



Eastern Inshore Fisheries and Conservation Authority

Marine Science Plan 2018-2019



May 2018

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Version	Date	Changes	Officer
1.0	17/04/2018	First draft incorporating 2017-2018 plan	RWJ
1.1	30/04/2018	Development of project descriptions and outputs (incorporating strategic assessment drivers)	RWJ
1.2	01/04/2018	Update of introductory text, project descriptions and outputs	JCS
1.3	04/05/2018	Update project leads. Insert images	RWJ

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 21 marine protected areas in the District 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 typically responds to 80 such consultations every year. In addition, the team evaluates environmental impacts of byelaw exemption requests. Between 2014 and 2018 these averaged 18 requests/year, but the numbers have recently been rising indicating this area of work is on the increase.

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 2018-2019

Table 1 sets out the high priority marine science projects as identified by the 2018 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 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 an 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
SP1a	Regulation of shrimp fishery – Project management
SP1b	Shrimp fishery mitigation
SP1c	Brown shrimp fishery sustainability assessment
SP1d	Shrimp fishery Monitoring & Control Plan
SP2a	Cromer Shoal MCZ fisheries assessment – Project Management
SP2b	Cromer Shoal MCZ fisheries mitigation
SP2c	Crab and Lobster stock assessment and development of management measures
SP2d	Cromer Shoal MCZ Monitoring & Control Plan
SP3	Haisborough, Hammond & Winterton SCI fisheries assessment and mitigation
SP4	Inner Dowsing, Race Bank & North Ridge SCI fisheries assessment and mitigation
SP5	Evidence plan and assessment of fisheries in new marine protected areas
SP6	Habitat Regulations Assessments for ‘unplanned’ fisheries.
SP7a	Wash Fishery Order Cockle Fisheries Management Plan
SP7b	Wash Fishery Order Mussel Fisheries Management Plan
SP8	Wash Fishery Order Cockle stock assessment and development of management measures
SP9	Wash Fishery Order mussel stock assessment and development of management measures
SP10	Wash Fishery Order mussel mortality study
SP11	Review of Wash Fishery Order cockle and mussel survey regime
SP12	Hydraulic Suction Dredge Environmental Impact Assessment
SP13	Environmental Health shellfish sampling
SP14	Study of The Wash Embayment Environment and Productivity (SWEEP water quality) monitoring
SP15	Fishing Activity Mapping Project
SP16	Fin fish projects and development of management measures

Project Code	Project
SP17	Whelk stock assessment and development of management measures
SP18	Horseshoe Point Cockle stock assessment and development of management measures
SP19	Titchwell mussel stock assessment and development of management measures
SP20	Development of Biosecurity Plan and associated measures.
SP21	Consultations management
SP22	Byelaw exemptions management & review of process
SP23	External engagement including Community Voice and Agents of Change
SP24	Wash Fishery Order cockle and mussel Habitats Regulations Assessments
SP25	Alde & Ore Estuaries MCZ assessment
SP26a	Marine Protected Areas Byelaw review – Sub-tidal Red features
SP26b	Marine Protected Areas Byelaw review – Inter-tidal eelgrass
SP27	Monitoring & Control Plans for commercial fisheries in Marine Protected Areas
SP28	Revised approach to management of commercial fisheries in marine protected areas: EIFCA summary report
SP29	Bait digging Habitats Regulations Assessment
SP30	Pulse fishing review (Cefas project)
SP31	Assessment and management of private fisheries in MPAs
SP32	Assessment and management of rights in common in MPAs

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

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.

SP1a - Regulation of shrimp fishery – Project management	
Objectives	
<ul style="list-style-type: none"> • 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 	
Outputs & Timescales	
Completion of Habitats Regulations Assessment (Revise approach assessment), including submitting appropriate mitigation of the commercial fishery for Brown Shrimp (<i>Crangon</i> sp.) within the Wash & North Norfolk Coast SAC to NE.	June 2018
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.	September 2018
Monitoring and Control Plan for The Wash and North Norfolk Coast SAC brown shrimp fishery developed and agreed.	October 2018
Project lead	
Stephen Thompson	Lead Marine Science Officer



SP1b Shrimp fishery mitigation

Objectives

Finalise HRA for the Wash and North Norfolk Coast SAC shrimp fishery. This will involve:

- Developing appropriate management measures to mitigate against adverse effect(s) on site integrity
- External engagement with Natural England and fishery stakeholders
- Consideration of advice from Natural England and the industry in further development of measures.
- Consider environmental monitoring requirements set out in shrimp fishery Monitoring & Control Plan and ascertain links between HRA mitigation and these requirements.
- Support the Marine Protection team in delivery of an impact assessment, the production of stakeholder engagement material, and a formal consultation.
- Consider recommendations arising from review of existing Marine Protected Areas byelaw closures, to align closure areas with areas delivering required environmental protection and avoid multiple stakeholder consultations

Outputs & Timescales

Completed mitigation and final conclusion sections of shrimp fishery HRA. To include demonstration of how Natural England's advice has been considered.	June 2018
Stakeholder engagement infographic documents outlining mitigation measures, requirements for these, and illustrative charts showing spatial measures	June 2018
Shrimp fishery HRA mitigation report for EIFCA Full Authority meeting	July 2018

Project lead

Stephen Thompson	Lead Marine Science Officer
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SP1c Brown shrimp fishery sustainability assessment

Objectives

Develop measures to ensure brown shrimp fishery operates within appropriate biological limits determined by Marine Strategy Framework Directive and meets bycatch requirements set out by the Common Fisheries Policy Landings Obligation. This will involve:

- Review of the Poseidon assessment and the Wash Brown Shrimp Management Plan produced for the Wash Brown Shrimp Accreditation Group to ensure the suggested measures are suitable and adequate.
- Identification of additional stock management measures if required.
- Determination of the scope and objective of Cefas bycatch monitoring. Develop additional bycatch monitoring if required
- Liaise with and provide appropriate advice to Wash Shrimp Accreditation Group

Outputs & Timescales

Attend and provide appropriate advice at Wash Shrimp Accreditation Group meetings	As required – approx. 3 times per year
Document: EIFCA review of the Poseidon assessment and the Wash Brown Shrimp Management Plan. Determine if suggested measures are adequate and appropriate.	September 2018
Recommend additional stock management measures if required. Liaise with Marine Protection team	October 2018
Provide advice as to what impact the CFP landings obligations will have on this fishery.	September 2018
Determine the scope and objective of Cefas bycatch monitoring and develop additional bycatch monitoring if required	October 2018

Project lead

Rebecca Treacy	Marine Science Officer
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SP1d Shrimp fishery Monitoring & Control Plan	
Objectives	
<p>Using best practice for approach and layout of plans, develop a Monitoring & Control Plan for brown shrimp fishery. This will detail:</p> <ul style="list-style-type: none"> • 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 and agree the layout of the plan using best practice and advice from Natural England, other IFCA's and MMO	June 2018
Identify plan for the collection of fishing activity data (liaise with Marine Protection team)	July 2018
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.	May 2018
Identify evidence sources for designated site feature condition, to enable effectiveness of EIFCA interventions to be determined.	August 2018
Collate the above measures into a cohesive Monitoring and Control Plan.	October 2018
Project lead	
Stephen Thompson	Lead Marine Science Officer



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, 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 seabeds) 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. EIFCA is due to complete its fisheries assessment for Cromer Shoal Chalk Beds MCZ in 2018. The findings of the assessment will inform the Authority whether new management is needed for any of the fisheries undertaken within the site.

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. 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
 - Towed demersal fisheries
 - Fixed and drift net fisheries

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 fisheries mitigation

- 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

Monitoring and Control Plan

- 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

Complete assessment of potting fisheries in Cromer Shoal Chalk Beds MCZ, to include recommendations for mitigation (if required)	June 2018
Complete assessment of other fisheries in Cromer Shoal Chalk Beds MCZ, to include recommendations for mitigation (if required)	August 2018
Complete sustainability assessment of North Norfolk crab and lobster fisheries, to include recommendations for stock management measures	June 2018
Aligned management measures for potting fisheries within and outside Cromer Shoal Chalk Beds MCZ	July 2018

Project lead

Tom Bridges	Marine Science Officer
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SP2b - 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
 - Shrimp beam trawl fishery
 - Sub-littoral mussel fisheries
 - Fixed and drift net fisheries
- 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.

Outputs & Timescales

Completed assessment of the impacts of fishing activities within the Cromer Shoal Chalk Beds MCZ	June 2018
Fishery management recommendations proposed	July 2018
Infographic engagement materials produced, illustrated by charts, and dialogue held with Natural England and fishery stakeholders	September 2018
Liaison conducted with Marine Protection team to complete formal consultation of regulations, an impact assessment and the production of engagement material for stakeholders.	October 2018

Project lead

Tom Bridges	Marine Science Officer
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SP2c 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 have an adverse impact on the integrity of the site features of 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.
- 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 recorded data.
- 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	September 2018
Advice provided for potential management measures based on evidence from stock assessment data	June 2018
Advice provided for Socio-economic impacts of potential management measures.	July 2018
Presentation to Full Authority meeting of summary of assessment results and proposed management measures.	July 2018 or November 2018
Scientific report detailing the results of this study for publication on the Authority website.	November 2018

Project lead	
Tom Bridges	Marine science officer



SP2d Development of Cromer Shoal Chalk Beds Marine Conservation Zone Monitoring & Control Plan

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

Outputs & Timescales

Identify and agree the layout of the plan using best practice and advice from Natural England, other IFCA's and MMO	May 2018
Identify plan for the collection of fishing activity data (liaise with Marine Protection team)	July 2018
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.	September 2018
Identify evidence sources for designated site feature condition, to enable effectiveness of EIFCA interventions to be determined.	September 2018
Collate the above measures into a cohesive Monitoring and Control Plan.	October 2018
Project lead	
Tom Bridges	Marine Science Officer

SP3 Haisborough, Hammond & Winterton Site of Community Importance (SCI) fisheries assessment and mitigation

Objectives

- Complete the assessment of impacts of commercial fisheries in the part of the HHW SCI that lies within the EIFCA district (the majority of this site lies further offshore)
- Implementation of management measures for 'red-risk' gear/feature interactions – towed demersal fisheries on biogenic reef. 'Red-risk' interactions require immediate management. Work includes:
 - Development of management options (spatial closures) within the site, based on location of biogenic reef feature
 - Dialogue with Natural England and fishery stakeholders
 - Formal consultation of regulations,
 - Completion of an economic impact assessment
 - Production of engagement material for stakeholders.

If required (as identified through the fisheries assessment), recommendations must be made for managing amber & green interactions within the SCI.

Outputs & Timescales

Evidence reviewed for biogenic reef feature extent; towed demersal gear closure areas identified	June 2018
Habitats Regulations Assessment for inshore section of Haisborough, Hammond & Winterton SCI completed	September 2018
Recommendations made for managing amber and green interactions (identified through the assessment)	September 2018
Dialogue undertaken with Natural England and fishery stakeholders on management measures	June 2018 (red risk) October 2018 (amber & green) – if needed
Marine Protection team supported in production of formal consultation on new measures, impact assessment and the production of engagement material for stakeholders.	August 2018 (red) November 2018 (amber & green) – if needed
Project lead	
Sandra Cowper	Marine Science Officer

SP4 Inner Dowsing, Race Bank and North Ridge (IDRBNR) Site of Community Importance (SCI) fisheries assessment and mitigation.

Objectives

- Complete the assessment of impacts of commercial fisheries in the part of the IDRBNR SCI that lies within the EIFCA district (the majority of this site lies further offshore)
- Implementation of management measures for 'red-risk' gear/feature interactions – towed demersal fisheries on biogenic reef. 'Red-risk' interactions require immediate management. Work includes:
 - Development of management options (spatial closures) within the site, based on location of biogenic reef and mosaic habitat feature
 - Dialogue with Natural England and fishery stakeholders
 - Formal consultation of regulations,
 - Completion of an impact assessment
 - Production of engagement material for stakeholders.
- If required (as identified through the fisheries assessment), recommendations must be made for managing amber & green interactions within the SCI.

Outputs & Timescales

Evidence reviewed for biogenic reef feature and mosaic habitat extent; towed demersal gear closure areas identified	June 2018
Habitats Regulations Assessment for inshore section of Inner Dowsing, Race Bank & North Ridge SCI completed	September 2018
Recommendations made for managing amber and green interactions (if any identified through the assessment)	September 2018
Dialogue undertaken with Natural England and fishery stakeholders on management measures	June 2018 (red risk) October 2018 (amber & green) – if needed
Marine Protection team supported in production of formal consultation on new measures, impact assessment and the production of engagement material for stakeholders.	August 2018 (red) November 2018 (amber & green) – if needed
Project lead	
Sandra Cowper	Marine Science Officer

SP5 Evidence plan and assessment of fisheries in new marine protected areas

Objectives

There are four 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 three are much larger sites extending well beyond the district boundaries. Confirmation of EIFCA's responsibilities in relation to these straddling sites is required (through discussions with MMO). An assessment of the available impact and fishing activity data is required to focus evidence-gathering to inform the assessments. The new MPAs include:

- Southern North Sea candidate Special Area of Conservation (harbour porpoise)
- The Greater Wash Special Protection Area (six seabird species)
- Extension to Outer Thames Estuary Special Protection Area (two seabird species)
- Alde & Ore Estuaries Marine Conservation Zone (anticipated designation summer 2018).

The objectives of this workstream are to:

- Identify responsibility for managing fisheries within inshore (0-6nm) sections of new marine protected areas.
- Ascertain conservation advice for new marine protected areas in EIFCA district.
- Identify and quantify commercial fishing activity within these sites.
- Assess impacts of fishing activity on designated features and overall site integrity.
- Recommend mitigation (fisheries management) if required to support conservation objectives of sites.

Outputs & Timescales

Agreement with MMO on EIFCA responsibility for assessment and management of fisheries in inshore (0-6nm) sections of extensive MPAs	September 2018
Gap analysis report describing the available fishing activity data, feature extent and condition data, and conservation advice for the new sites. Data requirements highlighted.	December 2018
Habitats Regulations Assessment of commercial fisheries in inshore section of Greater Wash SPA, with mitigation recommendations (if required)	March 2019
Habitats Regulations Assessment of commercial fisheries in extension of Outer Thames Estuary SPA	March 2019

within EIFCA district, with mitigation recommendations (if required)	
Assessment of fisheries in Alde & Ore Estuaries MCZ, with mitigation recommendations (if required) (Project SP25)	May 2019
Habitats Regulations Assessment of commercial fisheries in inshore section of Southern North Sea candidate SAC, with mitigation recommendations (if required)	July 2019
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 managed to ensure compatibility with MPA conservation objectives before EIFCA authorises them to proceed. It is not foreseen that many such fisheries will occur in any year, but EIFCA must be prepared to complete timely assessments and identify appropriate conditions to support conservation and fisheries viability objectives.

The most likely fisheries in this category are seed mussel fisheries, which have the potential to occur throughout the year. When the potential for such fisheries are detected by fishers, officers have a limited amount of time to develop management measures and a HRA for the fishery (particularly in sub-tidal fisheries which are ephemeral). In the event one does occur, the economic benefit of the fishery is relatively high (as mussel is usually used in local aquaculture).

Outputs & Timescales

Habitats Regulations Assessment for unplanned fishery completed	As required (but within 1 month of notification of potential fishery)
Management options compatible with the assessment recommended and developed.	Within one month of notification of potential fishery
Dialogue completed with Natural England and fishery stakeholders	Within one month of notification of potential fishery

Project lead

Rebecca Treacy	Marine Science Officer
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SP7a - Development of WFO Cockle Fisheries Management Plan

Objectives

The existing Wash Shellfish Management Policies are overdue review. An initial review conducted in 2017 highlighted the benefit of developing a shellfish management plan in conjunction with a Long term (25 year) hand-worked cockle fishery Habitats Regulation Assessment and a Monitoring and Control Plan for the Wash and North Norfolk Coast SAC. An initial draft of the cockle fishery management plan was presented to the Authority in 2017, but still requires formal consultation with the industry and Natural England before final sign off.

Outputs & Timescales

Complete formal consultation of draft Wash Cockle Fishery Management Plan with Natural England and the industry.	August 2018
Obtain Authority agreement of the Wash Cockle Fishery Management Plan	October 2018

Project lead

Ron Jessop	Senior Marine Science Officer
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SP7b - Development of WFO Mussel Fisheries Management Plan	
Objectives	
<p>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.</p> <ul style="list-style-type: none"> • 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 2018
Complete formal consultation of draft Wash Mussel Fishery Management Plan with Natural England and the industry.	November 2018
Obtain Authority agreement of the Wash Mussel Fishery Management Plan	January 2019
Project lead	
Samantha Hormbrey	Marine Science Officer



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 2018 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 2018 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	May 2018
Report summarising survey results, including recommendations for 2018 cockle fishery	May 2018
Presentation of survey results and management recommendations to Authority	June 2018
Production of stakeholder engagement material	June 2018
Report of survey results for publication on the Authority website	January 2019
Project lead	
Ron Jessop	Senior Marine Science Officer

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 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 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 2018
Report summarising survey results, including recommendations for 2019 mussel fishery	December 2018
Presentation of survey results and management recommendations to Authority members	January 2019
Report of survey results for publication on the Authority website	February 2019
Project lead	
Ron Jessop	Senior Marine Science Officer

SP10 Wash Fishery Order mussel mortality study	
Objectives	
<p>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 <i>Mytilicola intestinalis</i> and pea crabs in mussels. EIFCA's role was to provide the required mussel samples (collected during the 2017 autumn mussel surveys), and to provide supporting stock information. Most laboratory analysis of samples was planned to be conducted by students from the university, but further sampling by EIFCA during 2018 is planned to augment the dataset.</p> <ul style="list-style-type: none"> • Provide support for a 3rd year Hull University student science project investigating the incidence of <i>Mytilicola intestinalis</i> and pea crab in mussels • Conduct additional analysis of mussel samples for incidence of <i>Mytilicola intestinalis</i> and pea crab 	
Outputs & Timescales	
Provide support to student during project	September 2017 to April 2018 - Complete
Complete dissection and analysis of mussel samples	September 2018
Presentation of results to Authority	January 2019
Project lead	
Elise Quinn	Marine Science Officer



SP11 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. The survey regimes will be reviewed to ensure they are cost-effective. This review will involve:

- Examining the methodology of both survey regimes to determine if their respective methods are still best practice and efficient.
- Conduct statistical analysis of different sampling resolutions to determine what level of resolution is required to confidently inform various management measures.
- Review various sampling options in conjunction with the management plans for those fisheries to identify where new management would be required to compensate for loss of evidence resolution.
- Conduct formal consultation with the industry and Natural England regarding identified options.
- Production of final report to Authority detailing options and outcomes of consultation.

Outputs & Timescales

Complete review of survey regimes, including analysis of impacts on informing management measures.	September 2018
Complete formal consultation with industry and Natural England	November 2018
Production of report detailing conclusions and presentation to Authority	January 2019

Project lead

Ron Jessop	Senior Marine Science Officer
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SP12 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. In order to provide the HRA with the relevant evidence concerning the environmental impact of these dredges, a literature review incorporating up to date scientific reports will need to be conducted. The project will aim to provide up to date information on:

- The environmental impact of hydraulic suction dredges on inter-tidal habitats typical of those found in The Wash.
- A sustainability study, providing information on cockle fishery sustainability and recovery following dredging.
- An assessment into what scale of dredge fishery The Wash could support without causing adverse effect on environmental features or the sustainability of the cockle fishery.

Liaison with Natural England will be required to ensure any relevant available data from the ongoing, private Le Strange cockle dredge fishery is taken into consideration.

The conclusions of this review will be reported and presented to the Authority members.

Outputs & Timescales

Complete literature review of hydraulic suction dredge environmental impacts	August 2018
Relevant available data obtained from Natural England in relation to Le Strange cockle dredge fishery	August 2018
Complete report considering review in respect of specific Wash conditions and fisheries.	September 2018
Present findings to Authority members	October 2018

Project lead

Samantha Hormbrey	Marine Science Officer
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SP13 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.	<ul style="list-style-type: none">• Monthly, throughout year• Minimum of 10 samples per year from each station
Complete production of annual report	January 2019

Project lead

Tom Bridges	Marine Science officer
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SP14 SWEEP Water Quality Monitoring

Objectives

- Organise and conduct a monthly sampling regime that will include:
 - Collecting salinity, temperature, turbidity, and chlorophyll fluorescence data from pre-determined stations using a hand-held YSI sonde
 - Downloading data from the in-situ buoy sonde and perform routine maintenance
 - Collecting mussel meat yield data from three existing sample stations (Thief, Tofts and Wreck)
 - Ensure all paperwork is completed and recorded accurately
- 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 research report containing the results of the project for the Authority website

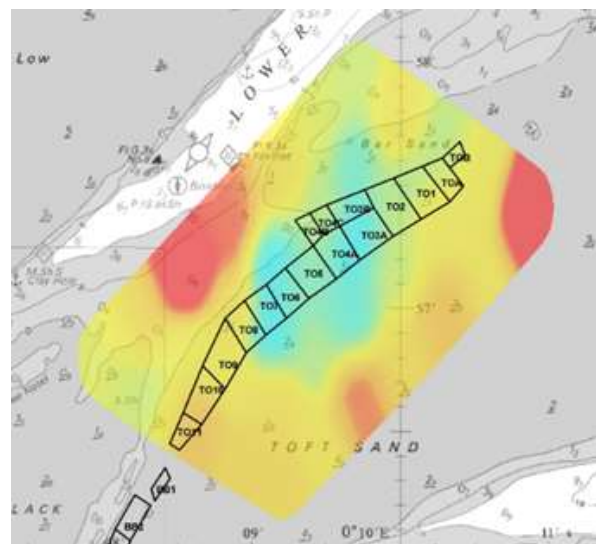
Outputs & Timescales

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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Complete production of a scientific report	February 2019
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Project lead

Elise Quinn	Marine Science Officer
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SP15 Fishing Activity Mapping Project

Objectives

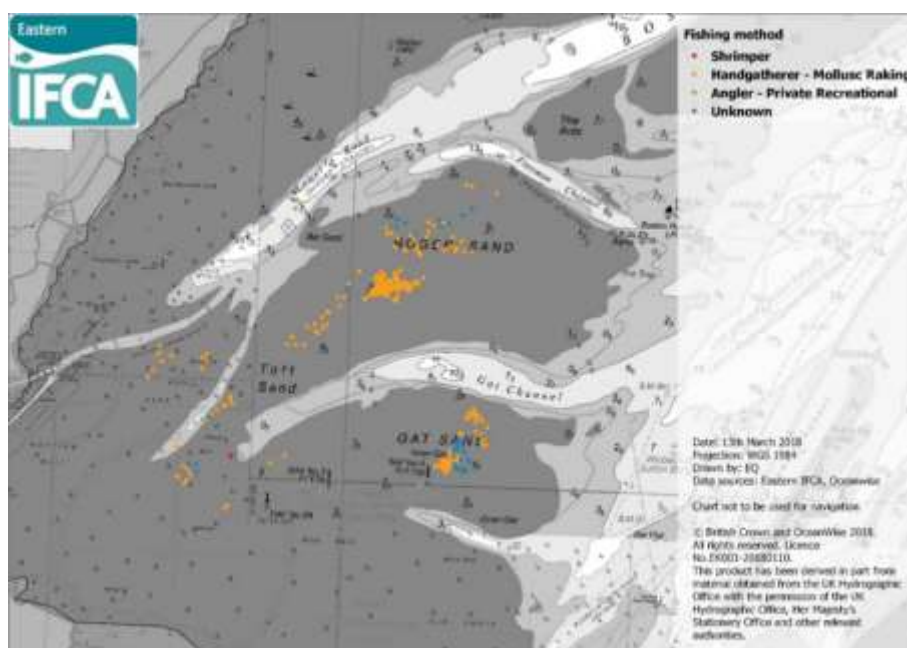
- Support the Authority's requirement for fisheries activity spatial data by:
 - Organising and collating the collection of fishing activity sightings data from EIFCA vessels
 - Collating fishing activity data from other available sources (MMO overflight, VMS, shrimp landings returns, etc.)
 - Analysis 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 other 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 standardised vessel activities information	As and when required
Production of fisheries activity report	February 2019
Suitable methods for collection of high resolution activity data developed	June 2018
Database and tools for storing and analysing iVMS data developed	September 2018

Project lead

Elise Quinn	Marine Science Officer
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SP16 - 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 (with bass being the “hot species” at the moment), 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.

As some of the activities undertaken by this project will contribute towards the delivery of several objectives, to avoid unnecessary repetition, the style of this section is different to the project descriptions that precede it.

SP16 Fin Fish Project	
Objectives	
Please see “Table of interactions between Objectives and Actions” which identifies the Objectives derived from the Strategic Assessment which the Finfish project will address.	
See “Table of Actions” below for specific actions, and “Table of interactions between Objectives and Actions” for detail as to how these actions will deliver (either in whole, or as a contribution to the overall objectives) the requirements identified within the Strategic Assessment	
Outputs & Timescales	
On-going collation and analysis of species and landings data from internal and external sources.	Ongoing until March 2019
Decision on future of “Voluntary Detailed Catch Returns” activity	End June 2018
Compilation of overview summary report detailing results.	March 2019
Project lead	
Stephen Thompson	Marine Science Officer

Table 3: Fin Fish project - Table of actions

Action	Description	Notes
A	Continue the collection, collation and analysis of data on significant finfish species which is available from external sources, and maintain a “watching brief” for other potentially useful external data sources.	
B	Continue EIFCA contributions to the protection and potential enhancement of fish nursery areas and productive fish habitat by participation in appropriate workshops, meetings etc.	
C	Examine the possibility of working with partner organisations (NGOs, IFM, etc) to conduct fieldwork to generate robust data on – especially – the utilisation of inshore and estuarine areas by fish species.	Will generate valuable community liaison benefits
D	Examine and assess returns from “Voluntary Detailed Catch Returns” and decide on the future of the activity.	
E	Continue involvement with external organisations in appropriate projects, especially in connection with Bass and elasmobranchs.	
F	Examine the possibility of using Recreational Sea Angling information to generate meaningful useful data on trends and relative abundances of fish stocks	

Table 4: Fin Fish Project - Layout of Table of Interactions between Objectives and Actions

Objective	Species & Theme	A	B	C	D	E	F	Notes
Objective ID, and Priority – Red = High Amber = Medium Green = Low	From Strategic Assessment 2018	Action, as identified in “Table of Actions” above						Specific Notes relating to this Objective
Summary of the Objective from the 2018 Strategic Assessment								

Table 5: Fin Fish project - Table of interactions between Objectives and Actions

Objective	Species & Theme	A	B	C	D	E	F	Notes
1.01	Bass, Cod - New data / evidence acquisition	✓	✓	✓	✓	✓	✓	
Continue to provide evidence in relation to development of BNAs; effort and fisheries data is not necessarily required from a 'stock management' perspective but is of a priority in relation to MPA management and fishing in spawning and nursery areas. Further evidence is potentially required in relation to the presence of spawning and nursery areas within the district, given the changes in water temperature and the emergence of bass nursery areas in recent years								
1.02	Bass, Cod - New data / evidence acquisition				✓		✓	
Further develop voluntary fisheries data; Recently introduced voluntary measures would benefit from further development and additional dialogue with the RSA community would be beneficial. National measures to obtain additional landings data from the under 10m sector will also address the 2016/17 work stream in the longer term.								
1.03	Bass, Cod - New data / evidence acquisition	✓		✓	✓	✓	✓	
Contribute to and liaise with those responsible for the progression of gap analysis of fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises. <i>Additional spatial activity data may be required to inform HRA related to proposed SPA and SAC for birds and porpoises.</i>								
1.04	Bass, Cod - Monitor / maintenance	✓	✓	✓			✓	
Re-assess needs for 'un-regulated netting' measures in the context of BNA development. development of 'unregulated netting' measures was a 2016/17 priority but EIFCA involvement in Bass Nursery Area development is likely to have a similar benefit (in relation to the impacts of netting in estuaries and rivers) although, any gaps left by the BNA work will need to be identified through the continuation (or re-evaluation) of unregulated netting in the context of BNA. Monitor displacement into other fisheries								
1.05	Bass, Cod – Engagement			✓		✓	✓	
Engagement with RSA sector to obtain fisheries data; Additional / more directed engagement with the RSA sector will also benefit strategic and operational decision making								
1.06	Bass, Cod – Engagement	✓	✓	✓		✓	✓	

Objective	Species & Theme	A	B	C	D	E	F	Notes
Contribute to and liaise with those responsible for engagement with fishers re BNA and other bass measures; <i>Engagement is required in relation to the development of BNAs.</i>								
1.07	Bass, Cod – Engagement	✓	✓	✓		✓	✓	
Contribute to and liaise with those responsible for development of material to engage RSA re MCRS and collaborative / standardising. <i>Fishers to be made aware and education to be completed around the landings obligation regulation and on new bass measures. In addition, there is a lack of consistency across IFCAs and the MMO in relation to the application of MCRS to RSA. A high proportion of RSA are not aware of MCRS within the district</i>								
1.08	Bass, Cod – Environment / Ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for Monitoring and control plans; Monitoring and control plans prioritise areas where this is not a primary fishery but will ultimately be considered through plans (primarily in Suffolk estuaries).								
1.09	Bass, Cod – Environment / Ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for undertaking gap analysis of impacts data relevant to assessing fishing impacts on SPA bird species and porpoises; <i>Impacts of fixed and drift netting to be considered in relation to SPA bird species and porpoises</i>								
1.10	Bass, Cod – Environment / Ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for development of management measures for any relevant 'red-risk' gear/feature interactions within MPAs.								
1.11	Bass, Cod – Viable Industry	✓		✓		✓		

Objective	Species & Theme	A	B	C	D	E	F	Notes
2.01	Dogfish and Sharks -New data / evidence acquisition				✓	✓		
Develop mechanism to monitor levels of LSD use as bait to gain better understanding of overall fishing mortality; LSD are an important bait species within other fisheries (e.g. crab and lobster) and as such, landed weight indicated from MMO data is potentially an underestimate of catch.								

Objective	Species & Theme	A	B	C	D	E	F	Notes
2.02	Dogfish and Sharks - New data / evidence acquisition	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for undertaking gap analysis of fishing activity data relevant to assessing fishing impacts on SPA bird species and porpoises.								
2.03	Dogfish and Sharks -Monitor / maintenance					✓		
Partnership working with CEFAS re shark / dogfish research where possible; EIFCA are involved with the Cefas led Elasmobranch Steering Group, which might at some stage conduct some research into the impacts of windfarm cables on elasmobranchs.								
2.04	Dogfish and Sharks -Monitor / maintenance				✓	✓		
Development of voluntary landings data. Continuation (and some further development) of voluntary landings data work streams are beneficial particularly in relation to lesser-spotted-dogfish.								
2.05	Dogfish and Sharks -Environment / ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for development of relevant monitoring and control plans; Monitoring and control plans prioritise areas where this is not a primary fishery but will ultimately be considered through plans (primarily in Suffolk estuaries). The EIFCA district is potentially a refuge for these species and this should be reflected within a monitoring and control plan.								
2.06	Dogfish and Sharks -Environment / ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for undertaking gap analysis of impacts evidence relevant to assessing fishing impacts on SPA bird species and porpoises; <i>Impacts of fixed and drift netting to be considered in relation to SPA bird species and porpoises.</i>								
2.07	Dogfish and Sharks -Environment / ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for development of management measures for any relevant 'red-risk' gear/feature interactions within MPAs. <i>Bottom-towed-gear management is also required in relation to 'red-risk' gear/habitat interactions although activity levels within this fishery are relatively low.</i>								

Objective	Species & Theme	A	B	C	D	E	F	Notes
2.08	Dogfish and Sharks -Viable industry	✓		✓		✓		
Contribute to working with partner organisations to report issues from fishers. Spurdog catches are very high (currently a prohibited species). Fishers have reported that they have to discard large amounts which is both time consuming and makes long lining unfeasible at certain times of the year								
Objective	Species & Theme	A	B	C	D	E	F	Notes
3.01	Flatfish - New data / evidence acquisition	✓	✓	✓	✓	✓	✓	
Contribute to EIFCA liaison with national approach re under 10m sector landing data; effort and fisheries data is not necessarily required from a 'stock management' perspective but is of a priority in relation to MPA management and fishing in spawning and nursery areas.								
3.02	Flatfish - New data / evidence acquisition	✓	✓	✓	✓	✓	✓	
Continue to provide evidence in relation to development of BNAs; Further evidence is potentially required in relation to the presence of spawning and nursery areas within the district, given the changes in water temperature and the emergence of bass nursery areas in recent years.								
3.03	Flatfish - New data / evidence acquisition				✓		✓	
Further develop voluntary fisheries data; Recently introduced voluntary measures would benefit from further development and additional dialogue with the RSA community would be beneficial.								
3.04	Flatfish - New data / evidence acquisition	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for undertaking gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises; <i>Additional spatial activity data may be required to inform HRA related to proposed SPA and SAC for birds and porpoises.</i>								
3.05	Flatfish - New data / evidence acquisition	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for development of sole fishing activity data (data sharing agreement with MMO). <i>In addition, fishing effort data in relation to sole will reduce the risk associated with anecdotal reports of increases in sole fishing activity (as a result of displaced fishers and lack of bass and cod). Collaborative work with the MMO (particularly in the form of a data sharing agreement) will enable better utilisation of data already collected to monitor activity and detect potential issues.</i>								
3.06	Flatfish – Monitor / Maintenance	✓	✓	✓			✓	

Objective	Species & Theme	A	B	C	D	E	F	Notes
Re-assess needs for 'un-regulated netting' measures in the context of BNA development.								
3.07	Flatfish - Engagement						✓	
Engagement with RSA sector to obtain fisheries data								
3.08	Flatfish - Engagement	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for engagement with fishers re BNA								
3.09	Flatfish - Environment / ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for monitoring and control plans; Monitoring and control plans prioritise areas where this is not a primary fishery but will ultimately be considered through plans (primarily in Suffolk estuaries).								
3.10	Flatfish - Environment / ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for undertaking gap analysis of impacts data relevant to assessing fishing impacts on SPA bird species and porpoises <i>Impacts of fixed and drift netting to be considered in relation to SPA bird species and porpoises</i>								
3.11	Flatfish - Environment / ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for development of management measures for any relevant 'red-risk' gear/feature interactions within MPAs. <i>Bottom-towed-gear management is also required in relation to 'red-risk' gear/habitat interactions although activity levels within this fishery are thought to be relatively modest.</i>								
3.12	Flatfish - Viable Industry	✓		✓		✓		
Contribute to and liaise with those responsible for exploring initiatives to re-invigorate the fishery.								

Objective	Species & Theme	A	B	C	D	E	F	Notes
4.01	Pelagic - New data acquisition	✓	✓	✓	✓	✓	✓	

Objective	Species & Theme	A	B	C	D	E	F	Notes
Contribute to and liaise with those responsible for undertaking gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises								
4.02	Pelagic - Monitor / maintenance				✓		✓	
Development of voluntary landings data. Continuation and potential for further development of voluntary data collection from smaller scale fishers								
4.03	Pelagic - Engagement	✓	✓	✓		✓	✓	
Contribute to and liaise with those responsible for further development of RSA engagement material. Wide engagement will be required in relation to bass nursery areas (which may have impacts on netting for all species within some rivers and estuaries but these will likely be limited for this fishery given low landed weights and values). Additional / more directed engagement with the RSA sector will also benefit strategic and operational decision making. Previous years have shown that RSA's are unaware of larger minimum conservation reference size (MCRS) in the North Sea ecoregion, therefore there is a requirement for a greater amount of engagement. There has been a lack of consistency between different IFCA's and the MMO on this issue.								
4.04	Pelagic - Environment / Ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for undertaking gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.								
4.05	Pelagic - Viable Industry	✓		✓		✓		
Contribute and liaise with EIFCA and external personnel to identify if opportunities exist to work with partner organisation's or individuals (including fishers) to increase the market demand of these species (primarily herring).								
Objective	Species & Theme	A	B	C	D	E	F	Notes
5.01	Skates and Rays - New data acquisition				✓		✓	
Development of voluntary landings data								
5.02	Skates and Rays - New data acquisition		✓	✓		✓		
Actively liaise with partner organisations in relation to planned research projects; Kent and Essex IFCA are undertaking a joint research project with Cefas which may provide additional information. Effort and landings data are poorly understood for skates and rays. Given the lack of formal fisheries data, there is a reliance on strong relationships with the industry and the RSA to detect changes in activity levels or potential emerging issues. The RSA sector								

Objective	Species & Theme	A	B	C	D	E	F	Notes
favours this group and may provide additional information or a platform for developing research initiatives (tagging study, size at maturity study etc.).								
5.03	Skates and Rays - New data acquisition	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for undertaking gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.								
5.04	Skates and Rays - Environment / ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for developing relevant monitoring and control plans.								
5.05	Skates and Rays - Environment / ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for undertake gap analysis of fishing activity relevant to assessing fishing impacts on SPA bird species and porpoises.								
5.06	Skates and Rays - Environment / ecosystems	✓	✓	✓	✓	✓	✓	
Contribute to and liaise with those responsible for development of management measures for any relevant 'red-risk' gear/feature interactions within MPAs.								
5.07	Skates and Rays - Viable Industry	✓		✓		✓		
Provide information for and liaise with those within EIFCA who are to lobby at a national level regarding the allocation of quota in a way that works for smaller vessels. <i>fishers have reported to the IFCA that at certain times of the year large quantities of Skate are on the ground and are available to be caught however the quota is not available.</i>								



SP17 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 Cefas and other IFCAs 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.

Outputs & Timescales

Advice provided on whether current management measures (re. pot limitation and MLS) are appropriate	September 2018
Advice provided on for development of additional management measures if required	October 2018
Advice provided re fishery gear impact for Cromer Shoal Chalk Beds MCZ Monitoring & Control Plan	September 2018
Completion of a scientific report detailing conclusions of the whelk study	March 2019

Project lead

Rebecca Treacy	Marine Science Officer
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SP18 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 2018-2019 fishery that complies with local byelaws and Natural England's approval.
- If a fishery is to be opened, liaise with the fishing industry, Natural England and the land owners of the shoreline to develop management further. 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 to make it more transparent and to enable a fishery from the sea.*

Outputs & Timescales

Successful completion of survey field work and the production of a report summarising survey results and recommendations for 2018-2019 cockle fishery	31 st July 2018
Completion of a scientific report detailing survey results for publication on the Authority website	October 2018
Project lead	
Elise Quinn	Marine Science Officer



SP19 Titchwell Mussel Stock Assessment and development of management measures

Objectives

- Organise and conduct the annual survey field work. This involves accessing the bed from shore to conduct low-water foot surveys using the “Dutch wand” method.
- Analysis of the survey data to determine the biomass and size distribution of mussel stocks within the bed. Production of GIS charts displaying this information and the geographical extent of the bed.
- Use the information gained from the surveys to develop management recommendations for the 2018/19 fishery that comply with local byelaws and Natural England’s approval.
- Support the development of a 5-year Habitats Regulation Assessment for the fishery.
- If required, support the development of a Monitoring and Control Plan for the fishery

Outputs & Timescales

Successful completion of survey field work and the production of a report summarising survey results and recommendations for 2018-2019 fishery	As required. Usually February or October
Development and approval of a 5-year Habitats Regulations Assessment for the Titchwell mussel fishery	June 2018
Development of Monitoring & Control Plan (if required)	March 2019
Completion of a scientific report detailing survey results for publication on the Authority website	January 2019
Project lead	
Tom Bridges	Marine Science Officer



SP20 Development of Biosecurity Plan and associated measures	
Objectives	
<ul style="list-style-type: none"> • Development of district-wide biosecurity measures and plans: <ul style="list-style-type: none"> ○ 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 to Cromer Shoal MCZ fishing impact assessment re. potential biosecurity issue of bait used in pots. • 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 and agreed	August 2018
EIFCA internal activities biosecurity measures developed and agreed	May 2018
District-wide fisheries biosecurity measures developed and agreed	September 2018
EIFCA Biosecurity Plan developed, including the agreed measures, communication/education products/actions and contingency measures	December 2018
Biosecurity advice provided to support Cromer Shoal MCZ fishing impact assessment regarding potential bio-security hazards associated with using bait in pots.	May 2018
Appropriate support provided to Cefas INNS project	Ongoing as required
Project lead	
Elise Quinn	Marine Science Officer

SP21 Consultation Management	
Objectives	
<p>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:</p> <ul style="list-style-type: none"> • 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 comments 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. <p>Information requests are also managed through the consultation system to ensure they are logged and dealt with appropriately.</p>	
Outputs & Timescales	
Proportionate, informed, evidence-based and timely consultation and information requests responses are delivered within agreed timeframes. Feedback provided to authors.	Ongoing through year
Outcomes of consultations and follow-up actions are undertaken, recorded in consultation database, and discussed with senior managers if appropriate	Ongoing through year
Progress reports provided to Authority in quarterly statutory meeting Marine Science update papers	Quarterly
Project lead	
Sandra Cowper	Marine Science Officer

SP22 Byelaw exemptions management & review of process	
Objectives	
<p>To manage the process of granting byelaw exemptions, ensuring a co-ordinated approach is taken with the EIFCA Support and Marine Protection teams and the CEO. Regulatory and conservation aspects must be given due consideration. Exemptions should be granted (or refused, with reasons) within specified timescales. To achieve this aim, the exemptions manager will:</p> <ul style="list-style-type: none"> • Review exemptions process with input from Marine Protection and senior management colleagues • 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. 	
Outputs & Timescales	
Updated exemptions process, application form and advice on EIFCA website	June 2018
Notification of updated process and documents sent to all previous applicants (last 3 years)	July 2018
Agreed position with Natural England in relation to process and assessment requirements	June 2018
Timely, accurate, QA'd 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	Quarterly
Project lead	
Sandra Cowper	Marine Science Officer

SP23 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 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 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 2018-19 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
Weekly tweets and monthly website updates provided by Marine Science team	Weekly tweets Monthly web updates
Articles published in relevant regional media, e.g. Norfolk Coast Guardian, Suffolk Coast & Heaths AONB newspaper, Wash & North Norfolk Marine Partnership website, etc.	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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SP24 Wash Fishery Order Habitats Regulation Assessments	
Objectives	
<ul style="list-style-type: none"> Using evidence from the 2018 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 <p>If required, develop a long-term (25-year) Habitats Regulations Assessment for the Wash Fishery Order cockle fishery</p>	
Outputs & Timescales	
Habitats Regulations Assessment for Wash Fishery Order cockle fishery	May 2018
Dialogue undertaken with Natural England and fishery stakeholders on management measures for Wash Fishery Order cockle fishery	May 2018
Habitats Regulations Assessment for Wash Fishery Order mussel fishery	January 2019
Dialogue undertaken with Natural England and fishery stakeholders on management measures for Wash Fishery Order mussel fishery	January 2019
Long-term (25-year) Habitats Regulations Assessment for the Wash Fishery Order cockle fishery (if required)	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	May 2019
Project lead	
Stephen Thompson	Lead Marine Science Officer



SP25 Assessment of commercial fisheries in recommended Alde & Ore Estuary Marine Conservation Zone

Objectives

The Alde & Ore Estuary rMCZ is expected to be designated in summer 2018. EIFCA will be required to assess the impact of commercial fisheries on the designated features of the site, and where necessary, to implement management measures to reduce impacts on the site.

The fisheries in the site have previously been assessed in relation to the Special Area of Conservation (SAC) and Special Protection Area (SPA) designations already in place. The new assessment must be specific to the MCZ features.

Outputs & Timescales

Update information on commercial fishing activities taking place within the site	November 2018
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Obtain conservation advice from Natural England	November 2018
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Assessment report	March 2019
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Recommendations for fishery mitigation (if required)	March 2019
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Project lead

Stephen Thompson	Lead Marine Science Officer
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SP26a Marine Protected Areas Byelaw review – Sub-tidal Red features

Objectives

Use scientific evidence to review the effectiveness of the closures under the Marine Protected Areas (MPA) Byelaw for sub-tidal red risk features (*Sabellaria* core reef and sub-tidal cobble and boulder (stony reef)). The review will involve:

- Analyse and map the 2016-2017 habitat mapping survey data to produce a detailed survey report of the identified seabed features (including in particular, *Sabellaria* reef).
- Consider implications of updated Conservation Advice (including core reef threshold values) in relation to location of current closures
- Analyse and review the habitat mapping survey data for the period 2013-2017 to inform a site report describing spatial extents of the habitats surveyed during the period and highlighting any temporal changes.
- Assess the effectiveness of EIFCA protection of MPA subtidal features, introduced in May 2014, by considering feature condition (extent) and fishing activity data.
- Liaise with Marine Protection Team over compliance with MPA byelaw (*Sabellaria* reef and subtidal stony reef) closures and the level of fishing activity in The Wash.
- Compile all data and produce a report detailing evidence, rationale and recommendations to the marine protection team to support the development of options to renew, amend or revoke current management measures

Outputs & Timescales

Complete analysis and habitat mapping of areas surveyed in 2016 and 2017.	April 2018
Produce site report for survey period 2013-2017, detailing core reef areas in the Wash and condition of features protected in MPA byelaw closure areas.	May 2018
Report on fishing activity in MPA byelaw closure areas	May 2018
Report on compliance with restrictions in MPA byelaw closure areas.	May 2018
Develop and report evidence for management options for MPA byelaw closure areas.	July 2018

Project lead

Samantha Hormbrey	Marine Science Officer
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SP26b Marine Protected Areas Byelaw review – Inter-tidal eelgrass	
Objectives	
<p>Use scientific evidence to review the effectiveness of the restricted areas under the Marine Protected Areas Byelaw 2016 for red risk intertidal eelgrass beds eelgrass beds at Horseshoe Point and the North Norfolk Coast. The review will involve:</p> <ul style="list-style-type: none"> • 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 EIFCA protection of MPA eelgrass features 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	
Produce site report for the survey period 2013 - 2017, detailing the condition of eelgrass features protected under MPA byelaw	December 2017 - Complete
Report on fishing activity in MPA byelaw restrictions for eelgrass features and compliance with restrictions	December 2017 - Complete
Report on effectiveness of restrictions for protecting eelgrass features	May 2018 - Complete
Produce a report detailing all evidence on feature extent, effectiveness of restrictions for eelgrass features and management recommendations	May 2018
Develop management options for MPA byelaw closures for eelgrass features and liaise with marine protection	May 2018
Project lead	
Elise Quinn	Marine Science Officer

SP27 Monitoring & Control Plans for commercial fisheries in Marine Protected Areas

Objectives

Monitoring and Control Plans will be required for the fisheries within each of the Marine Protected Areas (MPAs). These are being developed by the MMO and the other IFCAs, alongside guidance from Natural England. The Plans will need to be site-specific but should where possible be standardised. This project is to develop an EIFCA template for Monitoring & Control Plans that follow best practice and standardisation of approach.

Liaise with other IFCAs, MMO and Natural England to develop a standardised format for EIFCA Monitoring and Control Plans that follow best practice. The template format will need to be developed so that future plans can:

- Demonstrate a robust plan for the collection of fishing activity data (particularly spatial data and fishing intensity data);
- Collate available evidence for MPA feature condition, including EIFCA research activities and external data sources, and identify evidence gaps.
- Set out how the effectiveness of EIFCA interventions (fishery management measures) in MPAs will be assessed (review of fishing activity data and feature condition).
- Identify thresholds for interventions to ensure conservation objectives of MPAs continue to be furthered.

This project will also create a timetable for the creation of Monitoring & Control Plans for the main fisheries or MPAs in the EIFCA district, taking into account the Authorities MPA priorities and other marine science and engagement work.

A standardised Monitoring and Control Plan template developed that can be effectively used to create the necessary Plans for MPAs within EIFCA District	June 2018
Updated, fit-for-purpose MPA interactions database	July 2018
Recommended timetable for creation of Monitoring & Control Plans for main fisheries/MPAs in EIFCA District	July 2018
Project lead	
Samantha Hormbrey	Marine Science Officer

SP28: Review of EIFCA's progress under Revised Approach to Management of Commercial Fisheries in Marine Protected Areas

Objectives

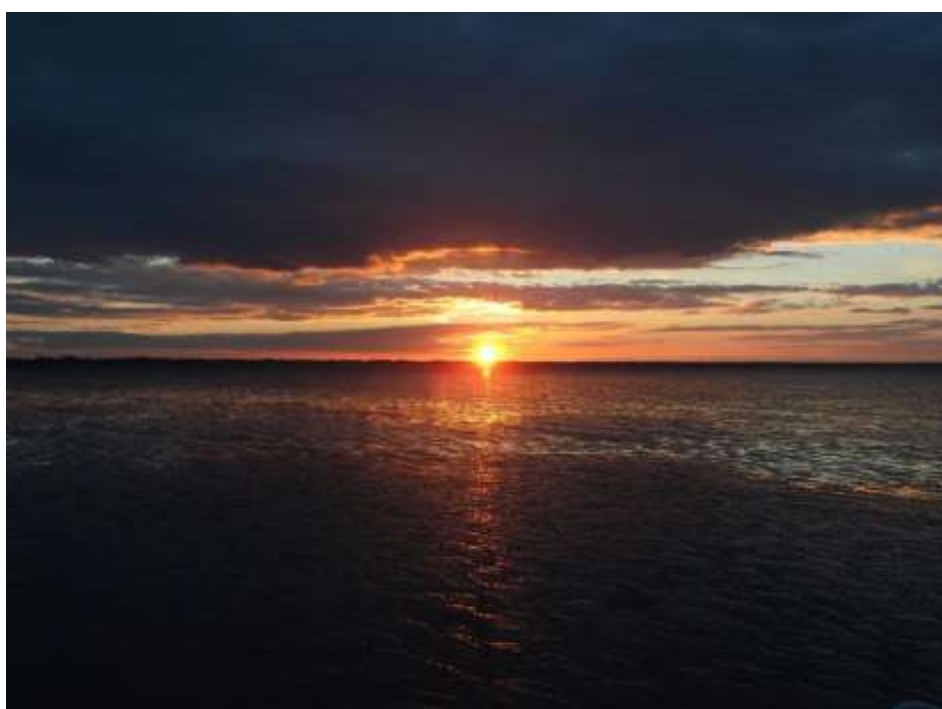
Defra published the "revised approach" in 2013. Protection for the most vulnerable Marine Protected Area (MPA) features was required by December 2013. Protection for remaining features requiring protection – as identified through fishery Habitats Regulations Assessments (HRAs) – was required by December 2016. This project will report on progress with fishery assessments and protective measures for all MPAs in the EIFCA district. It will feed into a national review of the work of IFCAs relating to management of fisheries in Marine Protected Areas. Liaison with national project will be required.

Outputs & Timescales

Situation report of HRAs (or MCZ assessments) for all MPAs in EIFCA district.	December 2018
Overview of fisheries management in each MPA in EIFCA district, including MPA specific measures and other measures that contribute to MPA protection	December 2018
Recommendations for completion of outstanding assessments / management measures	December 2018

Project lead

Judith Stoutt	Senior Marine Science Officer
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SP29: Assessment of bait collection activity and impacts in Marine Protected Areas

Objectives

Defra has directed IFCAs 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 IFCAs is recommended, as all IFCAs 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
Recommendations for (i) further assessment and/or (ii) mitigation to reduce impacts on designated sites	October 2018

Project lead

Rebecca Treacy	Marine Science Officer
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SP30: Pulse trawling review (Cefas project)	
Objectives	
<p>EIFCA Authority is aware of concerns within the fishing community of the potential impacts of electric pulse trawling.</p> <p>Through collaboration with the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), to better understand the regulations relating to electric pulse trawling and its impacts on target species and non-target species.</p> <p>To consider need for regulation relating to electric pulse trawling in the EIFCA district.</p>	
Outputs & Timescales	
Support the Marine Protection team to determine current status of regulations relating to electric pulse trawling within EIFCA district and whether there could be an immediate threat of fishery occurring.	May 2018
Report on regulations relating to electric pulse trawling and its impacts on target species and non-target species	December 2019
Recommendations for regulation (if deemed necessary) of electric pulse trawling in EIFCA district	January 2020
Project lead	
Stephen Thompson	Lead Marine Science Officer



SP31 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

Production of report detailing the extent and impacts of Private fisheries within the EIFCA district.

September 2018

Support provided to Marine Protection team to develop required management

October 2018

Project lead

Rebecca Treacy

Marine Science Officer



SP32 Assessment and management of rights in common in MPAs	
Objectives	
<p>Rights in common were exempted from the regulatory notices on the condition EIFCA provided Defra with a review of their activities. This will involve:</p> <ul style="list-style-type: none"> • Research, review and report the activities of rights in common • Using evidence of impacts (and legal advice), develop management as required. 	
Outputs & Timescales	
Common Rights fishing activity assessment report	September 2018
Required management developed	October 2018
Project lead	
Sandra Cowper	Marine Science Officer

Table 6: Chart showing deadline dates for the 2018-2019 marine science projects (Projects highlighted in red might not be required)

2018-2019 Marine Science projects		2018										2019											
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Ron																							
SP7a	Wash Fishery Order Cockle Fisheries Management Plan					X		X															
SP8	Wash Fishery Order Cockle stock assessment and development of management measures		XX	XX							X												
SP9	Wash Fishery Order mussel stock assessment and development of management measures								X	X	X	X											
SP11	Review of Wash Fishery Order cockle and mussel survey regime						X		X		X												
Judith																							
SP28	Revised approach to management of commercial fisheries in marine protected areas: EIFCA									XXX													
Stephen																							
SP1a	Regulation of shrimp fishery – Project management		X					X	X														
SP1b	Shrimp fishery mitigation			XX	X																		
SP1d	Shrimp fishery Monitoring & Control Plan		XX		X	X		X															
SP16	Fin fish projects and development of management measures	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	
SP24	Wash Fishery Order Habitats Regulations Assessments (plus possible development of Long		XX									XX				XX							
SP25	Alde & Ore Estuaries MCZ assessment									XX				XX									
SP30	Pulse fishing review (Cefas project)		X																			XX	
Sandra																							
SP3	Haisborough, Hammond & Winterton SCI fisheries assessment and mitigation		X	X		X	XX	X	X														
SP4	Inner Dowsing, Race Bank & North Ridge SCI fisheries assessment and mitigation		X	X		X	XX	X	X														
SP21	Consultations management	X	:	:	X	:	:	X	:	:	X	:	:	X	:	:	X	:	:	X	:	:	
SP22	Byelaw exemptions management & review of process	X	:	XX	XX	:	:	X	:	:	X	:	:	X	:	:	X	:	:	X	:	:	
SP23	External engagement including Community Voice and Agents of Change	X	:	:	X	:	:	X	:	:	X	:	:	X	:	:	X	:	:	X	:	:	
SP32	Assessment and management of rights in common in MPAs						X	X															
Tom																							
SP2a	Cromer Shoal MCZ fisheries assessment – Project Management			XX	XX	X																	
SP2b	Cromer Shoal MCZ fisheries mitigation			X	X		X	X															
SP2c	Crab and Lobster stock assessment and development of management measures	:	:	X	X	:	X	:	XX						:	:	:	:	:	:	:	:	
SP2d	Cromer Shoal MCZ Monitoring & Control Plan		X		X		XX	X															
SP13	Environmental Health shellfish sampling	:	:	:	:	:	:	:	:	:	:	X	:	:	:	:	:	:	:	:	:	:	
SP19	Titchwell mussel stock assessment and development of management measures			X				X				X	X	X									
Samantha																							
SP5	Evidence plan and assessment of fisheries in new marine protected areas						X			X				XX		X		X					
SP7b	Wash Fishery Order Mussel Fisheries Management Plan						X		X		X												
SP12	Hydraulic Suction Dredge Environmental Impact Assessment					XX	X	X															
SP26a	Marine Protected Areas Byelaw review – Sub-tidal Red features	X	XXX		X																		
SP27	Monitoring & Control Plans for commercial fisheries in Marine Protected Areas			X	XX																		
Elise																							
SP10	Wash Fishery Order mussel mortality study						X				X												
SP14	Study of The Wash Embayment Environmental Productivity (water quality) monitoring	:	:	:	:	:	:	:	:	:	:	X	:	:	:	:	:	:	:	:	:	:	
SP15	Fishery mapping project			X			X					X											
SP18	Horseshoe Point Cockle stock assessment and development of management measures				X			X															
SP20	Development of Biosecurity Plan and associated measures.		XX			X	X			X													
SP26b	Marine Protected Areas Byelaw review – Inter-tidal eelgrass		XXX																				
Rebecca																							
SP1c	Brown shrimp fishery sustainability assessment						XX	XX															
SP6	Habitat Regulations Assessments for 'unplanned' fisheries.	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	
SP17	Whelk stock assessment and development of management measures	:	:	:	:	:	XX	X	:	:	:	:	X	:	:	:	:	:	:	:	:	:	
SP29	Bait digging Habitats Regulations Assessment						X	X															
SP31	Assessment and management of private fisheries in MPAs						X	X															