



Eastern Inshore Fisheries and Conservation Authority

Marine Science Plan 2019-2020



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Version	Date	Changes	Officer
1.0	27/02/2019	First draft incorporating 2018-2019 plan	SH
1.1	15/07/2019	Update of introductory text, project descriptions and outputs	SH

Abbreviations	
Appropriate Assessment	AA
Association of IFCA	AIFCA
Bass Nursery Area	BNA
Centre for Environment, Fisheries and Aquaculture Science	Cefas
Department for Environment, Food and Rural Affairs	Defra
Eastern Inshore Fisheries and Conservation Authority	EIFCA
Eastern Sea Fisheries Joint Committee	ESFJC
Environment Agency	EA
European Marine Site	EMS
Habitat's Regulation Assessment	HRA
Inshore Fisheries and Conservation Officer	IFCO
Lesser Spotted Dogfish	LSD
Marine and Coastal Access Act 2009	MaCCA 09
Marine Conservation Zone	MCZ
Marine Management Organisation	MMO
Marine Protected Area	MPA
Marine Strategy Framework Directive	MSFD
Maximum Sustainable Yield	MSY
Natural England	NE
Royal Yachting Association	RYA
Site of Special Scientific Interest	SSSI
Special Protection Area	SPA
Special Area of Conservation	SAC
Site of Community Importance	SCI
Study of the Wash Embayment, Environment and Productivity	SWEEP
Tactical Co-ordination Group	TCG
Test of Likely Significant Effect	TLSE
Wash Fishery Order 1992	WFO 1992
Wash & North Norfolk Coast Marine Partnership	WNNCMP

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Introduction

The Authority is required to use best available evidence to inform its management decisions. To help gather biological and environmental evidence, the Authority employs a dedicated marine science team comprising two Senior Marine Science Officers, a Lead Marine Science Officer and five Marine Science Officers. This team has developed significantly from its conception in the 1990s, when the Authority's predecessor, Eastern Sea Fisheries Joint Committee (ESFJC), employed a single research officer, but so too has its workload. Whereas ESFJC was primarily concerned with fisheries management, requiring mainly shellfish stock data, the added conservation responsibility given to the IFCAs requires a much broader knowledge of fisheries interactions with their environment, and the development of skills to assess impacts and monitor protected features. In 2013, DEFRA published a revised approach to the management of commercial fisheries in marine protected areas. The resulting requirement for the IFCA to assess the impacts of all the licenced fisheries that occur within the 18 marine protected areas in the district has significantly increased the team's workload.

The Authority has a role as a primary advisor to the Marine Management Organisation (MMO) in relation to marine licensing. This requires comment on fisheries and conservation issues for MMO to consider before it grants licences for construction, extraction or scientific activities in the sea. The Marine Science team also provides proportionate, evidence-based, and timely advice to other marine and coastal regulators in relation to fisheries and conservation impacts of proposed developments and policy and typically responds to around 80 such consultations every year. In addition, the team evaluates environmental impacts of byelaw exemption requests. Between 2014 and 2019 these averaged 19 requests/year, but the numbers have recently been rising indicating this area of work is on the increase. So far in 2019, between the 1st January and the 15th March, 14 requests have already been received, approximately a 65% increase on the previous average.



To help prioritise workstreams, the Authority conducts an annual strategic assessment that considers the value and risks of various fisheries and the requirement for further evidence to support management. The strategic assessment underpins the annual Marine Science Plan.

Key Marine Science priorities 2019-2020

Table 1 sets out the marine science projects for the upcoming year as identified by the 2019 Strategic Assessment. Some are annual stock assessments to inform the management of their respective fisheries (e.g. the Wash Fishery Order cockle and mussel surveys); others are ongoing sampling regimes (e.g. environmental health shellfish and water sampling), or long-term monitoring programmes to inform future management (e.g. crustacea and whelk stock assessments). Some, including the various Habitat Regulations Assessments (HRA), are one-off projects that because of their complexities have been carried over from the previous year. The development of mitigation (management to minimise impacts on marine protected areas) and respective Monitoring and Control Plans follow on from the HRAs and are required to enable commercial fishing to continue in these sites. Responding to consultations and byelaw exemption requests are also included in the Marine Science Plan.

Through use of a strategic assessment and Marine Science Plan, EIFCA aims to take a holistic approach to planning across the science and marine protection arms of the organisation. We aim to avoid duplication, and align biological, environmental and socio-economic objectives, to deliver evidence-based and streamlined management of inshore fisheries in the Eastern district.



Table 1: Planned activities for EIFCA Marine Science team, 2018 – 2019

Project code	Project	Lead
SP1	Regulation and management of the Wash and North Norfolk Coast Brown shrimp fishery	ST
SP2a	Cromer Shoal MCZ fisheries assessment	TB
SP2b	Assessment of the impacts of potting activities within the Cromer Shoal MCZ	TB
SP2c	Cromer Shoal MCZ fisheries mitigation	TB
SP2d	Crab and Lobster stock assessment and development of management measures	TB
SP2e	Cromer Shoal MCZ Monitoring & Control Plan	TB
SP3	Haisborough, Hammond & Winterton SCI fisheries assessment and mitigation	SC
SP4	Inner Dowsing, Race Bank & North Ridge SCI fisheries assessment and mitigation	SC
SP5	Evidence plan and assessment of fisheries in new marine protected areas	SH
SP6	Habitat Regulations Assessments for 'unplanned' fisheries.	JS
SP7a	Wash Fishery Order Cockle Fisheries Management Plan	RJ
SP7b	Wash Fishery Order Mussel Fisheries Management Plan	SH
SP8	Wash Fishery Order Cockle stock assessment and development of management measures	RJ
SP9	Wash Fishery Order mussel stock assessment and development of management measures	RJ
SP10	Wash Fishery Order cockle and mussel Habitats Regulations Assessments	
SP11	Wash Fishery Order mussel mortality study	EQ
SP12	Review of Wash Fishery Order cockle and mussel survey regime	RJ
SP13	Hydraulic Suction Dredge Environmental Impact Assessment	SH
SP14	EHO/DSP Biotoxin Sampling	TB
SP15	Study of The Wash Embayment Environment and Productivity (SWEEP) monitoring	EQ
SP16	Fishing Activity Mapping Project	EQ
SP17	Fin fish projects and development of management measures	ST
SP18	Whelk stock assessment and development of management measures	RT
SP19	Horseshoe Point Cockle stock assessment and development of management measures	EQ
SP20	Development of Biosecurity Plan and associated measures.	EQ
SP21	Risk assessment and mitigation against unexpected Paralytic Shellfish Toxins	EQ
SP22	Consultations management	SC
SP23	Byelaw exemptions management & review of process	SC
SP24a	Agents of Change	SC
SP24b	Social media	RT
SP25	Marine Protected Areas Byelaw review – Inter-tidal eelgrass	EQ
SP26	Monitoring & Control Plans for commercial fisheries in Marine Protected Areas	SH
SP27	Revised approach to management of commercial fisheries in marine protected areas: EIFCA summary report	JS
SP28	Bait digging Habitats Regulations Assessment	RT
SP29	Assessment and management of private fisheries in MPAs	RT
SP30	Assessment and management of rights in common in MPAs	SC
SP31	Eastern IFCA intertidal activities monitoring of bird and seal disturbance	SH

Table 2: Work areas/drivers

Marine Protected Areas
Sustainable sea fisheries resources
Protection of marine environment from effects of exploitation
Wash Fishery Order
General Duties

SP1 - Regulation of the Wash and North Norfolk Coast Brown Shrimp Fishery

Developing management for the shrimp fishery is complex. While primarily focused in the Wash and North Norfolk Coast Special Area of Conservation (WNNC SAC), where it is one of the largest fisheries in the District, it also occurs elsewhere on a smaller scale. The Habitats Regulations Assessment conducted for this fishery identified that mitigation is required to minimise impacts from shrimp beam trawling on sensitive habitats within the SAC. In addition to conservation considerations, the fishery must also operate within appropriate biological limits set by the Marine Strategy Framework Directive (MSFD) and satisfy the bycatch requirements set out by the Common Fisheries Policy (CFP) landings obligation. Independently, members of The Wash fishing industry are also seeking Marine Stewardship Council (MSC) accreditation for the brown shrimp fishery and have developed a Wash Brown Shrimp Management Plan aimed at ensuring the sustainability of the fishery. EIFCA sit on this group in an advisory and liaison capacity, so in addition to other shrimp project workstreams, the science team are tasked with reviewing the sustainability report and management plan developed by this group.

The need for mitigation (management intervention) will be considered within each workstream. A coordinated approach is required to ensure the final suite of management measures for this fishery satisfies all the requirements but does not duplicate effort. To ensure effective coordination between each of the different workstreams, all the individual science-based shrimp projects will be overseen by a single coordinator, who will also liaise closely with the Marine Protection team in developing the agreed mitigation measures.

Once mitigation is developed and agreed from the various drivers, a Monitoring and Control Plan will be developed. This will include the management measures, the mechanisms for monitoring shrimp fishing activity, the agreed thresholds of activity (and/or other situations) that would trigger the tightening or loosening of restrictions, and the mechanisms for monitoring designated site/feature condition.

The following flowchart presents each of the shrimp projects and their key tasks.



Project Coordination

- Overall management of science team shrimp fishery workstreams to enable efficient coordinated approach
- Liaison with Marine Protection team to ensure coordination between teams to ensure effective mitigation is developed

Shrimp Habitats Regulations Assessment (HRA)

- Develop appropriate management measures to mitigate against adverse effect(s) on site integrity

Marine Protection Team

- External engagement: informal information gathering
- Undertake Impact Assessment
- Obtain legal advice and liaise with Defra
- External engagement: Formal consultation

Fishery sustainability assessment

- Ensure fishery operates within appropriate biological limits (MSFD)
 - Internal review of Poseidon assessment and Wash Brown Shrimp Management Plan
 - Develop additional stock management measures if required
- Ensure fishery meets bycatch requirements (CFP Landings Obligation)
 - Determine scope and objective of Cefas bycatch monitoring
 - Develop additional bycatch monitoring if required

Support accreditation process

- Liaison with Shrimp Accreditation Group

Marine Protection Team

- Agree EIFCA role in relation to the Wash Brown Shrimp Management Plan
- Identify landings obligations requirements
- Create and agree EIFCA shrimp (accreditation) enforcement plan; share with accreditation auditors

Monitoring and Control Plan

- Create shrimp fishery Monitoring & Control Plan (to include management measures, mechanisms for monitoring shrimp fishing activity, thresholds of activity (or other situations) that would trigger tightening or loosening of restrictions), mechanisms for monitoring designated site feature condition.

SP1 - Regulation and management of the Wash and North Norfolk Coast brown shrimp fishery

Objectives

- Coordination of shrimp fishery workstreams undertaken by the marine science team, to enable efficient holistic approach without duplication of effort and/or mitigation
- Liaison with Marine Protection team to ensure effective mitigation is developed

Using best practice for approach and layout of plans, develop a Monitoring & Control Plan for brown shrimp fishery. This will detail:

- Agreed management measures for the fishery
- Agreed mechanisms for monitoring shrimp fishing activity
- Agreed target thresholds of activity and feature condition that would trigger tightening or loosening of restrictions

Agreed mechanisms for determining effectiveness of management measures, including gathering evidence on designated site feature condition

Outputs & Timescales

Identify plan for the collection of fishing activity data (liaise with Marine Protection team)	August 2019
Identify evidence sources for designated site feature condition, to enable effectiveness of EIFCA interventions to be determined.	August 2019
Identify target thresholds for interventions to ensure conservation objectives of MPAs continue to be furthered. Refer to shrimp fishery HRA. Demonstrate how Natural England's advice has been considered.	September 2019
Collate the above measures into a cohesive Monitoring and Control Plan.	October 2019
Fishery sustainability assessment completed, and measures developed (in conjunction with those suggested by Wash Shrimp Accreditation Group) that ensure the brown shrimp fishery operates sustainably within appropriate biological limits determined by Marine Strategy Framework Directive and meets bycatch requirements set out by the Common Fisheries Policy Landings Obligation.	July 2020

Project lead

Stephen Thompson	Lead Marine Science Officer
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SP2 – Development of fisheries management measures for the Cromer Shoal MCZ

Cromer Shoal Chalk Beds was designated as a Marine Conservation Zone in 2016. Its special features include outcrops of exposed chalk forming expansive platforms on the seabed across much of the inshore area of the site, including raised rugged formations, gullies and chalk plains interspersed with boulder and cobble with sand and mixed sediment habitats located in the outer reaches of the site (8-10km from the coast). The relatively hard attachment surface (in a region characterised by sediment seabed) and irregular surface provided by chalk make it an attractive habitat for a large range of plants and animal species, many not otherwise found in the region. Characteristic flora and fauna include seaweeds, anemones, sea squirts, and the commercially targeted brown crab and European lobster.



Cromer is renowned for its crab fishery. Brown (or edible) crab are targeted in baited rope-mesh pots set on the seabed, using small, beach launched vessels typically between 6 and 8m in length. Lobster is a valuable bycatch in the crab fishery. Whelks are targeted to a lesser extent, using baited plastic pots. Although the potting fisheries are the most dominant in the site, a small amount of netting (targeting mainly herring) and light beam trawling (brown shrimp) is also undertaken. Occasional dredge mussel seed fisheries have also been undertaken in small parts of the site when seed mussel has been located; this has occurred very infrequently (only once in the last ten years).

EIFCA is required to assess the impact of commercial fishing activities in all marine protected areas, including MCZs. If impacts threaten the site's conservation objectives, the fisheries must be managed to reduce impacts.

- Eastern IFCA have drafted an assessment of the impacts of commercial fishing activities on features of the Cromer Shoal Chalk Beds Marine Conservation Zone. Following feedback from Natural England the assessment is ready to be submitted in May 2019.

- We identified that bottom towed gear could damage the chalk habitats for which the site was designated, therefore we have proposed spatial restrictions on this type of fishing activity within the site. Where new management has been proposed, it will be introduced following engagement with fishery stakeholders as well as public consultation, which is currently available on Eastern IFCA's website.

- New evidence was provided to Eastern IFCA in 2018 highlighting previously unknown damage to the raised rugged chalk feature found within the inshore of the coast, the relief of which contains gullies and raised features topping 2m+ in some areas, caused predominantly by the ropes connecting pots abrading the feature. Based on this new evidence, Eastern IFCA, working with Natural England, will design a survey strategy (to begin in 2019) to assess the damage caused to the raised chalk feature, expanding on the current assessment.

In addition to the MCZ assessment, EIFCA is required to ensure exploitation levels do not threaten the viability of crab and lobster stocks. Marine Science officers, working with the Marine Protection team, will this year complete a project to evaluate catch rates against population data for the crab and lobster fishery to identify exploitation rates. Stock assessments for the District's crab fishery have historically grouped bio-sampling data from all ports into one database. This has not taken into account differences in the size frequencies of crabs that are caught from different parts of the fishery, whereby high proportions of small crab are landed from the North Norfolk inshore fishery and larger crabs from the offshore fishery. Although these are technically both part of the same Southern North Sea population, statistically their population size frequencies are behaving as two separate populations, and as such should not be pooled for analysis. As a consequence of pooling data in previous stock exploitation models, these differences in population size structure may have been creating sampling artefacts resulting in erroneous outputs. To remove this potential artefact, a revised approach to analysing the data was developed in 2019, splitting the data by port of origin, coupled with expert IFCO knowledge, to create separate datasets for the inshore and offshore fisheries. These data have then been re-analysed using the models to create outputs for each area.

While quantifying Maximum Sustainable Yield (MSY) in the District's crustacean fishery is a Marine Strategy Framework Directive (MSFD) objective, such models are not currently available for crustacea. Instead, alternative methods have been employed to set and monitor progress towards sustainability in the fishery using Length Converted Catch Curve models as the primary driver for management and Landings Per Unit Effort (LPUE) to provide an overview of stock health. MSFD descriptors and mortality estimates and reference points can be used as proxies for indicating stock health and assessing progress towards F_{max} (considered a proxy for MSY in this modelling method). Used in this way, long-term stability in LPUE would indicate contemporary levels of effort were not having an observable impact on the stock, while declining LPUE would suggest effort is too high. Reference points derived from Yield Per Recruit (YPR) models can provide objectives to work towards and annual mortality estimates can be used as a monitoring tool and measure of success in achieving the MSFD targets. Progress towards the reference points will be achieved through a suite of management options that look to address MSFD descriptor criteria, and in doing so improve the health and productivity of the stock. Should stock management measures be required, proposals will be designed to align with any fisheries mitigation required for the MCZ.

in achieving the MSFD targets. Progress towards the reference points will be achieved through a suite of management options that look to address MSFD descriptor criteria, and in doing so improve the health and productivity of the stock. Should stock management measures be required, proposals will be designed to align with any fisheries mitigation required for the MCZ.



Project Coordination

Overall management of Cromer Shoal Chalk Beds Marine Conservation Zone (MCZ) fisheries assessment and Crab and Lobster stock assessment workstreams to enable efficient coordinated approach

Liaison with Marine Protection team to ensure coordination between teams in development of effective mitigation

Cromer Shoal Chalk Beds MCZ fisheries assessment

- Assess the impact of the following commercial fishing activities on the Cromer Shoal Chalk Beds MCZ:
 - Crab and lobster potting (including potential impacts of berried lobster ban)
 - Whelk potting

Complete assessment of potting impact on rugged reef within the Cromer Shoal Chalk Beds MCZ and advice provided

Crab and Lobster stock assessment and development of management measures

- Develop measures to ensure the crab and lobster fisheries operate within appropriate biological limits determined by MSFD
- Enhance evidence of fishing effort within Cromer Shoal Chalk Beds MCZ
- Develop method to monitor impacts of berried lobster ban

Marine Protection team

- Undertake impact assessment of new management measures

Development of Cromer Shoal MCZ potting fisheries mitigation (if required)

- Recommend management measures to ensure conservation objectives are furthered

Marine Protection team

- External engagement: informal information gathering
- Undertake Impact Assessment
- Obtain legal advice and liaise with Defra
- External engagement: Formal consultation
- Authority agree management

Monitoring and Control Plan

Based on the above work areas, create Cromer Shoal Chalk Beds MCZ Monitoring & Control Plan (to include management measures, mechanisms for monitoring fishing activity, thresholds of activity (or other situations) that would trigger tightening or loosening of restrictions), mechanisms for monitoring designated site feature condition.

SP2a – Cromer Shoal Chalk Beds Marine Conservation Zone Fisheries Assessment – Project management

Objectives

- Coordination of Cromer Shoal MCZ workstreams undertaken by the marine science team, to enable efficient holistic approach without duplication of effort and/or mitigation
- Liaison with Marine Protection team to develop effective mitigation
- Liaison with Marine Conservation Society project “Agents of Change” to promote quality stakeholder engagement around MCZ management

Outputs & Timescales

Completed assessment sent to Natural England prior to rugged reef impact assessment	May 2019
Complete assessment of potting impact on rugged reef within the Cromer Shoal Chalk Beds MCZ and advice provided including mitigation (if required)	TBC
Completed assessment of other fisheries in Cromer Shoal Chalk Beds MCZ, to include recommendations for mitigation (if required)	April 2019
Completed sustainability assessment of North Norfolk crab and lobster fisheries, to include initial recommendations for stock management measures	May 2019
Identification of the location and extent of raised reef features at Cromer Shoal	May 2019
Aligned management measures based on potting fisheries sustainability study and potting commercial fisheries assessment for Cromer Shoal Chalk Beds MCZ	October 2019

Project lead

Tom Bridges	Marine Science Officer
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SP2b – Assessment of the impacts of potting activities within the Cromer Shoal MCZ

Objectives

To understand the impacts of potting fisheries within the Cromer Shoal MCZ and to support, if necessary, the development of fisheries management measures to reduce impacts:

- Identify with adequate detail the location and intensity of potting activity, its seasonal and annual variation, and its spatial variation;
- Identify with adequate detail and precision the location of different seabed habitat features in the MCZ including chalk reef, chalk outcrops (flat rock) and other hard seabeds;
- Identify with adequate detail and precision the interaction between potting activity of varying intensity and seabed habitats of varying sensitivity, and ascertain impact on MCZ;
- Identify with adequate detail information on other human activities and natural processes which could significantly interact with potential impacts from potting;
- Identify what, if any, limits must be imposed on the potting activity (level of effort, gear type, operating practices etc.) in order to achieve the requirements of Section 126 of the Marine and Coastal Access Act (MCAA) (2009).

Outputs & Timescales

Report detailing the location and scale of potting activities in Cromer Shoal MCZ	October 2019
Habitat map detailing the location of seabed habitats of potentially varying sensitivity, such as chalk reef, chalk flat rock and other hard seabed.	November 2019
Assessment of impacts of potting activities within the Cromer Shoal MCZ, identifying whether and to what extent mitigation is required to reduce impacts	December 2019

Project lead

Tom Bridges	Marine Science Officer
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SP2c - Development of Cromer Shoal MCZ fisheries mitigation

Objectives

Finalise Cromer Shoal MCZ Fisheries Assessment. This will involve:

- Assessing the impact of fishing activities on the Cromer Shoal Chalk Beds MCZ (including a gap analysis of available evidence for impacts and fisheries activity to inform an environmental impact assessment). Assess impacts of:
 - Crab and lobster potting (including potential impacts of berried lobster ban)
 - Whelk potting
- Recommending fishery management measures to ensure conservation objectives are furthered.
- External engagement with Natural England, conservation and fishery stakeholders in cooperation with Agents of Change MCZ project
- Consideration of advice from Natural England and stakeholders in further development of measures.
- Liaison with Marine Protection team to help develop effective mitigation, conduct a formal consultation and impact assessment, and produce stakeholder engagement material.
- Based on recent advice regarding potential damage of potting on raised reef features, need to incorporate new advice into assessment
- Need to account for fact that chalk is softer than rock when assessing the interactions described by Walmsley et al. 2015

Outputs & Timescales

Completed assessment sent to Natural England prior to rugged reef impact assessment	May 2019
Complete assessment of potting impact on rugged reef within the Cromer Shoal Chalk Beds MCZ and advice provided	TBC
Fishery management recommendations proposed for bottom towed gear (potting recommendations to follow).	April 2019
Infographic engagement materials produced, illustrated by charts, including one-two page summary, bottom towed gear and features in MCZ (flow chart of fishing impacts on MCZ).	May 2019
Liaison conducted with Marine Protection team to complete formal consultation of regulations, an impact assessment and the production of engagement material for stakeholders.	May 2019

Project lead

Tom Bridges	Marine Science Officer
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SP2d Crab/Lobster Stock Assessment and development of management measures

Objectives

Develop measures to ensure the crab and lobster fisheries operate within appropriate biological limits determined by Marine Strategy Framework Directive and do not do not hinder the conservation objectives for the Cromer Shoal MCZ. This will include:

- An ongoing stock assessment to determine the current health of the stocks and to develop a baseline against which the impacts of management measures can be measured. The assessment will involve the capture and analysis of sufficient Monthly Shellfish Activity Returns (MSAR) and bio-sampling data using recognised stock population models.
- Split inshore and offshore bio-sampling data by port of origin and conduct LCCC and YPR modelling methods on each as a separate dataset.
- Provide evidence of fishing effort within Cromer Shoal MCZ to support environmental assessment of fishing impacts within the site.
- Monitor effort levels to assess if increases in effort occur as a result of berried lobster ban.
- Liaison with Cefas and MMO to develop MSAR forms to include higher spatial resolution and effort data.
- Ensure MEDIN compliance for all metadata.
- Use results to help inform the development of appropriate management measures for the fishery and to estimate the conservation and socio-economic impacts of such measures
- Liaison with the Marine Protection team and Engagement with stakeholders to help develop management measures
- Provide evidence to inform a socio-economic impact assessment of potting activity within the Cromer Shoal MCZ

Outputs & Timescales

On-going collection and analysis of data from MSAR forms and bio-sampling in ports.	Ongoing – monthly
Agreement with Cefas and MMO to improve spatial resolution of MSAR data	July 2019
Advice provided for potential management measures based on evidence from stock assessment data	April 2019
Advice provided for Socio-economic impacts of potential management measures.	April 2019

Presentation for Full Authority meeting of summary of assessment results and proposed management measures.	May 2019
Scientific report detailing the results of this study between 2015-2018 for publication on the Authority website.	April 2019
Project lead	
Tom Bridges	Marine science officer



SP2e Development of Cromer Shoal Chalk Beds Marine Conservation Zone Monitoring & Control Plan for Potting

Objectives

Using best practice for approach and layout of plans, develop a Monitoring and Control Plan for Cromer Shoal MCZ. This will detail:

- Agreed management measures for the fisheries
- Agreed mechanisms for monitoring fishing activity
- Agreed target thresholds of activity (or other situations) that would trigger tightening or loosening of restrictions
- Agreed mechanisms for determining effectiveness of management measures, including gathering evidence on designated site feature condition
- Reference to the assessment of sensitivity of rugged chalk to potting

Outputs & Timescales

Identify plan for the collection of fishing activity data (liaise with Marine Protection team)	July 2018 ongoing
Identify target thresholds for interventions to ensure conservation objectives of MPAs continue to be furthered. Refer to Cromer Shoal MCZ fisheries assessment. Demonstrate how Natural England’s advice has been considered.	July 2019
Identify evidence sources for designated site feature condition, to enable effectiveness of EIFCA interventions to be determined.	September 2019
Collate the above measures into a cohesive Monitoring and Control Plan.	October 2019

Project lead

Tom Bridges	Marine Science Officer
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SP3 Haisborough, Hammond & Winterton Special Area of Conservation (SAC) fisheries assessment and mitigation

Objectives

- Implementation of management measures for ‘red-risk’ gear/feature interactions – towed demersal fisheries on biogenic reef in the part of the HHW SAC that lies within the EIFCA district (the majority of this site lies further offshore). Tasks include:
 - Informal engagement on management proposals
 - Development of management options (spatial closures) within the site
 - Presentation of management proposals to Authority for decision
 - Formal consultation on management measures
 - Production of engagement material for stakeholders
 - Ongoing dialogue with Natural England, and fisheries and conservation stakeholders;
- Complete the assessment of impacts of “amber and green” gear/feature (sandbanks) interactions in the part of the HHW SAC that lies within the EIFCA district;
- If required (identified through the fisheries assessment), develop recommendations for managing amber & green interactions.

Outputs & Timescales

Informal engagement materials, including two-page summary of proposals and charts	April 2019 (red risk)
Evidence-based proposals to Authority (including demonstration of how conservation advice has been considered) for protection of biogenic reef within inshore section of Haisborough, Hammond & Winterton SAC.	May 2019 (red risk)
Updated Marine Protected Areas Byelaw 2019 charts and co-ordinates	May 2019
Formal consultation materials, including charts and co-ordinates	May/June 2019 (red risk)
Finalised Habitats Regulations Assessment for amber/green interactions in inshore section of Haisborough, Hammond & Winterton SAC	September 2019
Informal engagement materials, including two-page summary of proposals and charts (<i>if required</i>)	January 2020
Evidence-based proposals to Authority (including demonstration of how conservation advice has been considered) for protection of sandbanks within inshore section of Haisborough, Hammond & Winterton SAC (<i>if required</i>)	March 2020
Updated Marine Protected Areas Byelaw 2020 charts and co-ordinates (<i>if required</i>)	March 2020
Project lead	
Sandra Cowper	Marine Science Officer

SP4 Inner Dowsing, Race Bank and North Ridge (IDRBNR) Special Area of Conservation (SAC) fisheries assessment and mitigation

Objectives

- Implementation of management measures for ‘red-risk’ gear/feature interactions – towed demersal fisheries on biogenic reef. ‘Red-risk’ interactions require immediate management. in the part of the IDRBNR SAC that lies within the EIFCA district (the majority of this site lies further offshore). Tasks include:
 - Informal engagement on management proposals
 - Development of management options (spatial closures) within the site, based on location of biogenic reef and mosaic habitat feature
 - Presentation of management proposals to Authority for decision
 - Formal consultation on management measures
 - Production of engagement material for stakeholders
 - Ongoing dialogue with Natural England, and fisheries and conservation stakeholders;
- Complete the assessment of impacts of “amber and green” gear/feature (sandbanks) interactions in the part of the IDRBNR SAC that lies within the EIFCA district;
- *If required* (identified through the fisheries assessment), develop recommendations for managing amber & green interactions.

Outputs & Timescales

Evidence review for biogenic reef feature and mosaic habitat extent and charts showing proposed towed demersal gear closure areas	August 2019
Informal engagement materials, including two-page summary of proposals and charts	September 2019
Updated Marine Protected Areas Byelaw charts and co-ordinates	November 2019
Evidence-based proposals to Authority (including demonstration of how conservation advice has been considered) for protection of biogenic reef within inshore section of Inner Dowsing, Race Bank and North Ridge	November 2019
Formal consultation materials, including charts and co-ordinates	December 2019
Finalised Habitats Regulations Assessment for amber/green interactions in inshore section of Inner Dowsing, Race Bank & North Ridge SAC	March 2020
Develop recommendations made for managing amber and green interactions (if required following assessment)	July 2020

Project lead

Sandra Cowper	Marine Science Officer
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SP5 Evidence plan and assessment of fisheries in new marine protected areas

Objectives

There are three new MPAs in or partially within the EIFCA district; their features include seabird species and porpoises which are sensitive to net-based fisheries, and estuarine habitats. One of these sites lies entirely within the EIFCA district but the other two are much larger sites extending well beyond the district boundaries. EIFCA's responsibilities in relation to these straddling sites (through discussions with MMO) are:

- **The Greater Wash SPA** – to complete fishery HRA's for the area of the SPA within the EIFCA district (NE advise we are not expected to provide HRA until conservation advice has been provided – this isn't expected until 2020)
- **Extension to Outer Thames Estuary SPA** – to complete fishery HRA's for the two extension areas of the SPA (NE have provided conservation advice)
- **Southern North Sea SAC** – TBC (MMO have indicated a potential national steer) (Conservation advice provided by JNCC)

An assessment of the available impact and fishing activity data is required to focus evidence-gathering to inform the assessments.

The objectives of this workstream are to:

- Identify responsibility for managing fisheries within inshore (0-6nm) sections of the Southern North Sea SAC
- Ascertain conservation advice for Greater Wash SPA
- Identify and quantify commercial fishing activity within these sites (that lie within our district) (still complete for Greater Wash site, irrespective of NE advice above).
- Assess impacts of fishing activity on designated features and site integrity.
- Recommend mitigation (fisheries management) if required to support conservation objectives of sites.

Outputs & Timescales

Gap analysis report describing the available fishing activity data, feature extent and condition data, and conservation advice for the new sites. Data requirements highlighted, liaison with MP team and consideration of IVMS data and evidence on MAGIC	May 2019
Agreement with MMO on EIFCA responsibility for assessment and management of fisheries in inshore (0-6nm) sections of the Southern North Sea SAC	October 2019
Habitats Regulations Assessment of commercial fisheries in extension of Outer Thames Estuary SPA within EIFCA district, with mitigation recommendations (if required)	October 2019
Habitats Regulations Assessment of commercial fisheries in inshore section of Southern North Sea SAC, with mitigation recommendations (if required)	March 2020

Habitats Regulations Assessment of commercial fisheries in inshore section of Greater Wash SPA, with mitigation recommendations (if required).

December 2020

Project lead

Samantha Hormbrey

Marine Science Officer



SP6 – Habitats Regulations Assessments for unplanned fisheries (sub-tidal seed mussel fisheries in particular)

Objectives

“Ad-hoc” commercial fisheries need to be assessed and, if required, management identified to ensure compatibility with MPA conservation objectives before EIFCA authorises them to proceed. Historically, such fisheries have been infrequent, and limited to subtidal or intertidal seed mussel fisheries. The availability of such resources can be limited because of natural predation or erosion, so it is important that EIFCA is able to complete timely assessments and identify appropriate conditions to support conservation and fisheries viability objectives.

To inform assessments and develop appropriate management, information is needed about the resource available and population characteristics. If appropriate, EIFCA will undertake a field assessment (survey) to gather such information – depending on staff and vessel availability.

Liaison with fishery stakeholders is required to identify location, likely effort levels and preferred means/timings of exploitation. Liaison with Natural England is required for conservation advice, assent under the Habitats Regulations and consent under the Countryside & Rights of Way Act (if required).

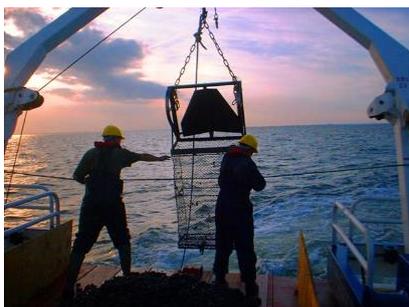
Unplanned fisheries could occur throughout the year. The economic benefit of such fisheries is likely to be high (because of the scarcity of local mussel seed resource required in local aquaculture).

Outputs & Timescales

Summary of available information regarding proposed fishery, including survey report (if survey conducted)	As required (but within 1 month of notification of potential fishery)
Habitats Regulations assessment (or Marine Conservation Zone assessment) and appropriate management measures (made in consideration of conservation advice)	Within one month of notification of potential fishery

Project lead

Judith Stoutt	Senior Marine Science Officer
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SP7a - Development of WFO Cockle Fisheries Management Plan

Objectives

The ESFJC 2008 Shellfish Management Policies are a set of agreed conditions under which The Wash cockle and mussel fisheries are managed. A review of these policies began in 2017, highlighting the benefit of developing two separate shellfish management plans for the cockle and mussel fisheries. These are planned to be developed in conjunction with their own bespoke Long term (25 year) Habitats Regulation Assessments and a Monitoring and Control Plan for hand-worked and dredged fisheries. An initial draft of the cockle fishery management plan was presented to the Authority in 2017, who agreed it should be taken to consultation with the industry and Natural England before final sign off.

The next steps with this project will be to:

- Develop the Management Plan further in close conjunction with the development of the Long term (25 year) Habitats Regulation Assessments for the hand-worked cockle fishery and a Monitoring and Control Plan for hand-worked and dredged fisheries.
- Formally consult with Natural England and the industry.
- Formally present Plan to Authority members for approval

Outputs & Timescales

Complete formal consultation of draft Wash Cockle Fishery Management Plan (in conjunction with a Long term (25 year) Habitats Regulation Assessments for the hand-worked cockle fishery and Monitoring and Control Plan) with Natural England and the industry.	August 2019
Obtain Authority agreement of the Wash Cockle Fishery Management Plan	October 2019

Project lead

Ron Jessop	Senior Marine Science Officer
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SP7b - Development of WFO Mussel Fisheries Management Plan

Objectives

The existing Wash Shellfish Management Policies are overdue review. An initial review conducted in 2017 highlighted benefit in producing separate cockle and mussel fishery management plans. A draft cockle management plan was developed in 2017 but the mussel management plan was not started.

- Review the 2008 WFO Shellfish Management Policies in conjunction with Wash mussel fishery HRAs and a Monitoring and Control Plan for the W&NNC SAC in order to develop a Wash Mussel Fishery Management Plan
- Formally consult with Natural England and the industry.
- Formally present Plan to Authority members for approval

Outputs & Timescales

Complete development of Wash Mussel Fishery Management Plan	September 2019
Complete formal consultation of draft Wash Mussel Fishery Management Plan with Natural England and the industry.	November 2019
Obtain Authority agreement of the Wash Mussel Fishery Management Plan	January 2020

Project lead

Samantha Hornbrey	Marine Science Officer
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SP8 WFO Cockle Stock Assessment and development of management measures

Objectives

The WFO cockle stock assessments are on-going annual surveys that are conducted to inform the management of the WFO cockle fishery, helping to identify what the annual TAC and which beds can be opened to the fishery.

- Conduct the annual spring cockle survey field work. This involves using the Authority’s research vessel, *Three Counties*, to sample approximately 1,300 stations from 21 beds, either using a Day grab deployed from the vessel or quadrats used during foot surveys.
- Analysis of the survey data to determine the biomass and spatial distribution of the adult and juvenile cockle stocks on each of the beds surveyed. Production of GIS charts displaying this information.
- Using survey evidence, develop management recommendations for the 2019 fishery that comply with local byelaws, Wash Fishery Order 1992 regulations and agreed shellfish management policies.
- Consult with Wash Fishery Order 1992 Entitlement Holders regarding the recommended management measures for the 2019 cockle fishery.
- Produce a report for the Authority summarising the survey results and detailing the proposed management measures. Present the survey results and management proposals to the June Authority Statutory meeting.
- Produce detailed report of the survey results for publication on the Authority website

Outputs & Timescales

Completion of survey field work	8 May 2019
Report summarising survey results, including recommendations for 2019 cockle fishery	31 May 2019
Presentation of survey results and management recommendations to Authority	June 2019
Production of stakeholder engagement material	June 2019
Report of survey results for publication on the Authority website	January 2020

Project lead

Ron Jessop	Senior Marine Science Officer
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SP9 WFO Mussel Stock Assessment and development of management measures

Objectives

The WFO mussel stock assessments are on-going annual surveys that are conducted to inform the management of the WFO mussel fishery, helping to identify which beds can be opened to the seed and harvestable fisheries.

- Conduct the annual autumn mussel survey field work. This involves using the Authority’s research vessel, *Three Counties*, to conduct low-water foot surveys on The Wash inter-tidal beds using the “Dutch wand” method.
- Analysis of the survey data to determine the biomass and size distribution of mussel stocks within the beds. Production of GIS charts displaying this information and the geographical extent of the beds.
- Using survey evidence, develop management recommendations for the 2020 fishery that comply with local byelaws, Wash Fishery Order 1992 regulations and agreed shellfish management policies.
- Consult with Wash Fishery Order 1992 Entitlement Holders regarding the recommended management measures for the 2020 mussel fishery.
- Produce a report for the Authority summarising the survey results and detailing the proposed management measures. Present the survey results and management proposals to the January Authority Statutory meeting.
- Produce detailed report of the survey results for publication on the Authority website

Outputs & Timescales

Completion of survey field work	November 2019
Report summarising survey results, including recommendations for 2020 mussel fishery	December 2019
Presentation of survey results and management recommendations to Authority members	January 2020
Report of survey results for publication on the Authority website	February 2020

Project lead

Ron Jessop	Senior Marine Science Officer
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SP10 Wash Fishery Order Habitats Regulation Assessments

Objectives

- Using evidence from the 2019 cockle and mussel stock surveys, complete annual Habitats Regulations Assessments for the proposed Wash Fishery Order cockle and mussel fisheries.
- Conduct dialogue with Natural England and fishery stakeholders
- Develop a long-term (25-year) Habitats Regulations Assessment for the Wash Fishery Order cockle fishery

Outputs & Timescales

Habitats Regulations Assessment for Wash Fishery Order cockle fishery	May 2019
Dialogue undertaken with Natural England and fishery stakeholders on management measures for Wash Fishery Order cockle fishery	May 2019
Dialogue undertaken with Natural England and fishery stakeholders on management measures for Long-term (25-year) HRA for the Wash Fishery Order cockle fishery	August 2019
Long-term (25-year) Habitats Regulations Assessment for the Wash Fishery Order cockle fishery	October 2019
Habitats Regulations Assessment for Wash Fishery Order mussel fishery	January 2020
Dialogue undertaken with Natural England and fishery stakeholders on management measures for Wash Fishery Order mussel fishery	January 2020
Project lead	
Stephen Thompson	Lead Marine Science Officer



SP11 Wash Fishery Order mussel mortality study

Objectives

A joint research project with Hull University was commenced in 2017 to investigate cause of mussel mortality in The Wash, focusing on the presence of *Mytilicola intestinalis* and pea crabs in mussels. Eastern IFCA's role was to provide the required mussel samples (collected during the 2017 and 2018 autumn mussel surveys), and to provide supporting stock information. Some laboratory analysis of samples was planned to be conducted by students from the university, but further sampling by Eastern IFCA during 2018 was completed and is planned for 2019 to augment the dataset.

- Conduct additional analysis of mussel samples for incidence of *Mytilicola intestinalis* and pea crab
- Write a report analysing the results of *Mytilicola* and pea crab occurrence in mussels from The Wash

Outputs & Timescales

Complete dissection and analysis of mussel samples	July 2019
Produce scientific report detailing results and conclusions of project	October 2019
Presentation of results to Authority	January 2020
Project lead	
Elise Quinn	Marine Science Officer



SP12 Review of WFO cockle and mussel survey regimes

Objectives

The WFO cockle and mussel stock assessment surveys are on-going annual surveys that are conducted to inform the management of the WFO cockle and mussel fisheries. In addition to informing management decisions for these two fisheries, both sets of surveys contribute towards historic datasets that can be interpreted to show stock trends and make future predictions. In 2018 the Authority agreed to seek 50% cost recovery from the industry for the regulation of the WFO fisheries. Both survey regimes were reviewed in 2018 and a report containing various options was presented to the Authority with recommendations to adopt some of the lower-impact options and to review further another option that might have a greater impact on the resolution and confidence of the cockle surveys.

The objective is to complete outstanding elements of this project:

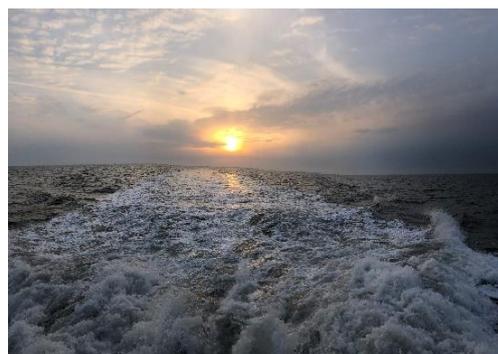
- Conduct examination of the option to reduce sample stations to various fractions (50%, 25%) of the current number by increasing distance between stations to determine what impact this will have on survey confidence.
- Conduct formal consultation with the industry and Natural England regarding this option.
- Present conclusions of examination and outcomes of consultation to the Authority for decision.

Outputs & Timescales

Complete examination of options for reduction of sample stations to various fractions (50%, 25%) of the current number by increasing distance between stations.	ST - September 2019
Complete formal consultation with industry and Natural England	December 2019
Production of report detailing conclusions and presentation to Authority	January 2020

Project lead

Ron Jessop	Senior Marine Science Officer
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SP13 Hydraulic Suction Dredge Environmental Impact Assessment

Objectives

No hydraulic suction dredge cockle fisheries have operated on The Wash regulated beds since 2008. Before any future dredge fisheries could be opened, it would need to be demonstrated through a Habitats Regulations Assessment that they were not going to cause an adverse impact on site integrity.

A report has been compiled detailing a literature review of the environmental impacts of hydraulic dredges, an assessment of potential impacts and the sustainability of such a fishery on The Wash cockle beds, socio-economic impacts and an assessment of the management implications. This report has been submitted to NE for their review and comment. Next steps are to:

- Undertake consultation with relevant stakeholder to inform recommendations
- Report and present the conclusions of this review and subsequent recommendations to the Authority

Outputs & Timescales

Liaise with Natural England to obtain their advice and comments on report

April 2019

Consult relevant stakeholders and identify recommendations to take to the authority

August 2019

Present findings and recommendations to Authority members

September 2019

Project lead

Samantha Hornbrey

Marine Science Officer



SP14 EHO/DSP Biotoxin Sampling

Objectives

- Following prescribed Cefas/FSA protocols, organise the collection, processing and despatch of live shellfish and water samples to support the classification of shellfish waters within The Wash. A minimum of 10 samples per year should be collected from each of the following sites:
 - Ouse Mouth – EHO cockles
 - Nene Mouth – EHO cockles
 - Black Buoy – EHO cockles
 - North Lays – EHO cockles
 - Toft – EHO mussels, DSP biotoxin mussels, DSP biotoxin water sample
 - Welland Wall – EHO mussels
 - Stubborn Sand – DSP biotoxin water sample
- Ensure all paperwork associated with the sampling regime is compiled accurately and when required, included in the samples.
- If any of the planned samples are unable to be collected:
 - Inform contacts at Local Authorities, Cefas and the EHO laboratory to make them aware of changes
 - Liaise with manager to determine if alternative sampling can be organised.
- Liaise regularly with CEFAS, FSA and Local Authorities to keep aware of any changes to sampling protocols. Ensure that in-house sampling protocols are updated as necessary to reflect any changes and that all EIFCA staff are aware of them.
- Ensure sufficient sampling equipment is always stocked ready for each sampling occasion and that chiller blocks for cool boxes are frozen.
- Compile an annual report detailing the sampling and results

Outputs & Timescales

Supply CEFAS and local authorities with required monthly shellfish and water samples. All paperwork is completed accurately.

- Monthly, throughout year
- Minimum of 10 samples per year from each station

Update table on Eastern IFCA website to reflect most current shellfish bed classifications

Monthly check and update as and when changes occur

Project lead

Tom Bridges

Marine Science officer



SP15 SWEEP Water Quality Monitoring

Objectives

- Organise and conduct a monthly sampling regime that will include:
 - Collecting salinity, temperature, turbidity, and chlorophyll data from pre-determined stations using a hand-held YSI sonde
 - Downloading data from the *in-situ* buoy sonde and perform and organise routine maintenance
 - Collecting mussel meat yield data from three existing sample stations (Thief, Toft and Wreck)
 - Ensure all paperwork is completed and recorded accurately and filed in an orderly manner
- Monitor data against target HRA targets and alert managers if values fall below minimum thresholds
- Seek to enhance the project by sourcing additional data from other organisations (Cefas and Environment Agency buoy and environmental data)
- Produce a detailed annual research report containing the results of the project for the Authority website

Outputs & Timescales

Complete monthly sampling regime to monitor compliance with HRA commitments	Monthly, throughout year Minimum of eight samples per year from each station and continuous dataset from buoy sonde
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Inform Natural England of results biannually	Biannual
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Complete production of a scientific report	February 2020
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Project lead

Elise Quinn	Marine Science Officer
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SP16 Fishing Activity Mapping Project

Objectives

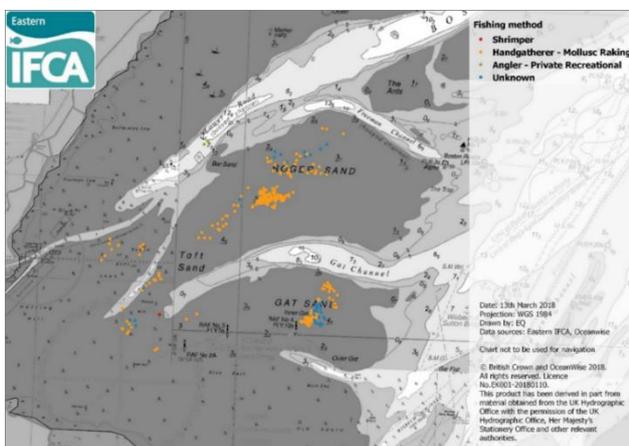
- Support the Authority's requirement for fisheries activity spatial data by:
 - Encouraging, organising and collating the collection of fishing activity sightings data from Eastern IFCA vessels
 - Collating fishing activity data from other available sources (e.g. MMO overflight, VMS, shrimp landings returns, etc.)
 - Analysis of spatial data in GIS to provide standardised charts of identified fishing activity
- Liaise with the MMO to potentially capture higher resolution fisheries data in MSAR forms
- Liaise with CEO, Marine Protection and partner organisations to develop mechanisms to store and analyse iVMS data
- Provide reports and charts, as required, detailing fishing activity in the district

Outputs & Timescales

Production of charts showing vessel sightings and standardised vessel activities information also incorporating other data sources (VMS, etc.)	As and when required
Production of fisheries activity report	May 2019
Suitable methods for collection of high-resolution activity data developed	As and when required
Encourage all officers to record sightings data to increase the dataset	As and when required
Database and tools for storing and analysing iVMS data developed	As iVMS introduction progresses

Project lead

Elise Quinn	Marine Science Officer
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SP17 - Fin Fish Project

Within the EIFCA Strategic Assessment, a broad spectrum of objectives and activities fall within the remit of the Finfish project. While the Strategic Assessment has tended to divide these activities between several groups (e.g. cod & bass, pelagic fisheries, sharks & rays, flatfish etc) this plan has viewed them holistically in order to determine what actions are required to capture the relevant evidence without the repetition seen in the Strategic Assessment. When taking this approach, the remit of the finfish project goes beyond providing evidence to support the sustainable exploitation of the various finfish species, and includes supporting projects that maintain or enhance the ecosystems in which the fish and their juveniles live. This includes actions such as supporting the protection and enhancement of fish nursery areas, supporting understanding of fish movements and aggregations in our district, all the way through to supporting measures for the diversification of fishing effort onto stocks which are currently more resilient than some of the “pressure stocks”. The finfish project supports these by ensuring that robust information is available in a timely manner. Many of the activities associated with this project are on-going data collection activities, or require liaison with others within and outside EIFCA, to ensure that the requirements of Finfish are considered when delivering EIFCAs remit.



SP17 Fin Fish Project	
Objectives	
As described in more detail above.	
Outputs & Timescales	
On-going collation and analysis of species and landings data from internal and external sources.	Ongoing until March 2020
On-going contact and liaison with organisations and activities to ensure Eastern IFCA is well informed as to emerging and ongoing developments relevant to finfish and to our remit.	Ongoing until March 2020
Decision on future of "Voluntary Detailed Catch Returns" activity, in the light of information which may become available from the MMO collection of more detailed data on the "under 10 m." fleet.	End July 2019
Compilation of overview summary report detailing results.	July 2019
Contacts and liaison with groups, individuals and organisations where this will lend support to the Eastern IFCA approach to managing finfish in our district.	Ongoing until March 2020
Develop liaison with such recreational angling groups who are able and willing to provide information that will enhance Eastern IFCA understanding of finfish within our district.	Ongoing until March 2020
Review existing data sources addressing utilisation by finfish species of inshore and transitional waters; identify gaps, and determine methods to fill these gaps. Examine options for joint working with other organisations.	July 2019
Recommendations for regulation (if deemed necessary) of electric pulse trawling in EIFCA district	January 2020
Project lead	
Stephen Thompson	Marine Science Officer



SP18 Whelk stock assessment and development of management measures

Objectives

- Continuation of whelk research projects to develop measures to ensure the whelk fishery operates sustainably within appropriate biological limits determined by Marine Strategy Framework Directive. This will involve:
 - The analysis of MSAR data using recognised stock population models to provide information on the size, health and spatial extent of the whelk fishery.
 - Continuation of bio-sampling regime to determine size of sexual maturity (SOM) of whelks in our district, whether this varies between sites (“stocklets”) across the district, and whether the current MLS for this species is appropriate.
 - Expansion of the voluntary gathering of whelk samples from fishers for SOM bio-sampling.
 - Liaison with Marine Science team to develop appropriate management measures for the fishery and to estimate the conservation and socio-economic impacts of such measures.
 - Liaison with Whelk Working Group to developing a more co-ordinated approach to whelk research and, potentially, management.
- Liaison with Cefas and other IFCA's to increase the scope of the project and to input into national dataset.
- Support the fisheries assessment for the impacts of whelk fishery activities occurring in the Cromer Shoal MCZ. (potentially the M&CP)

Outputs & Timescales

Advice provided on whether current management measures (re. pot limitation and MLS) are appropriate	October 2019
Advice provided on for development of additional management measures if required	October 2019
Completion of a scientific report detailing conclusions of the whelk study	March 2020
Chair meetings of whelk working group	3/year (2 dial-in)
Project lead	
Rebecca Treacy	Marine Science Officer



SP19 Horseshoe Point cockle stock assessment and development of management measures

Objectives

- Organise and conduct the annual survey field work. This involves conducting foot surveys from shore, sampling 36 stations at the Horseshoe Point site and 15 stations at each of the two Grainsthorpe Haven sites.
- Analysis of survey data to determine the biomass and spatial distribution of the adult and juvenile cockle stocks on each of the beds surveyed. Production of GIS charts displaying this information.
- Use the information gained from the surveys to develop management recommendations for a potential 2019-2020 fishery that complies with local byelaws and has Natural England’s approval.
- If a fishery is to be opened,
 - Liaise with the fishing industry, and Natural England, to produce a paper for the Authority detailing survey results and proposed management measures.
 - Liaise with East Lindsey Borough Council regarding water quality classification.
 - Liaise with Marine Protection during their review of the Humber estuary cockle byelaw (inherited from North Eastern Sea Fisheries Committee). *The byelaw requires review.* This review will need to involve the development of means of accessing the site from sea.

Outputs & Timescales

Successful completion of survey field work and the production of a report summarising survey results and recommendations for 2019-2020 cockle fishery	Survey work: late July/early August 2019
Completion of a scientific report detailing survey results for publication on the Authority website	December 2019

Project lead

Elise Quinn	Marine Science Officer
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SP20 Development of Biosecurity Plan and associated measures

Objectives

- Development of district-wide biosecurity measures and plans:
 - Development of biosecurity measures for the fisheries within the district. This primarily relates to the bivalve mollusc fisheries, which are particularly vulnerable to biosecurity events, particularly where aquaculture is also present, but is applicable to all fisheries in the district
 - Development of biosecurity measures for EIFCA internal activities to minimise biosecurity risk posed by our own activities
 - Development of a district-wide EIFCA biosecurity plan with actions to mitigate risk, including education and communication actions and emergency (contingency) response actions. To include biosecurity plan for bivalves in The Wash, where there has previously been low compliance with fishers pre-notifying the authority regarding shellfish movements on their lays
- Provide advice for habitats regulations assessments, consultation responses and other projects as and when required
- Liaise with relevant partners (Cefas, Environment Agency, other IFCAs, Natural England, Non-Native Species Secretariat, Shellfish Liaison Group) regarding biosecurity issues and best practice.
- Where appropriate, to develop relationships and support external biosecurity initiatives (e.g. Cefas INNS project)

Outputs & Timescales

WFO biosecurity measures developed with Marine Protection and agreed by managers	September 2019
EIFCA internal activities biosecurity measures reviewed as necessary	As and when required
District-wide fisheries biosecurity measures developed and agreed	October 2019
EIFCA Biosecurity plan developed alongside Marine Protection team, including the agreed measures, communication/education products/actions and contingency measures	December 2019
Prioritise and respond to urgent biosecurity alerts and create action plans for these events (e.g. Chinese mitten crabs in mussel seed imports, etc.)	Ongoing as required
Appropriate support provided to Cefas INNS project	Ongoing as required

Project lead

Elise Quinn	Marine Science Officer
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SP21 Operation Blake: Risk assessment and mitigation against unexpected Paralytic Shellfish Toxins in Eastern England

Objectives

To work with Cefas to ensure the coordination and delivery of the following EMFF-set objectives and targets for the project:

- To undertake routine testing of commercial fish species (edible crab, whelks, and brown shrimp) to infer presence/absence of PST
- To use monitoring to inform appropriate governance of the industry in relation to PSP
- To maintain public confidence in important fisheries with regards to food safety by evidencing an effective monitoring and control programme
- To report annually (through a situation report) on the development of PST related incidents within the project area
- To work towards establishing the source of the PST, the occurrence of which is novel given the timing of the initial incidents
- To produce a report (single) at the end of the project detailing the outcomes of the investigation of the source of the novel PST
- To validate two independent tests for detecting PST in crustaceans in a UK laboratory so as to maintain consumer confidence in the governance as set out above

Outputs and timescales

Produce a press release to be quality assured and released by the Gold Group	May 2019
Organise and manage sample collection, maintain a sample collection log, deliver samples to Cefas as required and arrange liaison meetings with Cefas	Monthly
To manage and submit claims including logs of time management, travel and subsidence costs, and organise invoices from Cefas	As and when required, near claim submission deadlines including for: Claim 1 - 1 September 2019 Claim 2 – 1 March 2020

Project lead

Elise Quinn	Marine Science Officer
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SP22 Consultation Management

Objectives

To provide proportionate, evidence-based, and timely advice to marine and coastal regulators in relation to fisheries and conservation impacts of proposed developments and policy. To achieve this aim, the consultation manager will:

- Log incoming consultations and outgoing responses
- Liaise with managers to conduct and/or assign consultations to appropriate team members
- Direct team members to liaise with Marine Protection colleagues to ensure relevant fisheries information is considered when reviewing consultations
- Ensure delegated consultation responses are reviewed for content and accuracy, and feedback provided to author
- Ensure notifications of licences are reviewed and logged - detailing to what extent our input was recognised and any issues we raised were resolved. When appropriate take further action if necessary raising issues to senior managers / the Authority.
- If necessary, ensure senior managers and/or Authority are made aware of issues arising from consultations.
- Provide Authority with regular summary of consultation workstream and outcomes resulting from EIFCA input.

To manage information requests and ensure that proportionate, evidence-based and accurate responses are provided within required timescales.

Outputs & Timescales

Proportionate, informed, evidence-based and timely consultation and information requests responses. Internal feedback on responses.	Ongoing through year
Orderly, accessible and up-to-date consultation database that includes details of consultations/information requests, outcomes of Eastern IFCA input and follow-up actions required	Ongoing through year
Progress reports for quarterly Authority meetings	May 2019, September 2019, December 2019, March 2020

Project lead

Sandra Cowper	Marine Science Officer
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SP23 Byelaw exemptions management & review of process

Objectives

- To manage the process of granting byelaw exemptions, ensuring a co-ordinated approach is taken within Eastern IFCA and with external partners.
- To ensure regulatory and conservation aspects are given due consideration.
- To ensure exemptions are granted (or refused, with reasons) within specified timescales. To achieve these objectives, the exemptions manager will:
 - Review internal exemptions process with input from Marine Protection and senior management colleagues.
 - Promote dialogue / develop understanding of external partners' related processes – Natural England, Marine Management Organisation, Foreign and Commonwealth Office, IFCA's & AIFCA, to ensure processes are efficient and consistent
 - Liaise with colleagues as set out in agreed exemptions process to ensure appropriate and timely responses are provided to exemption requests
 - Liaise with managers to conduct and/or assign derogation requests to appropriate team members
 - Ensure compliance with Habitats Regulations; co-ordinate liaison with Natural England in relation to exemptions for activities within marine protected areas
 - Review delegated exemption responses for content and accuracy and provide feedback to author
 - Provide Authority with regular updates on exemptions and outcomes
 - Review method of dealing with regular exemption requests for ongoing activities.

Outputs & Timescales

Updated exemptions process, application form and advice on EIFCA website	June 2019
Notification of updated process and documents sent to all previous applicants (last 3 years)	July 2019
Agreed position with Natural England Marine Management Organisation, Foreign and Commonwealth Office, IFCA's & AIFCA in relation to process and assessment requirements	July 2019
Timely, accurate, quality-assured responses provided to all exemption applications; feedback provided to team members	Ongoing through year
Where necessary, proportionate Habitats Regulation Assessments produced and submitted to Natural England	As required
Progress reports provided to Authority in quarterly Statutory meeting Marine Science Update papers	May 2019, September 2019, December 2019, March 2020

Project lead

Sandra Cowper	Marine Science Officer
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SP24a External communications (including Community Voice actions and Agents of Change project)

Objectives

- To ensure the actions identified in the Community Voice “Common Ground” report be considered, enacted as appropriate and reported by the whole EIFCA staff.
- To collaborate with Agents of Change staff in engaging with stakeholders in relation to Cromer Shoal Chalk Beds MCZ fisheries assessment and management.

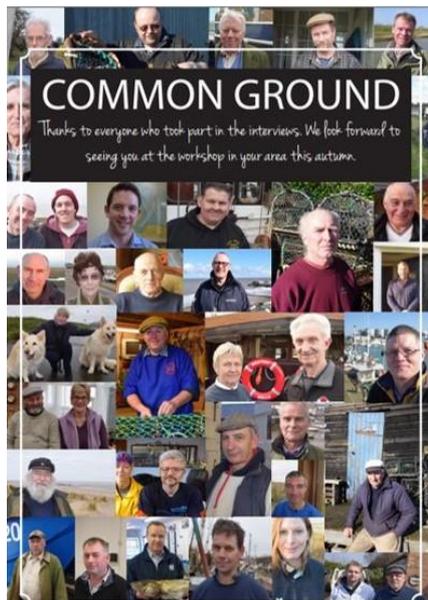
This work area supports the delivery of best practice in stakeholder engagement during the development of appropriate and responsive fisheries management throughout the district. All members of staff at EIFCA have a responsibility for engaging with stakeholders; this project is designed to provide a focus in the Marine Science team on the Community Voice actions and Agents of Change project. The work is complementary to the Communications and Engagement Plan, as set out in the 2019-20 update of EIFCA’s Business Plan.

Outputs & Timescales

Regular updates to colleagues in relation to engagement tasks and opportunities, via team meetings, bulletins and conversations	Monthly team meetings Fortnightly bulletins Ad hoc conversations
Content for tweets and website updates provided as necessary	As required
Articles published in relevant regional media and communications materials produced (leaflets / infographics)	Minimum two per year
Quarterly reports on stakeholder engagement (including informal and formal consultations) undertaken by Marine Science team	Quarterly

Project lead

Sandra Cowper	Marine Science Officer
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SP24b External communications - Online social media

Objectives

- For communication and engagement to be incorporated into day to day work activities, and time to be allocated to create content for the website and social media posts.
- To engage with stakeholders by posting content which highlights EIFCA daily activities, including surveys and/or patrols, any management or enforcement updates, press releases or any other important information of which deemed necessary.
- Use social media platforms as a way to communicate with other organisations and experts in the field and report back to the teams about online content relevant to EIFCA.
- This work area supports the integration of best practice in stakeholder engagement in the development of appropriate and responsive fisheries management throughout the district. All members of staff at EIFCA have a responsibility for engaging with stakeholders; this project is designed to engage with stakeholders by having an online presence.

Outputs & Timescales

1 Social Media update per team per week

3 per week: Marine Science, Marine Protection and combined support/executives)

Feedback on tweet impressions and engagement rates and Facebook reach over the previous week/month

Monthly team meetings and all staff meeting

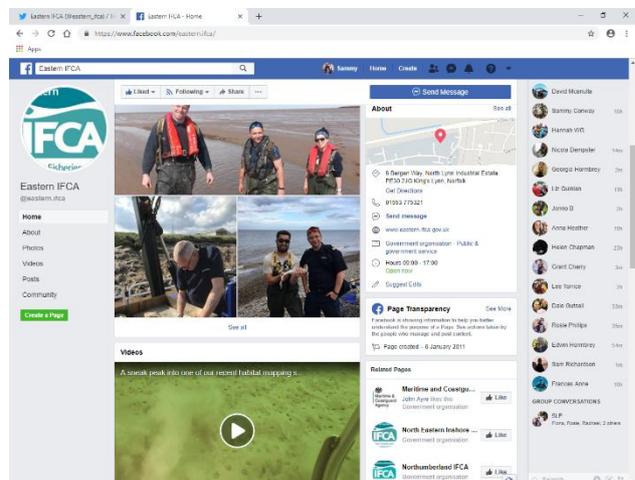
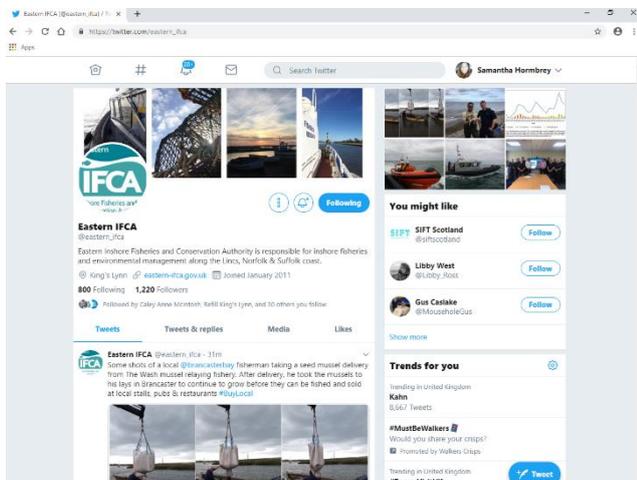
Update social media strategy for 2019

October 2019

Project lead

Rebecca Treacy

Marine Science Officer



SP25 Marine Protected Areas Byelaw review – Intertidal eelgrass

Objectives

Use scientific evidence to review the effectiveness of the restricted areas under the Marine Protected Areas Byelaw 2016 for red risk intertidal eelgrass beds at Horseshoe Point and the North Norfolk Coast. The review will involve:

- Review internal data and report on the extent of eelgrass at Horseshoe Point for the 2013-2017 period;
- Investigate the extent of eelgrass in the North Norfolk Coast restricted areas (2013-2017) using data from external surveys;
- Produce site reports describing spatial extents of habitats surveyed during the period since the introduction of the original Protected Areas Byelaw;
- Highlight any temporal changes in these reports;
- Liaise with Marine Protection over compliance with restrictions;
- Assess the effectiveness of Eastern IFCA protection of designated eelgrass features within MPAs by considering feature condition and fishing activity data;
- Compile all data/reports and present best available evidence to the marine protection team to support the review of MPA byelaw intertidal closures.

Outputs & Timescales

Develop management recommendations off the back of the review report for MPA byelaw closures for eelgrass features and liaise with marine protection

May 2019

Project lead

Elise Quinn

Marine Science Officer



SP26 Monitoring & Control Plans for commercial fisheries in Marine Protected Areas

Monitoring and Control (M&C) Plans are required for fisheries within each Marine Protected Area (MPA) and are being developed by the MMO and the other IFCA's, alongside guidance from Natural England. EIFCA's approach to M&C plans is to develop one plan per fishery using a template and standardised approach with the aim of:

- Demonstrating the collection and monitoring of fishing activity data (spatial and intensity) and the enforcement of management measures.
- Reviewing the effectiveness of measures and our ability to respond to changes in fishing activity, introducing additional controls when required.
- Ensuring feature condition remains favourable and risk to features remain low
- Collating available evidence, contributing to the identification of knowledge gaps and assisting in prioritising resource towards filling these gaps.

Fishing activities within the district have been identified and grouped into 10 categories (table 3), for each, a M&C plan requires creation and development. This involves identifying mechanisms for monitoring fishing activity and feature condition and defining thresholds of activity that would trigger tightening or loosening of restrictions. Once the plan has been developed the plan needs to be implemented and reviewed on an annual basis (at the beginning of the year), to assess the current level of activity and identify any actions that will inform the years strategic assessment and science plan. To achieve this, a project lead has been assigned to each of the plans. The project lead will be responsible for the creation, implementation and annual review of each plan, with support from the overall project co-ordinator.



Table 3 Split of monitoring and control plans across fisheries within the Eastern IFCA district (each plan shaded in blue or green). Yellow shaded activities are those that are not thought to occur within the district.

M&C Plans		Gear type	Areas
Towed gears	Shrimp beam trawling	Beam trawl (shrimp)	WNNC SAC Rest of district
	Demersal gears (excluding shrimp beam trawling)	Beam trawl (whitefish) Beam trawl (pulse/wing) Heavy otter trawl Multi-rig trawls Light otter trawl Pair trawl Anchor seine Scottish/fly seine	District wide
	Pelagic	Mid-water trawl (single) Mid-water trawl (pair) Industrial trawls	District wide
	Dredges	Scallops Mussels, clams, oysters Pump scoop (cockles, clams) Suction (cockles)	District wide (excluding WFO area): IFCA byelaw dispensation required for activity to occur and would be subject to a HRA. WFO area: Cockle and Mussel Regulated fishery require a HRA; Mussel lay several fishery HRA in place.
		Other dredges	Tractor Bait dragging
Hand-working	Hand working (access from vessel)	Hand working (access from vessel)	WFO area: Cockle and Mussel hand-work fishery requires a HRA Rest of district
	Hand working (access from land)	Hand working (access from land) Crab tiling Digging with forks	District wide
Static pots and traps	Potting	Pots/creels (crustacea/gastropods) Fish traps	District wide
	Other	Cuttle pots	Activity not thought to occur within district
Netting	Static	Gill nets Trammels Entangling	District wide
	Passive	Drift nets (pelagic) Drift nets (demersal) Beach seines/ring nets	
	Seine nets and other	Purse seine Shrimp push-nets Fyke and stakenets	Activity not thought to occur within district Activity not thought to occur within district Activity not thought to occur within district
Lines	Longlines and other	Longlines (demersal) Handlines (rod/gurdy)	District wide
		Longlines (pelagic) Jigging/trolling	Activity not thought to occur within district Activity not thought to occur within district
Other		Commercial diving Any other	Activity not thought to occur within district Activity not thought to occur within district

Project Coordination

- Overall management of the ten Monitoring and Control Plans (detailed below) to enable an efficient, coordinated and standardised approach to monitoring fishing activity and feature condition within the Eastern IFCA district
- Liaison with Marine Protection team to ensure coordination between teams to ensure effective monitoring and review of fishing activity

Priority

Shrimp beam trawling

- Create plan
- Implement plan
- Annual review

Lead: SH

Deadline: September 2019

Static pots and traps

- Create plan
- Implement plan
- Annual review

Lead: TB

Deadline: October 2019

Hand-working (access from vessel)

- Create plan
- Implement plan
- Annual review

Lead: ST & RJ

Deadline: October 2019

Hand-working (access from land)

- Create plan
- Implement plan
- Annual review

Lead: RT

Deadline: October 2019

Dredging

- Create plan
- Implement plan
- Annual review

Lead: EQ

Deadline: June 2019

Lines

- Create plan
- Implement plan
- Annual review

Lead: SH

Deadline: June 2019

Demersal towed gears (exc. shrimp beam)

- Create plan
- Implement plan
- Annual review

Lead: EQ

Deadline: January 2020

Netting

- Create plan
- Implement plan
- Annual review

Lead: ST

Deadline: January 2020

Pelagic towed gears

- Create plan
- Implement plan
- Annual review

Lead: SH

Deadline: January 2020

SP27: Review of EIFCA's progress under Revised Approach to Management of Commercial Fisheries in Marine Protected Areas

Objectives

During the past six years, following a revised Defra policy, IFCAs and the MMO have systematically assessed the impacts of commercial fisheries on marine protected areas (MPAs) in English waters. Fisheries management has been implemented where required to support the conservation objectives of marine protected areas.

Eastern IFCA is developing monitoring and control plans (see project SP26) to set out how fishing activity is monitored throughout the district and what controls are in place, including those developed to support conservation targets for MPAs. The Revised Approach work provides a baseline for the development of the monitoring and control plans.

95% of the inshore waters in the Eastern IFCA district has one or more MPA designation. This project will list the marine protected areas in the EIFCA district, and report on progress on the fishery assessments for each site and any protective measures developed as a result. It will summarise the status of the assessments, their conclusions, Natural England's advice, and areas where further work is required.

Outputs & Timescales

Progress report of commercial fisheries assessments for all MPAs in EIFCA district.	July 2019
Overview of fisheries management in each MPA in EIFCA district, including MPA-specific measures and other measures that contribute to MPA protection	July 2019
Plan for completion of outstanding assessments / management measures	October 2019

Project lead

Judith Stoutt	Senior Marine Science Officer
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SP28: Assessment of bait collection activity and impacts in Marine Protected Areas

Objectives

Defra has directed IFCA's to undertake assessments of the impact of bait digging in Marine Protected Areas (MPAs), in the same manner that commercial fisheries have been assessed under the "revised approach to management of commercial fisheries in Marine Protected Areas".

EIFCA has previously considered bait collection within its fishery Habitats Regulations Assessment. This project will review the existing work and identify whether further assessment is required, and whether mitigation needs to be developed for any MPA. Liaison with other IFCA's is recommended, as all IFCA's have been directed to undertake this work. Natural England should be contacted for conservation advice.

Outputs & Timescales

Report on existing assessment of bait collection in EIFCA fishery HRAs	September 2018
Address any outstanding issues following NE feedback from existing HRAs	July 2019

Project lead

Rebecca Treacy	Marine Science Officer
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SP29: Assessment and management of private fisheries in MPAs

Objectives

To assess the impacts of Private and Several fisheries on Marine Protected Areas; EIFCA has a role in managing private fisheries which occur within MPAs. These fisheries generally relate to bivalve molluscs (aquaculture) and have not been considered within the ‘Amber and Green’ assessment and require assessment and possible management. The evidence base in relation to this work is limited and as a first step, a gap analysis of activity levels and interactions is required. In particular, Natural England have requested that EIFCA undertake to manage fishing activity in the Le Strange private fishery.

- Undertake a gap analysis of available evidence in relation to private fisheries to determine where additional evidence is required to inform related assessments.
- Liaise with Cefas, who may be conducting HRAs on some private fisheries
- Collate required data and assess fisheries impacts.
- Liaise with Marine Protection team to assist in developing required management measures

Outputs & Timescales

Need to determine whether this work stream has been conducted by Cefas or EA Raise at inshore working group Having received advice, determine next steps required	May 2019 (JCS)
Production of report detailing the extent and impacts of Private fisheries within the EIFCA district.	TBC
Support provided to Marine Protection team to develop required management	TBC

Project lead

Rebecca Treacy	Marine Science Officer
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SP30: Assessment and management of rights in common in MPAs

Objectives

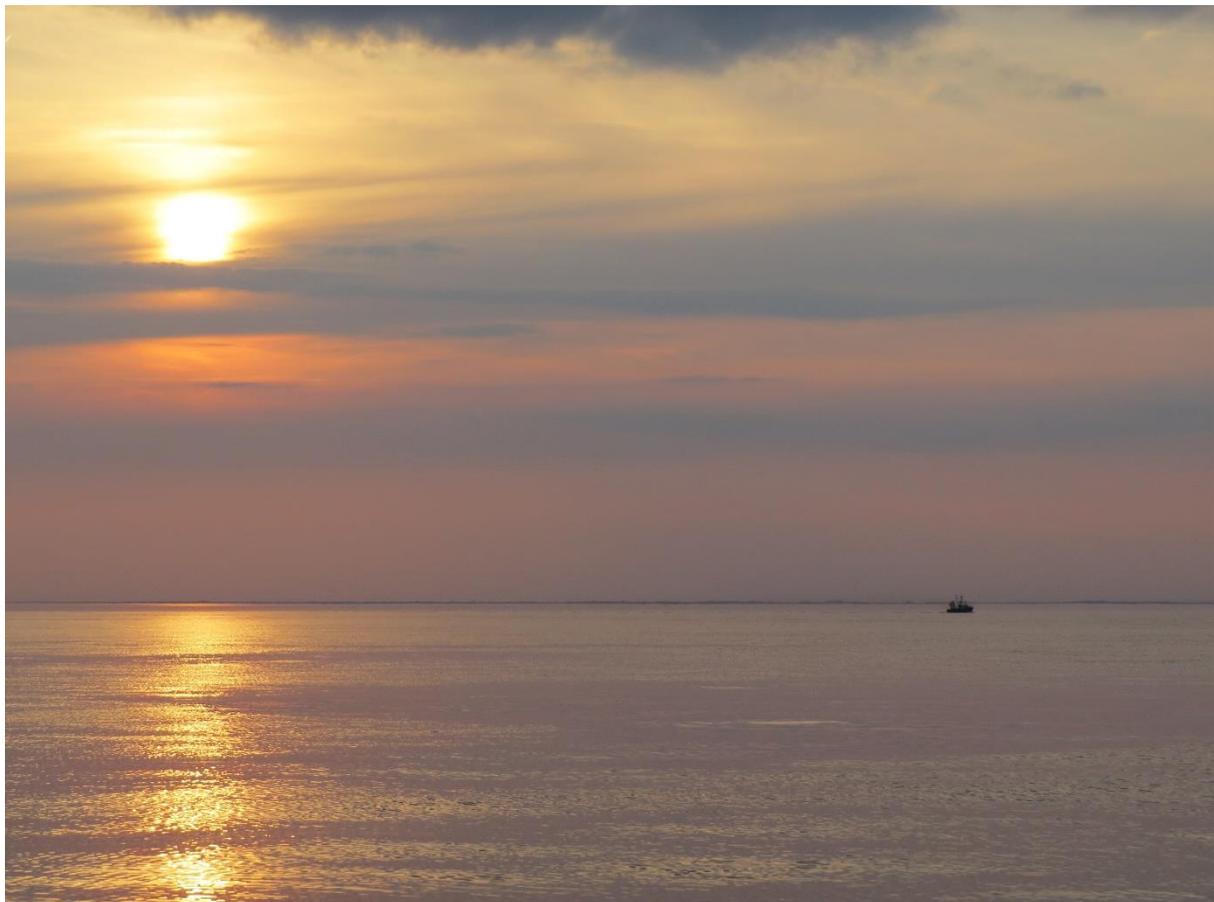
Defra has requested that Eastern IFCA assess the effects on marine protected areas of activities undertaken as rights in common. Eastern IFCA will routinely assess these activities within areas affected by the Marine Protected Areas Byelaw, as part of the byelaw-making process

Outputs & Timescales

GIS chart(s) showing areas of registered common land where fishing activities can be conducted as rights in common	July 2019
Standard Operating Procedure for identification of potential location of common rights activities and production of charts	August 2019

Project lead

Sandra Cowper	Marine Science Officer
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SP31: Eastern IFCA intertidal activities monitoring

Objectives

Following the completion of a Habitats Regulations Assessment (HRA), in June 2018 Eastern IFCA received a five-year assent from NE for all its intertidal activities carried out within The Wash and North Norfolk Coast SAC. To ensure the extent and duration of activities and the levels of disturbance to sensitive species do not exceed those detailed within the HRA, we have committed to recording our activities and monitoring resultant disturbance with the site. In order to achieve this, the following objectives have been set:

- Create a monitoring form and database to be filled in by officers when working in the intertidal zone. This should detail information on the activities carried out and any observed disturbance to sensitive bird and seal species;
- Analyse monitoring data to produce a short yearly report summarising activity and disturbance for that year. The report will be used to monitor activity and disturbance but also to inform the completion of subsequent HRA's and requests for long-term assent;
- Monitor the number of days officers have worked in the intertidal zone to ensure that this does not go beyond assented levels;
- Monitor temperature during winter months to identify whether suspension of activities is required during periods of severe weather (agreed mitigation for disturbance).

Outputs and timescales

Monitoring form and activities database	April 2019
Up-to-date activities database	Continuously
Temperature record	November to February (annually)
Annual activities and disturbance report	January (annually)

Project lead

Samantha Hornbrey	Marine Science Officer
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