angling:	
Key considerations:	<p>The 'Participation, Effort and Catches of Sea Anglers Resident in the UK in 2018 and 2019' report published by Cefas in 2021¹⁸ highlights that recreational sea anglers fished for over 6 million days each year in 2018 and 2019, contributing to the economic and material health and wellbeing of the individual anglers and the communities that their activity supports.</p> <p>Recreational sea angling is a popular and economically important activity in the Eastern IFCA district, particularly along the North Norfolk and Suffolk coasts. However, data on recreational activity is limited for most species.¹⁹ As the regional inshore fisheries and conservation manager, Eastern IFCA needs to understand the patterns and trends of recreational sea angling in the district, particularly where recreational activity happens in MPAs or</p>

¹⁸ Hyder, K.; Brown, A.; Armstrong, M.; Bell, B.; Hook, S.A.; Kroese, J. Radford, Z.; 2021, Participation, effort and catches of sea anglers resident in the UK in 2018 & 2019, Cefas.

¹⁹ The outputs of the Angling 2012 project by Armstrong *et al.* 2013¹⁹ have been used to judge important recreational species in the district.

	<p>sensitive areas like known spawning and nursery grounds. This is because in these areas even recreational activity has the potential for significant impact including to non-target species. For example, unregulated recreational netting is known to occur in the district and where this overlaps with known spawning and nursery grounds, there is potential for disproportionate effects on wider stocks.</p> <p>Understanding recreational targeting of key commercial stocks would be valuable to help stock assessments of key species and significantly improve our evidence base in relation to those species to ensure that exploitation levels are sustainable.</p> <p>Eastern IFCA previously had a Recreational Sea Angling Strategy seeking to promote RSA in the district, recognising its economic and social value as well as its potential environmental impacts. However, the strategy had limited effect and was consequently lapsed. Some other IFCAs do maintain such strategies, however, similarly to Eastern IFCA's past strategy, these tend to centre on broad commitments rather than specific actions in relation to engagement, data collection and identifying potential conflicts with the commercial sector and/or MPA management.</p> <p>Eastern IFCA routinely engages with recreational fishers in the district, with a focus on educating fishers on applicable minimum sizes, and other relevant local and national regulation as well as developing our understanding of RSA activity. It is unlikely that we will have the capacity this financial year to undertake workstreams in relation RSA beyond our routine engagement with fishers.</p>
Workstreams:	Priority level and status:
Engagement and education with RSAs on minimum sizes and applicable local and national regulation	<p>Business critical Underway: This part of the routine engagement and compliance checks by IFCOs.</p>
Establish a mechanism to	<p>Potential future workstream Refer to key considerations for rationale.</p>

collect data on recreational fishing in the district	
Consider the need for developing an RSA Strategy	<p>Potential future workstream The key focus would be on what added value a formal strategy would bring.</p>
2. Aquaculture	
Key considerations:	<p>In 2019, the MMO published a document identifying areas of aquaculture potential in English waters,²⁰ matching the physiological and environmental requirements of species of fish, molluscs, crustaceans and plants (seaweeds) with the environmental and habitat conditions of the sea. One of the outcomes of the report was the production of habitat suitability maps for the various species, including seaweeds for which areas in East Anglia have been identified as suitable.</p> <p>Eastern IFCA has since seen an increasing number of requests for comments on applications for MMO licences in connection with seaweed aquaculture, where prior to 2019 there was none.²¹ Other IFCAs have been seeing a similar trend and it is generally anticipated that this will continue. The fishing industry has voiced concerns regarding the potential growth of aquaculture projects and the subsequent displacement of fishing activities and competition that may result in overfishing remaining grounds.</p> <p>Eastern IFCA has a statutory duty to manage the exploitation of sea fisheries resources in the district, seeking to balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district. Sea fisheries resources include those that are cultivated in the sea, and as such it is considered that elements of aquaculture activities would also fall within our remit. To that end, Eastern IFCA has agreed a position relating to seaweed farm developments, which sets out strategic points that inform our advice to MMO in response to marine licence applications for seaweed farms.</p>

²⁰ MMO, Identification of areas of aquaculture potential in English waters (MMO 1184, 2019), available at: [MMO1184_AquaPotential_forPub_191210.pdf](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/81210/MMO1184_AquaPotential_forPub_191210.pdf) (publishing.service.gov.uk).

²¹ One application was received in 2019, one in 2020 and three in 2021.

Workstreams	Priority level and status:
Consider formalising the internal Eastern IFCA position into an Aquaculture Strategy	<p>Future workstream</p> <p>Consider the added value of a public facing document to help guide stakeholders to the key considerations we take into account when consulting on aquaculture licencing applications.</p>

3.4 Eastern IFCA Priorities 2022-2023

As a small organisation with a large area to cover and finite resources, Eastern IFCA needs to carefully prioritise workstreams and ensure that resources are targeted where they are needed most. The tables below bring together and organise the workstreams identified in Section 3.1 (Fisheries Assessments) into the same three distinct categories indicating levels of priority: high priority, business critical and future workstreams.

3.4.1 *High Priority Workstreams 2023-2024*

The workstreams outlined in Table 4 below represent those workstreams that are considered as high priority according to the outputs of the Strategic Assessment. These workstreams are recognised as being important to ensuring that Eastern IFCA is able to fulfil its statutory duties and maintain an effective regulatory framework capable of ensuring sustainable fisheries, healthy seas, and a viable industry. A failure to carry out these workstreams is believed to be potentially detrimental to the fisheries and areas to which they relate.

Table 4 – High priority workstreams for 2023-2024			
Category	Work	Fisheries	Comments / Rationale
To ensure that the conservation objectives of Marine Protected Areas in the district are furthered:	Implementation of management measures for 'red-risk' gear/feature interactions.	All Species	<p>Relates primarily to shrimp trawling (although all bottom-towed-gear fisheries will be affected). 'Red-risk' interactions require immediate management. Impacts to MPAs are mitigated through the continued development of restricted areas to protect designated features and sub-features that are at risk from bottom-towed gears. These will be implemented through the Closed Areas Byelaw 2021 which will introduce new restricted areas within 5 MPAs in the district, where no bottom-towed fishing will be permitted. Engagement with stakeholders is ongoing and will be a high priority as the Byelaw comes into effect to ensure compliance and that the new measures are well understood.</p> <p>Particular priority is given to this category of work given that the 25-year Environment Plan's target of achieving favourable condition within MPAs by 2042 is based on halting damaging activities by 2024.</p>

	Continued implementation of an Adaptive Risk Management (ARM) of Cromer Shoal Chalk Beds (MCZ).	Crustaceans, Whelks, Shrimp and prawns, bivalve molluscs	Delivery of ARM is crucial to mitigate the need for more precautionary measures to prevent fishing activity from hindering the conservation objectives of the MCZ. Key workstreams include developing a byelaw to enable flexible management, analysing survey data to refine the extent of 'rugged chalk' and gathering additional fishing activity data to inform assessments and monitoring.
	Completion of amber/green gear/feature interactions and development / implementation of management measures where required.	All species	The re-assessment of amber/green impacts in MPAs (including an analysis of gaps in fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises) is ongoing. Completion of this is a high priority workstream to ensure the protection of MPAs from potential impacts of fishing activity in line with Eastern IFCA's statutory duties.
Management of Wash cockle and mussel fisheries (wild capture and private)	Confirmation of the Wash Cockle and Mussel Byelaw to enable management of wild capture fisheries	Bivalve molluscs	The Wash Cockle and Mussel Byelaw 2021 is at the final stages of formal QA with the MMO prior to being considered by the SoS. Interim measures are in place to enable continued management of fisheries during the transition between the WFO92, which expired on 3 January 2023 and the new byelaw coming into effect.
	Implementation of Wash Cockle and Mussel Byelaw access policies (transition)	Bivalve molluscs	The WCMB Eligibility Policy was agreed by the Authority in September 2022 and the transition from WFO licences to permits under the WCMB began in November. Effectively administering the transition is crucial to ensuring the continuity of businesses reliant on the associated fisheries.
	Develop appropriate management of private shellfish aquaculture within The Wash	Bivalve molluscs	The WFO92 provided rights for several (private) fisheries (i.e., the lays). Interim management of the lays is in place to ensure continuity of access to the private stock after the expiry of the WFO92. A replacement Several Order has been in development, including through consultation with lay holders who have indicated an intention to object to the Authority's

			management proposals for the lays. In the context of the limited economic value of the lays and their limited use compared to other fisheries in the district, additional consideration is required to determine if it is appropriate for the Authority to make a Several Order application before continuing this work.
Obtaining better fisheries data	Implementation of I-VMS for all fisheries specifically the Wash Shrimp fishery (dependent on partnership working with MMO led project).	Shrimp & prawns	The national roll-out of I-VMS began in Jan 2022. Once drafted, the national legislation to require use of I-VMS will be considered to identify if any additional requirements need to be implemented by Eastern IFCA to ensure coverage of all vessels operating within the Wash and North Norfolk Coast shrimp fishery. Further work is also required to develop systems to utilise the data for fisheries management purposes.
Fisheries Management Plans	Contributing to the development of Fisheries Management Plans	Crab & lobsters, whelks, bass, demersal	The frontrunner FMPs will be developed during 2023, with outputs which may influence local management anticipated during this financial year. The Authority's role is to advise and facilitate stakeholder engagement.

3.4.2 Business Critical Workstreams

The table below outlines business critical workstreams. These constitute ongoing, long running workstreams which have become established and represent business as usual from an organisational perspective. Although they constitute business as usual, these workstreams are critical to mitigating risks in relation to certain fisheries or species and their cessation has the potential to significantly increase the risk associated with the fisheries to which they relate.

Table 5 – Business Critical Workstreams			
Category	Work	Fisheries	Comments/rationale
To ensure that the conservation objectives of Marine Protected Areas in the district are furthered;	Effort monitoring within the Wash and North Norfolk Coast SAC including, and permit scheme administration.	Shrimps and prawns	The effort monitoring scheme has been established and is ongoing. Management can be implemented as required via the Shrimp Permit Byelaw 2018 (which was confirmed by the SoS in 2022).
Industry viability; Stock sustainability;	SWEEP Study of the Wash Embayment, Environment and Productivity	Bivalve molluscs	A long-running research project established in 2009, SWEEP aims to ensure that mussels farmed on private lays in The Wash do not cause food limitations for wild beds and to identify environmental factors that may influence the physiological processes of bivalves. Monitoring continues utilising new sondes that have been purchased to facilitate this monitoring regime. This business critical workstream is part of agreed mitigation for the Several fishery to ensure that activities do not have an adverse effect on the integrity of The Wash & North Norfolk Coast SAC. A potential review of SWEEP is being considered for 2023/24 to assess whether it is still required.
	Wash cockle and mussel surveys and Management	Bivalve molluscs	Annual surveys of cockle and mussel stocks within The Wash are a significant undertaking, providing a level of fisheries evidence which is not reflected in any other fishery within the district. A review regarding the type and extent of sampling regime required has been conducted, resulting in the streamlining of sampling stations. Habitats Regulations assessments (HRAs) are also completed annually

			<p>for cockle and mussel fisheries and are a business critical workstream necessary in order to open these fisheries. A long-term HRA for The Wash cockle fishery is being developed, but annual updates will be required to account for latest evidence on cockle stocks, and bird and seal populations levels and distribution. The HRAs will need to take account of updated advice on Harbour seal disturbance, following a 2022 SMRU review of seal haulout sites. Furthermore, a study into seal disturbance by intertidal fishing activity in The Wash has been proposed for 2023, to better inform this issue.</p> <p>Reports have been received about an increased targeting of small cockles which threatens fishery sustainable and industry viability in the long term. It will likely become to develop an engagement plan to educate and inform about small cockles, including engagement with processors to better understand the market for small cockles. A voluntary approach could be considered in the first instance, enhancing the existing code of conduct.</p>
	Shrimp Fishery Management (MSC accreditation)	Shrimps and prawns	<p>Eastern IFCA has agreed to facilitate certain aspects of the MSC accreditation for the Wash brown shrimp fishery, recognizing its importance as a nationally significant fishery (accounts for 95% of the brown shrimp fished in UK waters). Work includes gear inspections and effort calculations to assist industry with continuing to meet the requirements MSC accreditation. As such this is a business critical workstream relating to industry viability.</p>
	Development of measures to address the sustainability of whelk stocks	Whelk	<p>Adapting fisheries management measures to reflect changing circumstances, including to best available evidence is a business critical workstream for Eastern IFCA.</p> <p>A monitoring programme is established to enable identification of risks to the fishery, for example decreasing LPUE of sudden increases in effort, which may require mitigation in the form of management.</p> <p>Completing the stock assessment is necessary to inform the review of whelk permit conditions. The priority of this workstream is increased in the context of the low mobility and reproductive trends of whelk which makes them vulnerable to over-fishing and slow to recover.</p>

			Completing the SOM study is also a priority in relation to industry viability to ensure that minimum sizes are appropriate. The stock assessment and SOM studies are dependent on obtaining reliable fisheries data and samples from across the district.
	Complete HRAs in relation to 'unplanned' fisheries	Bivalve molluscs	Mussel fisheries (sub-tidal seed mussel fisheries in particular) have the potential to occur throughout the year. Where such a fishery is detected by fishers, officers have a limited amount of time to develop management measures and an HRA for the fishery (particularly in sub-tidal fisheries which are ephemeral). This constitutes a business critical workstream as in the event that a fishery does occur, the economic benefit is relatively high (as mussel is usually used in local aquaculture).
	Advice in relation to the risk of conflicts with other marine users	All species	<p>The present assessment focusses on sustainability issues which are within Eastern IFCA's sphere of influence. However, other marine users also compete for space and resource within the marine environment and such activity is increasing over time.</p> <p>Eastern IFCA is an advisor within the Marine Licensing system. Where new plans or projects are proposed within the district, Eastern IFCA provides advice to the MMO (marine licence regulator) on the need to protect the environment and to prevent interference with legitimate uses of the sea, such as fishing. For nationally significant developments, such as offshore wind farms, Eastern IFCA provides similar advice to developers, their consultants, and to the Planning Inspectorate during planning examinations. Providing advice on new plans and projects is a business critical workstream and related both to the protection of MPAs from anthropogenic activities as well as industry viability. For example, one conflict which Eastern IFCA regularly reports relates to the impacts of windfarm cables on electrosensitive species and sensitive habitats. There is also an emerging trend for an increase in licensing applications for seaweed aquaculture activities.</p>
Enforcement; Engagement	Compliance monitoring and engagement in	All species	Enforcement activity is primarily driven through the Compliance Risk Register and Tactical Coordinating Group meetings (which considers intelligence, emerging issues, fishing trends and the monthly risk profile). Enforcement activity is

	accordance with the Compliance Risk Register and TCG		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). Engagement with stakeholders is a business critical workstream with the intention to foster compliance by ensuring that management measures and the reasons behind them are well understood.
	Engagement and education with RSAs	All species	Recreational sea angling is a popular and economically important activity in the Eastern IFCA district, particularly along the North Norfolk and Suffolk coasts. Eastern IFCA needs to understand the patterns and trends of recreational sea angling in the district, particularly where recreational activity happens in MPAs or sensitive areas like known spawning and nursery grounds, where even recreational activity has the potential for significant and disproportionate impact to wider stocks. Eastern IFCA officers routinely engage with RSAs on minimum sizes, applicable local and national regulation and wider sustainability issues as an established part of our work.
Biosecurity	Monitoring of district-wide biosecurity risk	Bivalve molluscs	The controls from the Wash Fishery Order and The Wash Restricted Area Biosecurity Plan 2020 – 2025 have now been implemented and officers are briefed regarding reporting biosecurity concerns. Furthermore, officers undertake engagement with stakeholders to increase awareness and understanding as appropriate. It is recognised that the spread and control of Invasive non-native species is outside of Eastern IFCA's remit and we may be limited to reactionary actions only, but this is not a primary function. Work in relation to ensuring compliance with private lay lease conditions primarily putting on and removing shellfish and education and engagement work is going in relation to biosecurity and the transfer of Invasive non-native species.
Partnership working	Continue and expand collaborative work	All species	Working in close collaboration with partners like other IFCAs, Natural England, Cefas, the MMO, local police forces and district councils enhances our capacity to undertake research, allows us to share expertise and experience, increases the reach of projects and helps to deliver impactful outcomes.

	with partner organisations		Moreover, the Strategic Assessment shows that the outputs of partnership working mitigates risk in relation to many fisheries. For instance, partnership working with the MMO in the context of the national intelligence project is critical to developing our evidence-base and understanding of risk to various species. Partnership working is also critical in the context of delivering the Adaptive Risk Management approach to the Cromer Shoal Chalk Beds MCZ and the investigation into mussel die-off in the Wash, and these are only some examples.
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3.4.3 Future and potential workstreams

Table 6 outlines future and/or potential workstreams which are considered of lower priority in comparison to the works outlined in Tables 4 and 5 above, based on their association with risks to fisheries. These workstreams are identified as they may inform future Strategic Assessments, and in recognition that opportunities or developments may present during the year which would enable their undertaking or increase their priority.

Table 6 – Identification of future and/or potential priorities			
Category	Work	Fisheries	Comments / Rationale
Obtaining better fisheries data	Development of relationships with RSA to obtain more fisheries data, including consideration of the added value of developing a RSA Strategy	All (focus on finfish species)	Finfish species are relatively data poor within the district, but RSA data will be useful in determining trends to detect issues. Development of Eastern IFCA's relationship with the RSA sector will further our available evidence and enable better integration of RSA activity into the Strategic Assessment.
	Investigation into cockle & mussel die-off	Bivalve molluscs	Since 2010 the inter-tidal mussel beds have suffered unusually high-levels of mortality that has led to the decline of the beds and the mussel fishery. In addition, 'atypical mortality' in the cockle fishery was detected in 2008. Eastern IFCA has been working in partnership with Cefas on a multi-disciplinary investigation to gain a better understanding of what is causing the mortalities. Final samples have been provided by Eastern IFCA in support of the project and results are anticipated. It may be necessary to collect further samples for statistical robustness or to answer further questions that arise from the current study.
	Continue dialogue with MMO and other partner organisations to develop 'joined-up' approach to	Demersal, skates and rays, flatfish,	In order to obtain better fisheries evidence without duplicating effort on the part of the fishers, a collaborative approach is required. In particular, MMO data requirements do not have the spatial resolution needed to undertake HRAs. Furthermore, effort data is rarely collected.

	gathering fisheries data from fishers.	dogfish and sharks	
	Gather information regarding recreational hand gathering.	Bivalve Molluscs	This is identified as a data gap throughout the district and may have an impact on stocks in certain areas.
	If required re-assess need to deliver 'unregulated netting' measures in the context of BNAs.	Demersal, flatfish, skates and rays, dogfish and sharks	The assessment of the potential impacts and scale of 'unregulated netting' was undertaken in the 2020-2021 financial year as a priority. Subsequently, BNAs have been proposed and Eastern IFCA has provided evidence towards the development of these. However, the proposed BNAs are still undesignated and this may require a re-assessment of the need to implement independent 'unregulated netting measures' in most areas.
	Implementation of electronic/app based returns system (to be incorporated with MMO under 10's catch returns if possible).	Cockles, Whelks, Shrimps	Industry members have raised that they would prefer to submit returns on an app-based system. Whilst this would take significant investment from Eastern IFCA it could bring long term benefits in relation to data input.
	Investigate requirement/applicability of Netting permit.	All finfish species	Changes in national regulation have left a gap within the mesh size requirements, for which a local regulation may be required. Furthermore, there is the potential for unregulated to have a disproportionate negative impact if occurring in nursery areas. Eastern IFCA may require more data on levels of this activity in the future.
	Develop mechanism to monitor levels of Lesser Spotted Dogfish use as bait	Dogfish and sharks	This may be necessary to gain a better understanding of overall fishing mortality.
	Investigate shrimp fishing activity outside of Wash and North Norfolk Coast SAC	Shrimp and prawns	Related to and likely to be resolved via other priority and business critical workstreams.

Delivering fisheries management in relation to fisheries in MPAs	Review the Humber estuary cockle byelaw (inherited from North Eastern Sea Fisheries Committee)	Bivalve molluscs	Fishing opportunities within this fishery have previously been limited by an unfavourable stock assessment (e.g., 2020 survey did not find enough stock to support a commercial fishery), the absence of a current shellfish water classification and difficulties relating to access via the land. The byelaw requires review to make it more transparent and to enable a fishery from the sea. Fishers have more recently indicated a desire to fish the area and there may be a relatively simple solution to enable this to be explored. In order for the area to get water classification the local council have indicated that they would need a request from industry directly, rather than through Eastern IFCA.
	Development of Monitoring and Control Plans	All species	Following the completion of fisheries assessments in MPAs, Monitoring and Control Plans will be developed for each major fishing metier in the district, and where appropriate, MPA-specific controls will be specified. The intention is to implement responsive management.
	Review Mussel Fisheries Management Plan	Mussels	The Mussel fishery 'management policies' were introduced in 2008 and require review. Such review is pending the outcomes of Cefas led investigations into mussel die-offs such that they can be incorporated into the plan.
To ensure that sea fisheries resources are exploited sustainably	Assessment of and development of management measures in relation to crab and lobster fisheries sustainability	Crustacea (edible crab and lobsters)	<p>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.</p> <p>Work to support industry in developing a Fisheries Improvement Plan is complete, however progress for its adoption has been slow. Indications have been given that MSC are considering proposing the FIP for Phase 1 Assessment (pre-assessment) and should this happen, Eastern IFCA may</p>

			be involved in a supporting/facilitative role as with the Wash Brown Shrimp MSC accreditation.
	Consider incorporating the internal Eastern IFCA position on seaweed farms in an aquaculture strategy	Aquaculture species	In view of the emerging trend for an increasing number of aquaculture licencing applications (seaweed farms in particular), it may be appropriate to consider the added value of a public-facing document to help guide stakeholders to the key considerations we take into account when consulting on aquaculture licencing applications.
	Explore initiatives to invigorate the herring fishery through participation in promotional/awareness raising campaign	Pelagic	Certain fishers rely almost entirely on a limited number of species (cod, bass, sole, skate) which are presently either in a poor state or heavily regulated. Any potential works which could reduce reliance on these few species would likely be of benefit to the viability of the industry and the sustainability of other fisheries in the long-term. In particular, there is significant latent capacity in the herring fishery of East Anglia which was once a prominent fishery.

4. Principles applied in undertaking identified priorities

The Strategic Assessment focuses on what actions are required to further fisheries sustainability and the conservation objectives of MPAs. How these actions are undertaken is guided by our published policies and strategies which are underpinned by our vision statement and two overarching principles: consideration of the 'complete' fishery and the Community Voice Method (CVM). The importance of these two principles in undertaking identified priorities is considered below.

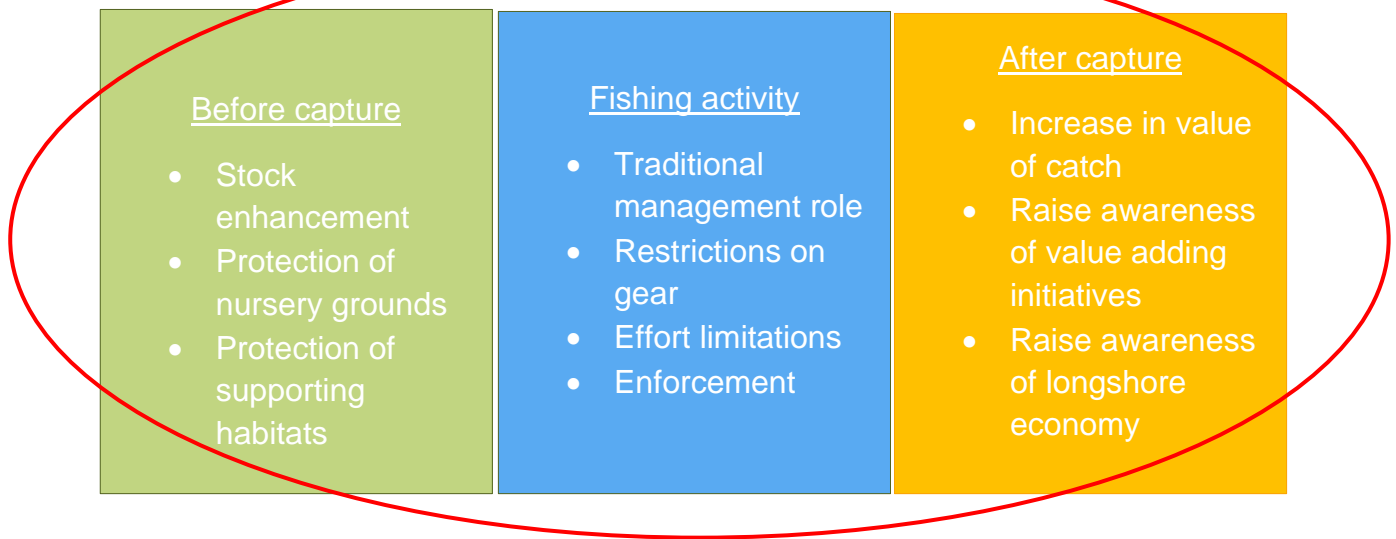
4.2 Consideration of the 'Complete' Fishery

The principle of giving consideration to the complete fishery involves a more holistic approach to fisheries management, recognising that fisheries consist of more than just the fish and fishing gear which capture them. For example, the productivity and sustainability 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. Delivering effective fisheries and conservation management is challenging in complex multi-species, multi-gear fisheries that define the inshore sector and requires the consideration of environmental, social and economic factors.

While Eastern IFCA regulations tend to focus on the mechanisms of catching fish and shellfish, like restrictions on the number of whelk pots and daily quotas of cockles for example, our management of these fisheries considers the complete fishery and wider contextual issues. Where it is achievable and appropriate, Eastern IFCA endeavours to get additional benefit from management measures by considering how management can move closer to a more holistic approach that goes beyond traditional stock management of target stocks.

The diagram overleaf illustrates some of the factors involved in the consideration of a complete fishery.

Factors involved in the consideration of a complete fishery



4.2 Community Voice Method

Community Voice Method (CVM) is a relatively novel approach to conducting public consultation and finding solutions for natural resource conflict among stakeholders and industries. CVM focuses on engaging stakeholders more effectively in decision-making and the development of management on issues that are of importance to them and their local communities. By enabling stakeholders to have a voice in shaping local management, the process builds trust and respect between managers and stakeholders and between stakeholders with different and sometimes polarising views.

CVM was identified as a useful mechanism to support IFCA's in the development of management measures, particularly in the context of the designation of Marine Conservation Zones. In 2016 Eastern IFCA and the Marine Conservation Society's Agents of Change partnered in the delivery of the Common Ground project with the support from Community Voice Consulting. Common ground was a CVM-based project to emphasise the values that connect the diversity of Eastern IFCA stakeholders across the district and was regarded as a successful example of the benefits that CVM can bring.

Recognising that engagement with our broad base of stakeholders is critical to the development and success of management measures, Eastern IFCA endeavours to apply lessons learned from the Common Ground project wherever possible to ensure that management is effective and that as managers we continue to develop our understanding of the different ways in which people use and value the coast and sea.

5. Conclusions

The overall priorities for 2023-24 have been identified by the annual Strategic Assessment. Annual priorities reflect the work which is the focus during the financial year rather than distinct, annual projects. Whilst the priorities identified during the 2022 Strategic Assessment have progressed, most of these work-streams require continued development and completion. This is reflected in the 2023 assessment which indicates that the key priorities are those carried over from 2022-23. In some cases, the wording is revised to reflect a development in the priority as the workstream has progressed.

The key changes to high-priority workstreams include the addition of the need to develop a byelaw as part of Adaptive Risk Management in the Cromer Shoal Chalk Beds; the movement from developing a replacement byelaw for the Wash Fishery Order 1992 to the confirmation and implementation of that byelaw; and the separation of the private shellfish aquaculture management into its own workstream, as this needs to be considered in terms of whether the Authority's degree of involvement is necessary or appropriate. Finally, this year 2023-24 sees the addition of Fisheries Management Plans, and the high-priority need to contribute to their development.

Business critical workstreams have not seen many significant changes, though the implementation of improved monitoring of effort in the whelk and shrimp fisheries are now both included, as well as the administration of the newly developed permit scheme for shrimp.