

Impact Assessment

Sussex IFCA MPA Byelaw: Kingmere MCZ Schedule

<p>Title: Sussex IFCA Marine Protected Areas Byelaw - Kingmere Marine Conservation Zone Schedule 1 (2015)</p> <p>IA No: SXIFCA003</p> <p>Lead department or agency: Sussex IFCA</p> <p>Other departments or agencies: Natural England, Marine Management Organisation, Defra</p>	<p style="text-align: center; font-weight: bold; font-size: 1.2em;">Impact Assessment (IA)</p> <p>Date: 12/06/15</p> <hr/> <p>Stage: Consultation</p> <hr/> <p>Source of intervention: Domestic</p> <hr/> <p>Type of measure: Secondary Legislation</p> <hr/> <p>Contact for enquiries: Tim Dapling, Chief Fisheries and Conservation Officer: 12a Riverside Business Centre, Shoreham-by-Sea, West Sussex, BN43 6RE, 01273 454 407, admin@sussex-ifca.gov.uk</p>
Summary: Intervention and Options	RPC Opinion: N/A

Cost of Preferred (or more likely) Option					
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2009 prices)	In scope of One-In, Two-Out?	Measure qualifies as	
N/A	N/A	N/A	No	N/A	

What is the problem under consideration?

The Sussex IFCA MPA Byelaw and associated Kingmere MCZ Schedule is proposed to further the conservation objectives of this 1st tranche MCZ site in order to help the government achieve their commitment to providing a well-managed ecologically coherent marine protected area network and in accordance with the duties of the IFCA under sections 125, 126, 153 and 154 of the Marine and Coastal Access Act 2009.

Why is government intervention necessary?

Government intervention is required to redress market failure in the marine environment by implementing appropriate management measures (e.g. this byelaw and the Kingmere MCZ Schedule) to conserve features to ensure negative externalities are reduced or suitably mitigated. Implementing this byelaw will support continued provision of public goods in the marine environment.

Specifically, this byelaw and associated Schedule will help provide appropriate risk-based management and protection across Kingmere MCZ where fishing activities are deemed detrimental to achieving the protected features conservation objectives, namely: spawning and nesting black seabream, *Spondyllosoma cantharus*; moderate energy infralittoral rock and thin mixed sediments; subtidal chalk.

What are the policy objectives and the intended effects?

- To enable a flexible approach to management of the fisheries using an adaptive method based on sound evidence.
- To further the conservation objectives stated for Kingmere MCZ;
- To ensure compliance with the Marine and Coastal Access Act 2009 and help achieve the government's commitment to a well-managed, ecologically coherent network of MPAs;
- To promote sustainable fisheries while conserving the marine environment;
- To minimise the impact on fishing activity and promote compliance and support by introducing 'zoned management' and adaptive measures for specific gear types whilst furthering the conservation objectives of Kingmere MCZ (see Section 5.4)
- To reduce external negativities and ensure continued provision of public goods

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

- Option 0. Do nothing
 Option 1 Voluntary agreement
 Option 2 IFCA MPA Byelaw with Kingmere MCZ Schedule
 Option 3 IFCA byelaw: Full site prohibition

All options are compared to option 0. The preferred option is option 2 which will promote both sustainable fisheries and conserve the marine environment while ensuring compliance with the Marine and Coastal Access Act 2009.

Will the policy be reviewed? It will be reviewed. If applicable, set review date: 4 years

Does implementation go beyond minimum EU requirements?			No		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	Micro Yes	< 20 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 responsible SELECT SIGNATORY: _____ Date: _____

Summary: Analysis & Evidence Policy Option 1

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2015	PV Base Year 2015	Time Period Years 10	Net Benefit (Present Value (PV)) (£m ¹)		
			Low: Optional	High: Optional	Best Estimate:

COSTS (£m)	Total Transition ² (Constant Price) Years	Average Annual ³ (excluding transition) (Constant Price)	Total Cost ⁴ (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	£0m	Optional	£2.09m

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

Monetised costs were estimated in Defra's MCZ Impact Assessment, as outlined in Section 6.1 of the evidence section. This suggests that £46,000/yr of landings would be affected. These costs are associated with a high degree of uncertainty and are overestimates so should be treated with caution. Estimates were based on an 'unknown' number of operators and reflect landings from a wider area than just the MCZ. The proposed management also allows varying degrees of access, further reducing costs.

MMO landings figures indicate an average of 134 tonnes of black seabream are landed annually in ICES rectangle 30E9 which the MCZ falls within. With regards to angling potential lost revenue, the proposed management allows for site use over the season outside of an exclusion zone with associated effort controls, thus any economic repercussions for the sector are likely to be minimal.

A best estimate of £22,400/month for in season patrol costs, vessel tracking, monitoring and communications by Sussex IFCA and £14,400/month out of season is calculated, equating to a total of £196,800/yr.

Enforcement of the byelaw and regulatory notice will be met within the current budget and whenever feasible will be incorporated into existing business and patrol costs reducing estimated costs provided. Whenever possible Sussex IFCA will work with joint agency partners to conduct land or sea patrols making effective use of resources to achieve common objectives and further reducing estimated costs.

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

Information gathered from fishers and other stakeholders during the extensive pre-consultation conducted by Sussex IFCA has been used to support the evidence base and assumptions. Sector representatives were invited to provide fishing industry cost estimates but the information received was largely qualitative and anecdotal. Thus, neither refinement of the monetised costs for

¹ Net Benefit - value of the total monetised benefits minus the total monetised costs. All monetised costs and benefits should be expressed in £m. In order to compare options you need to adjust the estimates by discounting the impacts to the same point in time, to estimate the Present Value (PV) of the impacts (see main evidence section for explanation).

² Transient, or one-off costs or benefits that occur, which normally relate to the implementation of the measure. Non-quantified transient or one-off costs should be documented in the non-monetised section

³ Average Annual, These are the costs and benefits that will reoccur in every year while the policy measure remains in force (although the scale of the impact may change over time) and so should not include transition costs. These are expressed as an annual average (over the life of the policy). i.e. undiscounted.

⁴ i.e. discounted as with NPV

commercial fisheries in Defra’s MCZ IA nor accurate angling costs calculation were possible.

Mobile gear operators were unable to estimate the proportion of their catch or income from the site, static gear fishers estimates ranged from 40-60+% of their income and Littlehampton angling charter boats indicated they rely on the site for their businesses to continue, estimating 40-80% of their income generated April-June from Kingmere MCZ.

Implementing a zone management approach for all fisheries and a bag limit for anglers will minimise the potential displacement of vessels.

BENEFITS (£m)	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	No monetised figures

Description and scale of key monetised benefits by ‘main affected groups’

No monetised figures are available for the benefits of the recommended closure. However, significant potential benefits are described below. It is considered that the potential environmental benefits of introducing the proposed byelaw outweigh the possible administrative burden.

Other key non-monetised benefits by ‘main affected groups’

Introduction of the proposed management will further the site’s conservation objectives. Protection of the site will have a range of environmental, sustainable fisheries and ecosystem services benefits (see Section 6.2). Evidence indicates that the management option of ‘do nothing’ would result in a decline of ecosystem services currently provided by the site and that the existing ecosystem services derived from Kingmere MCZ make a contribution to the local economy, primarily through fisheries and recreation activities.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5%
That evidence and fisheries models are sufficient to reflect predicted outcomes.		

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: £0.24m	Benefits: No monetised figures	Net: £0.24m	No	N/A

Evidence base

1.0 Introduction

1.1 Impact Assessment purpose

This impact assessment (IA) outlines the costs and benefits of the proposed fishing activity management to protect the designated habitats and breeding black seabream of Kingmere MCZ and further their conservation objectives. This includes the Kingmere MCZ Schedule within the Sussex IFCA MPA Byelaw, and the recommended angling code of conduct. The IA also indicates why the option being recommended is the preferred option for management. A draft of this IA will be subject to public consultation.

The overarching MPA Byelaw itself is not site specific, and as such cannot be costed or analysed in terms of its impact. As such the schedule component is the principle subject of the IA. This IA should be read in conjunction with the byelaw and the Kingmere MCZ Schedule within it.

1.2 Marine Protected Area Network

The UK Government's vision is of 'clean, healthy, safe, productive and biologically diverse oceans and seas'. Under the Marine and Coastal Access Act 2009 (MCAA) the government committed to designating a well-managed ecologically coherent network of marine protected areas (MPAs), which is a key element for achieving this vision. This network will consist of existing MPAs including special areas of conservation (SACs), special protected areas (SPAs), sites of special scientific interest (SSSIs), Ramsar sites, and a new type of MPA called marine conservation zones (MCZs).

Within the Sussex Inshore Fisheries and Conservation Authority's (IFCA) district, Kingmere MCZ together with Beachy Head West and Pagham Harbour were designated within a first tranche of MCZs in November 2013. Two further tranches of MCZs are planned over the next three years to complete the contribution to the ecologically coherent network. Proposed Tranche 2 sites are currently being consulted on by government. Timescales for Tranche 3 sites consideration have not yet been set but there is the intention by UK government to designate all sites in the network before the end of 2016.

1.3 IFCA's MCZ duties

IFCAs are responsible for the management of inshore sea fisheries resources out to 6 nautical miles and the protection of the marine environment from fishing impacts within this area, balancing social, environmental and economic benefits.

Under section 154 of the MCAA IFCAs have a statutory duty to further the conservation objectives of any MCZ and are required to develop fisheries management measures for sites within 6nm to achieve this, as well as the subsequent enforcement. Figure 1 summaries IFCA’s duties under MCAA with regards to MCZs. This work has been embedded in Sussex IFCA’s annual plans, with development and introduction of management measures for Kingmere MCZ identified as a priority.

The development of management for designated MCZs within the Sussex IFCA District is a complex process and requires the Authority to take into consideration: the Authority’s legal duties; site conservation advice and objectives; and the socio-economic needs of the community, assessing how these can be accommodated within appropriate, practical and economically feasible management.

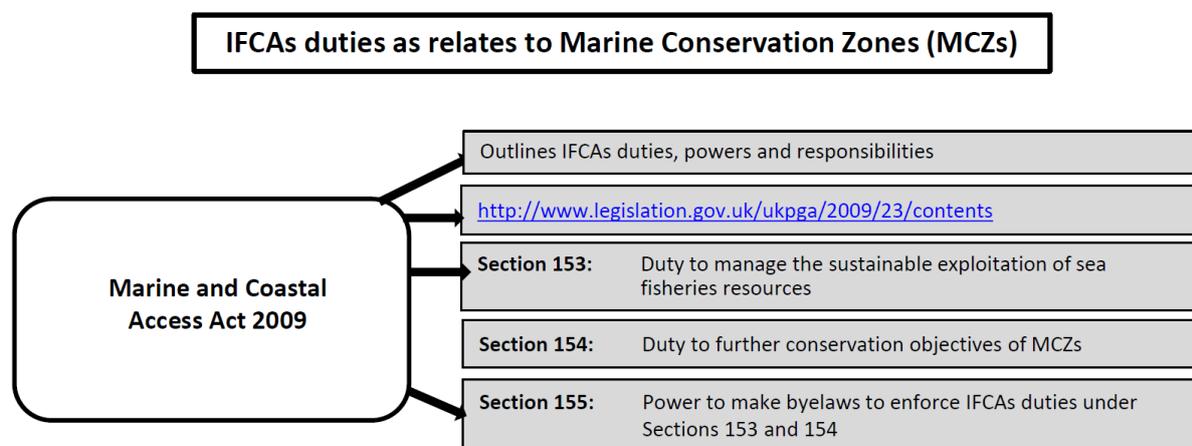


Figure 1. IFCAs duties as relates to MCZs

1.4 Kingmere MCZ

Conservation of Kingmere MCZ contributes to the delivery of a well-managed ecologically coherent network of MPAs, together with Defra’s aim to conserve and enhance the marine environment and promote sustainable fisheries.

Kingmere MCZ is a 47km² site in the Eastern English Channel, located between 5 and 10km off the West Sussex coast to the South of Littlehampton and Worthing (Figure 2).

Table 1 summarises the features and importance of Kingmere MCZ. The site protects the spawning stage of black seabream. It is the best studied (Lythgoe and Lythgoe, 1971, Pawson, 1995) and potentially one of the most important nesting and breeding grounds for black seabream in the UK.

This species exhibits unusual spawning habits linked strongly to specific habitats (Lythgoe and Lythgoe, 1971, Pawson, 1995; James *et al.*, 2010; Clark & Vause, 2009), therefore protection of supporting rocky reef habitats - moderate energy infralittoral rock and thin mixed sediment and subtidal chalk - is required. Protection of these rich and diverse habitats is also intrinsically important, with sublittoral rocky reefs accounting for probably less than 3% of the total area of seabed off Sussex within the 12nm limit of territorial waters (Irving, 1996).

The general management approach for all protected features within the site is 'recover'. Natural England's conservation advice is that management is required in order to achieve the sites conservation objectives.

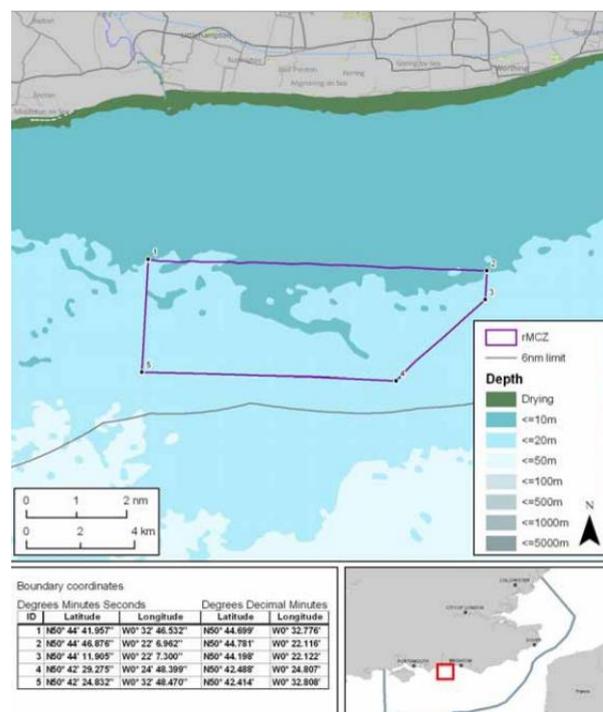


Figure 2. Kingmere MCZ location map. Balanced Seas (2011)

Table 1: Kingmere 1st tranche MCZ features and importance

DESCRIPTION & IMPORTANCE	FEATURES FOR PROTECTION	CONSERVATION OBJECTIVE
<p>47km². Located between 5 and 10km off the coast between Littlehampton and Worthing.</p> <p>Important regional location for breeding black sea bream – may be one of the most important spawning sites in UK.</p> <p>Recommended by Sussex Sea Fisheries Committee in order to afford some protection for the species whilst spawning.</p> <p>The area is a Key Inshore Biodiversity area in the Balanced Seas region (South East England Biodiversity Forum, 2010).</p> <p>It contains diverse rocky reef (Kingmere Rocks) and the best exposures of chalk cliffs in Sussex (Worthing Lumps) – both of which are marine Sites of Nature Conservation Interest (mSNCI), designated by East and West Sussex County Councils with support of Seasearch.</p> <p>These rocky outcrops support a wide range of marine life such as bryozoans, coralline algae, sea squirts and sponges (Irving, 1996, Williams & Clark, 2010).</p>	<p>Designated for 3 features:</p> <ul style="list-style-type: none"> • Spawning and nesting black seabream • Subtidal chalk • Moderate energy infralittoral rock and thin mixed sediments 	<p>General management approach for all features is recover.</p>

2.0 Rationale for intervention

2.1 Overarching rationale for government intervention

IFCAs have duties to ensure that fish stocks are exploited in a sustainable manner, and that any impacts from that exploitation on designated features in the marine environment are reduced or suitably mitigated, by implementing appropriate management measures (e.g. this byelaw and associated regulatory notice). Implementing this byelaw will ensure that fishing activities are conducted in a sustainable manner and that the marine environment is suitably protected.

Fishing activities can potentially cause negative outcomes as a result of ‘market failures’. These failures can be described as:

- Public goods and services – A number of goods and services provided by the marine environment such as biological diversity are ‘public goods’ (no-one can be excluded from benefiting from them, but use of the goods does not diminish the goods being available to others). The characteristics of public goods, being available to all but belonging to no-one, mean that individuals do not necessarily have an incentive to voluntarily ensure the continued existence of these goods which can lead to under-protection/provision. Sussex IFCA must ensure that the exploitation of sea fisheries resources is carried out in a sustainable way.
- Negative externalities – Negative externalities occur when the cost of damage to the marine environment is not fully borne by the users causing the damage. In many cases no monetary value is attached to the goods and services provided by the marine environment and this can lead to more damage occurring than would occur if the users had to pay the price of damage. Even for those marine harvestable goods that are traded (such as wild fish), market prices often do not reflect the full economic cost of the exploitation or of any damage caused to the environment by that exploitation. Sussex IFCA must seek to balance the social and economic benefits of exploiting the sea fisheries resources of the district with the need to protect the marine environment from, or promote the recovery from, the effect of such exploitation.
- Common goods - A number of goods and services provided by the marine environment such as populations of wild fish are ‘common goods’ (no-one can be excluded from benefiting from those goods however consumption of the goods does diminish that available to others). The characteristics of common goods (being available but belonging to no-one, and of a diminishing quantity), mean that individuals do not necessarily have an individual economic incentive to ensure the long term existence of these goods which can lead, in fisheries terms, to potential overfishing. Furthermore, it is in the interest of each individual to catch as much as possible as quickly as possible so that competitors do not take all the benefits. This can lead to an inefficient amount of effort and unsustainable exploitation.

Sussex IFCA must seek to balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district. In summary, IFCA byelaws aim to redress these sources of market failure in the marine environment through the following ways:

- Management measures to conserve designated features of European marine sites (EMS) and MCZs will ensure negative externalities are reduced or suitably mitigated.

- Management measures will support continued existence of public goods in the marine environment, for example by restricting the catch taken and conserving the range of biodiversity within MCZs in the IFCA District
- Management measures will also support continued existence of common goods in the marine environment by reflecting the needs of commercial and recreational sectors, for example ensuring the long term sustainability of fish stocks in the IFCA District

2.2 Natural England Conservation Advice

IFCA's management measures for MCZ sites are guided by Natural England's (NE) conservation advice (CA) on what is compatible with site's conservation objectives, together with the outcome of the process to develop and define management measures with the community.

2.2.1 *Conservation Advice summary*

NE's CA is that management is required for fisheries activities within Kingmere MCZ in order to achieve the sites conservation objectives, in relation to both Black seabream and habitat impacts.

The CA indicates that features within the site are currently vulnerable to damage from the level of existing activities within the site, or from the potential increase in intensity of activities. Thus all designated features have a 'recover' general management approach in order to achieve favourable condition. This advice was based on best available evidence on the sensitivity of the protected features to human activities which can damage them.

Further detail is contained within NE's online CA package at:

www.gov.uk/government/publications/conservation-advice-for-marine-conservation-zone-kingmere-bs16

2.2.2 *Conservation Objectives*

A conservation objective (CO) is a statement describing the desired ecological/geological state (the quality) of a feature for which an MCZ is designated – the aspiration for the site. The CO establishes whether the feature meets the desired state and should be maintained, or falls below it and should be recovered to favourable condition. Therefore 'favourable condition' is the overall aim and whether the features requires 'recovery to' or to be 'maintained in' is the action needed to achieve the objective. Protected sites in the UK

use the term favourable condition to represent the desired state of their features. A 'feature' is one of the habitats, species or geodiversity interests that MCZs are intended to conserve. For details on the COs for Kingmere MCZ refer to the Kingmere MCZ Designation Order 2013 in Annex I. This states that:

1) the habitats (infralittoral rock and thin mixed sediment, and subtidal chalk) should be in good condition, which means:

(a) its extent is stable or increasing; (b) its structure, quality and the species present are such that it is in good condition and not deteriorating.

2) the black seabream population occurring in the MCZ should be free of disturbance of a kind likely significantly to affect the survival of its members or their ability to aggregate, nest, or lay, fertilise or guard eggs during breeding.

To ensure the COs are achieved, the CA indicates that the impact of fishing activities on the following need to be managed:

1) habitats (subtidal chalk and infralittoral rock and thin mixed sediment) – damage/disturbance (abrasion) to the seabed

2) spawning black seabream – disturbance and removal

2.2.3 Conservation Advice by gear type

Table 2 outlines the CA for each gear type grouping.

Table 2. Natural England’s Conservation Advice – by gear type grouping

Mobile gear	Static gear	Angling
<p>Seasonal prohibition over entire site to protect bream from disturbance and direct catch.</p> <p>Year round prohibition over protected habitat features to protect integrity of reef network the site’s designed to protect.</p>	<p>To have certainty in achieving the CO it is best to ban any netting – targeted/not targeted – throughout the site during the nesting season, to protect spawning bream from disturbance and catch. However, the option to distinguish between nets that do not target bream and those that do exists, if feasible from an enforcement perspective. The former would only require management over known bream nest areas.</p> <p>Seasonal prohibition of pot/traps over known bream nesting areas, to protect nests/eggs from damage and bream from bycatch.</p> <p>For the rest of the year cap static gear intensity of activity at current levels to minimise impacts on site habitat features and restrict the potential increase in static gear following mobile gear restrictions.</p> <p>With regards to habitat/abrasion impacts from static gear and their associated anchors, currently there is not adequate supporting impact evidence to advise restrictions over protected habitat features.</p>	<p>Statutory seasonal prohibition on anchoring over known bream nest areas, to manage for anchoring impact in terms of bream disturbance and nest/egg damage from anchor drag.</p> <p>The final CA during management measures formulation with the community indicated that it was acceptable to not protect every individual bream but instead the adult spawning population as a whole, moving in the right direction of travel towards achieving the CO. Following the community consultation and final management formulation NE revised their thinking, as outlined in Section 5.4.4.</p> <p>However, NE’s current advice indicates that they still support the proposed management outlined in Option 2 and believe it will further the COs of all 3 features providing that there is a review period of 2-4 years and the requirement for research and monitoring is intrinsically linked to the byelaw.</p>

2.3 Black seabream protection need

Black seabream are not subject to ICES stock assessment, they are not classed as a pressure stock for EU fisheries management purposes and no Total Allowable Catch is prescribed. There is also currently no minimum legal landing size for black seabream under EU Technical Regulations; as protogynous hermaphrodites such measures can have a counter productive effect (Clark, 2012; Clark & James, undated). The vulnerability of the nesting sites means that they are suitable candidates for protection through spatial management measures.

3.0 Policy objectives and intended effects

3.1 Underlying policy objective

The underlying policy objective of the proposed MPA byelaw and associated Kingmere MCZ Schedule is to ensure Sussex IFCA's obligations to further the conservation objectives of MCZ sites are met. IFCA's have a duty under the MCAA to manage the exploitation of commercial and recreational sea fisheries resources in a sustainable way and to protect marine ecosystems from the impact of fishing in the 0-6nm limit off England. Their nationally agreed vision 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”*.

Under Section 155 of the MCAA IFCA's may make byelaws for their district to enforce their duties under Sections 153 and 154, to manage the sustainable exploitation of sea fisheries resources and further the conservation objectives of MCZs respectively.

3.2 Sussex IFCA principles underpinning MCZ management

The Authority will:

- ***Further the conservation objectives of the MCZ, in accordance with the conservation advice from the Government's Conservation Advisor, Natural England***
- ***Reflect the terms of the MCZ site Designation Order (see Annex I)***
- ***Base decisions on best available evidence and allow, where possible, for the collection of further evidence***
- ***Take into account site user knowledge and wider stakeholder views, with the IFCA being the ultimate decision making body***
- ***Develop management which is proportionate, adaptive and subject to review***

- ***Contribute to site recovery through fisheries management restrictions that will apply to all fishing activities, including both commercial and recreational***
- ***Strive to introduce management that promotes compliance and support from the community, whilst still adhering to the conservation objectives***
- ***Develop management that is economically viable, aims to minimise enforcement complexity and is sustainable for the IFCA***

The above principles will be achieved using the structure of the Authority's Principal Committee and its Technical Subcommittee.

4.0 Background

4.1 IFCA evidence requirements

One of IFCA's success criteria is to make the best use of evidence to deliver their objectives. In order to sustainably manage sea fisheries resources, IFCA's need to gather evidence to inform decisions, evaluate options, propose management solutions and, where necessary, develop and agree byelaws. They also need to evaluate outcomes and review the effectiveness of any action taken. The Authority has conducted extensive work with the community to develop management measures which are widely supported – see section 4.6.

4.2 Feature extent evidence

There is a high level of confidence in features location evidence. Refer to Annex II for the NE feature map. A combination of datasets were used to inform the habitat and bream nest feature maps, including: JNCC MESH, Seasearch, Sussex IFCA, aggregates surveys including REC (James *et al.*, 2010) - refer to NE CA package.

Over 10 years of monitoring data on bream nest locations (from the aggregates industry) has been utilised (Emu, 2007, 2008a, 2008b, 2009, 2011). To collect up to date data pre-management introduction, in 2014 Sussex IFCA collected site wide side scan sonar data on black seabream nest locations and densities within Kingmere MCZ. In 2015 the Authority used this information to collect side scan sonar (SSS) data at known bream nest locations outside of repeat monitoring areas being re-surveyed the same year. Sussex IFCA data indicated that the majority of bream nest areas in 2014 fell outside of the repeat monitoring areas conducted by the aggregates industry biennially and were located in the north/north-east of the site – See Figure 3 (FugroEmu Ltd., 2015).

The condition assessment for all 3 features is not assessed (NE CA).

4.3 Fishing activity evidence

There is a good understanding of fishing activity level and location within the site. Sussex IFCA conducted a review of observed fishing activity in Kingmere MCZ and constructed 2001-2014 activity maps for each fishing gear type (Annex III). Fishing activity sightings data has been collected by Sussex IFCA, and its predecessor the Sussex Sea Fisheries Committee, over the past 15 years, with detailed sightings data available from 2001.

4.3.1 *Commercial fisheries*

The site is wholly within the 6 nautical mile limit and is only fished by UK vessels. The site is mainly fished by vessels based in Shoreham, Newhaven and Littlehampton. Several Selsey-based potters also fish here. The main commercial fishery is potting, followed by set-netting and trawling (Defra, 2013a & IFCO expert intel). Most vessels fishing in the site are small static gear boats under 10 metres. A few larger 13.5m trawlers based in Shoreham and Newhaven fish in the site. A >16m beam trawl vessel based in Shoreham could exploit the site but has not previously been sighted by IFCOs.

Bass is an important species, as is cuttlefish which is caught in trawls, traps and static nets during the spring; coinciding with the black bream spawning season. The important target species in spring and summer are plaice, Dover sole, skate and black bream, and in winter the target species are whiting, lemon sole and cod if quota is available (Fishermapping interviews information).

The site encompasses an important area to commercial fishermen and is heavily fished by trawlers, netters and potters using lobster pots, whelk pots and cuttlefish traps. Black seabream are not currently protected under any byelaws, although Sussex IFCA has technical conservation regulations in place that require large mesh (95mm) cod-ends to be used on trawls during the spawning season, which reduce the incidence of juvenile fish capture. Further information on commercial fisheries activity was gathered through CVM interviews and workshop discussions and a bespoke questionnaire (Annex IV) for sectoral meetings, summarised in Table 3.

Table 3. Commercial fisheries activity within Kingmere MCZ. Site user questionnaire.

	Mobile gear	Static gear
Location	Northern and eastern edges and north/south corridor in west of site utilised by mobile gear.	Parlour pots targeting lobster and crabs primarily around raised rocky reef, whelk pots throughout site, cuttlefish traps eastern edge, drift netting north-western, north-eastern and eastern parts of site, set-nets over Kingmere rocks.
Level	<p>Low number of mobile gear users using the site.</p> <p>Commercial black bream fishery off West Sussex, in terms of landings, dominated by pair-trawling. Approximately 3 pair teams in district now. 2014 season 1 pair-trawl team observed within site, 2015 season 2 pair teams sighted within the site and a third team in the vicinity.</p> <p>1-2 single boat otter trawlers may target cuttlefish over the season in Kingmere. 2-3 beam trawlers operate around the palaeochannel area running north-south in the west of the site.</p>	<p>High level of static gear activity within the site.</p> <p>Traditionally lobster potting is the biggest commercial fishing activity in Kingmere over summer months, whelking now occurs at high levels. Traditionally, localised high intensity static and set-net fisheries across Kingmere rocks at start of bream season</p>
Frequency	Site used frequently by those that do operate within it. Pair-trawl team estimates 4 days/week over May/June. Beam trawls operate over the autumn and otter trawls year round.	Site user intel from sectoral meeting. Up to 10 static gear vessels/day. During a year, 3-4 times this. Site used year round.

4.3.2 Angling

The Kingmere area is a popular spot for angling with both local and non-local anglers all year round, with April to June during the black seabream breeding season being a key period. This site is renowned for having one of the best populations of black seabream in the south east and as such attracts anglers from all over the country at certain times of year (Stakmap, 2010).

Charter boats in the area particularly depend on black seabream fishing, including vessels based in Chichester (5 vessels), Shoreham (1 vessel), Selsey (2 vessels) and Brighton (11 vessels), with the closest fleet based at Littlehampton (15 vessels) (Stakmap 2010; Balanced Seas Kingmere site meeting report, February 2011). Charters launched from Littlehampton have a maximum radius of activity of 10 miles from their home port due to the conditions needed to enter and exit Littlehampton harbour (Stakmap 2010), which makes the Kingmere area particularly important for them. When fishing for bream, charter boat operators anchor off Kingmere rocks whereas smaller private angling vessels anchor directly on the rocks using small sacrificial anchors. Further information on angling activity was gathered through CVM interviews and workshop discussions and a bespoke questionnaire for sectoral meetings (see Annex IV), summarised in Table 4.

Table 4. Angling activity within Kingmere MCZ. Site user questionnaire

	Angling
Location	Anglers are primarily observed clustered around Kingmere Rocks
Level	<p>There is a high number of angling operators and level of activity within the site.</p> <p>Based on site user meetings information:</p> <ul style="list-style-type: none"> - Estimated average daily number of charter and private vessels over season, 8 and 26 respectively. - Large variation in number of vessels between during the week and weekend, and charter/private vessel split - Charters, range from 6 during week up to 10 at the weekend - Private anglers, range from 2 during the week up to 50 at the weekend - Maximum of 60 angling vessels (charter and private combined) observed by users on a weekend day in perfect conditions over the season
Frequency	Site used 9 months of the year by some charters, with special focus April-June by anglers

4.4 Current management

Refer to Annex V for relevant current management within Kingmere MCZ.

4.5 Impacts evidence

Table 5 summarises the level of confidence in existing impacts evidence for the different gear type groupings and key evidence gaps.

Table 5. Level of confidence in impacts evidence

Mobile gear	Static gear	Angling
<p>Level of confidence in impacts evidence – High.</p> <p>There is a weight of evidence in peer reviewed literature with regard to the impacts of towed gear on marine features, in particular on rocky reef.</p>	<p>Level of confidence in impacts evidence – Low/Medium.</p> <p>There is a limited body of evidence with regard to static gear impacts on rocky reef features. This evidence is growing with ongoing research.</p>	<p>Level of confidence in impacts evidence – Low/Medium.</p> <p>Poor level of understanding around anchoring impacts on rocky reef and catch and release impacts, and if significant negative impact in terms of bream disturbance and also nest/egg damage for the former. Uncertainties around level of bream mortality acceptable whilst still achieving the sites conservation objectives.</p> <p>Sussex IFCA research exploring bream survivability post catch and release, site fidelity and bream movements: Literature search and tagging research (pilot 2014, larger scale 2015).</p> <p>Monitoring/research programme to be developed with NE to inform adaptive management measures for angling.</p>

Refer to NE’s online Conservation Advice Package, specifically the Advice on Operations document with associated Activity-Pressure Justifications, for detailed advice on potential pressures from activities and supporting evidence references:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/425512/AoO_Kingmere_MCZ.PDF)

4.6 Community engagement

4.6.1 *Balanced Seas - site selection*

After over 2 years of discussion, taking into account social and economic factors alongside the best available scientific evidence, stakeholders passed 127 final site recommendations to Government advisory bodies in September 2011. All the MCZ sites went out for public consultation between December 2012 and March 2013, enabling further input from the community into the sites to be designated.

Management recommendations were developed for some sites at the site selection stage by stakeholders involved in the process, for details of those proposed for Kingmere MCZ refer to Annex VI. There was cross-sector support for the management measures recommended at the Balanced Seas stage by those industry or interest group representatives involved. However, during the 2 year period between the site selection stage and designation, concerns arose in the wider community, in particular within the angling sector. For more information on the Balanced Seas project visit:

<http://webarchive.nationalarchives.gov.uk/20120502155440/http://www.balancedseas.org/page/home.html>

4.6.2 *Defra - proposed MCZs consultation*

The summary of responses from the Defra consultation on proposed MCZ sites between December 2012 and March 2013 (Defra, 2013b) indicated that Kingmere MCZ had support across a range of sectors as it is recognised as one of the most important breeding sites for black seabream. However, concerns were expressed from the local fishing community regarding the conservation objectives which may affect the current level of fishing activity. There was also a desire that existing activities, such as angling and the mooring/anchoring of recreational vessels should not be affected by MCZ designation (Defra, 2013b).

4.6.3 *Sussex IFCA – Community Voice Method*

Sussex IFCA have conducted extensive informal pre-consultation to develop and generate support for potential management measures at Kingmere. Prior to the designation of 1st tranche MCZ sites at the end of 2013 the Authority had already begun its first stage of consulting with the community on management. Leading the process, Sussex IFCA worked with the Marine Conservation Society and independent consultants on an innovative project which utilises a film-based technique called Community Voice Method (CVM) to gather people's views on Sussex MCZ management.

The CVM project and process intended to inform the IFCA's decision-making on management of sites to maximise environmental benefit, satisfy the regulatory framework and the conservation objectives whilst achieving outcomes that balance the needs of sea-users. The work built on discussions that took place during the Balanced Seas project.

Forty-one filmed stakeholder interviews were conducted between November 2013 and April 2014, with people selected for interview based on their expert knowledge or involvement in relevant industries or sea user groups. The aim was to ensure as full a range of views and values as possible from across the area was captured and to build on discussions that took place during the Balanced Seas project. The 30 minute film produced was screened at 6 wider community MCZ management workshops conducted in October and November 2014. At the workshops, potential management options for differing fishing activities (categorised as mobile, static or angling activity – see Annex VII) within Kingmere were discussed. These were developed by Sussex IFCA in consultation with NE in response to the conservation advice for the site (see Annex VIII).

The potential management options put forward for consideration by the community aimed to encompass the range of potential management measures, from the most precautionary and least complex with regards to compliance, to measures that still have regard for the conservation advice but are as adaptive as possible, requiring more management complexity. Workshop participants were provided with the opportunity to input their views and consider a preferred option, including selecting individual measures from the different options or suggesting how they could be adapted, to arrive at a final option.

These workshops helped Sussex IFCA work closely with the community in the development of MCZ management measures for both Kingmere and Beachy Head West 1st tranche MCZ sites, and provided participants with the opportunity to discuss MCZ management scenarios with other stakeholders, Sussex IFCA and Natural England.

Following the workshops, the outputs of discussions (made anonymous) were made available on Sussex IFCA's website to enable wider comment by those unable to attend.

See www.sussex-ifca.gov.uk/index.php?option=com_content&view=article&id=40&Itemid=206#cvmprogress for further details.

4.6.4 Sussex IFCA - site user sectoral meetings

Subsequent to the wider community workshops, the preferred management options indicated were taken back to Kingmere fisheries site users and representatives. Opinions of site users did not override all the wider community consultation conducted previously, instead their aim was to:

- 1) Understand how representatives use the site and its importance to them
- 2) Discuss impacts on site users of preferred management options identified in the wider community workshops
- 3) Explore details around the workshop preferred measures, potential modifications and management suggestions to minimise impact

A detailed questionnaire on site use was conducted with participants to more fully understand the importance of the area and impacts of management, the results of which have helped inform the current Impact Assessment.

4.6.5 *Sussex IFCA – other consultation*

Information on Kingmere MCZ, the informal consultation and all outputs have been kept updated on the Authority's website. Social and viral media (facebook, twitter) were utilised to advertise workshops and outputs in addition to direct mail outs, leaflet drops and posters in angling shops, clubs, ports etc. Additional angling meetings with the community were held on request to discuss widespread management concerns.

4.7 Management approach support

4.7.1 *CVM interviews*

In questions where interviewees were **prompted** about the management measures recommended at the Balanced Seas stage, of those that responded:

- The majority (64%, n=25) were in favour of seasonal restrictions on all activities throughout the site during the black bream breeding season – April to June.
- 41% (n=27) supported a year round restriction on trawling within the site (excluding within the palaeochannel), as opposed to 33% who were not in favour of this measure.
- 57% (n=21) supported static gear effort management.

In **unprompted** responses from participants about the types of measures they felt would be appropriate:

- 44% of interviewees (n=41) raised the need to limit mobile gear activity. Less people were concerned about limiting angling or static gear activity (24% and 17% respectively).

- 39% of interviewees indicated seasonal restrictions at Kingmere were required.

4.7.2 *CVM wider community workshops*

The preferred management options for each gear type indicated by the community within the CVM workshops are outlined in Table 6, together with some of the relevant key comments threads.

4.7.3 *Site user sectoral meetings*

The preferred management options for each gear type indicated by site users within sectoral meetings are outlined in Table 7.

4.8 IFCA Committee input

The Authority's Technical Subcommittee worked with officers to help develop the final proposed management. A detailed summary of their views on the issues and practical detail around management options is contained in Annex IX. The full Committee voted to proceed with formal consultation and implementation of the final proposed measures at their April 2015 quarterly meeting.

Table 6. Management approach support – CVM workshops

	Mobile gear	Static gear	Angling
Preferred option	<p>More people (62%, n=29) preferred Option 1 for mobile gear.</p> <p>This included a prohibition of mobile gear year round and throughout the site, with an appropriate buffer around the whole site.</p> <p>Remaining opinion was roughly equally split between Options 2 and 3.</p>	<p>There were equal votes (38% each, n=26) for Option's 1 and 2 for static gear.</p> <p>Option 1 included a seasonal static gear prohibition over the whole site with an iVMS system fitted to all vessels, and static gear prohibited year round over protected habitat features, with an appropriate buffer around these.</p> <p>Option 2 included a seasonal prohibition on nets over the whole site with out of season controls on fishing effort and iVMS fitted to vessels. It also included measures to prohibit pots/traps over bream nesting habitat (equated to habitat protected features) and an appropriate seasonal buffer around this habitat.</p>	<p>More people (52%, n=25) preferred the most adaptive management scenario for angling, Option 3.</p> <p>This included a seasonal bag limit on the amount of bream retained, a mechanism for controlling fishing effort and a voluntary seasonal prohibition on anchoring over known bream nesting areas.</p>
Key comments threads	<p>Concerns about a lack of evidence and questions around evidence of the impact of commercial fishing on features</p> <p>Comments suggesting that commercial fishing should not be excluded from the whole site, only over features</p>	<p>A lack of evidence and questions around evidence of the impact of commercial fishing on features</p> <p>Costs of iVMS</p> <p>Impacts of anchoring restrictions on static gear fishers.</p>	<p>A lack of evidence and questions around evidence of the impact of angling on features</p> <p>Impacts of anchoring restrictions on anglers and comments around less damaging anchors</p>

Table 7. Management approach support – site user sectoral meetings

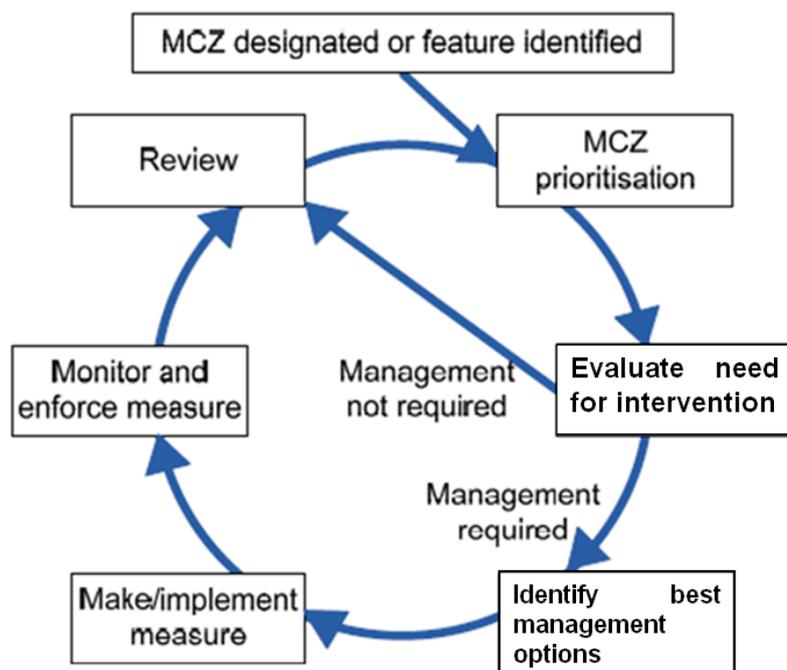
Mobile gear	Static gear	Angling
<p>Of the 3 mobile gear site user representatives who participated in the sectoral meetings, 1 was opposed to any mobile gear restrictions within the site and the other 2 supported seasonal whole site prohibition and advocated zonal management over protected features during the rest of the year, with the buffer width minimised (option 3).</p>	<p>Of the 3 static gear site user representatives spoken to 2 were supportive of whole site seasonal restrictions of pots/traps and nets (option 1). One of these operators suggested staggering the timing of gear restrictions, with potters being prohibited 2-3 weeks after trawlers to correspond with the lag time between bream aggregating and nesting.</p> <p>The third static gear fisher was opposed to any form of restriction for potting, but concluded that if restrictions had to be introduced they could tolerate pots being limited over known bream nest areas (option 3) and nets being prohibited over the whole site during the season (option 2).</p> <p>One of the operators supported the idea of an area, equating to zone 1, where all gear types are restricted year round. Another strongly advocated seasonal prohibition of all gear types throughout the site (Balanced Seas recommendation) and the third opposed any complete seasonal prohibition for static gear.</p> <p>All 3 static gear site users supported the need for effort control for this gear type. Opinion was split around buffers, with one advocating a buffer width greater than 4 times the water depth and another opposed to any form of buffer.</p>	<p>All of the angling representatives spoken to strongly opposed seasonal prohibition or catch and release management measures (options 1 & 2), with charter operators indicating that such measures would put them out of business.</p> <p>10 of the 11 representatives supported a seasonal bag limit (option 3). The 1 operator who opposed this cited concerns around a 'high grading' risk (selecting the best fish and throwing the others away dead).</p> <p>A 5 bream per person limit was palatable to all representatives, or 4 at a push for the majority, with any less causing grave concern; for the charters, due to the likelihood of losing business if customers are not able to retain what is deemed an acceptable number of bream.</p> <p>All angling representatives strongly opposed any anchoring restrictions, being sceptical about the suggested impact on nests/eggs and bream disturbance, stressing that this would have the same impact as prohibiting them due to the need to anchor when fishing for bream, specifically around the Kingmere Rocks area within the site.</p>

5.0 Options

5.1 Evidence-based decision making cycle

IFCAs must have a consistent approach to their decision making and be able to articulate clearly to stakeholders why they have chosen a certain approach. An evidence-based decision making cycle approach provides a common framework for decision making by IFCAs and has been adopted in the current management options consideration for features and fishing activities within Kingmere MCZ. Sussex IFCA aims to ensure that appropriate risk based management is implemented across Kingmere MCZ where activities are deemed detrimental to achieving the sites conservation objectives, in order to comply with Sections 125, 126, 153 and 154 of the Marine and Coastal Access Act (2009) (see Annex X for further details). It is the expectation of Defra that appropriate management measures for MCZs could involve both statutory and non-statutory measures to ensure adequate protection is achieved. Management decisions should be based on the best available evidence, but using a precautionary approach where necessary. Management will be applied on a risk-prioritised, phased basis, with management implemented at MCZ sites most at risk of damage first. Figure 4 describes the management cycle to evaluate sites and assess the need for potential management measures to further site's conservation objectives.

Figure 4. Management cycle



5.2 Option 0: Do nothing

The 'do nothing' option would not achieve the sites conservation objectives. The general conservation advice from Natural England for Kingmere MCZ is that fisheries management is required in order to protect all three features that the site is designated for. As such, Option 0 has been rejected.

5.3 Option 1: Voluntary agreement

Solely voluntary measures are not deemed appropriate for the site due to the sensitivity of features, and the level and type of activity. Where existing activities are having an impact on the achievement of a sites conservation objectives or where there is significant risk that they may do so either now or in the future, government indicates that statutory measures are likely to be required. As such, Option 1 has been rejected. The likelihood of compliance in any management arrangement and the risk associated with non-compliance also needs to be considered.

5.4 Option 2: Sussex IFCA Protected Areas Byelaw with Kingmere MCZ Schedule. Preferred option.

5.4.1 *Proposed management measures*

Sussex IFCA aims to introduce a combination of both voluntary agreement and regulation of commercial and recreational fishing that promotes compliance and support from the community, whilst meeting the conservation requirements of Kingmere. Sussex IFCA's proposed management measures during the black seabream breeding season (April to June) include restricting commercial fishing (mobile gear and netting exclusion throughout the site, potting restriction over defined known nesting areas and supporting habitat features), and having a black seabream bag limit for anglers, as well as a closed area to all activities in the north east of the site. A voluntary code of conduct for anglers will also be developed with the community. Outside of the bream season, prohibition of mobile gear over protected features, static gear effort management and a black seabream bag limit for anglers is proposed. High level management recommendations for each gear type grouping are outlined in Table 8, with further detail on measures in Table 9.

Four broad zones (Figure 5 & Table 10) are recommended which the Authority can relate management for all gear types to. Such an approach reduces management complexity and facilitates feasible enforcement, as opposed to multiple different zonal delineations for each gear type. Sussex IFCA used best practice techniques for management zones delineation,

using simple polygons comprised of straight lines with minimal node points to delineate areas, which could be easily described, navigated and understood by industry. Polygon point positions were rounded to 2 decimal places rather than 3 to facilitate mapping in real life. A buffer around features is incorporated in the zone 3 boundary, based on four times the average water depth as advised by JNCC/NE, to allow for gear offset from the boat and avoid feature gear interaction.

Table 8: High level management recommendations

Mobile gear	Angling	Static gear
Seasonal prohibition over entire site	Seasonal prohibition over defined known nesting areas and supporting habitat features (north of site, zone 1)	Seasonal prohibition of nets over entire site
Rest of year, access outside of protected habitat features (equates to paleochannel, zone 3)	Access over rest of site (zones 2, 3 & 4) with black bream bag limit	Seasonal prohibition of pots/traps over defined known nesting areas and supporting habitat features (zones 1 and 2)
Fitting of vessel monitoring system I-VMS	Activity and catch recording system	Out of season effort control

Table 9: Detailed recommended options

Mobile gear	Angling	Static gear
Seasonal prohibition of all mobile gear over entire site, season being April 1 st to June 30 th inclusive.	Seasonal prohibition over defined nest areas (zone 1), season being April 1 st to June 30 th inclusive.	Seasonal prohibition on nets over entire site, season being April 1 st to June 30 th inclusive.
Conditions of stowage of gear whilst transiting the site.	Year round predetermined bag limit of 4 individual bream per person with a voluntary catch return requirement for all other bream.	Seasonal prohibition of pots/traps over defined known nesting areas and supporting habitat features (zones 1 and 2)
Out of season, prohibited over protected habitat features, infralittoral rock and thin mixed sediment and subtidal chalk (zones 1, 2 and 4).	Year round prohibition on retaining or possessing bream above the specified limit. Deeming clause in respect to bream found on vessels whilst fishing activity in progress.	Out of season effort cap/control on nets and pots/traps through Sussex IFCA shellfish permit byelaw and future IFCA netting management. Timing of introduction to reflect the development of supporting byelaw processes, e.g. marking of gears through permits.
Operational iVMS system (or monitoring system with	IFCA agreed code of conduct for technical	Operational iVMS system (or monitoring system with

equivalent functionality) fitted to vessels. Timing of introduction to reflect the availability and development of suitable systems.	measures e.g. barbless hook, max/min size, careful handling of fish and release of gravid females.	equivalent functionality) fitted to vessels. Timing of introduction to reflect the availability and development of suitable systems. Recognition as a lower priority given that deployed static gears can be observed.
Requirement to provide fishing effort, activity and catch within the site. Where practicable, working with existing data systems and avoiding unnecessary duplication of reporting.	Requirement to provide fishing effort, activity and catch within the site.	Requirement to provide fishing effort, activity and catch within the site. Where practicable, working with existing data systems and avoiding unnecessary duplication of reporting.
Mechanism to review fixed season dates in terms of, for example, climate change effects and other evidence. Always encompassing annual variability.	Mechanism to review fixed season dates in terms of, for example, climate change effects and other evidence. Always encompassing annual variability.	Mechanism to review fixed season dates in terms of, for example, climate change effects and other evidence. Always encompassing annual variability.

Table 10: Kingmere MCZ proposed management zones description

Zone	Description
1	<p>North/north-eastern area of site, comprising 36% of the MCZ site.</p> <p>Zone encompasses the entire mapped area of protected subtidal chalk cliff feature within the site - Worthing Lumps marine Site of Nature Conservation Importance (mSNCI) – and large known bream nest areas.</p> <p>Prohibition of pots/traps and angling over the season proposed. Equates to a zone no fishing gear type could access during the season due to the additional proposed seasonal prohibition of nets and mobile gear throughout the site. Aims to balance more adaptive measures for angling and potting/trapping with option 1 (see Annex VIII) whole site seasonal prohibition for all activity types.</p>
2	<p>Central/south-eastern area of site, encompassing Kingmere Rocks mSNCI and a known bream nest area associated with the feature.</p> <p>During the season, access for angling proposed with associated statutory bag limit to control effort. Promotion of voluntary technical measures not suitable for regulation through a code of practice (e.g. use of barbless hooks). Aims to reflect socio-economic impact on the angling sector by allowing controlled access to their key bream fishing area.</p>
3	<p>Corridor from the north-west to the south of the site, which equates to the palaeochannel. Moderate energy infralittoral rock and thin mixed sediments feature absent from this area.</p> <p>Out of season access for mobile gear proposed. During season access for</p>

	potting/trapping and angling.
4	<p>Western edge of the site, approximately half of the area is comprised of the infralittoral rock and thin mixed sediment feature with a small, isolated patch of nests.</p> <p>During season potting/trapping and angling access proposed. From a management complexity perspective, another small zone delineating the isolated patch of nests within this area is not proposed.</p>

Kingmere Marine Conservation Zone

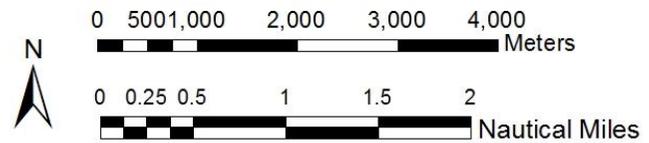
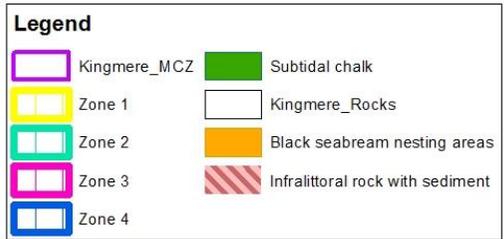
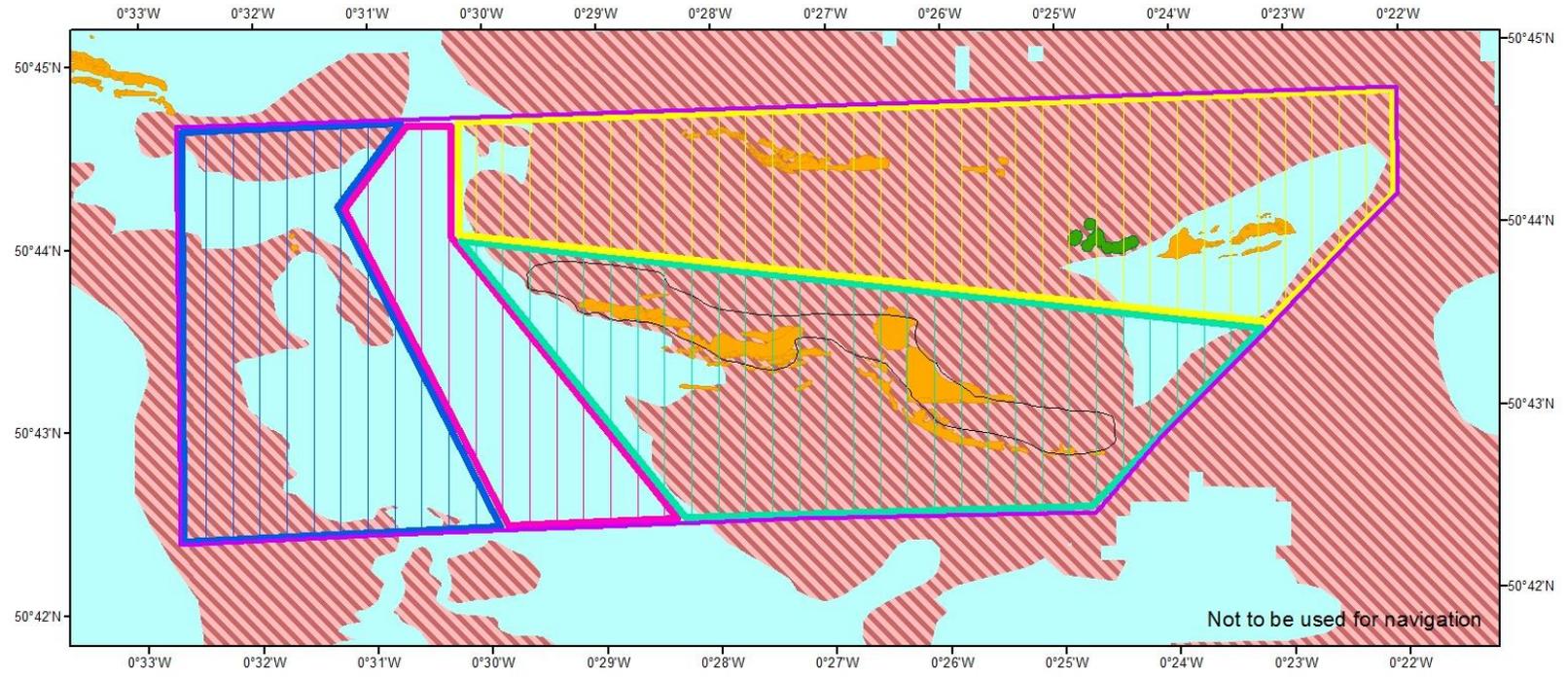


Figure 5. Kingmere MCZ proposed management zones

5.4.2 Summary rationale for proposed measures

The rationale underpinning the proposed Kingmere MCZ management measures is outlined in Table 11.

Table 11. Proposed Kingmere MCZ fisheries management measures rationale

Gear Type	Management rationale
Mobile gear	<p>During the bream breeding season, whole site prohibition of mobile gear is recommended. The conservation advice and the nature of physical contact with the features of Kingmere means that out of the season mobile gear needs to be restricted to all but the least sensitive areas, outside of protected habitat features. This is designated as Zone 3, and relates to the paleochannel area. The fitting of a vessel tracking system is thought necessary to aid compliance.</p> <p>Enforcement complexity associated with measure, medium. Anticipated level of sectoral support compared with alternative management options, good. Anticipated compliance levels compared with more stringent management options, good.</p>
Angling	<p>Angling is often fish specific (as is the case with black seabeam) and typically results in low levels of physical damage when handling is good. Survivability post catch and release is significantly more likely than from less selective gear types, including pair trawls, nets and as bycatch in pots. This makes this activity type a candidate for adaptive management in terms of allowing defined, controlled access which can be reviewed.</p> <p>The introduction of an appropriate bag limit would manage angling effort levels and initiate a decrease in fishing mortality. This year round measure, in combination with prohibiting access seasonally within a defined area in the north of the site (zone 1), would promote the conservation aims for the site whilst reflecting angling socioeconomic impacts that are now more fully understood through subsequent consultation.</p> <p>Zone 1 encompasses good examples of conservation features, including the entire extent of the mapped subtidal chalk feature within the site (Worthing Lumps mSNCI). Worthing Lumps was one of the MCS recommendations within their 'Your Seas Your Voice' campaign, where 96% of the general public who voted were in favour of protection for the site (MCS, 2011). A significant proportion of both the infralittoral rock and thin mixed sediment feature (49%) and the known bream nest area in the MCZ (33%) are also contained within the zone. Sussex IFCA 2014 SSS survey results indicate that the majority of mapped bream nests within the MCZ are currently encompassed within Zone 1 (see Figure 3).</p> <p>Regulated angling may offer benefits in terms of monitoring site status. Such zoned management would also provide an area to compare the success of measures and assess the effects of</p>

	<p>anchoring in terms of disturbance and habitat damage impacts to improve current understanding.</p> <p>Enforcement complexity associated with measure, medium-high. Anticipated level of sectoral support compared with alternative management options, good. Anticipated compliance levels compared with more stringent management options, good.</p>
Static gear	<p>A seasonal restriction of all nets throughout the site is proposed, to adhere to the Conservation Advice. Differentiating between nets targeting or not-targeting bream is not deemed feasible from a management perspective.</p> <p>The proposed seasonal prohibition on pots/traps over zones 1 and 2 equates to restrictions over known bream nest areas and surrounding bream nesting habitat. Access would be allowed to bream nesting habitat areas in the west of the site (zone 4, which incorporates approximately 17% of the infralittoral rock and thin sediment feature) and outside of protected features (zone 3).</p> <p>The recommendations strive to achieve a balance between options 1, 2 and 3 (see Annex VIII) for static gear management, providing greater protection than just over known bream nest areas but allowing access to approximately a third of the site over the season to reflect socioeconomic impact. The proposed management would facilitate an area closed to all gear types during the season (zone 1).</p> <p>Out of season, both nets and pots/traps would be permitted throughout the site. Effort control limits are recommended to control any potential increase in static gear as a result of mobile gear restrictions and the use of the site as a 'gear park'.</p> <p>Enforcement complexity associated with measure, medium. Anticipated level of sectoral support compared with alternative management options, good. Anticipated compliance levels compared with more stringent management options, good.</p>

To summarise, Option 2 is considered the most appropriate and proportionate management method to address risk to features and move towards achieving their conservation objectives, while balancing the needs of fishers in the area.

5.4.3 *Black seabream spawning season period*

In defining any seasonal restrictions to protect adult spawning black bream the Authority needs to recognise all evidence including any new evidence since the original designation. The current fixed season of April-June encompasses known annual variations in the spawning period. This includes 2014 bream fishing activity, both commercial and recreational, identified by the Sussex IFCA, during which spawning black bream were known to be present within the MCZ site from early April. The current season may be adjusted, using an adaptive

management approach, as further evidence is gathered over the years between any planned review.

5.4.4 Adaptive management and Natural England Conservation Advice

The proposed management used best available evidence at the time of management measures formulation with the community. Where adaptive management measures are proposed, such as bag limits for anglers which are subject to review, agreed ongoing monitoring and research will be developed with Natural England to assess if the conservation objectives for the site are being met.

During the extensive community consultation period on management conducted by Sussex IFCA and working closely with NE, advice from NE was that a reduction in mortality and disturbance due to angling, rather than complete cessation, would be sufficient to ensure that the black seabream feature was meeting the conservation objectives and moving towards recovery. Following the community consultation and final proposed management measures formulation however, NE revised this advice based on evidence that had recently come to light. In their letter to Sussex IFCA, dated 02/04/15, NE outlined that they now believe that the most significant impact on spawning and nesting black seabream is from direct mortality and disturbance while they are nesting, and would therefore now recommend that all activities that can cause disturbance and mortality are removed from the site during the breeding and spawning season between April and June, including catch and release. However, NE believes an interim measure can be adopted that allows for further evidence to be collected to better understand the impact of recreational angling on the black seabream feature, while still allowing the site to move towards recovery. As such, NE's current advice is that they support the recommendations outlined in Option 2, and believe they will further the conservation objectives of all 3 features of the MCZ, providing that:

- There is a review period of between 2 and 4 years
- The requirement for research and monitoring is intrinsically linked to the byelaw, and that if this demonstrates that there is still a significant impact on the MCZ interest features which means that the conservation objectives are not being furthered, then the byelaw will be amended to address this.

NE also has concerns about the impacts of anchoring vessels on the MCZ's interest features but recognises that Sussex IFCA's current legal advice is that this is not under the IFCA remit

to manage the anchoring of vessels, and will therefore explore mechanisms to manage this with the other regulatory bodies. Sussex IFCA does recognise its responsibilities in respect to the management of anchors and weights which form part of fishing gears used on static fishing gears. With regards to anchoring management responsibilities, Section 129.3(d) of the Marine and Coastal Access Act describes the duties of the Marine Management Organisation in respect to the anchoring of any vessel within MCZs. Non fishing recreational activities for example diving from anchored vessels does occur within the MCZ boundary, therefore if management is required it should be addressed in a 'cross sectoral' manner to prevent discrimination toward any specific user group.

5.4.5 Evidence collection

Sussex IFCA are currently working with the local recreational sea anglers on a black seabream tagging project that will help us understand the ecology of the fish. The Authority has also worked with partners to map the seabed features and bream nests on the Kingmere site. Sussex IFCA plans to carry on working in partnership with all stakeholders to further the conservation objectives of the site and will strive to follow the conservation advice set out by Natural England. Sussex IFCA is working with NE and other partners to identify and address knowledge gaps through survey programmes and desk-based research, namely the level of bream-take from anglers, black seabream survivability post catch and release and the disturbance impact of angling on nesting black seabream.

Measures may be adapted in the future if monitoring work or other new evidence and associated conservation advice indicate this is necessary. Following NE's recommendations, a review period of 4 years was agreed.

5.5 Option 3: Full site prohibition – Sussex IFCA byelaw

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 fishing activities within the MCZ is considered too conservative and cannot be justified. This option would go beyond NE's conservation advice for the site and thus has been rejected. Such a management measure would not be in line with IFCA's duty to sustainably manage the inshore marine environment 'ensuring healthy seas, sustainable fisheries and a viable industry'.

6.0 Costs and benefits

6.1 Key monetised and non-monetised costs

6.1.1 Lost revenue

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

- Defra MCZ consultation on proposals for designation in 2013. 12th December 2012 to 1st April 2013. Annex I2 Option 2, Site Specific Impact Assessment: rMCZ 16 Kingmere
- For commercial fisheries, landings data to ICES rectangle level from the MMO, for 2005 to 2014
- For commercials and anglers, information gathered from fishers during pre-consultation engagement (October 2013 to February 2015, by Sussex IFCA)
- Local IFCA officers expert knowledge

Monetised costs estimated in Defra's MCZ consultation IA for Kingmere are summarised in Table 12. Values presented under the most similar management scenario in the IA (scenario 2) to that proposed by Sussex IFCA under option 2 are quoted, with costs compared to option 1 – do nothing. Scenario 2 includes: closure of the MCZ to trawls, dredges, lines, pots and traps during the black bream breeding season and zoned closure of the site to trawls and dredges for the rest of the year over infralittoral rock and thin mixed sediments, leaving a trawling access corridor from north to south through the MCZ. The dredge costs included in the IA are not included as no fishing dredgers are known to operate within the site. An estimated total of £46,000 per annum of landings (excluding dredging) would be affected based on these calculations. These costs have an associated high degree of uncertainty and are overestimations so should be treated with caution. Estimates were based on an 'unknown' number of operators and reflect landings from a wider area than just the MCZ.

Under the proposed management measures in option 2, estimated costs to commercial operators would be further lowered due to the varying degrees of access allowed. Outside of the bream season mobile gear would have access over the palaeochannel corridor (zone 3), outside of protected habitat features, which equates to approximately 11% of the site. Over the season potters would have access outside of known bream nest areas and surrounding bream nesting habitat, equating to 33% of the site. During the rest of the year both potters and netters would have full site access with effort restrictions.

Table 12. Estimated annual value of UK commercial landings affected: MCZ Fisheries Model (Defra, 2013)

Mobile gear	Static gear	Angling
trawl: £10,000 Estimates based on unknown number of operators.	Hooks & lines: £1,000 Nets: £13,000 Pots & traps: £22,000 Estimates based on unknown number of operators.	Number of anglers using site stated as unknown so unable to quantify the impact.

Table 13 provides indicative figures from the Marine Management Organisation (MMO) on the quantity of black seabream landings into major Sussex ports between 2005 and 2014 from ICES rectangle 30E9. Over this 10 year period an average of 134.14 tonnes of black seabream were landed annually by the commercial sector. In Sussex, commercial bream landings are primarily from pair-trawlers. The figures include catches taken from a larger area than the MCZ and will be significantly greater than that actually taken from the Kingmere site. It is unknown what proportion of the total commercial landings value was derived from the MCZ area, which at 47.84km² makes up 2% of the 2342 km² ICES rectangle. Effort is not evenly distributed throughout ICES rectangle 30E9.

Table 13. MMO black seabream UK commercial landings data: ICES rectangle 30E9

Year	Tonnes
2005	130.96
2006	156.54
2007	183.50
2008	165.17
2009	152.95
2010	129.43
2011	90.27
2012	105.44
2013	106.61
2014	120.55

Information gathered from fishers and other stakeholders during the extensive pre-consultation conducted by Sussex IFCA has been used to support the evidence base and assumptions.

On the basis of site user questionnaire information from 11 angling representatives, a tentative estimated average of 16,500 bream may be caught by anglers in Kingmere over the season. At an average of 0.35 kilos per fish this equates to 5.8 tonnes over the season (April to June). Based on the questionnaire information this equates to an average of 6 bream per person

currently being caught by charters, which may be more on private vessels where individuals often work more than rod.

This data is based on best available evidence but further information is required to have a more robust understanding of how much black seabream is taken from the site by anglers. The data gathered from anglers through the questionnaire provides an indication of angler catch but it is based on anecdotal information on estimated average vessel numbers, catch, number of trips and persons on board and thus should be treated with caution.

The evidence base on angler catch is evolving. Sussex IFCA will continue to gather more robust data on angler catch through port side patrols and questionnaires, and catch returns will be requested once management is implemented. This will help the Authority to better understand angler take from the site and inform the proposed adaptive management measures.

In a report by Fletcher et al. (2012), it is estimated angling currently occurring within and around Kingmere MCZ generate approximately £125,190-£627,382/yr. This is based on what recreational anglers in the vicinity of Kingmere spend.

With regards to angling potential lost revenue, the proposed management allows for continued site use over the season outside of zone 1 with associated effort controls in the form of a bag limit. As such any economic repercussions for the sector are likely to be minimal.

Sector representatives at Sussex IFCA site user meetings were invited to provide fishing industry costs estimates. The information received from sector respondents was largely qualitative so neither refinement of the monetised cost for commercials in Defra’s MCZ impact assessment nor accurate angling costs calculation were possible. Table 14 summarises the costs to business estimated by fishers within these meetings. For information on commercial fisheries activity location, level and frequency refer to Section 4.3.1, and for angling see Section 4.3.2.

Table 14. Estimated fishing industry costs – Sussex IFCA site user meetings

Mobile gear	Static gear	Angling
All mobile gear representatives rated the site of high importance to	All static gear representatives rated the site of high importance to	All angling representatives rated the site of high importance to them.

<p>them.</p> <p>Although most bream are taken by pair trawls, a low number of operators utilise the site, therefore there will be a lower relative impact of restrictions.</p> <p>Mobile gear representatives in the site user meetings were unable to estimate the proportion of their income that came specifically from the Kingmere MCZ site, as continuous 'tow lines' are wider than just within the MCZ area.</p>	<p>them.</p> <p>Representatives in site user meetings indicated the site varied between users in significance as part of overall income. Results from 3 fishers indicate:</p> <ul style="list-style-type: none"> • £12,000 of annual income from site • two thirds of annual income • 40% of annual boat income (equates to 3% of individual's wider business 	<p>A high number of charter and private anglers utilise the site, therefore there is a higher potential socioeconomic impact.</p> <p>Littlehampton charters indicate they rely on the site for their business to continue: Estimated 40-80% of annual income generated from Kingmere MCZ, April-June.</p> <p>The iconic status of the site to anglers is important, attracting nationwide tourism to the area due to the perceived quality of the Kingmere black bream, April-June.</p>
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There is no cost to business in terms of a permit cost. It is believed that any loss in catch is cancelled out by the impact of introducing sustainable management of the fishery and potential subsequent stock improvements and spill over effect.

6.1.2 Displacement

Implementing a zoned management approach for all fisheries and a bag limit for anglers will minimise the potential displacement of vessels. Alternative fishing grounds are also accessible near by.

The cuttlefish season coincides with the black bream breeding season thus complete closure over the season would impact on businesses that are heavily dependent on cuttlefish landings from the MCZ area. As restricted access will be available to potters/trappers over the black bream season, this will limit any potential costs and gear conflict as a result of displacement.

During the pre-consultation, charter operators raised strong concerns about angling displacement if prohibited from the site over the season, suggesting there were no viable alternative areas nearby to catch black seabream during that period due to potential

trawler/angler conflict and scale of the bream ‘fishing marks’ within the site. Table 15 outlines the potential level of fisheries displacement by gear grouping type.

Table 15. Displacement potential

Mobile gear	Static gear	Angling
<p>Limited level of mobile gear displacement.</p> <ul style="list-style-type: none"> • 6 vessels associated with a maximum of 3 pair teams • 1-2 single boat otter trawlers over the season which the IFCA is aware of • 2-3 beam trawlers 	<p>Up to 10 static gear vessels per day may be displaced elsewhere over the season if prohibited.</p> <p>General static gear displacement raised as an issue in site user meetings.</p>	<p>High number of vessels would be displaced elsewhere if prohibited seasonally – maximum of 60/day.</p> <p>Potential trawler/angler conflict if anglers displaced to alternative bream areas which are currently heavily trawled, such as Shelley Rocks to the north west of Kingmere MCZ.</p>

6.1.4 Administrative burden

Sussex IFCA will regulate and monitor the Kingmere MCZ site through the use of:

- *Education/Communication Strategies* – provide advice and information on Kingmere MCZ. This can be done via information packages, public events, community groups, festivals, signage that can be delivered during specific meetings or whilst conducting routine land or sea patrols
- *Land Based Patrols* – mobile land patrol conducting inspections on landings, premises, vehicle’s and person’s. Intelligence gathering, sightings and key communication messages delivery to the community.
- *Sea Based Patrols* – mobile sea patrol conducting boarding inspections, intelligence gathering, vessel sightings and key communication messages delivery 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 deliver key communication messages
- *Monitoring/Research* - conducting regular research and gathering data to support the enforcement efforts within the site and inform management measures

The Authority will need to commit to a monitoring programme, potentially encompassing fishing activity, condition/location of features and impacts work, but the details of this is not

yet agreed thus associated costs are currently unknown. Currently the Authority is undertaking comprehensive annual assessments of black seabream nest location/density and research into black seabream site fidelity and survivability.

Through regular enforcement patrols (land and sea), remote monitoring systems and return information the Authority will monitor fishing activity and develop a thorough understanding of permissible activities following the introduction of management. Compliance activities will reflect the developed risk based approach for MPA management. Where required mechanisms and technologies are not fully developed phased introductions will be implemented working with fishers (e.g. use of iVMS).

Monitoring the extent of angling activity will include understanding the number and frequency of vessels within the site, catch returns and the extent to which bag limits are reached by the recreational community. Catch levels and rates will be assessed to inform any review process and future need for effort limitation (e.g. through restrictive permits) or changes to bag limits. Potential changes in anglers behaviour toward catch release and bag limit within an MCZ can be explored.

The opportunity for fishers being able to help inform the site condition and impacts of activities through the provision of information will be identified and developed. Through this route the Authority can potentially achieve greater support and sense of ownership by the community.

Enforcement of the proposed byelaw and regulatory order will be met within the current budget and wherever feasible will be incorporated into existing business and patrol commitments.

Using fully developed costings and an unconstrained model, a best estimate of £22,400/month for in season patrol costs, vessel tracking, monitoring and communications and £14,400/month out of season is calculated. Estimated monthly enforcement, monitoring and administrative costs are outlined in Table 16.

Table 16. Administrative costs estimates

	In season costs (£/month)			Out of season costs (£/month)		
	Low	High	Best	Low	High	Best

Enforcement - Sea patrols	7,000	26,000	12,000	5,000	20,000	10,000
Enforcement – Land patrols	1,000	4,000	1,500	500	2,000	1,000
Vessel tracking monitoring	–	–	300			300
Monitoring/Research	–	–	8,500			3,000
Communication	–	–	100			100
Totals			22,400			14,400

*Costs are based on the following daily rates: Watchful sea patrol including 5 crew (£3,500); Merline sea patrol including 3 crew (£1,500); Individual enforcement officers (£200); Road Patrol 2 officers (£500)

It is important to highlight that low community support and resulting poor compliance will incur greater costs, thus Sussex IFCA has strived through extensive pre-consultation and work with the community to develop proposed measures to generate good support for management.

6.2 Benefits

6.2.1 *Ecosystem services*

The habitats, species and other ecological features of the MCZ contribute to the delivery of a range of ecosystem services. Designation of the MCZ is helping to protect its features and the ecosystem services that they provide against the risk of future degradation from pressures caused by fishing activities. Potential improvement in the quantity and quality of the beneficial services they provide may increase the value (contribution to economic welfare) of them (Defra, 2013). Examples of the ecosystem service Kingmere MCZ provides include:

- Regulation of pollution - Marine sediments may act as temporary or permanent sinks for pollutants, particularly toxic metals (Fletcher et al., 2012). The features of the site contribute to the bioremediation of waste (subtidal sediments), water filtration (native oyster) and sequestration of carbon (rock, oyster and subtidal sediments) (Fletcher et al., 2012).
- Nutrient cycling - Marine sediments have an important role in the global cycling of many elements including carbon and nitrogen. Nitrogen and phosphorous remineralisation provide a significant contribution to the nutrients required by primary producers in the water column.
- Commercial fisheries - Infralittoral rock and mixed sediments support high biodiversity within the site and provide potential spawning and nursery grounds for many juvenile

commercial fish species. This, together with the generally high biodiversity due to the complex habitats within the site help support potential on-site and off-site fisheries, contributing to the delivery of fish and shellfish for human consumption and recreation services (Fletcher et al., 2012)

- Environmental resilience - The features of the site also contribute to the continued regeneration of marine ecosystems (Fletcher et al., 2012). Recovery of the infralittoral rock and mixed sediments and a reduction in the use of bottom towed fishing gear may increase the site's benthic biodiversity and biomass, improving the regulating capacity of its habitats, and protecting against the risk of future degradation from pressures caused by human activities.

There is clear evidence that the management option of 'do nothing' would result in a decline of ecosystem services currently provided by the site and that the existing ecosystem services derived from Kingmere MCZ make a contribution to the local economy, primarily through fisheries and recreation activities (Fletcher et al., 2012).

6.2.2 Environmental benefits

The proposed management of Kingmere MCZ will help achieve the site's conservation objectives. Management of the area has a vast range of environmental benefits, including protection of:

- The only designated MCZ site for the non-Ecological Network Guidance feature, black seabream (JNCC & NE, 2012)
- Possibly the most important breeding site for black seabream and the best studied area in the UK which has associated scientific value (Lythgoe and Lythgoe, 1971; Pawson, 1995; Emu Ltd 2007, 2008a, 2008b, 2009, 2011)
- Several excellent examples of rocky reef habitats and subtidal chalk outcropping reef systems. These rocky outcrops of sandstone and boulders support a wide range of marine life, such as bryozoans, coralline algae, sea squirts, sponges and starfish (Irving, 1996; Williams & Clark, 2010). Sublittoral rocky reefs account for approximately less than 3% of the total area of seabed of Sussex (within 12nm limit)
- A Key Inshore Biodiversity area (South East England Biodiversity Forum, 2010)
- Two marine Sites of Nature Conservation Importance (mSNCI) which are encompassed in this site (Kingmere Rocks and Worthing Lumps). These sites have been designated by East and West Sussex County Council with the support of Seasearch

- Other habitats and species which occur within the MCZ, including blue mussel beds, ross worm reefs and Undulate Rays
- Subtidal sediments which provide important nursery grounds for many ecologically and commercially important fish such as flatfish and sea bass and sand eel which support seabirds.
- A site which contributes to an ecologically coherent network of MPAs

6.2.3 *Sustainable fisheries*

A number of benefits in terms of moving towards sustainable fisheries are also associated with the proposed management at Kingmere MCZ:

- Reduction in fishing mortality - black seabream are not currently protected under any Sussex IFCA byelaws, apart from technical conservation regulations requiring large mesh cod-ends to be used on trawls during the spawning season to reduce juvenile fish capture
- Introduction of management measures for bream within the district, during a vulnerable stage of their life cycle, protecting an important breeding site
- Proposed management facilitates the collection of ongoing detailed information on effort and catch per unit effort data by Sussex IFCA, enabling the Authority to better understand fishing activity within the site and black seabream population status. Static gear operators with restricted access also have the ability to deploy and retrieve temperature loggers to help improve current understanding on the relationship between temperature and black seabream arrival in the area to spawn
- Potential increased bream productivity and beneficial spill over effects into surrounding areas as a result of sustainable management within the site, although it is difficult to predict what the impact of site protection will have on commercial stocks. The commercial species targeted by fishers in the area are mobile fish and crustacea and it is unclear whether the scale of habitat recovery and the magnitude of reduced harvesting will be enough to have a significant positive impact on commercial stocks (Defra, 2013a).

6.2.4 *Research and education*

Monitoring of the MCZ, including comparisons between the zone with complete fisheries exclusion over the season to those with some controlled access for anglers, will help inform

current understanding of how the marine environment is impacted by anthropogenic pressures and management intervention.

6.2.5 *Recreation - wildlife watching, angling, diving*

The greatest recreational use of the site is by sea anglers. Within this MCZ, Kingmere Rocks and Worthing Lumps are popular dive sites. Due to its offshore location the MCZ is not an important area for wildlife watching however, the area has particularly high biodiversity and abundant fish populations which may support foraging birds and potentially marine mammals. The site also occurs in an area of the channel used by ferries, which may carry wildlife watchers and is used by numerous recreational vessels. The recovery of broadscale habitats to favourable condition may improve their functioning as support for fish, bird and marine mammal populations and therefore potential wildlife watching in area (Defra, 2013a).

6.6.6 *Intrinsic value*

Protection of the site will benefit the proportion of the UK population that values conservation of the MCZ features (existence value), the ecosystem services they provide, conservation of habitats and species for use by others in the current generation (altruistic value) or future generations (bequest value) and the site's contribution to an ecologically coherent network of MPAs (Defra, 2013a). In the MCS's 'Your Seas Your Voice' campaign, Worthing Lumps was highlighted for its intrinsic biodiversity value and value as a fish nursery area.

6.3 One In Two Out (OITO)

OITO is not applicable for byelaws implemented for MPA management as they are local government byelaws introducing local regulation and therefore not subject to central government processes.

6.4 Small firms impact test and competition assessment

No firms are exempt from this byelaw as it applies to all firms who use the area, 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 potential hazard with management introduction at this site, in terms of being:

- Negatively perceived by 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 and statutory failure of duty

7.0 Conclusion

The Statutory Nature Conservation Bodies have highlighted this site as being at high risk. It is considered that the environmental benefits of introducing the proposed management outlined in Option 2 outweigh the potential monitoring, administrative and enforcement burden and costs to industry.

This work contributes to the fulfilment of Sussex IFCA's responsibility to ensure the sustainable management of inshore fisheries balancing environmental, social and economic costs and benefits.

The proposed management to protect the designated habitats and breeding Black seabream of Kingmere MCZ is a key component in Sussex IFCA carrying out its role locally in providing a well managed network of MPAs around the coast of England.

Sussex IFCA Kingmere MCZ management will be defined within a structured Site Management Plan that will reflect principles of 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 byelaw, associated Schedule and voluntary code of conduct.

In developing management measures for Kingmere 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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Annexes

- | | |
|------------|---|
| Annex I | The Kingmere Marine Conservation Zone Designation Order 2013. Ministerial Order |
| Annex II | Kingmere feature map, Natural England |
| Annex III | Fishing activity maps for Kingmere MCZ, 2001-2014, compiled by Sussex IFCA |
| Annex IV | Site use questionnaire – sectoral meetings |
| Annex V | Relevant current Sussex IFCA management |
| Annex VI | Balanced Seas management recommendations |
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MINISTERIAL ORDER

2013 No. 11

WILDLIFE

ENVIRONMENTAL PROTECTION

MARINE MANAGEMENT

**The Kingmere Marine Conservation Zone Designation Order
2013**

Made

21st November 2013

Coming into force

12th December 2013

The Secretary of State thinks it desirable to make this Order for the purpose of conserving the marine habitats and the species of marine fauna specified in Schedule 2 to this Order.

The Secretary of State has had regard to any obligations under EU or international law that relate to the conservation or improvement of the marine environment in accordance with section 123(5) of the Marine and Coastal Access Act 2009(a).

The Secretary of State has—

- (a) published notice of the proposal to make this Order in accordance with section 119(2) and (3) of that Act; and
- (b) consulted persons who are likely to be interested in, or affected by, the making of this Order in accordance with section 119(4) of that Act.

The Secretary of State makes the following Order in exercise of the powers conferred by sections 116(1), 117(1), (2) and (7), 118(1) and (6), and 123(1) of that Act.

Citation and commencement

1. This Order may be cited as the Kingmere Marine Conservation Zone Designation Order 2013 and comes into force on 12th December 2013.

Interpretation

2. In this Order—

“co-ordinate” means a co-ordinate on the World Geodetic System 1984(b);

(a) 2009 c.23. For the definition of the “appropriate authority” see sections 116(5) and 147(1) of that Act.

(b) For the definition of “World Geodetic System 1984” see the National Geospatial-Intelligence Agency Technical Report TR8350.2, “Department of Defense World Geodetic System 1984. Its Definition and Relationships With Local Geodetic Systems”, Third Edition, 4 July 1997.

“protected feature” means the features specified by article 4 and in Schedule 2; and
“the Zone” means the area designated by article 3(1) as a marine conservation zone.

Area designated

- 3.—(1) The area described in paragraph (2) is designated as a marine conservation zone.
- (2) The area is the marine area enclosed by the five boundary lines which are described in Schedule 1, in each case by reference to—
- (a) the co-ordinates of the points joined by the line; and
 - (b) a topographical description of the line.
- (3) In paragraph (2), “marine area”, in relation to the area designated, means—
- (a) any area of seabed or other land (whether or not covered by water) within that area; and
 - (b) all of the water covering any part of that seabed or other land.
- (4) The Zone may be referred to as “the Kingmere Marine Conservation Zone”.

Protected features

4. The protected features of the Zone are specified in Schedule 2.

Conservation objectives

- 5.—(1) There are two conservation objectives of the Zone, namely—
- (a) the objective specified in paragraph (2); and
 - (b) the objective specified in paragraph (6).
- (2) The first conservation objective is that the marine habitats specified in Schedule 2—
- (a) so far as already in favourable condition, remain in such condition; and
 - (b) so far as not already in favourable condition, be brought into such condition, and remain in such condition.
- (3) In paragraph (2), “favourable condition”, with respect to a habitat within the Zone, means that—
- (a) its extent is stable or increasing; and
 - (b) its structures and functions, its quality, and the composition of its characteristic biological communities are such as to ensure that it remains in a condition which is healthy and not deteriorating.
- (4) In paragraph (3)(b), the reference to the composition of the characteristic biological communities of a habitat includes a reference to the diversity and abundance of species forming part of or inhabiting that habitat.
- (5) For the purposes of paragraph (3)(b), any temporary deterioration in condition is to be disregarded if the habitat is sufficiently healthy and resilient to enable its recovery.
- (6) The second conservation objective is that, in relation to Black seabream—
- (a) the habitat used by members of that species for the purposes of spawning (“spawning habitat”)—
 - (i) so far as already in favourable condition, remain in such condition; and
 - (ii) so far as not already in favourable condition, be brought into such condition, and remain in such condition; and
 - (b) the population (whether temporary or otherwise) of that species occurring in the Zone be free of disturbance of a kind likely significantly to affect the survival of its members or their ability to aggregate, nest, or lay, fertilise or guard eggs during breeding.

(7) In paragraph (6)(a)(i) and (ii), “favourable condition”, with respect to spawning habitat within the Zone, means that the habitat is of sufficient quality and quantity to enable members of the species using the habitat to survive, aggregate, nest, or lay, fertilise or guard eggs during breeding.

(8) For the purpose of determining whether a protected feature is in favourable condition within the meaning of paragraph (2) or (6)(a), any alteration to that feature brought about entirely by natural processes is to be disregarded.

(9) In paragraph (6), “Black seabream” means the species *Spondyliosoma cantharus*.

21st November 2013

George Eustice
Parliamentary Under Secretary of State
Department for Environment, Food and Rural Affairs

SCHEDULE 1

Article 3

Area designated – boundary lines

<i>Boundary line</i>	<i>Set of co-ordinates of points which boundary line joins</i>	<i>Topographical description of boundary line</i>
1.	A, B	Geodesic line
2.	B, C	Geodesic line
3.	C, D	Geodesic line
4.	D, E	Geodesic line
5.	E, A	Geodesic line

where—

“A” is 50° 44' 41.957" N and 00° 32' 46.532" W;

“B” is 50° 44' 46.875" N and 00° 22' 06.962" W;

“C” is 50° 44' 11.905" N and 00° 22' 07.300" W;

“D” is 50° 42' 29.275" N and 00° 24' 48.399" W; and

“E” is 50° 42' 24.832" N and 00° 32' 48.469" W.

SCHEDULE 2

Article 4

Protected features

<i>Protected feature</i>	<i>Type of feature</i>
Moderate energy infralittoral rock and thin mixed sediments	Marine habitat
Subtidal chalk	Marine habitat
Black seabream (<i>Spondyliosoma cantharus</i>)	Species of marine fauna

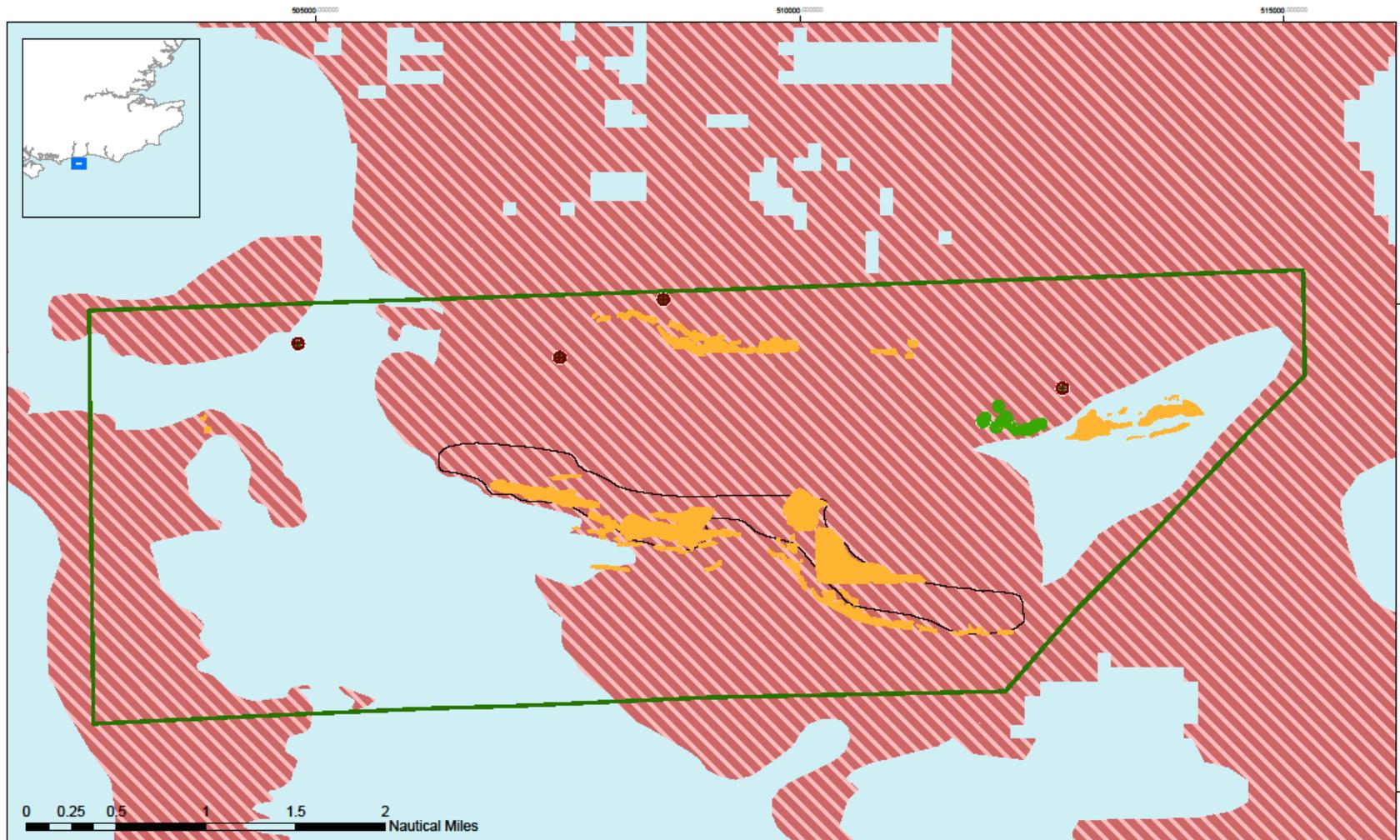
EXPLANATORY NOTE

(This note is not part of the Order)

This Order designates an area as a marine conservation zone (which may be referred to as “the Kingmere Marine Conservation Zone”). The area designated is defined in article 3 and Schedule 1. The protected features of that Zone are specified by article 4 and in Schedule 2. The two conservation objectives of that Zone are set out in article 5.

A full impact assessment of the effect that this instrument will have on the costs of business and the voluntary sector may be seen at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/82721/mcz-designate-ia-20121213.pdf.

Annex II. Features Map, Natural England



Boundaries

Designation Boundaries © Natural England

Kingmere MCZ

Designated MCZ features

HOCI and SOCI mapped integrating data originating from surveys and EU SeaMap

- Bream nest locations
- Subtidal chalk
- Black seabream

BSH mapped integrating data originating from surveys and EU SeaMap

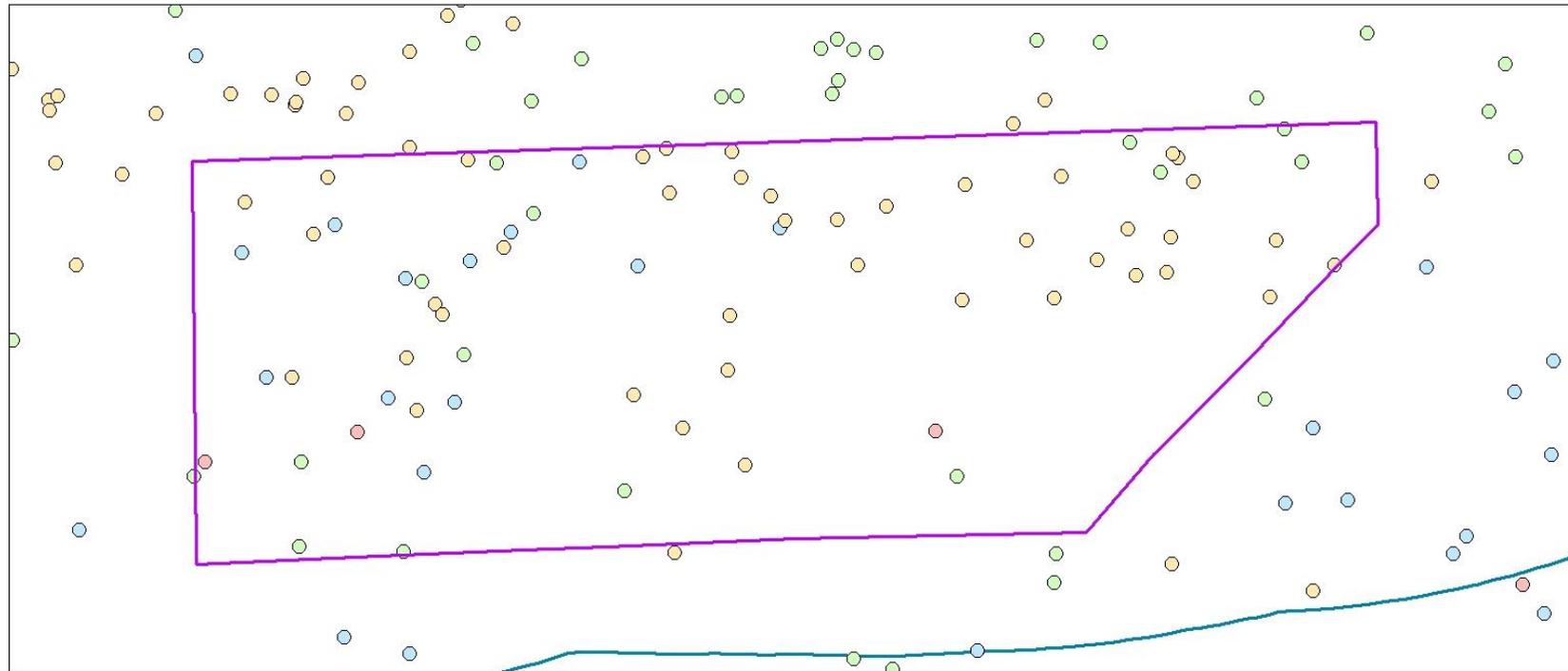
- Moderate energy infralittoral rock and thin mixed sediment

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 Plotter: 25/03/2015.
 Theme ID: 1477568.
 Map Version: 1.0.
 Coordinate System: British National Grid.
 Projection: Transverse Mercator.
 Scale (at A3): 1:35,000



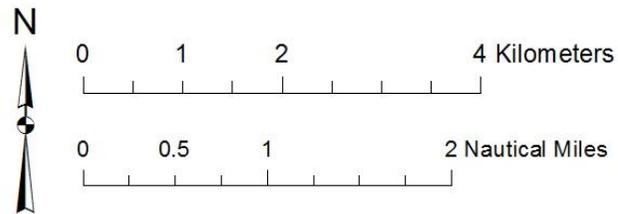
Annex III Fishing Activity Maps for Kingmere MCZ, 2001-2014, Sussex IFCA

Fishing activity 2001-2014 Trawling



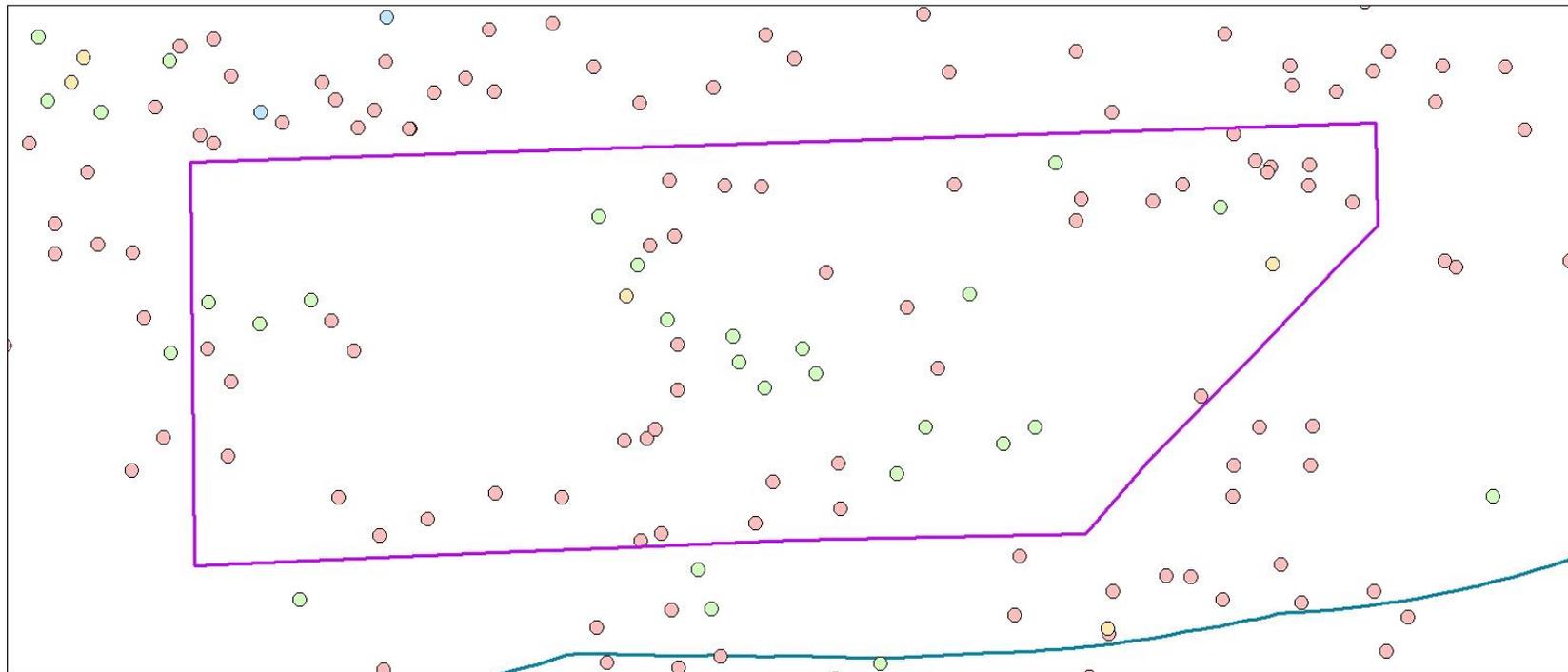
Legend

- Marine_Conservation_Zones
- Sussex IFCA district
- Trawling
- Beam
- Pair
- Stern



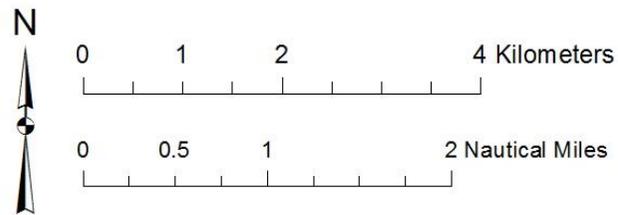
Fishing activity 2001-2014

Potting



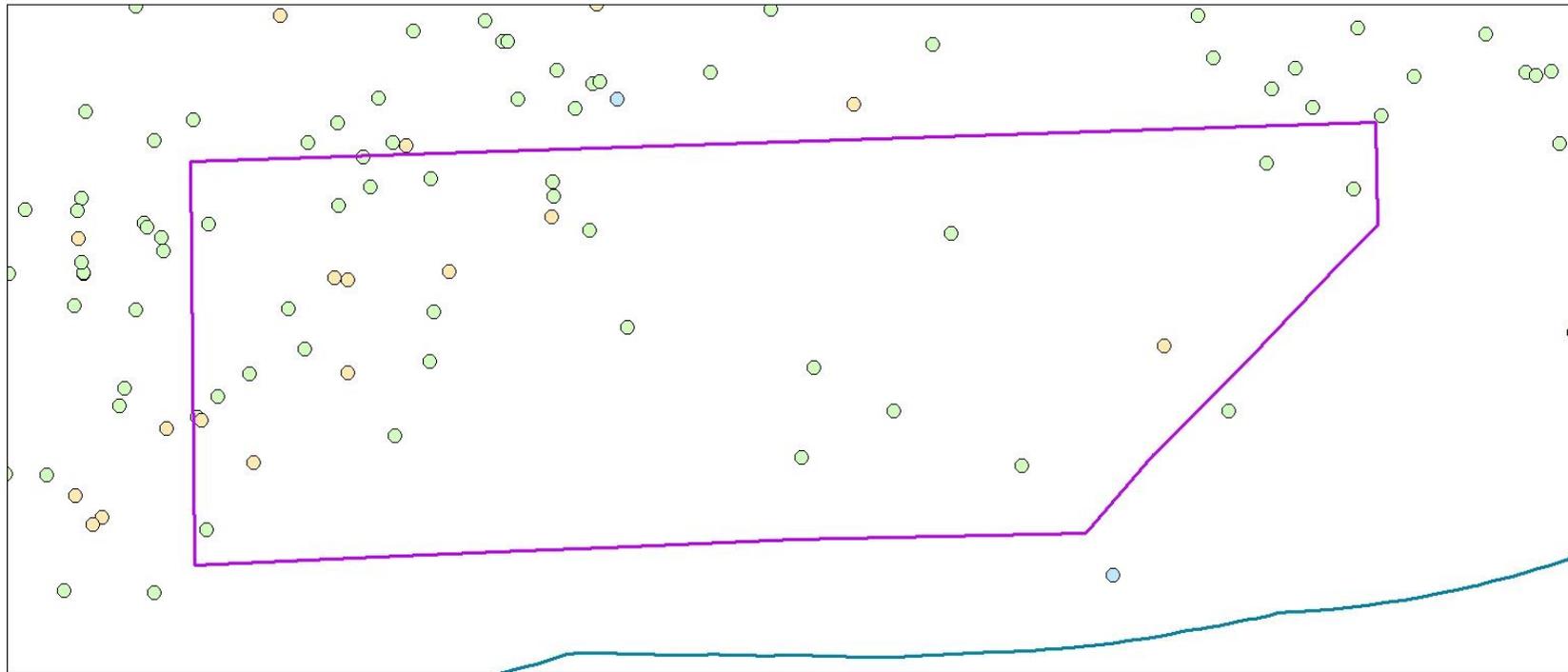
Legend

- Marine_Conservation_Zones
- Sussex IFCA district
- Potting
- Cuttlefish
- Lobster & Crab
- Whelk



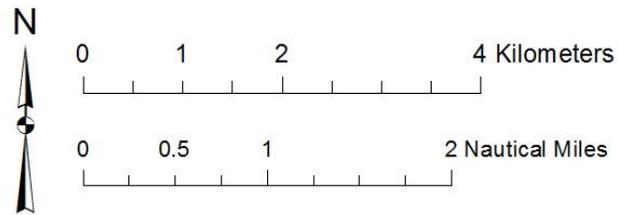
Fishing activity 2001-2014

Netting



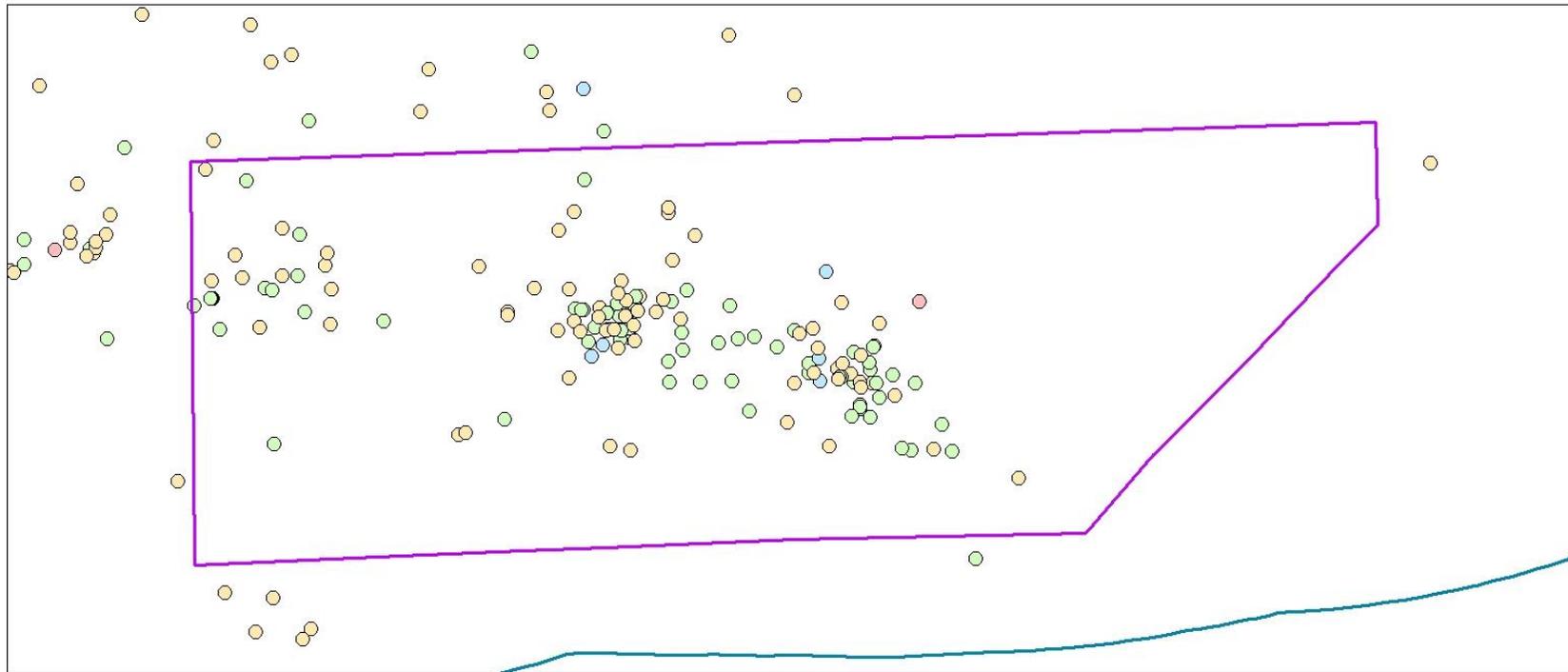
Legend

-  Marine_Conservation_Zones
-  Sussex IFCA district
-  Netting
-  Drift
-  Gill



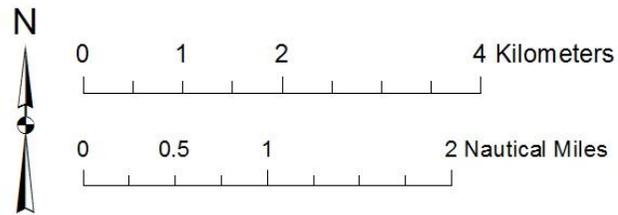
Fishing activity 2001-2014

Angling



Legend

- Marine_Conservation_Zones
- Sussex IFCA district
- Angling
- Commercial
- Recreational
- Long lining





**KINGMERE MCZ SITE USE DETAILS:
Information Gathering Questionnaire**

Sussex IFCA would like to better understand the number of vessels, quantity of gear and bream catch/bycatch by nets, pots, traps, trawls, lines and recreational angling within Kingmere MCZ. We would greatly appreciate your input on how you use the site and what you know about the site.

Site user name: _____

Email: _____

1. What gear type do you use?
Specifics of gear used

2. What time of year do you mainly use Kingmere MCZ?

3. Where do you fish within the site and for what species? (Mark on attached map or describe)

4. How often do you, or the individuals you are representing, use the site and how long for?

5. How much / what size of gear do you deploy at the site? (If applicable)

6. If you fish for bream within the site, what is your approximate catch/landings from the site?
Actual numbers or tonnage or approximate percentage of total bream catch

7. What proportion of your income do you estimate comes from the Kingmere MCZ site?
Help us understand your economic take from the site and the cost of restrictions to your business

8. If restricted from using this area, are there alternative areas nearby or methods you could use?
Please provide details – including why not an option, if applicable, and if there would be additional travel to use an alternative area

9. How important would you rate the site is to you?
Low, Medium or High importance

10. What number of vessels of your gear type are you aware of which use the site?
Over each season, when and where (map)

Annex V Relevant current Sussex IFCA management

Site	Current Sussex IFCA Management
Kingmere	For existing Sussex IFCA byelaws see: http://www.sussex-ifca.gov.uk/index.php?option=com_content&view=article&id=98&Itemid=184
	Vessel length byelaw: No vessel which exceeds 14m in length can be used in fishing for seafish within the district (with few historic rights exceptions)
	Fishing Instruments Byelaw: Only defined fishing instruments may be used for fishing within the district. This byelaw places a mesh size restriction on pair trawls of 95mm
	Fixed Engines byelaw: Restricted season for purpose of managing netting activity

Annex VI Balanced Seas management recommendations

- Seasonal restriction of all extractive activities throughout the site during the black bream breeding season – end April – June
- Permanent restriction of trawling over infralittoral rock and thin mixed sediments feature
- Need for access corridor from north to south through the MCZ for mobile gear

Annex VII Gear Categories and fishing method

Examples of the gear types included within each category are below

Mobile (towed)

Beam trawls

Otter/demersal trawls (single boat)

Multi rigged trawls

Pair Trawls

Fly dragging

Scallop dredges

Oyster dredges

Mussel Dredges

*Pelagic trawl

All other dredging methods including suction dredges

Static Gear (to include all passive netting)

Gill nets

Trammel nets

Tangle nets

Drift nets

Purse seines

Ring nets

Pots

Traps

Long lines

Angling

Single line with single or multiple hooks used from a rod

*Note: The IFCA has no evidence that pelagic mobile gear is currently used at the site. To address future development of any pelagic trawls operations and associated impacts, all trawling needs to be restricted within the MCZ during the bream season due to potential bream catch and disturbance impacts. Over the rest of the year, any pelagic trawl gear would be encompassed within mobile gear management prescriptions due to the risk of potential interaction with the seabed in this shallow site and compliance management requirements.

Annex VIII Community Voice Method Workshops: Sussex IFCA Kingmere management options summary, based on Natural England's Conservation Advice



KINGMERE MCZ POTENTIAL MANAGEMENT OPTIONS

	SCENARIO 1			SCENARIO 2			SCENARIO 3		
	Whole Site	Infralittoral rock and thin mixed sediments and sub-tidal chalk (protected habitat features)	Known black bream nesting areas	Whole Site	Infralittoral rock and thin mixed sediments and sub-tidal chalk (protected habitat features)	Known black bream nesting areas	Whole Site	Infralittoral rock and thin mixed sediments and sub-tidal chalk (protected habitat features)	Known black bream nesting areas
Mobile Gear	<p>1M1 Prohibited year round over whole site.</p> <p>1M2 Appropriate buffer around site.</p>	N/A	N/A	<p>2M1 Seasonal prohibition over whole site.</p> <p>2M2 iVMS system fitted.</p>	<p>2M3 Prohibited year round over protected habitat features.</p> <p>2M4 Appropriate buffer around protected habitat features.</p>	N/A	<p>3M1 Seasonal prohibition over whole site.</p> <p>3M2 iVMS system fitted.</p>	<p>3M3 Prohibited year round over habitat protected features.</p> <p>3M4 Appropriate buffer around protected habitat features – options to minimise buffer width.</p>	N/A
Static Gear	<p>1S1 Seasonal prohibition over whole site.</p> <p>1S2 iVMS system fitted.</p>	<p>1S3 Prohibited year round over protected habitat features</p> <p>1S4 Appropriate buffer around protected habitat features.</p>	N/A	<p>2S1 Seasonal prohibition on nets over whole site.</p> <p>2S2 Out of season, control on fishing effort.</p> <p>2S3 iVMS system fitted.</p>	<p>2S4 Seasonal prohibition on pots/traps over bream nesting habitat (equate to habitat protected features)</p> <p>2S5 Appropriate seasonal buffer around bream nesting habitat.</p>	N/A	<p>3S1 Seasonal prohibition of targeted net fishery for bream over whole site.</p> <p>3S2 Out of season, control on fishing effort.</p>	N/A	<p>3S3 Seasonal prohibition on pots/traps and nets over known bream nesting areas</p> <p>3S4 Appropriate seasonal buffer around known bream nesting areas.</p>
Angling	<p>1A1 Seasonal prohibition over whole site.</p>	<p>1A2 Out of season code of conduct for spatial restriction of anchoring over protected habitat features.</p>	N/A	<p>2A1 Seasonal prohibition on retaining or possessing bream within the site (catch and release).</p> <p>2A2 Out of season, control on fishing effort.</p>	<p>2A3 Seasonal prohibition on anchoring over bream nesting habitat (equate to habitat protected features).</p>	N/A	<p>3A1 Seasonal bag limit on amount of bream retained.</p> <p>3A2 Mechanism for controlling fishing effort.</p>	N/A	<p>3A3 Voluntary seasonal prohibition on anchoring over known bream nest areas.</p>

* Definition of season: April 1st – June 30th

* Definition of iVMS: Vessel tracking system which provides real time updates on vessel positions

16th September 2014 Technical Subcommittee meeting: Break out sessions

Summary of members views on potential issues with temporal, spatial and technical management measures for mobile gear

- Requirement for iVMS and possibly AIS on all mobile and static boats recommended – to assist potential spatial management measures
- Need for adequate buffers if explore spatial management highlighted
- Support for zonal management outside of season although issue raised around enforcement complexity and difficulty if manage over features

Summary of members views on potential issues with temporal, spatial and technical management measures for static gear

- Seasonal (April-June) restriction on all fishing methods recommended
- Issues around displacement raised
- Anchoring believed to be minor issue due to small footprint
- Zoned areas outside of bream nest areas suggested
- Effort management through shellfish permit recommended
- Technical measures to limit gear damage suggested
- Need for regular review of data to steer decisions raised – catch returns, activity (where, what, amount)

Summary of members views on potential issues with temporal, spatial and technical management measures for angling

- General perception that seasonal prohibition would receive many objections from angling sector
- Need for consideration of socioeconomic effects on charter fishers raised
- Perception that fish survival rate likely to be high post capture – given shallowness of site, hook size, fish behaviour
- Thought that catch and release would not be an attractive option to anglers
- CoC suggested for good practice technical measures rather than regulatory means
- Deeming clause for facilitating enforcement of bag limit recommended
- Value of information collection to better understand stock status if anglers allowed to utilise site during season highlighted

18th December 2014 Technical Subcommittee meeting: Break out sessions

Summary of members further input, issues and practical detail around potential management options:

- Support for seasonal restrictions for all fishing activities voiced
- Some members indicated they were not supportive of a larger compliance buffer. The use of iVMS on commercial vessels and cameras to minimise buffer widths were advocated, although issues around cost
- The need for practical 'simple' spatial boundaries around conservation features was highlighted
- Displacement from closures was discussed although was not felt to be significant
- It was suggested a compromise would encourage more buy-in, including managing static as well as trawlers and giving trawlers an access corridor.
- The need for static gear effort management outside of the season was raised by a number of members
- The use and value of gear 'tagging' and marking was recognised
- Variance between the location of the trawl and the trawlers during towing operations was understood by officers and members and the need to be reflected in measures.
- Consensus that if commercial sectors are managed, angling also needs management in accordance with conservation advice to reduce its impact
- Suggestion that some specific areas 'rectangles' should be considered for total prohibition of angling
- Practical enforcement and compliance issues around option 3 for angling were raised
- Recognition that compliance is likely to be best where there is community support for management and users can exert pressure on others and provide information to the Authority.
- Deeming clause recognised as essential if option 3 bag limits approach taken for angling
- Suggestion that survival of fish post hook and release could be improved through use of barbless hooks, which could be approached through a code of conduct
- Raised that the biggest back lash to seasonal prohibition would be by anglers, based on the workshop outputs.
- Suggestion that more chance of compliance if bring fishermen with us with measures and that a bag limit would be well supported, suggesting that charters would go out of business if prohibited seasonally.

Annex X Marine and Coastal Access Act obligations

- Duty in relation to MCZ implementation

The duty in section 125 requires public authorities, so far as is consistent with the proper exercise of their functions, to exercise their functions:

- i. in the manner which the authority considers best furthers the conservation objectives for the MCZ; or, where this is not possible;
- ii. in a manner which the authority considers least hinders the achievement of the conservation objectives.

Section 126 applies to all public authorities with responsibility for authorising applications for activities (such as shellfish extraction) capable of affecting:

- i. a protected feature of an MCZ; or,
- ii. any ecological or geomorphological processes on which the conservation of an MCZ feature is partially or wholly dependent.

The duty in section 154 requires IFCAs to further the conservation objectives of MCZs.

- Provisions for management

Sections 129 to 132 of the Act give MMO the power to make byelaws, including emergency and interim byelaws, for the purpose of furthering the conservation objective of an MCZ.

Section 140 of the Act makes it an offence for any person to intentionally or recklessly damage the protected features of an MCZ in such a way that the conservation objectives have, or may have, been significantly hindered.

The purpose of this section is intended to prevent:

- i. Acts of environmental vandalism – intentional acts where the purpose is to damage the designated feature of an MCZ;
- ii. Reckless damaging behaviour – where the person was aware (or should reasonably be expected to have been aware) that damage was a likely consequence of their actions, but they continued regardless.

Sections 155 to 157 of the Act give IFCAs the powers to make byelaws, including emergency byelaws, for the purpose of furthering the conservation objectives of an MCZ.

Section 156 sets out a non-exhaustive list of the types of activities for which IFCAs may make byelaws (including emergency byelaws) to manage sea fisheries resources in their district. Provisions that may be made by a byelaw under this section include prohibiting or restricting the exploitation of sea fisheries:

- i. in specified areas or during specified periods;
- ii. limiting the amount of sea fisheries resources a person or vessel may take in a specified period.

The provisions cover:

- i. permits (including conditions for the issue, cost and use of permits);

- ii. vessels;
 - iii. methods and gear, (including the possession, use, retention on board, storage or transportation of specified items).
- Risk and uncertainty

In carrying out their duties under Part 5 of the Act, it is inevitable that public authorities will be required to take decisions on the basis of incomplete or uncertain information. For example, it will sometimes be impossible or impractical to establish with certainty:

- i. whether an activity or proposed development is capable of affecting an MCZ, and whether the impact is insignificant;
- ii. whether or not a proposed development may 'hinder the achievement' of an MCZ's conservation objective;
- iii. the extent of any damage to the environment;
- iv. or whether equivalent environmental benefit measures will secure the desired outcome.

Decision-making should be reasonable and proportionate to the level of risk and potential impact. Decisions should be based on the balance of best available evidence and have regard to any advice from Statutory Nature Conservation Bodies (SNCBs). In cases where the risk to the conservation objectives of the site could be high, it may be appropriate to follow a precautionary approach. Where evidence is inconclusive, regulators should make reasonable efforts to fill evidence gaps but will also need to apply precaution within an overall risk-based approach. This means that if the risks from an activity are uncertain preventative measures may be required.

- Monitoring in regard to MCZ reporting

Section 124 requires an assessment every 6 years, outlining the extent to which conservation objectives have been achieved across the MCZs, and the contribution of sites towards achieving an ecologically coherent network of MPAs.

Subsection 3 directs the appropriate SNCB to carry out the monitoring of MCZs.

The report should contain:

- i. the number of MCZs which the authority has designated during the relevant period;
- ii. in relation to each such MCZ.
 - the size of the MCZ, and
 - the conservation objectives which have been stated for the MCZ;
- iii. the number of MCZs designated by the authority in which the following activities are prohibited or significantly restricted;
 - any licensable marine activity;
 - fishing for or taking animals or plants from the sea.
- v. information about any amendments which the authority has made to any designation orders;
- vi. the extent to which the conservation objectives stated for each MCZ which it has designated have been achieved;
- vii. any further steps which are required to be taken in relation to any MCZ in order to achieve the conservation objectives stated for it.