

Title: Sussex IFCA Beachy Head East Regulatory Notice IA No: SXIFCA010 Lead department or agency: Sussex Inshore Fisheries and Conservation Authority (IFCA) Other departments or agencies: Natural England, Marine Management Organisation, Department for Environment Food and Rural Affairs	Impact Assessment (IA)	
	Date: 12/03/2024	
	Stage: Consultation	
	Source of intervention: Domestic	
	Type of measure: Secondary legislation	
	Contact for enquiries: Robert Pearson, Chief Fisheries and Conservation Officer: 12a Riverside Business Centre, Shoreham-by-Sea, West Sussex, BN43 6RE, 01273 454 407, admin@sussex-ifca.gov.uk	
Summary: Intervention and Options	RPC Opinion: Not Applicable	

Cost of Preferred (or more likely) Option			
Total Net Present Social Value	Business Net Present Value	Net cost to business per year	Business Impact Target Status Qualifying provision
£Not monetised	£71K	£8.2K	
What is the problem under consideration? Why is government action or intervention necessary? <p>This Regulatory Notice is proposed to further the Conservation Objectives of Beachy Head East Marine Conservation Zone (MCZ), facilitating government commitments as specified by sections 125, 126, 153, and 154 of the Marine and Coastal Access Act 2009; to provide a well-managed ecologically coherent marine protected area (MPA) network, supporting Objectives 10-12 of the South Marine Plan 2018; to promote the resilience, adaptability, and ecological status of habitats and species within MPAs to secure ecosystem goods and services. Government intervention is needed to redress market failure in the marine environment by implementing appropriate management measures to conserve features, to ensure negative externalities are reduced or suitably mitigated. This Regulatory Notice will help provide appropriate risk-based management and protection across Beachy Head East MCZ.</p>			

What are the policy objectives of the action or intervention and the intended effects? <ul style="list-style-type: none"> To further the Conservation Objectives for Beachy Head East MCZ; To ensure compliance with both the Marine and Coastal Access Act 2009, and the South Marine Plan 2018, which aim to promote an effective MPA network to secure ecosystem services; To promote sustainable fisheries while conserving the marine environment; To reduce negative externalities and ensure continued provision of public goods; To measure the success of management by recording levels of compliance with site management and the maintenance/recovery of conservation features and/or fisheries as indicated by any associated monitoring.
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What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base) <p>Option 0. Do nothing Option 1. Voluntary measures Option 2. Sussex IFCA MCZ Byelaw with zonal management measures Option 3. Sussex IFCA Byelaw: Full site prohibition</p> <p>All options are compared to Option 0. The preferred option is Option 2 which will promote both sustainable fisheries and conserve the marine environment by enabling the protection of natural capital assets (biogenic and abiotic reefs) while ensuring compliance with the Marine and Coastal Access Act 2009. It is considered that, based on available evidence, the benefits of this protection outweigh the potential costs of the measures.</p>

Will the policy be reviewed? It will be reviewed. If applicable, set review date: 4 years				
Is this measure likely to impact on international trade and investment?		No		
Are any of these organisations in scope?	Micro Yes	Small Yes	Medium No	Large No
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)		Traded: N/A		Non-traded: N/A

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the Chief Fisheries and Conservation
Officer, Robert Pearson



Date:

12.03.2024

Summary: Analysis & Evidence

Policy Option 2

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2020	Time Period Years 10	Net Benefit (Present Value (PV)) (£K)		
			Low: Optional	High: Optional	Best Estimate: - 106,915

COSTS (£K)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	10	Optional	Optional
High	Optional		Optional	Optional
Best Estimate	82		124	1,069

Description and scale of key monetised costs by 'main affected groups'

A low number of bottom towed gear operators use the site (Figures 4 and 5), so a low overall economic impact of restrictions is envisaged. Defra estimate the cost of towed gear management throughout the site at £11k/year to the fishery and £5K for ports and harbours, Sussex IFCA analysis of MMO landings data 2017-2021 estimate the value of the fishery that will be affected by the proposed management measures within Beachy Head East MCZ at £8.2K/year.

A best estimate total cost to Sussex IFCA of £124,200, comprising of sea and land patrol costs, vessel tracking, monitoring/research and communications totalling £10,350/month is calculated. This estimate is a standalone cost and does not factor in efficiencies associated with current enforcement activities and joint working.

Other key non-monetised costs by 'main affected groups'

Information gathered during two rounds of informal consultation workshops and Sussex IFCA expert intelligence has been used to support the evidence base and assumptions. Extensive refinement of the non-monetised costs for commercial fisheries was not possible, due to the largely qualitative nature of the consultation responses.

Relatively little displacement of vessels is anticipated due to low usage of the site by mobile gear operators and existing seasonal prohibitions within the area for these gear types (Figures 4 and 5).

BENEFITS (£)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional		Optional	Optional
High	Optional		Optional	Optional
Best Estimate	N/A		N/A	N/A

Description and scale of key monetised benefits by 'main affected groups'

No monetised figures are available for the benefits of the recommended management. However, significant potential monetary benefits are summarised below. It is considered that the potential environmental benefits of introducing the proposed regulatory notice, such as increased recruitment of commercial species, outweigh the possible administrative burden. In fact, the evidence indicates that without intervention, the existing ecosystem services derived from Beachy Head East MCZ, which contribute to the local economy primarily through fisheries and recreation activities, will decline.

Other key non-monetised benefits by 'main affected groups'

Management of conservation features within the site will have a range of environmental benefits, such as increases in biodiversity, and the value of other natural capital assets, as well as securing and recovering ecosystem goods and services. The proposed Regulation will also contribute to an ecologically coherent MPA network, and play a part in securing sustainable fisheries into the future.

Key assumptions/sensitivities/risks	Discount rate (%)
	3.5%
That evidence and fisheries models are sufficient to reflect predicted outcomes. That accurate information has been gathered from stakeholders through stakeholder liaison. That there will be compliance with the measures and that the measures will achieve the policy objective.	

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £K:			Score for Business Impact Target (qualifying provisions only) £:
Costs: 8.2	Benefits: N/A	Net: -8.2	
			0.000041

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Evidence Base

1.0 Introduction

1.1 Impact Assessment purpose

This Impact Assessment (IA) outlines the costs and benefits associated with proposed fisheries management within Beachy Head East MCZ, providing a justification for the recommended management option, in line with Stage 2 of the MCZ assessment process. It follows an informal public consultation in February 2023. A draft IA will be subject to statutory public consultation.

1.2 Area in question

Beachy Head East MCZ is a large inshore site in the south-east of England stretching from the Beachy Head Lighthouse to Hastings in East Sussex (Figure 1). It covers three key Sussex towns; Eastbourne, Bexhill, and Hastings, and extends just beyond the 6nm limit at its most seaward point. The site covers a total area of around 195km², of which approximately 192km² falls within Sussex Inshore Fisheries and Conservation Authority's (IFCA) jurisdiction, this equates to 11% of the total area of the Sussex district (1,738km²).

The site covers part of the Dungeness, Romney Marsh, and Rye Bay Special Protected Area, a region designated in recognition of its importance for breeding bird populations and extensive tern foraging grounds. It also borders the Pevensey Levels SSSI and Beachy Head West MCZ. The site contains two marine Sites of Nature Conservation Importance, the Royal Sovereign Shoals and Horse of Willingdon Reef.

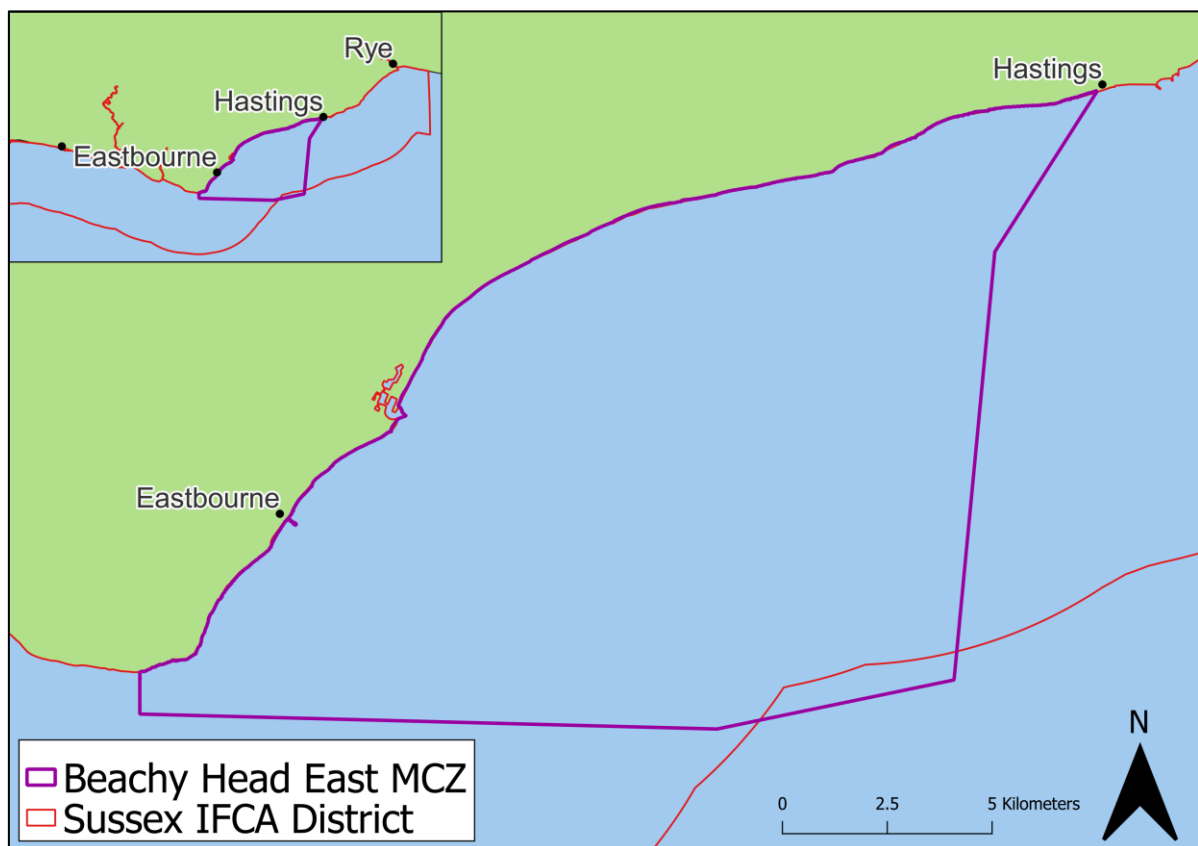


Figure 1. Site map of Beachy Head East Marine Conservation Zone

1.3 Inshore Fisheries and Conservation Authority duties

IFCAs are responsible for the conservation and sustainable management of inshore habitats and fisheries resources, to ensure balanced social, environmental, and economic benefits of these resources for all. Under the Marine and Coastal Access Act 2009 (MaCAA) the government committed to designating a well-managed ecologically coherent network of marine protected areas (MPAs). MaCAA also specifies that each IFCA must propose a schedule of management to protect designated habitats and species, therefore furthering the Conservation Objectives of each MCZ within its district. This is also essential to the UK Government's broader vision of clean, healthy, safe, productive, and biologically diverse oceans and seas.

1.4 Rationale for management

From a conservation perspective, of primary concern in Beachy Head East MCZ are the extensive striations of chalk and sandstone reef habitats, in part because the southern and eastern coasts of England house over half of Europe's coastal chalk habitat, highlighting its broader importance (JNCC 2011; Tittley 2009). Chalk reef is a fragile, rare marine habitat that supports abundant wildlife including blue mussel beds, native oysters, and sea squirts. The site contains other sensitive and valuable habitats, such as biogenic Ross worm (*Sabellaria spinulosa*) reefs, peat and clay exposures, as well as fauna such as the short-snouted seahorse (*Hippocampus hippocampus*). The site is also considered an important nursery area for herring, plaice, and Dover sole (Defra, 2019). Table 1 summarises the designated features of Beachy Head East MCZ and their respective General Management Approach.

Table 1. Beachy Head East MCZ features and General Management Approach (GMA)

Protected features	General Management approach
Littoral chalk communities	Maintain in favourable condition
Subtidal coarse sediment	
Subtidal sand	
Short-snouted seahorse (<i>Hippocampus hippocampus</i>)	
High energy circalittoral rock	Recover to favourable condition
Moderate energy circalittoral rock	
Peat and clay exposures	
Subtidal chalk	
Ross worm reefs (<i>Sabellaria spinulosa</i>)	

MCZ management proposed by an IFCA is guided by Natural England's Conservation Advice (CA), detailing which activities are compatible with a site's Conservation Objectives (CO). Natural England's CA for Beachy Head East MCZ states that management of towed gear fishing activities is required to protect vulnerable biotic and abiotic reef habitats (Table 1), which could be achieved in the form of spatial closures, and ensure the site meets its CO. For details of the CO for Beachy Head East MCZ refer to its Designation Order 2019 (Annex I) and Natural England's online CA package at: [Marine site detail \(naturalengland.org.uk\)](https://www.naturalengland.org.uk/Marine/site-detail)

The nature of public goods, which are available to all but owned by no one, mean that individuals do not necessarily have an incentive to voluntarily ensure the sustainable exploitation of these goods (HM Government, 2018). Most marine areas are under national jurisdiction with common access, for this reason there is a lack of a sense of responsibility and stewardship (Jones, 2014). As such, market forces are unlikely to drive adherence to any

voluntary measures, suggesting that a regulatory approach is required, as detailed within this Impact Assessment. Fishers and the public derive benefits from the ecosystem goods and services that the inshore marine environment in Sussex provides, however without management of unsustainable fishing practices, these benefits will diminish. Without intervention and regulation, commercial pressures lead to unsustainable practices. Therefore, Government intervention is necessary to ensure the long-term provision of this valuable resource for fishers, wider society, and the environment.

2.0 Catalogue of evidence

2.1 Current Sussex IFCA byelaws relevant to the site

There are several existing Sussex IFCA byelaws that currently manage various activities within the entire district, and therefore also pertain to the Beachy Head East MCZ. These include:

- The Vessel Length Byelaw – Restricts vessel length to 14m. Excludes vessels with historic rights, which now comprises four vessels, only two of which have been seen within the district in the last 10 years
- The Nearshore Trawling Byelaw – Prohibits trawling within 304km² of nearshore habitat throughout the district, termed the Trawling Exclusion Zone
- Scallop Closed Season Byelaw – Prohibits scallop dredging within a 3nm limit year-round and the remainder of the district between the 1st of June and the 31st of October
- Shellfish Permit Byelaw – Restricts whelk, crab & lobster potting effort throughout the district to 300 pots within 3nm and 600 within 6nm; Cuttlefish traps are capped at 300 pots inside 6nm. The permit conditions also require catch returns to be submitted on a monthly basis

2.1 Evidence summary

In proposing the recommended option, Sussex IFCA has responded to Government's current steer on the best fisheries management approach for the achievement of sustainable fisheries, namely, an ecosystem-based approach (Garcia et al., 2003; FAO, 2011). This aims to balance ecological well-being with human and societal well-being by limiting the degradation of underlying natural capital assets to sustainable levels and ensuring people benefit from nature-based goods and services into the future (Hooper et al., 2019). The natural capital approach has particular relevance to the marine environment; studies that attempt to compare the total value of global ecosystems repeatedly demonstrate the high relative value of marine and coastal environments compared to their terrestrial and freshwater counterparts (Constanza et al., 1997; de Groot et al., 2012).

As directed by Government, the Authority has subsequently reviewed the 'best available evidence' to establish:

- The impact of towed gear on habitats
- The importance of inshore areas for towed gear activities
- The impacts, costs, and benefits of management proposals on the towed gear fleet, static gear operators, wider marine users, the general public, and the environment

The Government has advised a precautionary approach to fisheries management should be adopted (HM Government, 2011). The FAO Code of Conduct for Responsible Fisheries (FAO 2018) defines this as follows: "the absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures".

2.2 Feature extent evidence

A habitat map of Beachy Head East MCZ has been produced by Natural England with both broadscale and point feature data (Figure 2). This map combines data from various habitat and species feature maps, including: JNCC MESH, Seasearch, and Sussex IFCA SCHIP1 data. The majority of the broadscale habitat data was collected through a combination of Mini-Harmon

grab samples and drop-down camera samples in March of 2012 to obtain ground-truth data. Accompanying acoustic data was also acquired at a similar time to help produce a habitat map (through the SCHIP1 project) and was used to fill in effort gaps in the 2012 survey. An MCZ Assessment was then conducted for Beachy Head East to establish which designated features require implementation of management. Sussex IFCA have updated this habitat map to include data collected by Natural England in 2023 (Annex V and VI), from dive and drop-down camera surveys conducted in August and November, respectively (Figure 2; c). These data have not been through Natural England's formal Quality Assurance process but have been reviewed by experts and both Natural England and Sussex IFCA are confident that the data are sufficiently reliable for consideration in the management development process. Through this assessment, it was concluded that the following designated features require management for towed gear activities:

- High energy circalittoral rock
- Moderate energy circalittoral rock
- Subtidal chalk
- Littoral chalk
- Peat and clay exposures
- *Sabellaria spinulosa* (Ross worm reef)

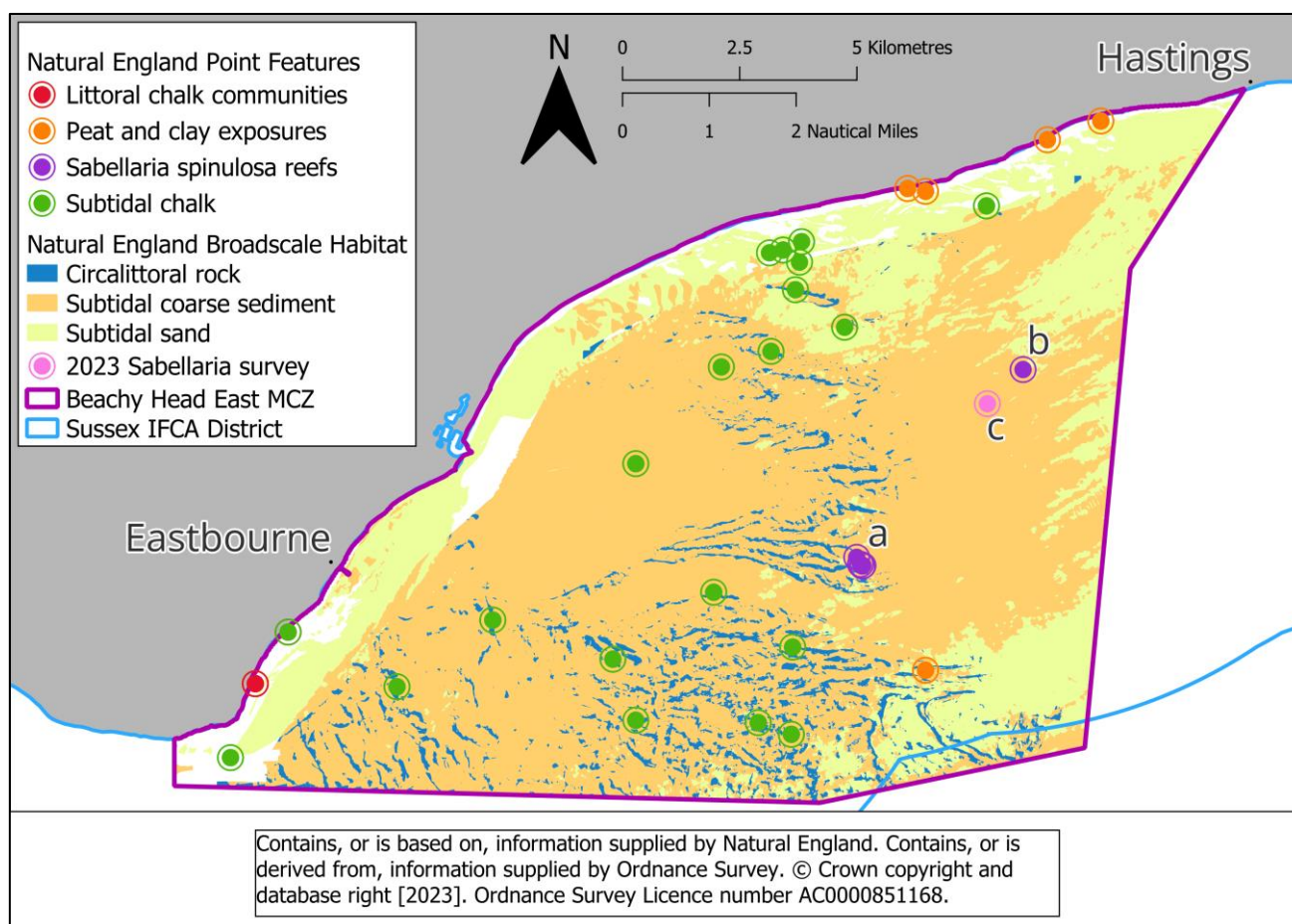


Figure 2. Beachy Head East MCZ feature map: Natural England broadscale habitat data and additional survey data covering BHE MCZ and designated point features

During the initial management development process, Sussex IFCA raised concerns of low confidence in the positional accuracy of a point observation of Ross worm (*Sabellaria spinulosa*) reef in the east of the site (Figure 2; b). This point was collected on a Seasearch survey in 1995, prior to the development of the current Seasearch project (and underlying QA process), that was defined through a steering group that formed in 1999.

In summer 2021 Sussex IFCA conducted a series of benthic video surveys in Beachy Head East MCZ, to improve confidence over the sites designated point features. A BlueROV2 remotely operated vehicle (ROV) with a HD live-stream, was used to conduct roving swim surveys over areas previously reported as containing Ross worm reef (Figure 2). Analysis of the footage confirmed the presence of Ross worm reef habitat at the western point (Figure 2; a), which is included in the towed gear management proposals. However, no Ross worm reef habitat was observed at the eastern point (Figure 2; b).

Sussex IFCA is confident that this feature does not currently exist in this location, this is because the original observation is ~28 years old, and multiple survey attempts have not been able to confirm its presence, including:

- ROV surveys conducted by Sussex IFCA in 2021
- Acoustic surveys performed by Natural England in May 2023
- Dive surveys conducted by Natural England in September 2023
- Grab sample surveys conducted by Natural England in November 2023
- Drop down camera surveys conducted by Natural England in November 2023

Due to the low confidence in the presence of Ross worm reef in this location, and the complexity of enforcing compliance over a single, outlying point, proposals that include towed gear management over that location were considered but not included in the proposed management options.

2.3 Fishing activity evidence

Fishing activity sightings data has been collected by Sussex IFCA, and its predecessor the Sussex Sea Fisheries Committee, over the past 20 years, with detailed sightings data available from 2001. Sussex IFCA conducted a review of the 2017-2021 sightings data producing a map of relative fishing effort for all gear types within each km² of the district (Annex II). This analysis controls for survey effort throughout the district and included 114 sea patrols within Beachy Head East MCZ. Therefore, Sussex IFCA has a good, evidence-based understanding of the levels of fishing activity within the site.

2.4 Commercial Fisheries

Approximately 192km² of Beachy Head East MCZ falls within the 6 nautical mile limit, and therefore is only fished by UK registered vessels under 14m (Sussex IFCA Vessel Length Byelaw). The remaining 3km² of the designated site falls outside of this limit and therefore outside of Sussex IFCA jurisdiction. Most commercial fisheries within the Beachy Head East MCZ are based out of Hastings, Eastbourne, or Bexhill, although the ports of Rye and Newhaven also lie near the site. Static gear fisheries, such as potting and netting, are most common within the site, and the rocky reef throughout the site is key potting ground.

Towed gear activities are also observed in Beachy Head East MCZ in the form of trawling. Demersal trawlers target sole and plaice within Beachy Head East MCZ. Notable levels of bycatch are associated with demersal trawling, including several elasmobranch species. IFCO intelligence also indicated an individual fisher undertakes pelagic trawling within the site for the purpose of targeting herring and mackerel. Scallop dredging has not been observed within the site since 2017; scallop dredging is currently managed via the Scallop Closed Season Byelaw.

Guidance on the economic impact of towed gear management within the site was taken from Defra's Impact Assessment, developed at the time the third tranche of sites were designated (Defra, 2018). Further to this, an internal analysis was conducted using MMO Landings Data, filtered for the appropriate ICES squares and gear types. A yearly average was calculated from the last 15 years of landings data to capture the historic value of towed gear fisheries, and, as much as possible, to average out any effect of the Covid pandemic. The value of all trawling

gear types was totalled, then divided by the proportion of the Sussex IFCA district that occurs within ICES squares 30E9 and 30F0, the proportion of district-wide trawling activity that occurs within Beachy Head East MCZ (according to the 2017-2021 fishing effort analysis), and by the proportion of Beachy Head East MCZ that will receive towed gear management. This is likely to be an overestimate given the relatively large value of the offshore trawling fishery, data for which has been captured within the estimate, for example landings from boats over 14m (and which therefore cannot operate inside the district) was included.

2.5 Community engagement

Informal consultations for development of Beachy Head East MCZ management took place between the 6th and 16th of February 2023 in collaboration with the Marine Conservation Society. A series of two workshops were organised in the towns of Eastbourne, Bexhill, and Hastings. Individuals from a range of backgrounds were encouraged to attend, which included members of the inshore fishing community, environmental groups, and residents of East Sussex. The first workshop focused on addressing general concerns with the marine environment and its management in Sussex, and introduced the evidence upon which management proposals had been developed. The second round of workshops focused specifically on fisheries management within Beachy Head East MCZ and encouraged attendees to voice their opinion on the proposed management options. At the end, fishers were asked to complete a questionnaire detailing which areas of the MCZ were important to their commercial/recreational activities, and to gather their views on the potential management options. This information was subsequently used when deciding which management options to include in the formal consultation. The Informal Consultation Report (Annex III) contains a breakdown of the preferences of fishers and other outcomes.

3.0 Description of options considered

Management Options are derived from considering the best available evidence, Authority Committee discussions and consultation with stakeholders.

3.1 Option 0: Do Nothing

Allow the current level of towed gear pressure to continue unabated and without regulation. This option does not offer any additional management to that which already exists within the site.

3.2 Option 1: Voluntary agreement

Rely on voluntary uptake of regulation by developing guidance documents designed to promote the CO of the site. As such, compliance with any such guidance would not be enforceable and may not tangibly increase management of the site and its features.

3.3 Option 2: Zonal management

Create a boundary line around designated features within which there is statutory management of towed gears. If suitably implemented, this would protect the sites features by managing the most damaging gear types, fulfil the statutory duties of Sussex IFCA under MaCAA, and also contribute to the current network of towed gear exclusion zones in the Sussex IFCA district, whilst limiting the impact to viable fisheries.

Boundaries of 100m, 200m, and 500m, were considered. The rationale for a 100m boundary assumes that a boundary 4x the average water depth of the site is sufficient to buffer against movement of towed gear relative to the position of the boat, reducing the risk of unintentional interactions between damaging fishing gears and conservation features. Natural England recommended that a 500m boundary would sufficiently protect the sites features and accommodate the margin of error associated with feature extent, minimising the likelihood of damage through unintentional interactions. However, Natural England have were not able to

provide a detailed rationale for this option. A 200m boundary was considered as a compromise between a 100m and 500m boundary, and represents a precautionary approach, which is appropriate for the particularly sensitive and damaging interactions which could occur within the site, without unnecessarily restricting trawling activity. Natural England stated that this option is appropriate but would require a protocol for adaptive risk management of fishing activities that occur within the site.

3.4 Option 3: Complete prohibition on trawling within Beachy Head East MCZ

A complete prohibition on towed gear would protect all reef and sediment habitats throughout the site, therefore protecting the conservation features, but heavily restricting fishing activities.

4.0 Policy objectives of management

The principal policy objective of the proposed byelaw is to further the CO of Beachy Head East MCZ. This will be achieved by prohibiting towed fishing in Zone 1 of the site. The social and economic impacts of management intervention will be minimised where possible, and are outweighed by the environmental, social, and longer-term economic benefits of regulation.

The nationally agreed vision of the IFCAs is to: *“lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry”*. IFCAs also have a duty under MaCAA to sustainably manage the exploitation of commercial and recreational sea fisheries resources, protecting marine ecosystems within the 6nm limit of England’s coastline where necessary. As such, the underlying policy objective of the proposed Beachy Head East MCZ Regulatory Notice is to ensure Sussex IFCA meets its obligation to further the CO of MCZ sites. Furthermore, a sustainable fisheries sector is necessary to deliver the Government’s vision of clean, healthy, safe, productive and biologically diverse oceans and seas, as well as Objectives 10-12 of the South Inshore and South Offshore Marine Plan 2018; to promote the resilience, adaptability, and ecological status of habitats and species within MPAs in order to secure ecosystem goods and services.

Government’s 25 Year Environment Plan is a strong driver for environmental policy, particularly in the context of natural capital, and so provides the most appropriate overarching framework. An ecosystem approach to fisheries management is also promoted within the 25 Year Environment Plan, to account for and seek to minimise impacts on non-commercial species and the marine environment generally (HM Government, 2018). Central to this plan is embedding natural capital approaches into decision-making, whereby natural capital is managed effectively to deliver multiple benefits to the environment, conservation, and people. This more holistic approach to fisheries management is being adopted by Sussex IFCA.

5.0 Recommended management option and implementation plan

Management Options are derived from considering the best available evidence, Authority Committee discussions, and consultation with stakeholders.

5.1 Option 0: Do nothing

The ‘do nothing’ option would not achieve the sites CO; the general CA from Natural England for Beachy Head East MCZ is that fisheries management is required to protect the features for which the site was designated. Therefore, Option 0 would not fulfil the statutory duties of Sussex IFCA under MaCAA and has therefore been rejected.

5.2 Option 1: Voluntary agreement

Solely voluntary measures are not deemed appropriate for the management of towed gear within the site due to the sensitivity of its features to these gear types. Furthermore, voluntary measures are unlikely to foster high compliance as market forces do not promote self-regulation and the likelihood of compliance in any management arrangement and the risk associated with non-compliance must be considered. Therefore, where existing activities are having an impact on the achievement of a sites CO, or where there is significant risk that they may do so in the future, government indicates that statutory measures are likely to be required. Given the likelihood of non-compliance with voluntary measures and the high risk this poses to the sites features, the sustainability of fisheries within and outside of the site, the health of the marine environment, and the local economy, they do not represent an adequate regulatory framework. Therefore, Option 1 would not meet the CO for the site or fulfil the statutory duties of Sussex IFCA under MaCAA and has been rejected.

5.3 Option 2: Zonal management

NE indicated that the 100m boundary would not meet the CO of the site and is therefore not recommended (Annex IV). Natural England advised that a 500m boundary be included in proposed management options presented at informal consultation, however feedback from consultation indicated this option was relatively unpopular and an evidence-based justification for this boundary could not be provided. A 200m boundary (Option 2) has the capacity to address unsustainable fishing practices and the threat they pose to the sites features, while balancing the needs of inshore fishers. It would provide greater protection from harmful interactions between features and towed gears, compared to voluntary measures, by introducing statutory management that significantly reduces non-compliance.

It is anticipated that there will be a relatively low impact on trawlers as Sussex IFCA sightings data and feedback during informal consultation workshops indicate that activity levels are low in the area where trawling management is proposed (Figures 4 and 5). Furthermore, enforcement complexity associated with proposed measures is expected to be low and the anticipated level of sectoral support and compliance is expected to be high.

Option 2 is also consistent with zonal management introduced elsewhere in Sussex IFCA district, such as within Kingmere MCZ and Beachy Head West MCZ, which utilise zonal and/or seasonal restrictions, as well as the Nearshore Trawling Byelaw, which protects nearshore habitats from towed gears throughout the district. Option 2 would meet the CO for the site and fulfil the statutory duties of Sussex IFCA under MaCAA and is therefore recommended as the approach that should be incorporated into statutory management.

As such, the 200m boundary represents the right balance between viable fisheries and the CO of the site. This would require 2 zones; Zone 1 within which towed gears are prohibited, and Zone 2 within which towed gears are permitted (Figure 3), as such amending the existing Sussex IFCA Marine Protected Area Byelaw, incorporating Beachy Head East MCZ management measures, is recommended. A zonal approach is considered the most appropriate and proportionate management framework and so the proposed management measures include a year-round zonal prohibition of towed gear within the site.

5.3.1 Outlying point observations

Sussex IFCA has low confidence in the reliability of the outlying point observation of Ross worm (*Sabellaria spinulosa*; Figure 2; point b), this is because:

- The observation was made in 1995 and so is almost 30 years old
- The methodology of data collection; a Seasearch survey:

- Due to technology available at the time, the location of the feature could not have been accurately recorded when the observation was actually made (i.e. during a SCUBA dive), and must have been estimated at a later time, significantly reducing the positional reliability of the data
- The Quality Assurance process that Seasearch data goes through currently, was not available at the time the observation was made
- The metadata associated with the survey states that it was carried out by “volunteer divers, whose recording standards and levels of relevant knowledge varied widely; species identification was occasionally expert, usually adequate but sometimes minimal”
- In the intervening period, no other point observations of Ross worm (*Sabellaria spinulosa*) are available, despite several surveys in the area, including:
 - ROV surveys conducted by Sussex IFCA in 2021
 - Acoustic surveys performed by Natural England in May 2023
 - Dive surveys conducted by Natural England in September 2023
 - Grab sample surveys conducted by Natural England in November 2023
 - Drop down camera surveys conducted by Natural England in November 2023

Management of this point would require Sussex IFCA to either:

- Increase the area of the site that is included in the managed zone; or,
- Introduce an additional management zone around the point observation within which trawling is prohibited

The first option would require a significantly larger area to be managed than would be required to meet the CO of the site and therefore would not ensure a balance between viable industry and environmental protections that is the remit of Sussex IFCA. The second option would create substantial compliance and enforcement issues. This is because this approach would:

- Be highly disruptive to towed gear fishers that use the area of the MCZ within which they are allowed to operate (Zone 2); this not only has reputational risks for Sussex IFCA, but could also cause a reduction in compliance with the management of the site more generally
- Create significant enforcement issues due to the small size of the managed area relative to the positional accuracy of the tracking instruments available to Sussex IFCA, i.e. the confidence with which it could be stated that a vessel was either inside or outside of the managed area. This in turn would create legal complications should Sussex IFCA attempt to pursue enforcement following noncompliance

As such, Sussex IFCA has taken the decision to not propose towed gear management over this point (Figure 2; point b). To further justify this approach, Sussex IFCA have used the guidance provided by the Measures of Equivalent Environmental Benefit (MEEB) process, which doesn't technically apply in this instance, but offers a useful framework within which to evaluate this management decision (Defra, 2021). Sussex IFCA assert that the requirements of MEEB have been met due to the inclusion of an additional 52.6km² of the MCZ site within the managed zone, relative to the area covered by a 200m boundary around the conservation features. A portion of this area will be viable Ross worm (*Sabellaria spinulosa*) habitat, therefore:

- The additional area that would be protected is substantially larger than the potential management area around point b (Figure 2) – 52.6km² vs. 0.13km²
- The likelihood of recovery of Ross worm (*Sabellaria spinulosa*) into areas in Zone 2, in which it does not currently exist, is substantially increased, due to the removal of towed gear pressure

It is also important to note that current management already protects 21.1km² of the site from towed gears, within the Trawling Exclusion Zone (Section 2.1), and this is not captured in the

calculations above. This protects an additional 18.4km² relative to that which would be protected solely by a 200m boundary around features (2.6km² within the Trawling Exclusion Zone). Bringing the total area that would be protected from towed gears, but which would not be captured within a 200m boundary, to 71.0km².

5.4 Option 3: Sussex IFCA Regulatory Notice - Full site prohibition

The Government's steer for MCZs is for them to be multiple use MPA sites, as opposed to no-take zones. Full site closure to all towed gear activities within the MCZ is considered too conservative and cannot be justified. Such management measures would not aid in 'ensuring healthy seas, sustainable fisheries and a viable industry' because this option goes beyond Natural England's CA for the site, would not meet the balance between viable industry and environmental protections that is the remit of Sussex IFCA, and therefore has been rejected.

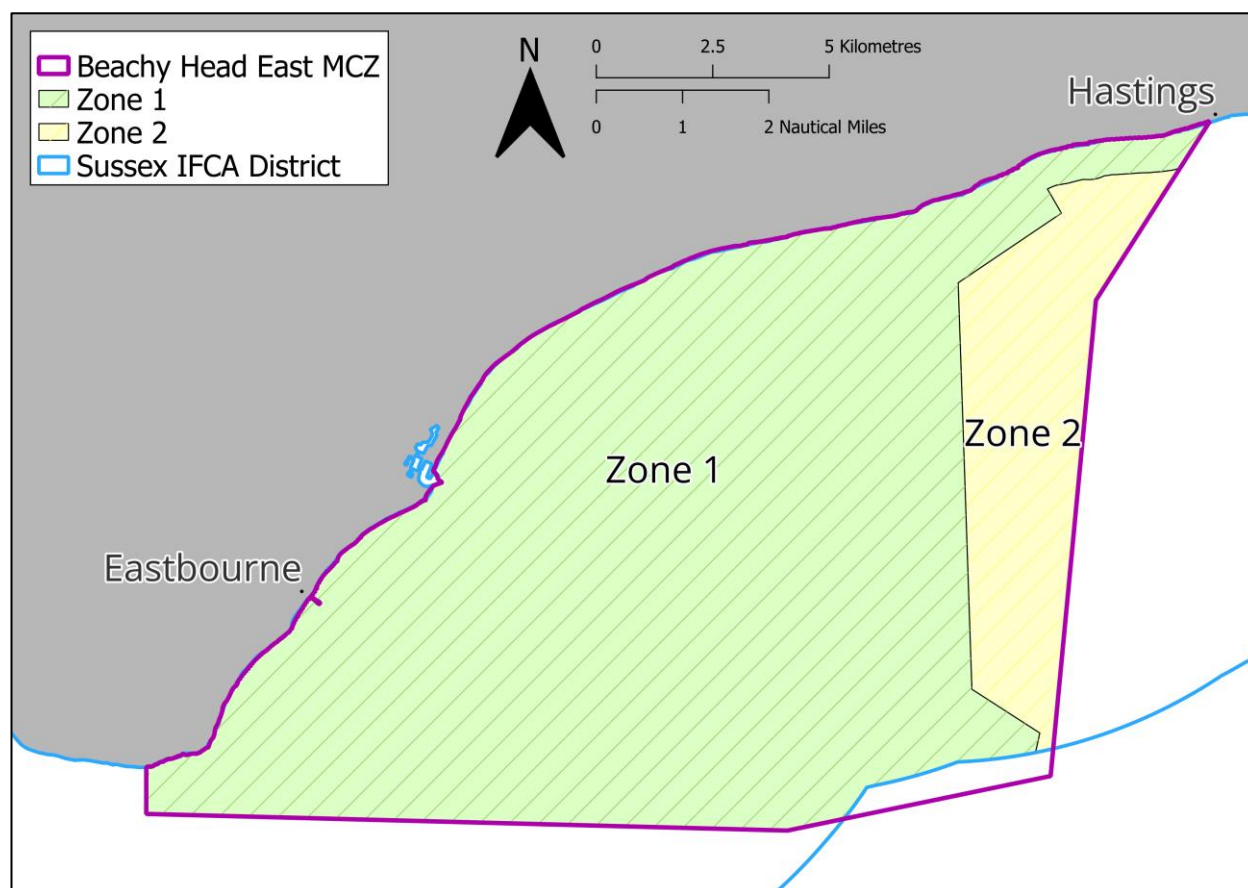


Figure 3. The management zones associated with a 200m boundary around conservation features within Beachy Head East MCZ

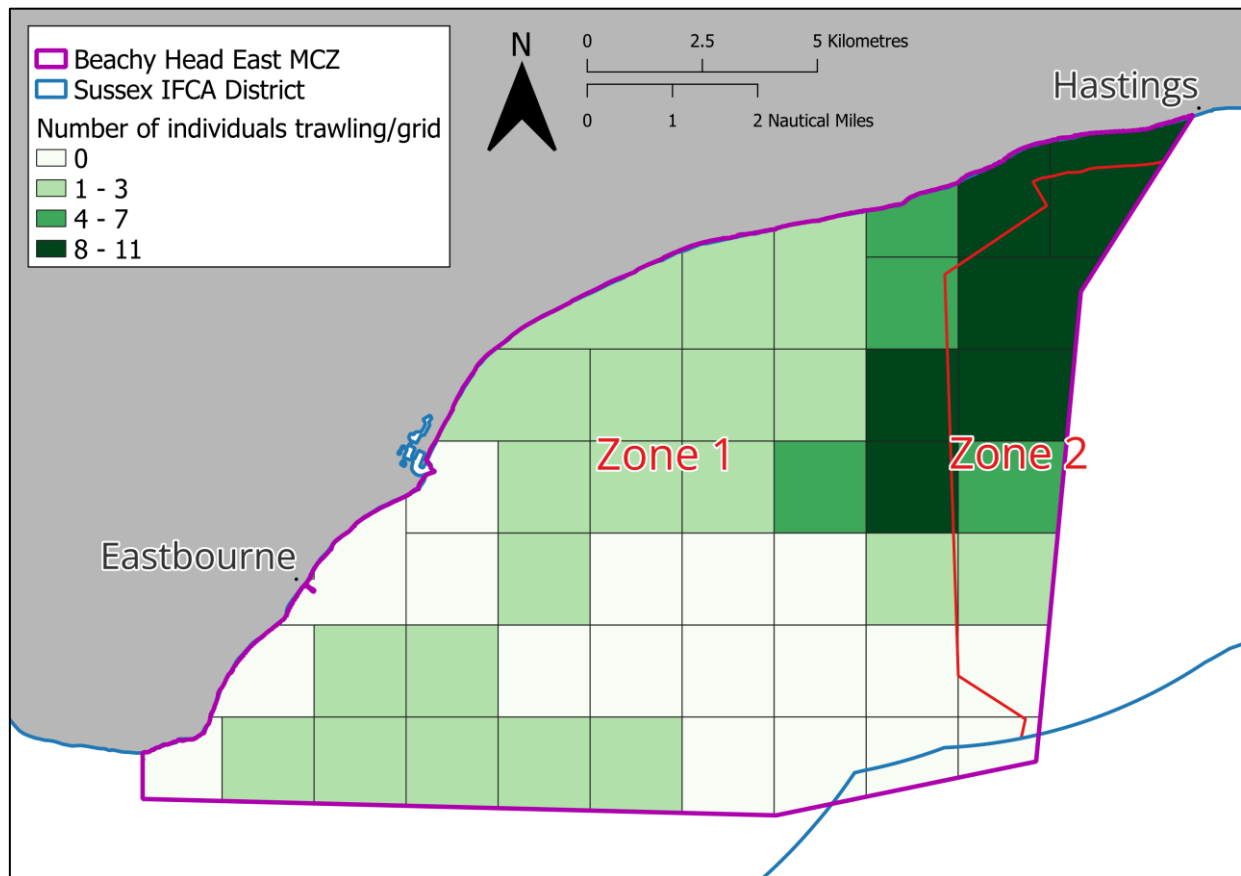


Figure 4. The management zones associated with a 200m boundary around conservation features within Beachy Head East MCZ and self-reported fishing effort of trawlers within the site boundary (data taken from informal consultation workshops)

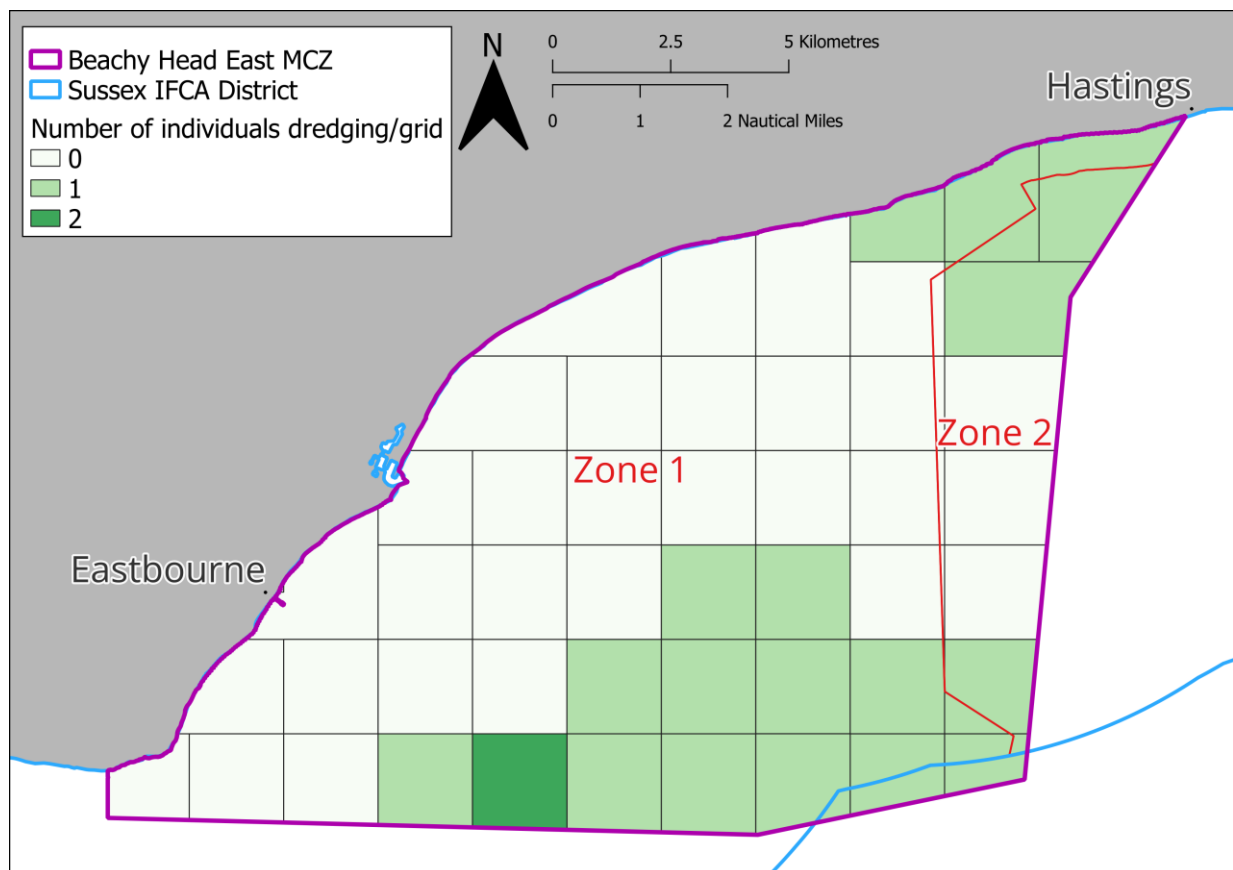


Figure 5. The management zones associated with a 200m boundary around conservation features within Beachy Head East MCZ and self-reported fishing effort of dredgers within the site boundary (data taken from informal consultation workshops)

6.0 Monetised and non-monetised costs and benefits of preferred option

The best available evidence has been used to assess the impacts of the proposed management measures, taken from:

- The Designation of the third tranche of Marine Conservation Zones Impact Assessment (2018), developed by Defra (RPC Reference No: RPC17-DEFRA-4197(2))
- MMO Landings Data
- Sussex IFCA fishing effort analysis
- Information gathered from fishers during informal consultation workshops by Sussex IFCA
- Local IFCA Officers expert knowledge

6.1 Key monetised and non-monetised costs

6.1.1 Lost revenue

To formulate a robust and complete estimate of the cost of management to the commercial fishing industry, several sources and methodologies were used to approximate a range of potential monetised costs. However, a low number of mobile gear operators utilise the site therefore low associated socio-economic impacts of restrictions are envisaged.

The MMO landings data indicates that a total of 32 trawling boats have landed into the ports that lie within the site boundary (Eastbourne, Bexhill, and Hastings), however Sussex IFCA intelligence suggests that the number of boats regularly trawling in Beachy Head East MCZ is between 6-8.

Several estimates of the value of the fishery were also considered. The first, calculated for inclusion in the Impact Assessment developed by Defra (Defra, 2018), estimates the cost of towed gear management for the whole site at £11,000/year for the commercial fishing industry, and £5,000/year for the associated ports and harbours. An internal analysis conducted by Sussex IFCA, which used MMO Landings Data and data on fishing effort throughout the district to calculate the cost of the proposed management measures to towed gears fisheries (methodological details in Section 2.4), estimates the cost at £ 8,157/year. The discrepancy between these estimates could be due to the fact that the Sussex IFCA estimate calculates the cost of management within the proportion of the site for which management has been proposed, with the majority of trawling activity occurring outside this zone (Figure 4).

No scallop dredging was observed in the site 2017-2021, within 6nm, and Figure 5 indicates that the current level of scallop dredging within the site is very low. Furthermore, a current Sussex IFCA byelaw includes seasonal prohibition of scallop dredging within 3nm and district-wide prohibition for the rest of the year. Therefore, the proposed management is anticipated to cause negligible displacement of scallop dredging and have negligible cost to the industry.

6.1.2 Compliance and enforcement

Through regular enforcement patrols (land and sea), remote monitoring systems, and intelligence reports the Authority will monitor fishing activity within the site. Compliance activities will reflect a risk-based approach for MPA management. Where required mechanisms and technologies are not fully developed, phased introductions will be implemented by working with fishers (e.g. use of iVMS). Whenever possible Sussex IFCA will work with joint agency partners to maximise efficiency of resource use and achieve common objectives. It should also be noted that this standalone estimate (Table 2) and does not account for the significant efficiencies that will be associated with its incorporation into current compliance and enforcement activities. Using fully developed costings and an unconstrained model, a best estimate of £10,350/month for sea and land patrol costs, vessel tracking, monitoring/research, and communications is calculated for management of Beachy Head East MCZ. Table 2 breaks down the estimated

administrative costs. It should be noted that this is a top end, standalone cost. Efficiencies will be made as above.

Table 2. Administrative costs estimates

	Costs (£/month)		
	Low	Medium	High
Enforcement – Sea patrols	1,600	9,600	6,400
Enforcement – Land patrols	600	3,000	1,800
Vessel tracking monitoring			500
Monitoring and research			1,500
Communication			150
Totals			10,350

*Costs are based on the following daily rates: FPV Watchful sea patrol including 5 crew (£3,200); FPV Merlin sea patrol including 3 crew (£1,600); Individual enforcement officers (£250); Road Patrol 2 officers (£600)

It is important to highlight that low community support and resulting poor compliance incurs greater costs, thus Sussex IFCA conducted extensive informal consultations with stakeholders to collaboratively develop proposed measures and generate support for management.

6.1.3 Displacement

A low level of mobile gear displacement may result from the proposed management, as 6-8 trawlers are known to fish near to, and at low levels within, the site (IFCO intelligence). However, as Figure 4 demonstrates, the majority of trawling activity will not be affected by the proposed management, and a current Sussex IFCA byelaw also prohibits trawling within 0.25nm of the coast throughout the site, both of which will minimise the anticipated level of displacement.

No scallop dredging was observed in the site 2017-2021, within 6nm, and Figure 5 indicates that the current level of scallop dredging within the site is not significant. Furthermore, a current Sussex IFCA byelaw prohibits scallop dredging within 3nm of the coast seasonally and throughout the district for the rest of the year. Therefore, displacement of scallop dredging is anticipated to be negligible.

As no management of other gear types is proposed, no other displacement is anticipated.

6.2 Key monetised and non-monetised benefits

Benefits of the management measures are summarised as follows:

- Environmental benefits from an increase in abundance and diversity of fish and shellfish populations;
- Direct benefits to the fishing industry as a result of increased catches and the increased size of fish and shellfish caught;
- Direct benefits to the fishing industry as a result of increased economic value of fisheries;
- Direct benefits to recreational fishers as a result of an increase in species population sizes and the size of individual fish;
- Social benefits related to increased participation in tourism and other recreational activities, such as recreational angling and diving;
- Social benefits related to an increase in the reputation of the fishing industry;
- Social benefits related to an increased understanding and compliance of regulations

It is anticipated that the proposed measures will benefit commercial and non-commercial species populations through removing activities that significantly degrade essential fish habitat, consequently improving the status of these habitats and increasing recruitment into a number of

commercially and/or ecologically important populations. Furthermore, it will reduce the number of adult individuals being removed from the fishery, therefore also promoting recruitment and recovery of degraded populations and an increase in ecosystem goods and services. This will also promote increases in natural capital associated with an increase in biodiversity and stability of ecosystems (Fletcher *et al.*, 2011). The socio-economic changes resulting from the Lyme Bay closed area inside which scallop dredging and bottom trawling were banned in July 2008 were assessed by Mangi *et al.*, (2012). This found static gear fishermen who fished inside the closed area were able to increase the number of crab and whelk pots they could deploy. They have experienced improved fishing conditions, reported increased gear safety and less conflict, and increased fishing income as a result. However, these benefits are difficult to evaluate and are therefore described here as non-monetised benefits.

6.3 One in Three Out (OITO)

OITO is not applicable for byelaws implemented by the IFCAs for their respective districts as they are local government byelaws introducing local regulation and therefore not subject to central government processes.

6.4 Impact on small and micro businesses

No firms are exempt from this byelaw as it applies to all firms who use the area, therefore it does not have a disproportionate impact on small firms. It also has no impact on competition as it applies equally to all businesses that utilise the area.

6.5 Risks and assumptions

Reputational risks are a hazard associated with introduction of management, in terms of being:

- Negatively perceived by the fishing community and wider stakeholders due to restrictive measures
- Negatively perceived by stakeholders for not protecting the site
- Negatively perceived by government for not implementing legislation/statutory failure of duty

Sussex IFCA have mitigated any risks associated with the introduction of management through extensive engagement with stakeholders, in the form of informal consultations, to ensure that professional, local, and anecdotal evidence has been incorporated into the management development process. Furthermore, conservatism has been built into the estimate of the cost to the commercial fishing sector by including landings that are likely to have occurred outside of the area for which management measures are proposed.

6.6 International trade and investment implications

Given the modest size of the value of the fishery, and therefore its limited relevance to import and export activities, no impact on international trade and/or investments is anticipated.

6.7 Monitoring and Evaluation

Sussex IFCA will regulate, monitor, and evaluate the Beachy Head East MCZ site via:

- *Education/Communication Strategies* – provide advice and information on Beachy Head East MCZ. This can be done via the Sussex IFCA website and social media platforms, information packages, public events, community groups, and signage (leaflets/posters) that can be delivered during specific meetings or routine patrols
- *Land Based Patrols* – mobile land patrol conducting inspections of landings, premises, vehicles, and persons. Intelligence gathering, sightings and delivering key communication messages to the community
- *Sea Based Patrols* – mobile sea patrol conducting boarding inspections, intelligence gathering, vessel sightings and delivering key communication messages to the fishing community

- *Joint Agency Working* – Working with joint agency partners in order to conduct land or sea mobile patrols utilising effective use of resources to achieve common objectives and delivering key communication messages
- *Monitoring/Research* - conducting regular research and gathering data to support the enforcement efforts within the site

Compliance with the management measures will be assessed via land and sea patrols and inspections conducted and intelligence gathered as part of Sussex IFCA's statutory obligations. Monitoring of the effect of management measures will also be conducted by Sussex IFCA through several operations:

- Sightings data will be used to calculate any change in fishing pressure across all gear types
- Data collected via catch returns submitted in accordance with the Shellfish Permit Byelaw will be used as an indicator of any change in LPUE (Landings Per Unit Effort) for the potting and trapping industries that are prominent within the site
- Collaborations with partners such as Natural England (acoustic surveys) and Blue Marine Foundation (potting surveys)
- Other ad hoc monitoring, such as the repeats of the ROV surveys conducted in 2021

Updated condition assessments from Natural England will also indicate any change in the status of conservation features within the site. Data on compliance will be collected and assessed and management will be reviewed every 4 years, with any changes in management measures requiring re-consultation with stakeholders and the local community.

A Monitoring and Control plan will also be developed for Beachy Head East MCZ, which will detail thresholds of fishing activity and/or changes in conservation feature status that will trigger further monitoring and/or reconsideration of management measures. This will be developed in collaboration with Natural England to ensure that adequate consideration of the site and its features is made.

7.0 Conclusion

It is considered that the environmental benefits of introducing the proposed management outlined in Option 2 (200m boundary) outweigh the costs to industry, as well as the potential monitoring, administrative, and enforcement burden for Sussex IFCA. Furthermore, this work will contribute to the fulfilment of Sussex IFCA's responsibility to ensure the sustainable management of inshore fisheries balancing environmental, social, and economic needs.

The proposed management will protect the designated features of Beachy Head East MCZ, fulfilling central objectives of Sussex IFCA to ensure a well-managed network of MPAs around the coast of England in order to deliver recovering and prolonged ecosystem services.

Sussex IFCA Beachy Head East MCZ management will include a defined management cycle describing implementation, monitoring, review, and refinement. A review period of four years will be set for the management plan and assessing the effectiveness of the recommended MPA Byelaw and associated Beachy Head East MCZ management measures, and any voluntary code of conduct.

In developing management measures for Beachy Head East MCZ, the Authority is fulfilling its obligations and commitments outlined in its annual plan for achieving the government's vision for clean, healthy, safe, productive, and biologically diverse oceans and seas.

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