FMP Rapid evaluation / advice on Front-Runner Fisheries Management Plans

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Contents

Introduction

The formulation of Fisheries Management Plans (FMPs) provides a unique opportunity to develop a robust roadmap for the future development and management of the UK fishing industry.

Based on the requirements of the Joint Fisheries Statement (JFS), which has been collaboratively produced by UK fisheries policy authorities, each FMP has been developed in consideration of the eight overarching fisheries objectives set out in the Fisheries Act 2020: sustainability, the precautionary approach, ecosystem, scientific evidence, bycatch, equal access, national benefit, and climate change. The aim of FMPs is to enable the sustainable management of stocks and their protection for now and in the long term, whilst also taking into consideration wider fisheries management issues covering environmental, social and economic concerns. An inherent component of the JFS vision is that industry should be encouraged to play a greater role in contributing to fisheries management and co-designing future policy, enabling fishers to participate more meaningfully in their own future and the sustainable management of the stocks upon which they rely.

The objective of this document is to provide an evidence-based assessment of the suitability and quality of these frontrunner FMPs (“the FMPs” herein) to assist with consideration of how best to advise and advance these plans toward meaningful implementation.

Methods

A mixed-method approach (see Appendix page 15) was taken to evaluate the FMPs. First, two benchmarking exercises were undertaken to evaluate how well each of the six FMPs align with (1) the eight fisheries objectives and (2) Section 5 of the JFS, which sets out the overall purpose of FMPs, including their link to the fisheries objectives and the wider framework for fisheries management. The main document of each FMP was benchmarked against each component of (1) (see Appendix page 16) and (2) (see Appendix page 17) and scored based on alignment. For (1) the scoring was 2,1,0 (good alignment, semi-alignment, and no alignment). For (2) a yes versus no approach was taken. For all scores a justification and or context description was provided to provide evidence / reason for the evaluation score that was given. Color-coding the scores within each matrix allowed generic patterns in scorings to be visualised easily and patterns in the evaluations to be drawn out easily from the FMPs.

Following the two benchmarking exercises a short evaluation report was written for each FMP. These short reports took a standardised approach using the following headings for each: Overview, primary challenges / constraints, main actions outlined in the FMP, deficiencies / room for improvement, concluding remarks / critique. Each report draws from the scoring of the benchmarking exercise and the expert opinion of the evaluation team. Each short report can be used as a stand-alone evaluation of each FMP but greater context and justification for the evaluation is possible when reviewed along with the results of the two benchmarking exercises (see supporting excel document).

Results

FMPs vs JFS Objectives - benchmarking

The six FMPs performed markedly differently when evaluating their alignment with the JFS objectives overall (Figure 1). The lowest scoring FMP (average across the eight objectives) was the bass (50.6) whilst the highest was the SNS mixed flatfish performed the best (67.6).

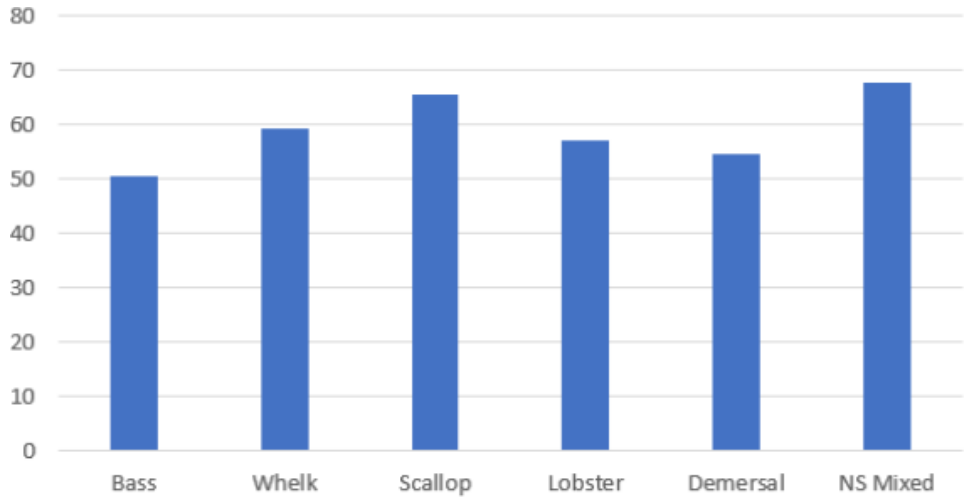


Figure 1. Average score of each FMP when evaluating each against the 8 objectives of the JFS.

The scores for each JFS objective were highly variable within each FMP (Figure 2), with Bass and SNS mixed showing the greatest variability compared to Whelk and Channel Demersal that showed the least.

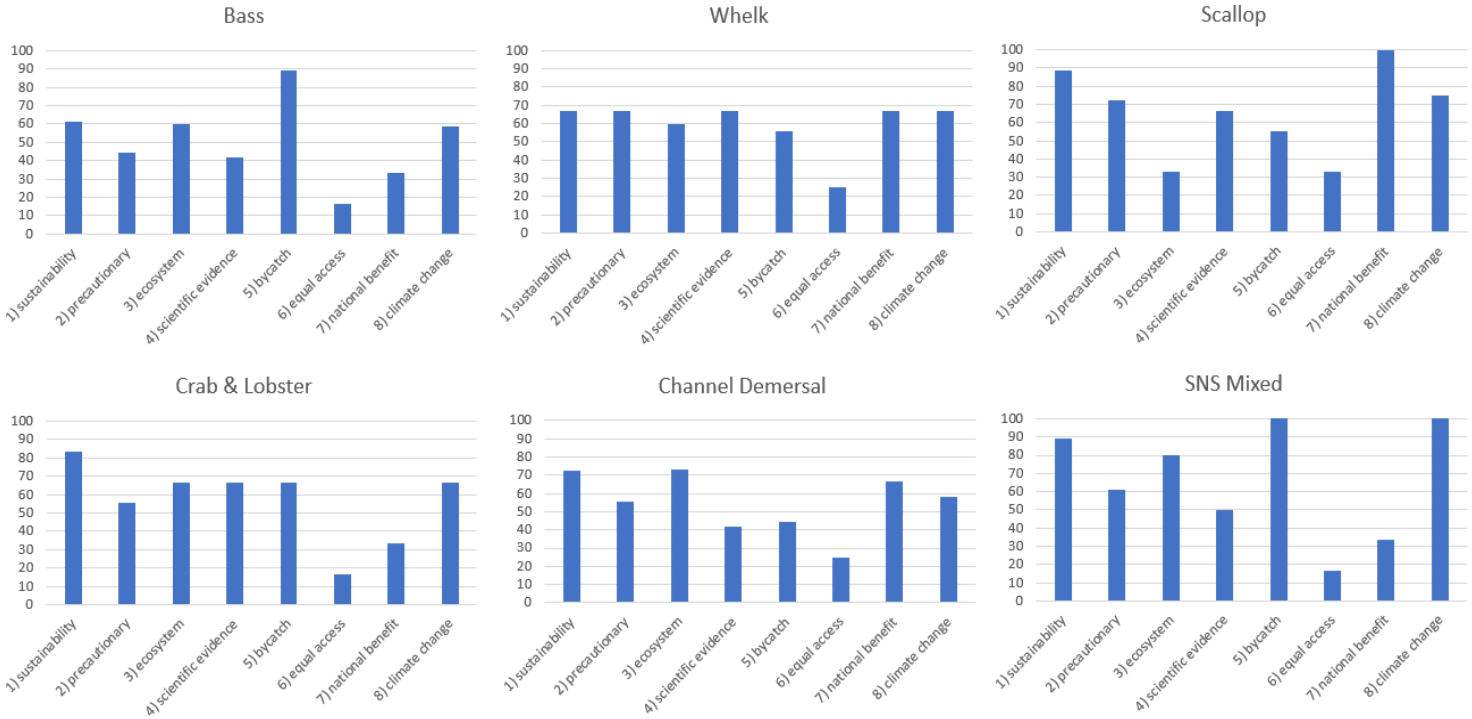


Figure 2. Scores (0-100) for each FMP when benchmarked against each of the JFS objectives (sustainability, precautionary, ecosystem, scientific evidence, bycatch, equal access, national benefit, climate change).

The FMPs (averaged overall) aligned better with some of the JFS objectives than others (Figure 3). The equal access objective scored significantly lower than any other objective whilst the sustainability, bycatch and climate change objectives scored the highest. It is, however, noteworthy that the variability within a single objective was high in some cases. For example, the bycatch objective for Bass and SNS mixed scored considerably higher when compared to the other FMPs (Figure 4). Similarly, the equal access objective scored significantly higher for scallops than the other FMPs.

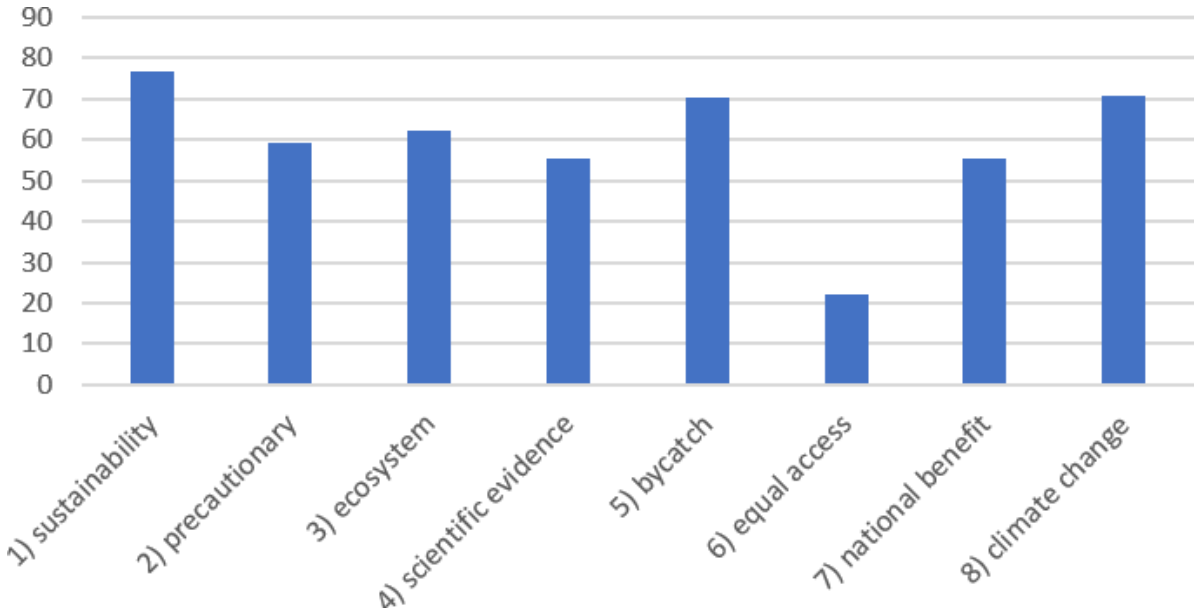


Figure 3. Average benchmarking scores per JFS objective with all FMPs combined.

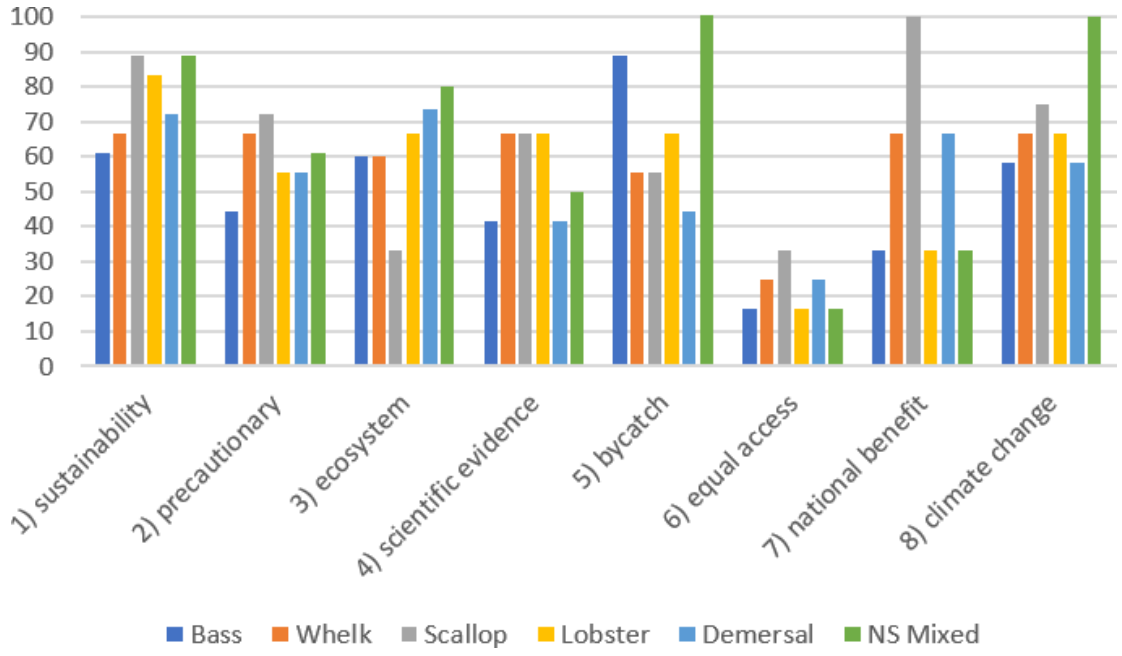


Figure 4. Benchmarking scores per JFS objective broken down for each FMP.

FMPs vs JFS Section 5 - benchmarking

Seven of the possible 21 clauses of the JFS section 5 benchmarking score highly across all FMPs (Figure 5). None of the clauses scored poorly across all FMPs. The worst performing clause (in Section 5 of the JFS) across the FMPs was "*Each FMP must specify the relevant indicator(s) that fisheries managers will use to assess the effectiveness of the plan. These indicators will help to monitor the effectiveness of the FMP and how it is contributing to those fisheries objectives relevant to the plan. Where appropriate, these indicators will be linked to timebound targets that relate to the goals and management targets of the FMP.*"

Section in #5	# in JFS	BASS	WHELK	SCALLOP	CRAB LOBSTER	DEMERSAL	SNS Mixed
Introduction	5.1.1	2	2	2	2	2	2
Introduction	5.1.2	see objectives benchmarking					
Introduction	5.1.3	na	na	na	na	na	na
Introduction	5.1.4	2	2	2	2	2	2
Introduction	5.1.5	na	na	na	na	na	na
What is an FMP	5.2.1	0	2	0	0	0	0
What is an FMP	5.2.2	1	1	2	2	1	1
What is an FMP	5.2.3	na	na	na	na	na	na
What is an FMP	5.2.4	2	2	2	2	0	2
What is an FMP	5.2.5	1	1	1	1	1	1
What is an FMP	5.2.6	1	0	2	1	1	2
Determining stocks included in FMPs	5.3.1	na	na	na	na	na	na
Determining stocks included in FMPs	5.3.2	0	1	1	2	1	0
Determining stocks included in FMPs	5.3.2	2	2	2	2	2	2
Determining stocks included in FMPs	5.3.2	2	2	2	2	2	2
Determining stocks included in FMPs	5.3.2	2	2	2	2	2	2
Determining stocks included in FMPs	5.3.3	na	na	na	na	na	na
Determining stocks included in FMPs	5.3.4	na	na	na	na	na	na
Determining stocks included in FMPs	5.3.5	na	na	na	na	na	na
Determining stocks included in FMPs	5.3.6	na	na	na	na	na	na
Determining stocks included in FMPs	5.3.7	2	0	1	1	1	2
Determining stocks included in FMPs	5.3.8	1	0	2	0	0	2
How FMPs relate to Fisheries Objectives	5.4.1	na	na	na	na	na	na
How FMPs relate to Fisheries Objectives	5.4.2	na	na	na	na	na	na
How FMPs relate to Fisheries Objectives	5.4.3	1	1	2	2	2	1
Relationship b/w FMPs and Existing MPs	5.5.1	na	na	na	na	na	na
Relationship b/w FMPs and Existing MPs	5.5.2	na	na	na	na	na	na
Relationship b/w FMPs and Existing MPs	5.5.3	na	na	na	na	na	na
Relationship b/w FMPs and Existing MPs	5.5.4	na	na	na	na	na	na
Assessing Sustainable fisheries	5.6.1	2	0	1	1	1	2
Assessing Sustainable fisheries	5.6.2	2	2	1	2	1	2
Assessing Sustainable fisheries	5.6.3	2	2	2	2	2	2
Assessing Sustainable fisheries	5.6.4	2	1	1	2	2	2
Assessing Sustainable fisheries	5.6.5	na	na	na	na	na	na
Assessing Sustainable fisheries	5.6.6	1	0	2	0	2	2
Monitoring and reviewing FMPs	5.7.1	2	1	1	2	0	1
Monitoring and reviewing FMPs	5.7.2	2	2	2	2	2	2

Figure 5. Benchmarking exercise of FMPs versus JFS Objective 5. Green highlights alignment, orange partial alignment and red no alignment. White (na) cells were not included in the exercise as they were too generic to be scored. Bold black rectangles highlight the best alignment across all FMPS for a given Objective 5 clause.

Discussion

Limitations

It is important to note that this project report is the result of a rapid evaluation and as such has not had sufficient time to evaluate all materials associated with each FMP. We appreciate that the annex materials of the FMPs contain additional detail relevant to the conversation. However, following a brief review of such materials we do not feel that any of our results or discussion would change in light of a deeper review of these additional materials.

Whilst the methods we use in the benchmarking provide a useful overview summary, it is important to highlight that a poor score in the benchmarking can be the result of both a lack of evidence altogether or a poor use of evidence provided. Whilst this requires consideration, it does not change the conclusions drawn about each FMP.

In the JFS Section 5 benchmarking exercise, not all clauses were evaluated because many of them are too broad to warrant such. Again, this has little bearing on the results and conclusions presented herein.

Overview of the Main Actions Outlined in the FMPs

In consideration of the primary challenges and constraints that have been identified, each FMP has laid out goals and actions to overcome them, in line with the eight fisheries objectives. Regarding these objectives, an aggregated synthesis of the main actions outlined in FMPs is provided below – note that while these actions have only been listed once under the heading of a specific objectives, many of the actions speak to multiple objectives:

Sustainability

- Regarding vessel fleets: possible implementation of effort controls with reference to number and size of vessels, consideration of diversity in fleets (i.e., size, power, capacity), consideration of vessel flexibility (i.e., ease of swapping sector)
- Undertake annual monitoring of patterns of fishing activity and fleet performance; develop a mechanism of gathering accurate fishing effort data
- Caution needed regarding the latent capacity in fleets; consider differences in fishing capacity between vessels of different constructions
- Conduct socio-economic impact assessments to improve social and economic data collection
- Identify social and economic indicators and seek new and novel ways to identify these
- Identify and integrate upcoming new/novel ways of social and economic data collation to feed into the FMP
- Collaboration across government, industry and academic organisations to understand the current evidence gaps and latest innovations
- Review the possibility of implementing local spatio-temporal closures to protect stocks
- Implementation/ adjustment of Minimum Conservation Reference Size (MCRS) for some stocks

- Implementation/ adjustment of Minimum Landing Size (MLS) for some stocks
- Improve the current data collection programme at a national level, to address critical data requirements and build a long-term time series of data to support evidence-based fisheries management and build partnerships between stakeholders to facilitate this
- Improve datasets to allow for assessment, harvest strategy and proposes MCRSs for some and reduce pressure on juveniles
- Seek to support the protection of protected sites and species
- Harvest Strategies are the combination of monitoring, stock assessment; Harvest Control Rules (HCRs) and management actions are required to bring about sustainable management

Precautionary approach

- Implementation of precautionary management measures in the short-term whilst more evidence is gathered
- Consider the development of permitting or licensing schemes for certain fisheries
- Continue allocating catch in accordance with ICES scientific advice – when available
- Seek to improve datasets to allow for assessment of the stock's Maximum Sustainable Yield (MSY)
- improve data collection on recreational catches
- Explore options around managing fishing effort to protect stocks in the absence of a full time series of effort data. Ensuring that management remains flexible and responsive to changes in stock status or availability of scientific information as the evidence base improves
- Encourage participation in existing observer programmes, which will increase our understanding and thereby allow better decision-making regarding what and where mitigations may be required
- Establishment of indices of abundance with at least two years of effective reporting

Ecosystem

- Minimise the impact of fishing on the wider marine ecosystem
- Minimise the impact of gear on seabed integrity; investigate and understand the key issues in seabed integrity within the fishery and develop appropriate mitigation
- Consider adopting an alternative authorisation system for fisheries
- Minimising fishing related litter and reduce negative interactions generally
- Minimise entanglement related deaths
- Review the effectiveness of existing technical measures to minimise ghost fishing
- Undertake additional research on what else an ecosystem-based approach to fisheries management could consider
- Contribute to the implementation and coordination of the Benthic Impact Working Group. This work will consider the issues at a strategic level and within the context of ongoing changes in marine spatial use and environmental protection to achieve the objective of 'good environmental status' (GES) under the UK Marine Strategy

Scientific evidence

- Consider establishing an evidence sub-group of the principal management group to seek consensus between sectors by placing science and evidence at the heart of decision-making
- Seek collaboration across government, industry and academic organisations to understand the current evidence gaps and latest innovations
- Implementation of an Inshore Vessel Monitoring System (iVMS)

- Identify relevant data required, including appropriate time series of data, to underpin catch limits, and understand if this is being collected already or if new methods for data collection are required
- Develop and pilot a comprehensive data collection programme
- Increased use of existing data gathered by fishers
- Work with scientists, regulators and the recreational sector to improve data collection on recreational catches - including options for other approaches, for example, applications, registration and reporting, onsite approaches
- Consideration of whether a 'freeze' on latent permits is required if scientific evidence supports this
- HCRs should ensure that exploitation is aligned with actual or likely stock status according to the best available scientific evidence and that management measures are adjusted in response to changes in the assessed state of the stock
- Consider fishery management measures designed to rebuild stocks rather than preserve them, as required, in line with the best available scientific evidence
- Implementing management measures based on best-available scientific evidence, which takes account of the external regulatory environment, is required for responsive management to protect stocks against over-exploitation

Bycatch

- Work to understand and minimise bycatch of unwanted stocks and minimise discarding
- Implement a bycatch monitoring plan – or potential impacts will be considered via a bycatch monitoring plan to be set out in future iterations of the FMP; the plan will encourage fishers to report accidental bycatches along with the geographical location and re-enforce the existing requirement to report any marine mammals caught in fishing gear within 48 hours of returning to port
- Implement policies seeking to better assess bycatch associated with the fisheries, which should allow the introduction of measures to reduce bycatch of non-target and sensitive species over the long-term if required
- Consider incentivising domestic participation in scientific trials to improve data collection on discards, such as providing derogations to land discards. Closely monitor the impact this has on landings, discards and stock sustainability and review annually
- Consider developing gear modifications and activities to reduce bycatch (for example, as publicised on the Clean Catch Bycatch Mitigation Hub)
- Consider allowing fishers with relevant authorisations the option to switch from using fixed nets to hook and line gears associated with a lower risk of Protected, Endangered and Threatened (PET) species bycatch
- Improve monitoring to better understand PET species bycatch, e.g., promote fishers' uptake of validated (observer/Remote Electronic Monitoring) monitoring on boats
- Review the practice of shallow inshore and shore-based netting to determine whether additional regional or national protections are needed to prevent migratory fish bycatch – also incorporating special consideration of netting in nursery areas
- Collaborate with other existing initiatives that are working to mitigate negative impacts of fishing action, such as the Bycatch Mitigation Initiative, Clean Catch UK
- collect additional evidence to understand levels of bycatch associated with static and towed gear
- Review the most appropriate size limits for the stock, for example, a MCRS or slot sizes whereby fish above and below a certain size are returned to the breeding stock
- Location-specific MLS could be complex and an evaluation of this is proposed
- Explore use of the Catch App to record discard data

- Consider potential gear developments to reduce discards from nets and trawls
- Consider implementing a requirement that vessels must immediately discard unwanted fish to facilitate effective enforcement of fisheries regulations at sea rather than only upon landing
- Consider how to fill evidence gaps required for improved stock assessments, including additional data on levels of discarding in the commercial sector and on recreational removals
- Consider the pros and cons of moving towards a catch limit or quota approach (instead of a bycatch approach), which could come with a landing obligation
- Considerable uncertainty is evident, including that of bird, cetacean bycatch. FMP recommends wider bycatch monitoring and mitigation programmes such as Clean Catch UK

Equal access

- Work towards sector equality in ensuring fisheries regulations are applicable to all those fishing for the species covered in the FMP. This could include consideration of how non-powered vessels should be managed
- Appropriate access arrangements can support thriving fisheries in terms of both economic and environmental sustainability

National benefit

- Increase research on the social, economic and cultural importance of fisheries to show the benefits for local coastal communities and how they could be maximised and measured
- Consider how to ensure compliance with regulations for buyers, sellers and fishers to help local coastal communities better maximise the benefits of fishing

Climate change

- Collaborate across government, industry and academic organisations to understand the current evidence gaps and latest innovations to support the development of pathways towards Net Zero for the UK fishing fleet
- Consider how to support industry to decarbonise (for example, aligned with a Net Zero by 2050 target)
- Implement a multiyear ‘End of Life Fishing gear Recycling Scheme’, a nationwide scheme for the collection and recycling of end-of-life fishing gear; and ongoing research initiatives to support the reuse and repurpose of end-of-life fishing gear back into the fishing industry
- Continuation of monitoring programmes to assess seafloor litter, surface litter and beach litter
- Identify opportunities for reducing carbon emissions
- Proposes the use of more efficient gear and improved understanding of the fisheries impact on the marine environment (including seabed, Blue Carbon, and CO_2 emissions) through collaborate studies
- Mitigating actions could include technological, regulatory, managerial, and behavioural changes to increase efficiency or transition to alternative fuels and energy sources, and reducing the direct impact that fisheries’ have on marine carbon stores. Work is occurring at a national level to understand the current evidence gaps and latest innovations to support the development of pathways towards Net Zero for the UK fishing fleet
- Assess the carbon footprint of fisheries using a reliable metric which takes into account specifics of the industry, an improved understanding of the carbon footprint of fisheries

will help identify carbon hotspots and identify opportunities for decarbonization or mitigation
- Collate research findings to build an improved understanding of the potential impacts of fishing. Implementing such actions has the potential for the FMP to have a positive contribution to the current baseline in the future.
- Suggests building an evidence base to consider viable options for towed gear management. Whilst passive gears are generally less emission-intensive than mobile gears, quantification of carbon emissions across the fishing fleet supply chain (for example, preharvest through to postharvest) is required to truly understand the fisheries carbon footprint.
- Building the evidence base on the impacts of climate change on fish and shellfish stocks and fisheries through the existing research and development projects, for example the Marine Climate Change Impact Partnership (MCCIP)
- Use/develop carbon hot spots and climate “refugia” maps to identify and reduce potential overlap with fishing footprints and develop an understanding of the likely impacts of climate change on the status of fisheries
- Undertake research into the impact of climate change on the fishery. Consider research to identify opportunities to implement climate change mitigation and adaptation measures.

FMP Development

The development of each FMP has commenced with an engagement process in order to determine the current status of the stock(s) in question, acknowledging that the long-term sustainability of these stocks is incumbent upon the development and implementation of management measures derived from a well-informed scientific evidence-base. In each instance, this initial data collection and engagement process has been conducted through various stakeholder engagement events which have facilitated the identification of existing measures currently in place for each stock along with all available science and evidence. These engagement events have brought together scientific researchers, fishery regulators, Statutory Nature Conservation Bodies (SNCBs) and industry stakeholders from across the supply chain. The development process for each FMP then proceeded to analyse these data to highlight where evidence gaps exist and determine what was required to fill these gaps. After this endeavour, the FMPs then define the overarching objectives and goals relevant to each respective FMP scope, and further define the activities that would best deliver upon these.

Primary Challenges / Constraints

The principal constraints identified across all FMPs is a lack of sufficient evidence and data, with some stocks being considerably more data limited than others. Broadly, these data deficiencies fall into the following categories: an absence of stock assessments; a limited understanding of stock structure and recruitment, no delineation of stock boundaries; no MSY reference points (or proxies); an absence of data pertaining to the wider environmental impacts of the fishery, including impacts from gear, marine litter, discards, bycatch, and impacts on blue carbon habitats; limited data on recreational catch; and a lack of socio-economic data pertaining to the fishery.

Whilst not applicable to all FMPs, other notable constraints pertain to the challenges presented by the inclusion of mixed species in the scope of some FMPs, as well as consideration of international governance mechanisms that apply to shared stocks. One of the FMPs for example, includes a diverse array of 19 species within its scope, which inevitably presents challenges in terms of the biological diversity that needs to be considered and the range of different habitats in question. Likewise, where international governance concerns need to be factored in, the FMP will need to address the additional complexity of international engagement and negotiation, without which binding control measures cannot be implemented.

Deficiencies / Room for Improvement

While the FMPs must be applauded for the broad vision that they offer in delivering sustainable management of stocks and their protection for now and in the long term, very few practical or tangible management measures are provided within them. The specific deficiencies in each FMP are discussed in the six individual reviews conducted per FMP (see Appendix pages 18 to 32), but here we provide a broad overview of the general theme of deficiencies identified throughout the FMPs.

Category one deficiencies

In some instances, the asks of the JFS are not addressed at all in the FMPs. For the sake of clarity, we define these instances as category one deficiencies, referring to aspects that are absent from the FMPs and have been overlooked or omitted. Notably, the objective of equal access is barely mentioned across all FMPs, which in general do not address the issue that the access of UK fishing boats to any area within British fishery limits should not be affected by the location of the fishing boat's home port; nor do any FMPs mention vessel owners. Similarly, little mention of the management of discards is made in most FMPs, despite this clearly being a priority sustainability metric across most fisheries. Likewise, the requirement of data sharing is either absent in FMPs or mentioned only in passing, and yet this is a key component to advancing the successful development and deployment of coordinated, evidence-based fisheries management measures. Where FMPs note the need for the introduction of, or amendments to, MLS or MCRS, no mention has been made about possible effort displacements that may occur because of this, wherein fishers swap to other species or fishing activity and the subsequent impacts of this. Importantly, none of the FMPs place clear obligations on the national fisheries authorities, which will seek to deliver the goals of the FMP – with FMPs typically stating that mandated action will only develop in the future iterations of the FMP.

Category two deficiencies

Other deficiencies, which for the sake of clarity we have categorized as 'category two deficiencies', pertain to requirements of the JFS that have been well referenced, but which are not comprehensively addressed or dealt within in a coherent actionable way. In these instances, FMPs acknowledge the asks of the JFS but do not support this with actionable goals, rather these topics are integrated into the FMP using ambiguous language. Clear objectives are not defined and there is a lack of clarity on how the FMPs will initiate

tangible improvements in fisheries management.

A lack of data and evidence is referenced across all FMPs, with the absence of data not appearing to lead to a precautionary approach. This looks to be at odds with article 2.1.7 in the JFS, which states that: "*To support the precautionary objective, the fisheries policy authorities will focus on ensuring that demands for additional evidence are not used to avoid or delay taking difficult management decisions*". In this regard, some examples of common themes discussed around data deficiency are: "*to review the efficacy of management approach in light of improved data collection*," and "*to consider how to fill evidence gaps required for making improved stock assessments*," and, "*the aim of the research plan is to build on existing research and data*." Evidence deficiencies appear to lead to little prescriptive action being defined, and no management plan to operationalize due to the unspecific nature of actions discussed in FMPs. This is reiterated when considering the lack of indicators noted to measure progress within each FMP and in some instances a failure to provide tangible mechanisms for measuring progress so that FMPs can be effectively evaluated and the delivery agencies held to account.

Found throughout the six front runner FMPs are frequent references to the FMP consultation process itself, in that actions will be determined once this consultation process has been completed. This offers further uncertainty. An example is "*specific timings on this process will depend on the outcome of the FMP consultation*". Overall, FMPs are not prescriptive enough and generally tend to suggest further review in six years, and any interim timelines provided, such as short and medium-term are indistinct.

Frequent references are made to climate change and net zero throughout the six FMP frontrunners. Again, action in relation to climate change mitigation strategies lack concrete initiatives and are focused on actions such as the need for further evidence gathering. No goals as to carbon reduction or emissions reductions have been made, no targets have been presented, and no firm measures to deal with this priority objective are offered. The FMPs refer to the development of a collaborative effort to assess carbon footprint rather than, for example, imposing a prescriptive target reduction in line with the specific targets of Net Zero. Similarly, socio-economic considerations are alluded to but sufficient detail is not provided to make them practicable within each FMP.

In respect of the scope covered by some FMPs, in some instances they are comprised of an unduly complex mix of species. This appears to make such FMPs particularly challenging and unlikely to be able to deliver on their purpose because of the diversity and differing needs, biologies, and habitats of the species included in these mixes. This is further compounded by the different user groups and stakeholders, which are comprised of both recreational and commercial interests, as well as this sometimes being further complicated due to international governance aspects in respect of shared stocks. In some instances, it may be worth re-evaluating the criteria of FMP species selection and geography.

Concluding Remarks

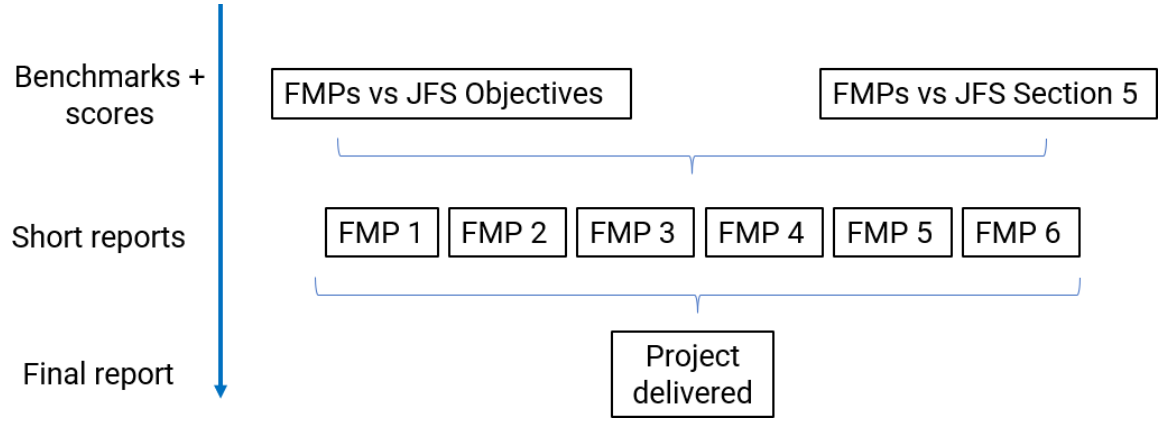
The six frontrunner FMPs are written in largely differing formats by different authors, with some appearing more similar than others dependent on origin. While all six attempt to address the eight objectives outlined in the JFS, they do so in significantly different ways and a template or ordered approach would be preferable to allow for harmonisation in the FMP process. This need for standardisation in the FMPs across all fisheries will be particularly important for managing overlaps that occur in the scope of FMPs, for example in the Channel Demersal Non-Quota Species FMP and the Southern North Sea and Eastern Channel Mixed Flatfish FMP. A failure to standardise FMPs (see Overview of the Main Actions Outlined in the FMPs) is likely to exacerbate misunderstandings and increase complexity rather than solve challenges of fisheries management.

FMPs should hold themselves accountable for progress against the JFS objectives and ultimately progress towards reaching GES. However, the six frontrunner FMP documents contain a significant deal of ambiguity derived from under specification. To counter this, individual FMPs should define clearly the actions that they propose to carry out and to prioritise those actions, offer clear time bound targets as to when these actions are to be, a) operationalised, and b) achieved. Through better definition and appropriate timescale commitments the lack of definition within the FMPs can be addressed. There are many more FMPs in the pipeline, these comments should therefore be considered with urgency so the above issues are not perpetuated / amplified which would likely lead to disengagement with industry stakeholders and make any future implementation more difficult as a result.

Appendices

Diagram of the mixed methods used for the FMP evaluation.

Arrow shows direction of work (start to finish).



Screenshot of benchmarking exercise (1) – JFS Objectives

Ref ID	Objective	JFS	**deseri**	**summ**	nce	words	Bass	Whelk	Scallp	Lobster	al	Mixed	Total by clause	
1	1) sustainability	2.1.1	aquacul	able	M	able	2	2	2	2	3	3	14	
2	1) sustainability	2.1.1	aquacul	mic and	M	mic,	2	1	3	2	2	3	13	
3	1) sustainability	2.1.1	fishing	do not	H	vessels	1	3	3	3	2	1	13	13.833
4	1) sustainability	2.1.2	able,	mental,	H	mic,	1	2	3	2	2	3	13	
5	1) sustainability	2.1.3	strike	ement	H	e	2	2	3	3	2	3	15	
6	1) sustainability	2.1.4	fisherie	rebuildi	H	rebuild,	3	2	2	3	2	3	15	
7	2) precautionary	2.1.5	precauti	onary	H	on	1	2	2	2	2	2	11	
8	2) precautionary	2.1.5	tion of	m	H	m	1	2	3	1	2	2	11	
9	2) precautionary	2.1.6	defines	e of	H	ent,	2	2	2	2	2	2	12	10.667
10	2) precautionary	2.1.7	support	availabil	R	availabil	2	2	2	2	2	2	12	
11	2) precautionary	2.1.8	defines	m	R	m	1	2	3	2	1	2	11	
12	2) precautionary	2.1.9	objectiv	proxies	H	proxies)	1	2	1	1	1	1	7	
13	3) ecosystem	2.1.10	aquacul	e	H	e	2	2	0	2	1	3	10	
14	3) ecosystem	2.1.10	al	minimis	H	bycatch	3	3	2	3	2	3	16	
15	3) ecosystem	2.1.11	ecosyst	em-	H	em-	1	1	1	1	2	3	9	10.6
16	3) ecosystem	2.1.12	fishing	s and	M	ture	0	0	0	1	1	1	3	
17	3) ecosystem	2.1.13	fisherie	e	M	e,	3	2	2	3	3	2	15	
18	4) scientific evidence	2.1.14	c data	scientifi	R	collecti	2	2	3	3	2	2	14	
19	4) scientific evidence	2.1.14	appropr	collecti	H	sharing	1	0	0	1	0	0	2	10
20	4) scientific evidence	2.1.14	manage	ement	R	ment	1	3	2	2	1	3	12	
21	4) scientific evidence	2.1.15	scientifi	e based	R	e	1	3	3	2	2	1	12	
22	5) bycatch	2.1.16	catchin	m	H	m	2	3	2	3	2	3	15	
23	5) bycatch	2.1.16	are	d	M	record,	0	1	0	0	2	0	3	
24	5) bycatch	2.1.16	that is	minimis	R	vation	3	1	2	3	2	3	14	8.2
25	5) bycatch	2.1.17	bycatch	ng	H	discard	3	1	0	0	0	2	6	
26	5) bycatch	2.1.18	fisherie	Allowab	H	allowabl	0	0	1	0	0	2	3	
27	6) equal access	2.1.19	the	home	L	port	0	0	0	0	0	0	0	
28	6) equal access	2.1.19	the	owners	L	owner	0	0	0	0	0	0	0	4
29	6) equal access	2.1.20	fisherie	equal	L	equal	1	1	1	1	1	1	6	
30	6) equal access	2.1.21	ions on	restricti	M	on,	1	2	3	1	2	1	10	
31	7) national benefit	2.1.22	fishing	of	L	benefit	1	2	3	1	2	1	10	10
32	7) national benefit	2.1.23	national	of	L	benefit	1	2	3	1	2	1	10	
33	8) climate change	2.1.24	adverse	e	M	impact	1	2	2	2	2	3	12	
34	8) climate change	2.1.24	aquacul	s adapt	M	change	1	2	2	2	2	3	12	12.75
35	8) climate change	2.1.25	d can	net zero	H	zero,	3	2	3	2	1	3	14	
36	8) climate change	2.1.26	change	to	H	adapt	2	2	2	2	2	3	13	
					Total by species		52	61	66	61	57	71		

Screenshot of benchmarking exercise (2) – JFS Section 5

Ref ID	Section in #5	# in JFS	Full	Brief	Key	BASS 2, 0, 1	BASS notes	WHELK 2, 0, kind	WHELK notes	SCALLOP 2, 0, kind	SCALLOP notes	CRAB_LOB 2, 0, kind	CRAB_LOB notes	DEMERSA 2, 0, kind	DEMERSA notes	NS_Mixed 2, 0, kind	NS_Mixe notes
1	Introduction	5.1.1	The Act	All	definition,	2	applies to	2	widely	2	scallop	2	maps of	2	a multi	2	n English wa
2	Introduction	5.1.2	This	Clear lin	see objectives benchmarking												
3	Introduction	5.1.3	The	na	na	na	na	na	na	na	na	na	na	na	na	na	na
4	Introduction	5.1.4	A FMP	FMP has	rs,	2	working with	2	FMP was	2	managemen	2	and Lobster	2	diversity in	2	l engagemer
5	Introduction	5.1.5	All FMPs	na	na	na	na	na	\	na	na	na	na	na	na	na	na
6	What is an F	5.2.1	FMPs	Does	obligations	0	obligations	2	relevant	0	obligations	0	obligations	0	0 mention	0	obligations a
7	What is an F	5.2.2	Each	research	na	1	Welsh	1	the research	2	King scallop	2	notes: The	1	develop a	1	ave a mesh
8	What is an F	5.2.3	national	na	na	na	na	na	na	na	na	na	na	na	na	na	na
9	What is an F	5.2.4	FMPs are	Has the	evidence,	2	Sustainable	2	insufficient	2	evidence	2	notes that	0	covers an	2	distributiona
10	What is an F	5.2.5	Each	Have	time,	1	Bass FMP	1	timings on	1	performance	1	are alluded	1	seems	1	l Estuaries (
11	What is an F	5.2.6	How a	Does the	na	1	ID 10, i.e.,	0	time frames	2	included in	1	Crab and	1	provides	2	(1-2 years) ar
12	Determining s	5.3.1	The	Has ICES	stock,	na	na	na	na	na	na	na	na	na	na	na	na
13	Determining s	5.3.2	The	Are any	conservati	0	does not	1	populations	1	assess the	2	notes that	1	lemon sole,	0	n are all man
14	Determining s	5.3.2	The	Are any	ecoUmic	2	refers to	2	been	2	one of the	2	clearly refers	2	effort in the	2	has the pot
15	Determining s	5.3.2	The	Are any	ecoUmic	2	FMP itself	2	fisheries	2	fisheries	2	clearly refers	2	Recreational	2	ocial and ec
16	Determining s	5.3.2	The	impact, di	na	2	Bass FMP	2	assesses	2	scallop	2	lobster pot	2	so 2,	2	gative impa
17	Determining s	5.3.3	The	na (as	above)	above)	above)	above)	above)	above)	above)	above)	above)	above)	above)	above)	above)
18	Determining s	5.3.4	Stocks	Are there	na	na	na	na	na	na	na	na	na	na	na	na	na
19	Determining s	5.3.5	Some	Are there	deep-sea,	na	na	na	na	na	na	na	na	na	na	na	na
20	Determining s	5.3.6	New or	Are there	fishery,	na	na	na	na	na	na	na	na	na	na	na	na
21	Determining s	5.3.7	Where	FMP stock	na	2	of the FMP	0	assessed	1	stock	1	existing	1	species are	2	s for all stoc
22	Determining s	5.3.8	stocks	FMP	objectives	1	objectives	0	stocks/stoc	2	stock	0	doesn't	0	0 mention	2	ly managed
23	How FMPs re	5.4.1	fisheries	na	na	na	na	na	na	na	na	na	na	na	na	na	na
24	How FMPs re	5.4.2	design	na	na	na	na	na	na	na	na	na	na	na	na	na	na
25	How FMPs re	5.4.3	may also	issues in	objectives,	1	staes that	1	FMP	2	objectives	2	states that :	2	compelled	1	and the ach
26	Relationship b	5.5.1	Multiannu	na	na	na	na	na	na	na	na	na	na	na	na	na	na
27	Relationship b	5.5.2	fisheries	na	na	na	na	na	na	na	na	na	na	na	na	na	na
28	Relationship b	5.5.3	fisheries	na	na	na	na	na	na	na	na	na	na	na	na	na	na
29	Relationship b	5.5.4	fisheries	na	na	na	na	na	na	na	na	na	na	na	na	na	na
30	Assessing Su	5.6.1	fishery	alternate	alternative	2	Sustainable	0	currently	1	term goal of	1	existing	1	and	2	er to achiev
31	Assessing Su	5.6.2	stocks	not	alternative	2	Sustainable	2	basic	1	poor or data	2	other	1	and	2	er to achiev
32	Assessing Su	5.6.3	recognis	ental risk	conservati	2	considers	2	pot fishery	2	scallop	2	states that	2	range of	2	(birds & fish)
33	Assessing Su	5.6.4	may form	ecosyste	conservati	2	considers	1	sensitive	1	recognises	2	states that	2	impacts of	2	(birds & fish)
34	Assessing Su	5.6.5	fishing	na	na	na	na	na	na	na	na	na	na	na	na	na	na
35	Assessing Su	5.6.6	will need	nally	al, stock,	1	objectives	0	level only	2	stock	0	doesn't	2	UK and EU	2	Fisheries Ac
36	Monitoring an	5.7.1	fisheries	g,	, indicator,	2	set out with	1	ie Following	1	timeline is	2	notes that	0	timeline	1	hat it will me
37	Monitoring an	5.7.2	FMP will	period	time, cycle	2	FMP seeks	2	FMP must	2	scallop	2	and Lobster	2	a first	2	of the abo

Summary Review of Proposed FMP for Sea Bass in English and Welsh Waters

Overview
The Sea Bass FMP applies to all fishing activity for European seabass (*Dicentrarchus labrax*) Northern stock occurring both inshore and offshore in English and Welsh waters by both UK and EU vessels. Notably, both the UK and EU reciprocally fish for sea bass in each other's Exclusive Economic Zone (EEZ). In 2015, joint UK/EU management measures were introduced in response to urgent scientific advisories of sea bass stock decline due to multiple years of poor recruitment and high fishing pressure.

Management of sea bass stocks must consider their complex lifecycle, which commences with a pelagic larval phase. Post metamorphic juveniles then occupy nursery grounds in inshore areas, before migrating offshore to join the adult population.

The Sea Bass FMP has been developed by the Department for Environment, Food and Rural Affairs (Defra) and the Welsh government, in collaboration with scientists, regulators, SNCBs and stakeholders from across the bass value chain.

Primary Challenges / Constraints
A lack of data and evidence gaps are referenced throughout the FMP, such as limited data on discarding, recreational catch, and the limited understanding of bass stock structure and recruitment to feed into improving stock assessment estimates. Various habitats are required for the complex life cycle of the stock and it is difficult to assess the relative contribution of individual nursery areas to the adult stock and to density dependent mechanisms that could reduce survival in nursery grounds. This makes a cost-benefit analysis of individual nursery areas challenging.

Main Actions Outlined in FMP
The management strategy for this FMP is divided into nine goals which address: inclusive stakeholder engagement; equitable access; discards; compliance with regulations; maximising benefits to communities; sustainable harvest; protection of juvenile and spawning bass stock; minimising impacts on the wider ecosystem (reducing bycatch of ETP species, minimising the impact of fishing gear, reducing marine litter); and adapting to and mitigating climate change impacts.

The FMP aims to achieve the goal of inclusive stakeholder engagement through the establishment of a bass management group and an associated evidence subgroup. This is targeted within one year of publication and will facilitate the development of a monitoring and evaluation strategy. This engagement strategy aims for collaboration across government, industry and academic organisations to understand the current evidence gaps and latest innovations and seeks consensus between sectors by placing science and evidence at the heart of decision-making.

The FMP proposes to continue allocating catch in accordance with ICES scientific advice which does not exceed an MSY approach (within 95% confidence intervals) and proposes several stock-related actions:

- A review of the most appropriate size limits for the bass stock, for example, a MCRS or slot sizes whereby fish above and below a certain size are returned to the breeding stock. This is accompanied by a precautionary statement noting this may have negative consequences leading to spatial and/or temporal changes in fishing effort.

- To gather evidence and review the possibility of local spatio-temporal closures to protect spawning bass as evidence evolves. The FMP notes that that bass nursery areas and spawning season closures of all bass fisheries are well-established management tools which provide protection during this vulnerable life-history stage.
- As a priority, minimise discarding of bass bycatch where survival rates are low. This includes a range of potential actions, such as gear modification (consider potential gear developments to reduce discards from nets and trawls) and allowing fishers to switch gear. Furthermore, an alternative bass authorisation system could be developed which, if agreed, would be designed to help minimise discarding. Additionally, the FMP mentions exploring the use of the Catch App to record discard data.
- Also notes that for additional measures, better data is required to make evidence-based management decisions.

Further proposed actions call for minimising the impact of bass fishing on the wider marine ecosystem, and particularly the impact of gear on seabed integrity. The FMP notes this work will consider the issues at a strategic level and within the context of ongoing changes in marine spatial use and environmental protection to achieve the objective of GES under the UK Marine Strategy. Other proposed actions include:

- Maintaining current restrictions on targeted trawling and netting of bass as part of a continued shift towards lower impact gears.
- Implementation of a nationwide scheme for the collection and recycling of end-of-life fishing gear.
- The continuation of monitoring programmes to assess seafloor litter, surface litter and beach litter- and ongoing research initiatives to support the reuse and repurpose of end-of-life fishing gear back into the fishing industry.
- The collation of relevant IFCA and Welsh byelaws to improve communication and compliance of regulations to buyers of bass and throughout the wider supply chain including investigating improved signage of existing regulations at popular fishing destinations and local hospitality venues.

Deficiencies / Room for Improvement

The FMP mentions that better data on the social, economic, and cultural significance of bass fisheries to coastal communities is required to make evidence-based management decisions but does not stipulate definitive action in this respect. The FMP does not clearly address issues relating to equal access as stipulated in the JFS; while it notes the main landing ports for the various species, it does not address the issue that the access of UK fishing boats to any area within British fishery limits should not be affected by the location of the fishing boat's home port, nor does it mention vessel owners. The FMP notes the need for better data collection with aims such as "*to review the efficacy of management approach in light of improved data collection*," and to "*consider how to fill evidence gaps required for improved stock assessments*," and to improve data collection on recreational catches. The FMP repeatedly suggests what needs to be "considered" rather than suggesting what needs to be achieved and fails to provide specific actionable advice within defined timeframes. The FMP does not place any precise obligations on the national fisheries authorities, which will seek to deliver the goals of the FMP, and some policies and measures mentioned within the FMP indicate action will only develop in the future as the plan's evidence progresses through each iteration.

Concluding Remarks/ Critique

The lack of data and evidence mentioned in the Sea Bass FMP limits actionable momentum throughout, with numerous references to limited data on discarding, recreational catch, and the limited understanding of bass stock structure and subsequent inability to comprehensively assess stocks. Similarly, regarding achieving a balance between economic, social, and environmental elements, which are identified as a central component of delivering the sustainability objective, the FMP offers only limited guidance as to how this is to be accomplished. The FMP does not attempt to help set out the UK's negotiating objectives for bass stocks but does acknowledge the UK's commitments under international agreements and declarations. The Sea Bass FMP lacks adequately timebound commitments, and a general lack of prescriptive actionable tasks is noted.

Summary Review of Proposed FMP for Whelk in English Waters

Overview
This FMP applies to common whelk (*Buccinum undatum*) and addresses all whelk fishing activity in English waters and includes activity from all UK, EU, and other Coastal State vessels. Whelks are a non-quota stock meaning that fishing of these stocks is not currently subject to catch limits. Access to whelk fisheries is largely unrestricted and limited management measures are currently in place except for a national MLS of 45mm. Whelk populations exist at a relatively small spatial scale, with the term 'stocklet' often used to describe localised stock units. As a sedentary species with limited mobility and larval dispersal there is a risk that whelk stocks are particularly susceptible to localised depletion. Whelks have been prioritised for an FMP due to the stock's vulnerability to over-exploitation, and the significant social and economic value of the fishery.

The Whelk FMP was developed by Seafish in collaboration with the Whelk Management Group (WMG) bringing together industry stakeholders from across the supply chain, scientific researchers, and fishery regulators working collaboratively to address issues facing UK whelk fisheries.

Primary Challenges / Constraints
The Whelk FMP highlights the complete absence of stock assessment for whelks in English waters, with there being no delineation of stock boundaries, and no MSY reference points or proxies of these highly localised populations (stocklets). The most basic metrics for monitoring fishing pressures and interpreting the health of the stock are not consistently available across English waters and the FMP repeatedly points to the need to develop comprehensive data collection systems to remedy this. Prior to an adequate assessment of Whelk stocks, the FMP suggests a precautionary approach limited to the possible issuance of licensing and permits, and the possibility of seasonal closures around spawning periods.

Main Actions Outlined in FMP
The FMP proposes to fill critical data gaps and evaluate stocks and facilitate evidence-based management decisions in the short and long term. The Whelk FMP proposes the development of a research plan and subsequent development of stock assessment methodology. The need to better understand whelk potting environmental impacts and limit bycatch and undersized whelk through better pot design is posited, as well as limiting handling related damage and impacts this fishery may incur. Regarding undersized whelk, whilst the current national MLS is 45mm, the FMP proposes an evaluation of this MLS due to the variability in the life cycle and size/maturity of localised stocklets. This, it is noted, could be complex and no specific targets or timeframe for this are stipulated. The FMP recommends the possible introduction of a permit / license scheme and potential seasonal closure / protection during spawning periods on a precautionary basis.

While sensitive marine species bycatch is considered low in the whelk pot fishery, the Whelk FMP proposes that a bycatch monitoring plan is implemented across all whelk fisheries in English waters and addresses marine litter from abandoned, lost, and discarded fishing gear. The Whelk FMP identifies opportunities for reducing carbon emissions and discusses gear modifications that may reduce undersized catch.

Deficiencies / Room for Improvement
The Whelk FMP touches on economics and social aspects, but all mentions are brief, and the FMP does not provide clear detail on what a good economic future may look like, nor how economic and social factors can be balanced. While the FMP proposes to fill critical data gaps and evaluate stocks and facilitate evidence-based management decisions in the short and long term, it does not stipulate in detail how this data collection will be carried out, nor offer a definitive timeline for this activity. There is only a generic passing reference to ecosystem-based approaches, a high priority item. Whilst the JFS stipulates that fisheries policy authorities work together and share scientific evidence there is no mention at all throughout the FMP of data sharing. The Whelk FMP says it "*aims to deliver a step change in moving us towards the long-term sustainable management of whelk fisheries in English waters*". However, with no appropriate benchmark referenced in this respect (i.e., stock assessments), or definitive timebound commitments, the FMP is lacking in definition as to how this could be achieved.

The FMP references high level climate change policy but does not stipulate how the Whelk fishery might contribute towards the aims or targets set out in climate change policy. The FMP does not clearly address issues relating to equal access as stipulated in the JFS; while it notes the main landing ports for the various species, it does not address the issue that the access of UK fishing boats to any area within British fishery limits should not be affected by the location of the fishing boat's home port, nor does it mention vessel owners. The FMP does include a summary of the relevant environmental legislation and obligations that must be followed to secure the long-term sustainability of fish stocks (as per the requirements of the JFS), but it does not place precise obligations on the national fisheries authorities, which would deliver these goals.

Each FMP has been tasked with identifying what measures will be used to deliver its policies. The Whelk FMP offers ambiguous language in this respect, i.e., "*The aim of the research plan is to build on existing research and data for whelks so that management is driven by a comprehensive harvest strategy*". There is further ambiguity regarding the indicators that must be used for those implementing the FMP to evaluate subsequent outcomes. The FMP states, "*Specific timings on this process will depend on the outcome of the FMP consultation, the costs and benefits of the proposals and the length of time required for implementation.*" A fisheries policy should include timebound targets to achieve their goals where appropriate, but no specific time frames are offered in the FMP.

Concluding Remarks/ Critique
The FMP fails to comprehensively address numerous asks as stipulated in the JFS and consistently uses non-definitive language in place of specific, timebound directives.

Summary Review of Proposed FMP for King Scallops in English and Welsh Waters

Overview
The king scallop fisheries covered by this FMP are defined within ICES areas 4b and c (North Sea), 7a (Irish Sea) and 7d-h (English Channel and Celtic Sea). Scallop stock assessments for the English Channel, the Celtic Sea and North Sea are undertaken unilaterally by France and England and the results of these assessments are presented to the ICES scallop working group. However, no ICES stock assessments have been undertaken for king scallop stocks in UK waters since 2022. Scallops are non-quota stocks which are currently not subject to catch limits. Current management in England and Wales is applied through licensing, legislation and byelaws. These measures determine technical gear specifications, MCRSs, king scallop licences or permits with conditions, seasonal closures to protect spawning stocks, closures to protect seabed features and days at sea fishing limits for vessels of 15m and over in length fishing in certain areas - referred to as the Western Waters effort regime.

Most king scallops are caught using spring-loaded dredges which are towed along the seabed. Other methods include beam trawling, where scallops are mostly caught as bycatch, and hand gathering by diving. The king scallop dredge fishery poses three environmental risks: a) risk to seafloor integrity, b) bycatch of sensitive species, and c) litter from fishing gear. Based on current evidence, bycatch of sensitive species and litter from fishing gear are considered low risk while seafloor integrity is perceived to be a higher risk issue.

This Scallop FMP has been developed by the Scallop Industry Consultation Group Working Group (SICGWG) on behalf of Defra and the Welsh Government incorporating feedback received during stakeholder engagement events.

Primary Challenges / Constraints
The Scallop FMP cites a lack of evidence and the need to improve stock assessment methodologies, indicators, and reference points for all stocks, noting that the status of the king scallop stock in Wales remains unknown. The FMP estimates some scallop stocks are being fished above MSY. The FMP mentions that data on hand diving for scallop in England is limited, and this is a particular area that the FMP will look to address. The FMP notes that the dredge fishery poses a particular risk of bycatch of sensitive species.

Main Actions Outlined in FMP
The FMP includes proposals for new data collection programmes and improving the evidence base and includes objectives to ensure environmental impacts associated with this fishery are understood, particularly where dredge fisheries are considered to have an adverse impact. The FMP states that an initial performance assessment will be based on contributing components, which can demonstrate (ahead of the six-year review) that meaningful progress has been made to deliver on this plan. An initial assessment of the stages in policy development are set out in the FMP, which notes that these stages will be subject to further scoping and prioritisation by each administration as part of the implementation of the plan. As a guide, the FMP notes that actions identified as short term are expected to be undertaken within 1-2 years of publication of the plan, medium

term in the next 3-5 years, and long-term actions 5+ years to reflect the more complex work required to develop these measures. The FMP notes that scallop fisheries contribute culturally, socially, and economically to coastal communities and seeks wider stakeholder input on approaches to inform development and assess the benefits and impacts of this fishery.

The FMP proposes that measures will be developed with stakeholders to maintain king scallop stocks at or above MSY or a similar proxy – the FMP notes that depending on their characteristics individual scallop stocks, or regions, may require different harvest strategies, which will set out the management actions necessary to maintain or restore the stock at MSY. It proposes a combination of monitoring, stock assessment and management action to develop Harvest Strategies and HCRs to ensure fishing effort is responsive to stock status and mentions protection of spawning stocks and a review and possible modification of closures. This closure review will start with the identification and collation of information on existing seasonal closures to determine their aim and effectiveness. This will be followed by action to identify and prioritise potential stock areas for which new closures could be applied, and the likely scope, duration and benefits of these. The FMP proposes that in the short-term, a guidance document (closure strategy) is produced, and that over the short-medium term, a gradual expansion of area-based closures is implemented. The continuation of existing seasonal closures will also be reviewed regularly to ensure such measures remain fit for purpose.

The FMP calls for an improved understanding of the wider environmental interactions of scallop fishing to allow for more sustainable management. The FMP states that inflexible technical specifications for scalloping gears specified through national and local regulations presents a barrier for improvement. It proposes the industry and research community could explore ways of reducing environmental impacts and CO_2 emissions through more efficient gear design. An improved understanding of the impact that king scallop vessels have on the marine environment (including seabed, Blue Carbon, CO_2 emissions, etc.) gained through collaborative studies would help minimise gear interactions. The FMP proposes to develop carbon hot spots and climate "refugia" maps to identify and develop understanding of the likely impacts of climate change on scallop stocks to inform adaptive management. The FMP suggests a 'freeze' on latent >10m scallop permits may be required and the appropriate method/criteria that could be applied - including an established approach for releasing 'frozen' entitlements if scientific evidence supports this. The FMP stipulates that initial performance indicators will be included in the published FMP and further developed during the first reporting cycle.

Deficiencies / Room for Improvement

The Scallop FMP states that most scallops are caught using towed dredges and emphasises reducing environmental impacts on the seabed. Whilst the FMP recognises the need for strong engagement in developing a strategic approach to reducing these impacts, apart from mentioning possible design changes (difficult due to regulatory inflexibility), action in this regard is not well defined. The FMP does not place any binding obligations on the national fisheries authorities, which will seek to deliver the goals of the FMP. The FMP makes numerous references to the precautionary approach, but it is not stipulated how, and where this needs to be implemented. Whilst the FMP identifies evidence gaps where further data is required to supplement the existing stock

assessments, no evidence of the precautionary approach is given in the context of this absence of data.

The FMP makes little mention of any effort towards rebuilding stocks. Whilst this FMP combines a long-term vision to achieve MSY or a similar proxy, it is unclear what these other proxies may be. The FMP makes little mention of minimising negative environmental impacts, focusing mainly on minimising conflict between “static” or “fixed” gear which is immobile, such as pots and fixed nets, and “mobile” or “active” fishing gear, which is towed, when occupying a shared fishing area. The FMP makes no mention of data sharing as stipulated in the JFS and makes no mention of discards. The FMP does not clearly address issues relating to equal access as stipulated in the JFS; while it notes the main landing ports for the various species, it does not address the issue that the access of UK fishing boats to any area within British fishery limits should not be affected by the location of the fishing boat’s home port, nor does it mention vessel owners. The FMP does not define measures to effectively mitigate the stock’s vulnerability to over-exploitation or the risk of bycatch of sensitive species.

Concluding Remarks/ Critique

No prescriptive obligations were mentioned in the FMP and only a loose timeline for any specific action is posited with the FMP citing that further work and analysis will be required to develop priority measures. Similarly, the FMP does not include performance indicators, however it states that these will be included in the published FMP.

Summary Review of Proposed FMP for Crab and Lobster in English Waters

Overview

The Crab and Lobster FMP applies to brown crab (*Cancer pagurus*) and European lobster (*Homarus gammarus*) fishing activity in English waters, including that of UK, EU, and other coastal state vessels. Any measures adopted in the FMP must align with the requirements of the UK-EU Trade and Cooperation Agreement (the TCA). Whilst crab and lobster are the primary focus of this FMP it also includes within its scope select data-limited shellfish species for which there is currently no formal stock assessment. These species are crawfish (*Palinurus elephas*), velvet swimmer crab (*Necora puber*), common spider crab (*Maja brachydactyla*), and common prawn (*Palaemon serratus*). Existing stock assessments for crab and lobster suggest that these stocks are experiencing high exploitation rates which exceed those required to maintain stocks at MSY. Current management of crab and lobster fisheries within English waters consists of technical measures alongside restrictions on fishing duration for vessels 15m and over under the Western Waters effort regime. National legislation restricts the number of licences available. Priority impacts associated with this fishery include fishing-related litter; abandoned, lost, and discarded fishing gear, and potential bycatch of non-target species. Additionally, vessel emissions and blue carbon were identified as the two most relevant issues relating to fishing activity in the context of climate change.

The Crab and Lobster FMP was developed by Seafish, on behalf of Defra, together with the Crab and Lobster Management Group (CMG), which includes industry stakeholders, scientific researchers, and fishery regulators working collaboratively on issues facing UK crab and lobster fisheries. The CMG established a dedicated working group to work on the FMP crab and lobster-specific management objectives.

Primary Challenges / Constraints

The Crab and Lobster FMP states that significant data gaps exist, both in terms of fishing activity and its level of impact on stocks and acknowledges that the evidence base is not sufficiently comprehensive at present to fully address many of the issues present. The FMP therefore proposes a multi-step, iterative approach to deliver long-term sustainability by improving the evidence base. Regarding the four other species within scope (crawfish, velvet swimmer crab, common spider crab, and common prawn) the FMP states it is unable to make a complete assessment at this stage due to the lack of available data for these species as well as noting a lack of information available on crab and lobster specific impacts on blue carbon habitats.

Main Actions Outlined in FMP

The FMP seeks to improve the current data collection programme at a national level, address critical data requirements and build a long-term time series of data to support evidence-based fisheries management, and to build partnerships between stakeholders to facilitate this. This data gathering initiative will include developing a mechanism to determine fishing effort, monitor fleet performance and include annual monitoring of patterns of fishing activity as well as indicators of stock status. It will also consider differences in fishing capacity between varying types of vessels and seeks to address issues around latent capacity. It also suggests implementation of an iVMS.

The FMP stipulates that over time, and with better evidence, more prescriptive management measures can be introduced to manage fisheries to MSY and mentions the benefit of establishing an MSY in future. The FMP includes a summary of possible management measures with an appraisal of the likely current feasibility and timing of each measure, whilst noting "*For data poor or data limited stocks such as crab and lobster, it is not possible to say how quickly stock status at or above MSY will be achieved.*"

The FMP seeks to address social, economic, and environmental impacts and calls for Government and the shellfish industry to work collaboratively on the sector's economic viability and socio-economic sustainability. The FMP notes the potential for increasing stock protection through harmonisation or an increase of national MLS for lobster and crawfish. Whilst a ban on landing egg-bearing (berried) lobsters is already in place in English waters the FMP suggests that catch limits could be set on a precautionary basis and that establishing a standardised MLS may provide additional protection for spawning stocks, enhancing reproductive capacity. Other proposed measures include a ban on landing soft ('white') crab and restricting landings based on sex for lobster as well as discussing protection from V-notching schemes. The FMP references MCRSs applicable to both brown crab and lobster and discusses numerous variances under consideration in this respect.

The FMP suggests undertaking a desk-based review of the wider environmental impacts of crab and lobster fisheries on benthic habitats and ETP species, considering variations in fishing methods, gear types, species present, and also incorporating the potential negative effects of fishing related marine litter noting the goal of minimising ghost fishing from pots and rope entanglement. The FMP suggests that while low risk, entanglement related deaths caused by pot ropes should be minimised. The FMP proposes to introduce a bycatch monitoring plan in the future. This plan will encourage fishers to report accidental bycatches and re-enforce the existing requirement to report any marine mammals caught in fishing gear within 48 hours of returning to port. The FMP also stipulates collaboration with the Bycatch Mitigation Initiative and Clean Catch UK. This FMP suggests the development of a collaborative effort to assess the carbon footprint of English shellfish fisheries using a reliable metric (e.g., different fleet métiers, carbon sequestration in shell material, etc.) and developing an improved understanding of the potential impacts that crab and lobster fishing can have on blue carbon habitats.

Deficiencies / Room for Improvement

The FMP lacks comprehensive integration of the social, economic factors involved in the fishery. The FMP, whilst making numerous references to an ecosystem-based approach and contributing to achievement of GES, lacks actionable specifics in this regard. The FMP makes no mention of discards. Despite numerous generic mentions, the FMP does not provide a clear description of how it will support fisheries to adapt to climate change. The FMP does not place any prescriptive obligations on the national fisheries authorities, which will seek to deliver the goals of the FMP. The FMP does not clearly address issues relating to equal access as stipulated in the JFS; while it notes the main landing ports for the various species, it does not address the issue that the access of UK fishing boats to any area within British fishery limits should not be affected by the location of the fishing boat's home port, nor does it mention vessel owners.

Concluding Remarks/ Critique

The FMP lacks definitive, actionable and timebound specifics throughout. Performance indicators are alluded to but not defined in this draft proposal - which notes that initial performance indicators will be included in the published FMP and further developed during the first reporting cycle. Consequently, coherent time bound targets are not provided in this FMP, and no prescriptive obligations are evident therein.

Summary Review of Proposed FMP for Channel Demersal Non-Quota Species

Overview

This Channel Demersal NQS FMP is a multi-species plan covering English waters of the Channel running from Kent to Cornwall. Specifically, the FMP area is defined by English waters in ICES divisions 7d (east) and 7e (west). The FMP is applicable to demersal NQS fished by all methods and by all sized vessels from all nations operating in UK waters of the ICES areas 7d and 7e. The 19 species in scope of the FMP include cuttlefish, squid, octopus, turbot, brill, lemon sole, red gurnards, grey gurnard, tub gurnards, red mullet, john dory, lesser spotted dogfish and smoothhound. Seven finfish and elasmobranchs (eight if the assessment for North Sea turbot is included) have been assessed by ICES within the English Channel, of which four (brill, grey gurnard, red mullet, and turbot) have concerns around sustainability. The remaining species have not been assessed by ICES and therefore no information is available on whether these are fished to MSY. Gear in this FMP may be wide ranging including both recreational and commercial. The FMP species are subject to a minimum towed gear mesh size of 80mm except for squid, for which there is a derogation allowing the use of 40mm. Whilst there is no clear indication that any stock is fished at unsustainable levels, other than potentially red mullet in ICES 7d, the species within this FMP are regarded as data deficient. The FMP species do not have a MCRS beyond 6nm. There is no constraint on the amount of NQS that can be landed, except for the TCA, which places a general cap on the amount of NQS that the UK and the EU can take from each other's waters.

This FMP has been developed by the Marine Management Organisation (MMO) on behalf of Defra in collaboration with a working group of fisheries stakeholders including commercial and recreational fishers. The MMO also engaged widely with coastal communities, supply chain businesses, scientists, and government agencies.

Primary Challenges / Constraints

This FMP covers the most diverse range of (19) species and fishers of all the six frontrunner FMPs reviewed. UK vessels primarily employed in this FMP include beam trawl (47.5%), demersal trawl (36.5%) and demersal seine (7.7%), although drift and fixed nets (3.7%) and pots and traps (3.6%) also made contributions. This FMP is applicable to demersal NQS fished by all methods and by all sized vessels, with both UK and EU vessels operating in the scope of this FMP. This FMP mentions the medium to long-term objective of regulating catching potential and limiting fishing impacts within the English Channel but given the scope and diversity of fishing this appears a complex ask. The species included in this demersal NQS FMP are data limited and there are insufficient data to support a stock assessment approach to introducing HCRs. Many are lacking comprehensive data collection programmes or formal stock assessments. These FMP species are mobile, transboundary fish, distributed and/or migratory across UK and EU waters. Therefore, stock assessment units will need to take into consideration UK and EU catches across the shared Channel area.

Within this FMP there are 52 protected area designations including Marine Conservation Zones (MCZs), Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Highly Protected Marine Areas (HPMAs). This adds to the complexity of the scope.

This FMP covers an inherently complex and poorly understood collection of species that are caught alongside quota and other NQS. Whilst the FMP has the long-term ambition of developing sufficient evidence so that mixed and multiple species management can be applied effectively, this appears to be challenging.

Main Actions Outlined in FMP

The Channel Demersal NQS FMP proposes five areas for priority management intervention. These are:

- The restriction of future flyseining effort.
- MCRSs for cuttlefish, lemon sole, turbot, and brill.
- Temporary seasonal closures for cuttlefish, identified as a critical targeted fishery requiring attention.
- Development of a monitoring programme to facilitate robust data collection.
- Adoption of voluntary guidelines and development of codes of conduct.

The FMP therefore considers minimising impacts of flyseining and introducing MCRSs for flyseine species – red gurnard, red mullet and bib. Also, the FMP proposes creating a NQS management group, comprised of industry, recreational fishers, processors and markets, the regulatory authority, fisheries scientists, policy makers and other interested stakeholders, which will act as a means for addressing management concerns and needs. The FMP proposes some precautionary management measures in the short-term whilst the long-term ambition is developing sufficient evidence so that mixed and multiple species management can be applied effectively.

The FMP states there is a current lack of data on bycatch associated with NQS fisheries and aims to collect additional evidence to understand levels of bycatch associated with static and towed gear. This FMP considers several actions with regarding equal access objective including mapping the direct and indirect benefits of the various fisheries in order that these can be better understood. The FMP proposes the development of a data collection programme and proposes to develop a research plan for octopus.

Deficiencies / Room for Improvement

This FMP is notable for the high economic and social value of recreational sea fishing contained within its management remit. The FMP mentions identifying social and economic indicators and seeking new and novel ways to identify these, but no definition on actual implementation is offered. This FMP states that flyseining has been identified as a priority fishery for introduction of precautionary management. The need for precautionary management measures is mentioned repeatedly without specifics, or actionable definition. The FMP mentions suitable proxies may be used for the assessment of the multi-species stock under consideration but does not detail these. The FMP mentions managing key interactions to minimise adverse impacts on Channel demersal NQS without stipulating what these may be and does not mention minimising any harmful impacts to the wider ecosystem. The FMP states that it aims to collect additional evidence to understand levels of bycatch associated with static and towed gear, with concerns in relation to the MPAs in the FMP. These aims and references fail to offer a clear path of action to resolve these concerns, particularly given the multi-species nature of this FMP.

The FMP makes no mention of data sharing. The FMP does not mention discards. The FMP does not clearly address issues relating to equal access as stipulated in the JFS; while it notes the main landing ports for the various species, it does not address the issue that the access of UK fishing boats to any area within British fishery limits should not be affected by the location of the fishing boat's home port, nor does it mention vessel owners. Gear in this FMP is wide ranging including both recreational and commercial. The FMP species are subject to a minimum towed gear mesh size of 80mm except for squid, for which there is a derogation allowing the use of 40mm. Given the wide-ranging species and fisheries effort there is a lack of specific initiative in this respect. The FMP undertakes to research the impact of climate change on Channel demersal NQS and identify opportunities to implement climate change mitigation and adaptation measures, however little specific action is stipulated. The FMP mentions that the Centre for Environment, Fisheries and Aquaculture Science (Cefas) are trialing cephalopod aquaculture but fails to mention other aquaculture activities in this FMP location (i.e., there is a large-scale mussel farm off Brixham). The FMP does not place any binding obligations on the national fisheries authorities, which will seek to deliver these goals.

Concluding Remarks/ Critique

While the FMP proposes that social and economic benefits are mapped in order that they can be optimised, actioning this amongst such a diverse user and multi species base seems unduly complex for a single FMP. This FMP is notable amongst the six frontrunner FMPs for its exceptional species complexity and diversity of fishery effort. The 19 species incorporated into this FMP have highly divergent biologies, life cycles and habitat requirements and amalgamating these (together with recreational, commercial, and non-UK fishers) under one FMP appears challenging. The lack of definition and actionable specifics mentioned in this FMP, and the absence of timebound targets in this regard, are thus possibly symptomatic of this.

Summary Review of Proposed FMP for S. North Sea and Eastern Channel Mixed Flatfish

Overview
The Southern North Sea and Eastern Channel Mixed Flatfish FMP applies to fishing activity within English waters of ICES Divisions 4.b, 4.c and 7.d. This FMP applies to nine flatfish species: plaice (*Pleuronectes platessa*), common sole (*Solea solea*), turbot (*Scophthalmus maximus*), brill (*Scophthalmus rhombus*), lemon sole (*Microstomus kitt*), witch (*Glyptocephalus cynoglossus*), dab (*Limanda limanda*), flounder (*Platichthys flesus*) and halibut (*Hippoglossus hippoglossus*). ICES produces annual stock assessments for all stocks within this FMP except for Atlantic halibut. Whilst this FMP states that demersal fish biodiversity is recovering from a history of over-exploitation, current evidence shows this FMP fishery has an impact on the marine environment primarily through seabed disturbance. Additionally, the FMP notes that the Total Allowable Catch (TAC) management of lemon sole, witch, turbot and brill as joint TACs are not optimal for sustainable management as it allows for the overexploitation of a stock above the recommended MSY advice provided by ICES. Management plans or technical measures specifically designed for the stocks are limited within this FMP except for common sole and plaice and directed fisheries for flatfish in areas 4b and 4c stipulate mesh size of at least 90 mm for fixed nets, whilst those in area 7d should have a mesh size of at least 100 mm for fixed nets. Of note, the Channel Non-Quota Demersal FMP overlaps directly with this FMP for the management of lemon sole, turbot and brill between 7d and 7e.

The Southern North Sea and Eastern Channel Mixed Flatfish FMP has been developed by the Defra, in collaboration with scientists, regulators, SNCBs and other stakeholders.

Primary Challenges / Constraints
This FMP acknowledges that the current evidence base is not sufficient to comprehensively establish reference points for stocks or mitigate impacts. Additionally, there is a lack of data availability on the direct impacts that flatfish fisheries in the Southern North Sea and Eastern Channel are having on the wider environment, including impacts on designated features of protected sites and the achievement of GES. As a result of this, in this first iteration of the FMP, no new HCRs are being introduced. Instead, the FMP proposes that ICES advice is followed to achieve MSY and, for stocks where MSY advice is not available, recommends data gathering to enable stock assessments to be performed in the future.

Main Actions Outlined in FMP
The FMP seeks to develop an improved evidence base for quota and non-quota flatfish in the Southern North Sea and Eastern Channel mixed flatfish fishery, which will support monitoring and evaluation of any impacts of the fishery on the wider environment and identify options to minimise negative impacts.

For all stocks that are data poor and consequentially unable to be assessed for stock status at MSY, the FMP seeks to improve datasets to allow for assessment, harvest strategy and proposes MCRSs for some to reduce pressure on juveniles. The FMP proposes measures for introducing a MCRS for lemon sole (25 cm), turbot (40 cm) and brill (35 cm). The FMP includes an objective to better understand and effectively manage the social and economic value of the fisheries to the coastal communities within the FMP area and includes a range of short-term (1-2 year) and long-term (3-5 year) actions to achieve this. The FMP will seek to support the protection of protected

sites and species. The FMP recommends enhanced monitoring/observers, and to address the insufficiency of data concerning bycatch, including the considerable uncertainties relating to that of seals, birds and cetaceans. The FMP also plans work to understand and minimise bycatch of unwanted stocks and minimise discarding and fishing related litter to reduce negative fishery and environment interactions overall.

This FMP will develop a harvest strategy and seek to improve datasets to allow for assessment of the stock's MSY. The FMP suggests investigating and better understanding the key issues regarding seabed integrity within the fishery and develop appropriate mitigation strategies whilst sharing concerns that GES criteria are not being met with regard to seabed / benthic impacts from demersal towed gear, as well as marine litter, and possibly underwater noise. The FMP proposes to incentivise participation in scientific trails to improve data collection on discards and recommends wider bycatch monitoring and mitigation programmes such as Clean Catch UK. The FMP supports policies to meet targets to achieve net zero by 2050 making vessels more fuel efficient and generally less polluting and suggests building an evidence base to consider viable options for towed gear management. The FMP suggests quantification of carbon emissions across the fishing fleet supply chain (for example, preharvest through to postharvest) is required to truly understand the fisheries carbon footprint as well as the impact of flatfish fishing on blue carbon. The FMP references gear design changes to minimise seabed impacts and particularly identifies damage to submerged peaty deposits known as moorlog.

Some stocks within this FMP are shared with other coastal states and their management and TACs are subject to international fisheries negotiations. In line with the Fisheries Act 2020 and the JFS, this FMP will put forward and encourage the use of the nine principles of international fisheries negotiations, as laid out in section 4.2.1.14 in the JFS.

Concerning Atlantic halibut, since ICES does not currently assess and advise on Atlantic halibut in the FMP area, and no measures are proposed for this stock due to the FMP being on the edge of the distributional range, the FMP suggests that a more concerted effort is needed to collate any available information. This FMP proposes that such work could be undertaken by a relevant ICES working group to better identify stock unit in the North Atlantic and, once identified, work could be commissioned to develop a stock assessment, which could then be used to support management of Atlantic halibut.

Deficiencies / Room for Improvement

The FMP frequently references the precautionary approach but does not provide specifics in relation to this. The FMP mentions MSY proxies without providing any further detail. The FMP does not mention data sharing as stipulated in the JFS. The FMP does not clearly address issues relating to equal access as stipulated in the JFS; while it notes the main landing ports for the various species, it does not address the issue that the access of UK fishing boats to any area within British fishery limits should not be affected by the location of the fishing boat's home port, nor does it mention vessel owners. The FMP notes that it adopts an ecosystem-based approach to fisheries management to help deliver environmental, social and economic benefits but does not provide detail on how this would be achieved. The FMP does not place any prescriptive obligations on the national fisheries authorities, which will seek to deliver the goals of the FMP.

Concluding Remarks / Critique

In the section describing indicators for monitoring the effectiveness of the plan, the FMP notes that it will measure progress through the use of an array of indicators provided by various organisations including ICES Key biological indicators, Seafish Economics of the UK Fishing Fleet Annual reports, Cefas Sea Angling in the UK report, Sea Angling Diaries, Watersports Participation Survey, United Kingdom Marine Strategy, and The 25-year Environment Plan indicator framework. This is not harmonised with the indicators of other FMP's, most of which provide indicators regarding the species covered in the FMP. Furthermore, the timeline and timebound specific actions indicated in the FMP are not set out clearly.