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MSC Pre-Assessment for

Western & Channel Monkfish (Anglerfish)

(Gillnet, Demersal Trawl and Beam trawl)

Project UK Fisheries Improvements

DRAFT REPORT

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Prepared For: Project UK Fisheries Improvements.
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Contents

Glossary

CL	Carapace Length
DCF	Data Collection Framework
ETP	Endangered, Threatened & Protected
DEFRA	Department for Environment, Food and Rural Affairs
EU	European Union
EC	European Commission
FAO	Food and Agriculture Organisation of the United Nations
FCR	Fisheries Certification Requirements
FIP	Fisheries Improvement Project
ICES	International Council for Exploration of the Seas
IFCA	Inshore Fisheries & Conservation Authority
JRC	European Commission Joint Research Centre
LTL	Low Trophic Level
MMO	Marine Management Organisation
MSC	Marine Stewardship Council
PI	Performance Indicator
PRI	Point of Recruitment Impairment
PSA	Productivity Susceptibility Analysis
PUKFI	Project UK Fisheries Improvements
RBF	Risk Based Framework
SG	Scoring Guidepost
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable catch
UoA	Unit of Assessment
UoC	Unit of Certification
VME	Vulnerable Marine Ecosystem
WGBIE	Working Group for the Bay of Biscay and the Iberic Waters Ecoregion

1 Introduction

1.1 Aims/scope of pre-assessment

This report presents an update of the Marine Stewardship Council (MSC) pre-assessment of the Western and Channel Monkfish (Anglerfish) fishery (Gillnet, Demersal Trawl and Beam trawl) that was originally included as part of Project Inshore[1] in 2013. As such, the primary aims of this update of the earlier pre-assessment is to:

- Undertake a further review of available fishery-specific data
- Identify the key changes that have occurred in either the operation or the management of the fishery which may lead to changes in expected MSC scoring outcomes
- Based upon updated information, review the performance of the fishery against the latest version of the MSC certification requirements[2], which includes a number of changes since the time of the original pre-assessment.
- Present revised pre-assessment scoring and supporting rationale.

However, it should be noted that there is a change of scope since Project Inshore, since this project has been expanded to include all UK vessels. However, as this pre-assessment is primarily intended to be an update of an earlier pre-assessment, a simplified reporting template has been used. This seeks to include the normative requirements of the MSC pre-assessment process – in particular in relation to definition, scope and scoring of the fishery – but does not include the level of wider background and description which would sometimes be included in a pre-assessment report.

However, this simplified pre-assessment update process still involves providing a provisional evaluation against MSC Performance Indicators (PIs) and Scoring Guideposts (SGs), to inform how the fishery fares against the MSC standard and whether each PI is likely to fall within the following categories: fail (i.e. score <60), pass with conditions (60-79) or pass without conditions (≥ 80). It should be noted that the pre-assessment does not attempt to duplicate a full assessment against the MSC standard, which requires precise scoring and defined public consultation phases.

1.2 Background

The pre-assessment has been undertaken as part of Project UK Fisheries Improvements (PUKFI). This project is working towards an environmentally sustainable future for UK fisheries by running Fishery Improvement Projects (FIPs) on six UK fisheries that have been selected by the UK supply chain. They were selected due to their importance for the UK market. PUKFI will do this through strategic use of the MSC process to develop credible FIPs, giving each fishery the tools to implement changes and to ensure their sustainable future. It will use the MSC Pre-Assessment process as a gap analysis to determine current status, identify improvements and inform development of an Action Plan designed to ultimately improve the sustainability of the fishery.

PUKFI builds upon the foundation of Project Inshore, a project which ran from 2012-2014 and which sought to map and present key data on English Inshore fisheries (Stage 1); undertake MSC pre-assessments of those fisheries (stage 2) and; drawing on the conclusions of the pre-assessment,

[1] Futher details about Project Inshore, along with all reporting outputs are available on the Seafish website: http://www.seafish.org/industry-support/fishing/project-inshore

[2] MSC CRv2.1 Version 2.1 | Issued: 20 February 2015 | Effective: 1 September 2015. Available for download at: https://www.msc.org/documents/scheme-documents/fisheries-certification-scheme-documents/fisheries-certification-scheme-documents#FCR

provide strategic sustainability reviews for each[3] English Inshore Fisheries Conservation Authority (IFCA) (stage 3).

The original pre-assessment report (Stage 2) is available for download from the Seafish Website (Southall *et al* 2013)[4]. In addition, the 2013 pre-assessment results are presented in an online database[5] which allows users to search for the MSC pre-assessment results for a particular species and filter results by stock, gear type or IFCA region.

This Pre-Assessment will feed in to the development of an Action Plan for the fishery, designed to raise the scores over a defined period to a point at which the fishery could enter MSC assessment.

1.3 Constraints to the pre-assessment of the fishery

Given that this is an update of an earlier pre-assessment no site visit to the fishery has been undertaken. However, in spite of this a representative range of data has been available to the assessors. All key data sources were made available to allow appropriate assessment for this fishery and an appropriate level of stakeholder consultation was undertaken. However, the comparatively quick pre-assessment exercise still does not go into the level of detailed and rigorous scrutiny, which is undertaken as part of a full MSC assessment. For this reason, it cannot be guaranteed that the outcome of a full assessment process can be predicted with absolute accuracy. There may still be some unforeseen additional issues that arise once a fuller public consultation exercise is undertaken as part of any full assessment.

One constraint worthy of mention, was the challenge of getting a representative catch profile, in particular for the gillnet UoA. This is to a large extent due to the aggregation of different sizes of gillnets, targeting different fisheries within the MMO landings data. This this constraint should be addressed in preparation for any full assessment.

1.4 Unit(s) of Assessment

The Unit of Assessment (UoA) for this updated pre-assessment is defined as:

Table 1: Unit of Assessments

Target Stock:	White anglerfish (*Lophius piscatorius*) in divisions 7.b–k, 8a–b, and 8d (southern Celtic Seas, Bay of Biscay)
Fishing Method / gear type:	UoA 1: Gillnet UoA 2: Demersal Trawl UoA 3: Beam Trawl
Fishing Fleet	UK Registered vessels
Area:	UK & EU waters: ICES Area 7.b–k, 8a–b, and 8d (southern Celtic Seas, Bay of Biscay)

Given the open scope of the UoA definition above (i.e. all UK registered vessels), no other eligible fisheries are likely. However, if a future full MSC assessment chooses a smaller Unit of Assessment

[3] With the exception of Sussex IFCA, which already had relevant results from an earlier project (Dapling *et al* 2010) which piloted the multi species MSC pre-assessment approach.

[4] http://www.seafish.org/industry-support/fishing/project-inshore/project-reports/stage-two-reports

[5] http://msc.solidproject.co.uk/msc-project-inshore.aspx

(UoA), perhaps a particular group of vessels or association, in which case other potential future eligible fishers would need to be defined.

In particular, for gillnet it will important to verify and probably further define the gear definition before proceeding to full assessment (see later comment in section 2.3 of this report providing further discussion of the gillnet gear type).

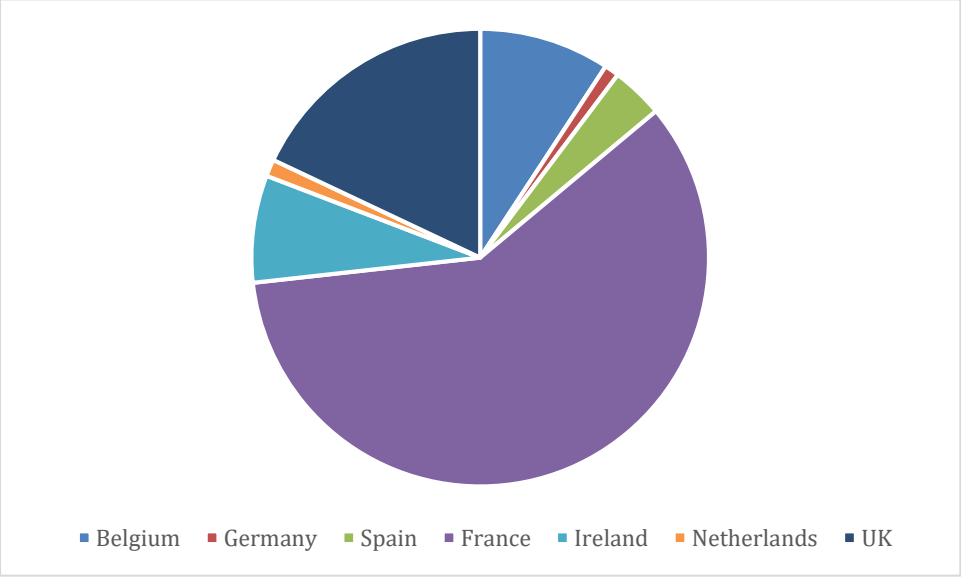
1.5 Total Allowable Catch (TAC) and Catch Data

TACs are set for the Western & Channel fishery. In 2015 the TAC was 33,516t tonnes. 100% of this TAC was allocated to the EU. The UK share (initial allocation) accounts for around 18% of the total TAC, with the French fleet allocated the majority of the quota.

Table 2: TAC and Landing Data for Western & Channel Monks / Anglers. Source: TAC figures from Europa Fishing TACs and Quotas Poster. Landings data from MMO landings database.

	2014	2015
Total Allowable Catch (initial allocation)	33,516	33,516
UK Share of TAC (initial Allocation)		6,027
UoA 1 (Gillnet) share of catch		238t
UoA 2 (Demersal trawl) share of catch		1,003t
UoA 1 (Beam Trawl) share of catch		753t

Figure 1: Initial Allocation of Area VII Angler / Monkfish quota (2015)



2 Description of the fishery

2.1 Scope of the fishery in relation to the MSC programme

The fishery under assessment is within scope of the MSC program as defined in FCR v2 Section 7.4.11 (i.e. the target species is not from the following taxa: amphibians, reptiles, birds or mammals; the fishery is not being conducted under a controversial unilateral exemption to an international agreement, nor does the fishery use destructive fishing practices such as poisons or explosives - such fisheries would automatically fail the MSC standard).

2.2 Introduced Species / Enhanced Fishery / Low Trophic

These MSC policies do not apply in the case of this fishery and no adjustments to the standard assessment procedure will therefore be required to include these. The fishery does not target non-native or introduced species therefore the MSC Introduced Species Requirements do not apply. And no fishery enhancement techniques (such as artificial reefs) are employed. Finally, the species is not classified as a Key low trophic species.

2.3 Inseparable Stocks (IPI)

However, Landings of Monkfish into the UK are recorded as Monks / Anglers (*Lophiidae*) whereas, the ICES stock assessment, and therefore the MSC assessment is of the single species *Lophius piscatorius.* There is therefore a risk that other species of *Lophiidae* may be inadequately distinguished in catches. This may therefore trigger the MSC IPI policies, or it may be possible for both *Lophiidae* species to be covered by the assessment. This may require further consideration during a FIP in advance of a full MSC assessment.

2.4 Overview of the fishery

Although the MSC pre-assessment reporting template includes a number of descriptive sections, because this report is an update of an earlier pre-assessment and because these sections are not normative requirements (i.e. the template indicates that certain sections “may” be included), these have been omitted from this reduced template. Instead, below only very limited description of key fishery parameters are included with the aim of explicitly clarifying the nature of the fishery that is being pre-assessed.

Monkfish are caught in a mixed demersal trawl and beam trawl fishery (see Appendix 3 for charts showing the locations of fishing activity of the UK fleet). The majority of monks caught by gillnet in the area of the fishery is targeted with a large mesh gillnet (220mm mesh) as part of a directed summer fishery also targeting large flatfish (turbot, brill etc.). This may be an enmeshing / tangle / trammel net with longer soak times (up to 72 hrs).

By contrast, there is a different gillnet fishery in the Southwest targeting whitefish with smaller mesh (pollack, hake etc.). This may also catch very small quantities of monkfish. In many cases the same vessels may operate both gears and the 2 gears may not be clearly distinguished in the landings data (often simply aggregated as ‘gillnet’). In this pre-assessment, an attempt has been made to reflect the catch profile in the directed large mesh fishery. If the smaller mesh gillnet was also to be included in any future full assessment (in order that the small quantities of monkfish caught by that gear might also be covered by the certificate), then the catch profile would need to be adjusted to reflect the very different characteristics of this fishery.

2.5 Other elements in the fishery

The MSC Fishery Certification Requirements (FCR) v2 which was released on 8 October 2014, and became effective from 15 April 2015 uses different components in scoring Principle 2 to earlier versions of the MSC standard. In the earlier pre-assessment undertaken as part of Project Inshore

other species caught in the fishery (referred to as 'elements' in the scoring) were defined according to whether a 'retained' catch (PI2.1.1-2.1.3) or whether a more unwanted or typically discarded 'bycatch' (PI 2.2.1-2.2.3).

The latest version of the MSC standard re-categorises those other species caught in the fishery as either Primary (PI 2.1.1-2.1.3) or Secondary (2.2.1 – 2.2.3), regardless of whether it is retained or discarded. Primary species within Principle 2 are defined as those that have management measures and tools in place intended to achieve stock management objectives reflected in either limit or target reference points (FCRv2 SA3.1.3). If management limits or reference points are not in place then the species is classified as a secondary species (unless it is classified as Endangered, Threatened or Protected).

For Primary species a stock assessment would most likely be available but for secondary species a stock assessment is less likely to be available, therefore, the outcome status of secondary species is likely to be scored using the Risk Based Framework (as per definition in Table 3, Section 7.7.6 of FCRv2).

Table 3: Summary P2 species definition. Source: Informed by Acoura analysis of MMO data query (year 2015).

UoA	Primary		Secondary	
	Main	Minor	Main	Minor
UoA 1 Gillnet	Sole (some stocks), Hake		Turbot, sole (some stocks), brill, ling, rays species	
UoA 2 Demersal Trawl	Megrim, Hake, Haddock		Cuttlefish, Lemon Sole	
UoA 3 Beam Trawl	Megrim, Plaice, sole		Cuttlefish, Gurnard (GUX)	

In order to determine the catch composition to inform this pre-assessment and to identify the other 'elements' within the fishery, the assessment team queried the MMO landings database. Specifically, querying catch compositions of trips where catches of the P1 species account for more than 5% of total catches by the gear type under assessment. This approach has some drawbacks: By using a 5% cut off, it is possible that catches from trips where the target species contributes a negligible share of the catch is not accounted for. By contrast this does mean that a more typical 'trip' for catches of the P1 species are represented. Secondly, these figures represent landings and not catch. As part of preparation for full MSC assessment, a fuller analysis of catch composition will be useful, particularly if the UoA is to be more tightly defined – i.e. to reflect particular operational patterns of gear configurations, or in the case of the gillnet fishery – mesh size.

When applying this approach for monkfish (i.e. applying the 5% of P1 catches cut-off filter), it did become apparent that this may have generated some apparent catch profiles which are misrepresentative of the actual fishery, in particular for gillnet. This is likely because the gear type definition within the MMO landings data does not sufficiently distinguish between different gillnet fisheries operating in the area, targeting different species assemblages. However, even in the demersal trawl data there were high levels of some catches which would not be associated with the monkfish fishery – suggesting some data anomalies. Some attempt has been made to overcome this by referring to operational characteristics of the fishery and interpreting the data accordingly, in some cases removing certain species from the catch profile. This means that a quantitative breakdown of catches is not presented here. However, in support of any future full assessment, a more definitive catch profile would be required and this should be included in any FIP.

3 Evaluation Procedure

3.1 Assessment methodologies used

The MSC Fisheries Certification Requirements v 2.0 was used to conduct the pre-assessment for this fishery. Although the MSC Pre-Assessment Reporting Template v 2.0 was used as the basis to create this report, some sections which were not normative requirements have been omitted, in particular in relation to the description of the fishery.

3.2 Summary of consultations during pre-assessment

This pre-assessment has been undertaken by Tristan Southall as an entirely desk based exercise, drawing on the conclusions already drawn during Project Inshore, but seeking updated landings data from MMO, and updated stock assessments from ICES. No face to face meetings or field activities were undertaken. However, a small number of phone consultations were used:

- Simon Dixon: MMO Statistics Unit
- Gus Caslake: Seafish, SW Regional Advisor

3.3 Applicability of the default assessment tree

The default assessment tree as provided in FCR v2 has been used to assess and score the fishery. No revisions of the default assessment tree are required.

3.4 Approach to Scoring

The MSC pre-assessment process involves a provisional evaluation against MSC Performance Indicators (PIs) and Scoring Guideposts (SGs), to inform how the fishery fares against the MSC standard and whether each PI is likely to fall within the following categories:

Table 5: Key to likely scoring level in Table 6 & Tables A1.1 – A1.3

Definition of scoring ranges for PI outcome estimates	Shading to be used
Information suggests fishery is not likely to meet the SG60 scoring issues.	Fail (<60)
Information suggests fishery will reach SG60 but may not meet all of the scoring issues at SG80. A condition may therefore be needed.	Pass with Condition (60-79)
Information suggests fishery is likely to exceed SG80 resulting in an unconditional pass for this PI. Fishery may meet one or more scoring issues at SG100 level.	Pass (≥80)

3.5 Stakeholders to be consulted during a full assessment

The following key stakeholders should be consulted during full assessment:

- National Government: DEFRA / MMO
- Enforcement Officers: MMO
- Vessel Skippers: All UoAs
- Fishery Scientists: (CEFAS, ICES)
- Relevant NGOs: WWF, North Sea Foundation

The stakeholders would be expected to engage in the RBF process for Principle 2 Secondary Species 2.2.1 Outcome Status.

4 Traceability (issues relevant to Chain of Custody certification)

4.1 Eligibility of fishery products to enter further Chains of Custody

As with all MSC assessments it is noted that there is a risk that catches of target species landed into ports and facilities covered by the MSC assessment, but by non-member vessels (i.e. outside of the UoC) could be sold as MSC certified product. Additionally, the same target species but caught from another adjacent stock area (and therefore not covered this assessment) maybe landed into the same ports and facilities as target species covered by the assessment. In both cases systems, will need to be in place to avoid the inclusion of non-MSC product in the Chain of Custody.

In the case of this fishery there are some additional issues: Landings of Monkfish into the UK are recorded as Monks / Anglers (*Lophiidae*) whereas, the ICES stock assessment, and therefore the MSC assessment is of the single species *Lophius piscatorius.* There is a risk of other Lophiidae species therefore being included in landings and therefore being sold as MSC certified.

5 Preliminary evaluation of the fishery

The pre-assessment evaluation of the fishery is provided within Appendix 1 – Pre-assessment Scoring Sheets

Table .

Table 6: Summary of Likely Scoring Levels.

Principle	Component	PI	Performance Indicator	Likely scoring		
				UoA 1 Gillnet	*UoA 2 Trawl*	*UoA 3 Beam*
1	Outcome	1.1.1	Stock status	60-79		
		1.1.2	Stock rebuilding			
	Management	1.2.1	Harvest Strategy	60-79		
		1.2.2	Harvest control rules and tools	60-79		
		1.2.3	Information and monitoring	≥80		
		1.2.4	Assessment of stock status	60-79		
2	Primary Species	2.1.1	Outcome	≥80	≥80	≥80
		2.1.2	Management	≥80	≥80	≥80
		2.1.3	Information	60-79	≥80	≥80
	Secondary species	2.2.1	Outcome	<60	<60	<60
		2.2.2	Management	<60	<60	<60
		2.2.3	Information	60-79	60-79	60-79
	ETP species	2.3.1	Outcome	60-79	60-79	60-79
		2.3.2	Management	60-79	60-79	60-79
		2.3.3	Information	60-79	60-79	60-79
	Habitats	2.4.1	Outcome	≥80	60-79	<60
		2.4.2	Management	≥80	60-79	60-79
		2.4.3	Information	≥80	60-79	60-79
	Ecosystem	2.5.1	Outcome	≥80	≥80	60-79
		2.5.2	Management	≥80	≥80	≥80
		2.5.3	Information	≥80	≥80	≥80
3	Governance & policy	3.1.1	Legal and customary framework	≥80		
		3.1.2	Consultation, roles responsibilities	≥80		
		3.1.3	Long term objectives	≥80		
	Fishery specific management system	3.2.1	Fishery specific objectives	60-79		
		3.2.2	Decision making processes	60-79		
		3.2.3	Compliance and enforcement	≥80		
		3.2.4	Mgt performance evaluation	60-79		

5.1 Key findings from the pre-assessment

Scores of less than 60 in Principle 2 and a probable average of less than 60 for Principle 1 mean that Western & Channel Monkfish fishery would not currently be expected to meet the MSC standard.

Principle 1

Level 60 was met for all PIs within Principle 1 however most did not meet the SG80 level. Overall, if assessed in the current circumstances the Western & Channel Monkfish fishery would not be expected to pass P1.

Level 80 was not met for the following PIs:

- PI 1.1.1: Stock Status: Although the most recent ICES Advice points to the stock status being above MSYBtrigger, given the uncertainty of the assessment, the fact that Fishing mortality is only estimated up to 2014 and given that the assessment is not presented in probabilistic terms (i.e. with confidence intervals) it is likely that SG80 level may not be met.
- PI 1.2.1: Harvest Strategy: Although scientific advice is for a single species (*Lophius piscatorius*), the TAC (and data collection) is for the *Lophiidae* stock complex (*L. piscatorius and L. budegassa*). ICES cautions that "Management of the two anglerfish species under a combined TAC prevents effective control of the single-species exploitation rates and could lead to overexploitation of either species".
- PI 1.2.2: Harvest Control Rules: In addition to the collective TAC weakness noted above (which may affect scoring of the adequacy of the tools to control exploitation rate), the ICES MSY approach for a category 3 species may be concluded to be insufficiently tailored to fishery specific uncertainties and therefore considered to be only a 'generally understood' HCR.
- PI 1.2.4: Assessment of Stock Status: Insufficient of account is made of uncertainty in the assessment.

Principle 2

The Level 60 was met for all PIs in Principle 2, except secondary species management (all UoAs), secondary species outcome status for demersal trawl and habitat outcome status for beam trawl. Given this result it is expected that Western & Channel Monkfish fishery using gillnet, demersal trawl or beam trawl would currently fail. However, it is noted that some of the issues highlighted may be possible to address in a shorter timeframe or by a tighter UoA definition.

In addition, likely conditions are highlighted for all demersal gears for secondary species information and all ETP PIs.

Level 60 was not met for the following PIs:

- PI 2.2.1: All gears: There are a number of secondary species which are likely to be main. These do not have analytical assessments. There is therefore a requirement for a thorough RBF exercise to inform scoring. In the absence of this, scoring has been applied at a precautionary level.
- PI 2.2.2: All gears: There is a specific requirement for a review of alternative measures to reduce unwanted catches of secondary main species. Any out of scope species caught in the gear will automatically be considered secondary main and must therefore be subject to a review of how to reduce unwanted catches. The assessors are not aware of any such review.
- PI 2.4.1: Beam Trawl: Insufficient quantitative evidence in order support a conclusion that this gear is unlikely to cause serious or irreversible habitat harm, including on VMEs. In the absence of this, scoring has been applied at a precautionary level.

Level 80 was not met for the following PIs:

- PI 2.1.3: Primary Species Information (Gillnet): There is difficulty in obtaining accurate landings data for the particular gillnet fishery under consideration, as various gillnet fisheries are aggregated in the data.
- PI 2.2.3: Secondary Species information (All gears). There is a specific requirement for information on the level of interaction and impact of secondary main species. Any out of scope species caught in the gear will automatically be considered secondary main and must therefore have an appropriate level of information. In addition (for gillnet) there is difficulty in obtaining accurate landings data for the particular gillnet fishery under consideration, as various gillnet fisheries are aggregated in the data.
- PI 2.3.1: ETP Outcome Status (All gears): Levels of catches of skate and rays species prohibited under EU legislation may be such that SG80 is not met. For gillnet the level of potential ETP interactions may also include marine mammals and birds classified as ETP.
- PI 2.3.2: ETP Management (All gears): There is a specific requirement – across all fleets – that management strategies should be designed to manage the impact of the fishery on the ETP component specifically. No such fishery specific strategy is available. In addition, MSC CRv2 requires a review of alternative measures to minimise mortality of ETP species. No such review is evident.
- PI 2.3.3: ETP Information (All gears): There is a challenge of accurately assessing the level of interaction and resulting impact on populations of skate and ray species prohibited under Council Regulation (EU) 2016/72. And information on a wider range of ETP species is also required.
- PI 2.4.1: Habitat Outcome Status: Demersal trawl: MSC habitat assessments of demersal fisheries are likely to need to present a quantitative assessment of the spatial scale, the level of impact and the rate of recovery. Without such quantitative evidence assessors are more likely to draw a more qualitative conclusion based on plausible argument at the SG60 level (i.e. serious or irreversible harm is 'unlikely' rather than 'highly unlikely').
- PI 2.4.2: Habitat Management & 2.4.3 Habitat Information: habitats management PI now (in latest version of the MSC CRv2) requires "information directly about the UoA". This is necessary for gears which scored less than SG80 at 2.4.1.

Principle 3

Level 80 was met for all Governance & Policy PIs in Principle 3, but there are conditions expected in the Fishery Specific Management PIs. In spite of this there is a chance that Western & Channel Monkfish would be expected to pass P3. However, the work to address the conditions in Principle 1 are likely to benefit P3 scores.

- PI 3.2.1: Lack of Fishery Specific Management Plan means objectives are only implicit.
- PI 3.2.2: Lack of management plan means that decision-making processes are generally understood
- PI 3.2.4: No holistic review or evaluation of the fishery management system has been undertaken.

5.2 Expectations regarding use of the Risk-Based Framework (RBF)

The Risk-Based Framework (RBF) is not required for Principle 1. Due to the lack of stock status reference points for the main secondary species, Performance Indicator (PI) 2.2.1would be expected to use RBF.

Appendix 1 – Pre-assessment Scoring Sheets

Table A1.1: Simplified Scoring sheet – Principle 1

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
Outcome	1.1.1	Stock status	N	60-79	The most recent assessment and advice comes from the ICES Advice on fishing opportunities, catch, and effort Bay of Biscay and the Iberian Coast and Celtic Seas ecoregions published June 2016 (ICES Advice 2016, Book 5 1, 5.3.2 White anglerfish (*Lophius piscatorius*) in divisions 7.b–k, 8.a–b, and 8.d (southern Celtic Seas, Bay of Biscay)). The assessment is based on biomass indices from three surveys (Spanish Porcupine Groundfish, Irish Groundfish, and French EVHOE), which cover different areas of the stock distribution. Although the signals from each have not been consistent and none is considered to be fully representative of stock trends, it does allow for an overall perception to be concluded sufficient to offer advice relative to proxy reference points (MSY Btrigger: 19400 t and FMSY: 0.61) using the ICES MSY approach for a category 3 stock ("stocks for which survey-based assessments indicate trends"). The 2016 assessment indicates that fishing mortality (up to 2014) is below the FMSY proxy and stock biomass (up to 2015) is above the MSY Btrigger proxy. This suggests that scoring issue a (Point of Recruitment Impairment) would meet the SG60 level, however, given the uncertainty of the assessment, the fact that Fishing mortality is only estimated upto 2014 and given that the assessment is not presented in probabilistic terms (i.e. with confidence intervals) it is likely that the unconditional SG80 level would not be met for either scoring issue a or b.
	1.1.2	Stock rebuilding	N/A		PI1.1.1 probably scores less than 80 therefore PI 1.1.2 (rebuilding) should be scored. However, the conclusion in relation to stock status is more due to insufficient information and lack of defined MSY reference point. Once reference points are defined, as part of a more analytical stock assessment, it may become clearer whether an actual rebuilding plan is required.
Management	1.2.1	Harvest Strategy	N/A	60-79	The MSC defines Harvest Strategy as "The combination of monitoring, stock assessment, harvest control rules and management actions". Many of these elements are in place for *Lophius piscatorius* in divisions 7.b–k, 8.a–b, and 8.d, with management actions including catch restrictions (TAC), effort restrictions (albeit targeted at other species), limited licencing, technical measures (minimum mesh sizes), and the recently adopted landing obligation - backed up by appropriate levels of control & enforcement. To some

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					extent this is responsive to the state of the stock as stock status is determined by abundance indices and other ancillary information enabling catch levels (TAC) to be set according to the precautionary approach for Category 3 species as defined by the ICES MSY approach. However, although advice is for a single species (*Lophius piscatorius*) the TAC is for the *Lophiidae* stock complex (*L. piscatorius and L. budegassa*). ICES cautions that "Management of the two anglerfish species under a combined TAC prevents effective control of the single-species exploitation rates and could lead to overexploitation of either species". The majority of anglerfish catches consists of young fish and there are indications that discarding of small anglerfish has increased in recent years meaning that ICES cannot quantify the corresponding catch. This may be of relevance when considering the final scoring issue (e) which is new to the latest version of the MSC standard MSC CRv2) and requires that there is a review of alternative measures to reduce unwanted catches of the target stock. This could include catches of small monks or catches caught once annual quota has been used up. It is likely that the introduction of the landing obligation (and the reviews that informed that) could be seen as one such measure. It would expected that a review would be scheduled to assess the efficacy of this. This may go some way toward meeting the SG80 requirement, however, (unusually for MSC Principle 1), this scoring issue refers to the UoA - so there is clear potential for the fleet under assessment to also initiate regular reviews of alternative measures focused on the particular gear type.
	1.2.2	Harvest control rules and tools	N/A	60-79	A tool is in place to control the rate of exploitation (i.e. a TAC system), which is to some extent responsive. The catch level (i.e. TAC) is advised by ICES using the MSY approach under which *Lophius piscatorius* is classified as a Category 3 stock (stocks for which survey-based assessments indicate trends). In this case the available knowledge is insufficient analytically determine MSY, although MSY proxies are available and advice is based on the precautionary approach. This means that advice on future catch levels are set according to recent trend data. This is perhaps adequate to meet the definition of 'Generally understood HCR", thus enabling scoring at the SG60 level, but would not enable a definition of "well defined". A clear weakness in the tools to control exploitation (i.e. the TAC) is that it is a shared TAC for 2 species. ICES highlight the inherent weakness in this approach: "Management of the two anglerfish species under a combined TAC prevents effective control of the single-species exploitation rates and could lead to overexploitation of either species". This weakness may even be such that SG60 is not met for scoring

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					issue c (i.e. the combined species TAC is not effective at controlling exploitation), although overall a more likely scoring outcome for this PI is 60-79.
	1.2.3	Information and monitoring	N/A	>80	The information that informs stock assessment and stock management is from commercial landings and three survey indices (EVHOE-WIBTS-Q4, IGFS-WIBTS-Q4 and SPPGFS -WIBTS-Q4). This data is sufficient on stock structure, fleets, productivity, abundance, and removals to support a precautionary harvest strategy (SG80a+; SG80b+). Although discarding is known to take place and is considered to be non-negligible (> 5%) ICES report that this cannot be quantified although the advice does state that "Discard data were available this year (but) because of data submission problems, an analysis of these data could not be conducted". One potential weakness is mentioned in the ICES stock annex "a particularity of the data gathering processes for anglerfish species is that, except in Spain, anglerfish are sold without any species distinction. The overall catch per species is estimated from the species ratio observed in the biological sampling". However, this is not highlighted in the advice as a data weakness.
	1.2.4	Assessment of stock status	N/A	60-79	In 2007, ICES rejected the XSA age-based stock assessment of both *Lophiidae* species due to data quality and ageing problems. There is now no age-based data to inform the assessment so the information that informs stock assessment and stock management is from commercial landings and three survey indices (EVHOE-WIBTS-Q4, IGFS-WIBTS-Q4 and SPPGFS -WIBTS-Q4). The basis for the advice is the ICES approach to Data Limited Stocks, which considers stock status relative to proxy reference points and recognises uncertainty but does not take these uncertainties, specifically issues with the abundance indices in this case, into account. This could be addressed by standardising and combining abundance indices. The approach is appropriate for the harvest control rule (as currently written) and for this fishery. The assessment is subject to peer review through ICES WG process (SG80e+). An analytical assessment would require discard data as well as other information on age, growth and so on.

Table A1.2: Simplified Scoring sheet – Principle 2

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
Primary Species	2.1.1	Outcome	No	Gillnet: ≥80 Trawl: ≥80 Beam: ≥80	As indicated in the introductory sections of this report. There has been some difficulty in the quick exercise of a pre-assessment to get an accurate catch profile of the monkfish gillnet fishery. This is because the landings data does not distinguish between gillnets used in different targeted fisheries. In preparation for full assessment it will be important to more tightly define the UoA (i.e. is is only the 220mm mesh gillnet?) and seek a catch profile of the gear under assessment. For **gillnet** (when Monks are P1), the following species primary species are likely to feature in the catch: sole (some stocks will be defined as primary, some as secondary) and hake. These are both known to feature in the catch – so will be assumed to be main. All other primary species are unlikely to feature in the catch in sufficient quantities to be considered main. For **demersal trawl** (when Monks are P1), the following species primary species are likely to feature in the catch: Megrim, Hake, Haddock. All other primary species are likely to be minor and will not affect scoring below 80, regardless of status. For **Beam Trawl** (when Monks are P1), Megrim is likely to be the only main primary species. However, plaice and sole also appear close enough to the 'main' threshold to warrant inclusion. All other primary species are likely to be minor and will not affect scoring below 80, regardless of status. **Hake (Vb, VI, VII, XII, XIV):** SSB has increased substantially in recent years. F is below Fmsy. This will score at the SG80 level as a P2 primary species. **Sole:** There are at least 3 stocks in the area of the fishery defined as Primary (other stocks in the area of the fishery are defined as secondary). The 7f, 7g stock is above MSYbtrigger so will lead to MSC scoring at the SG80 level. The 7e stock is also above Blim so will lead to MSC scoring at the SG80 level. By contrast the 7d stock (Eastern English Channel) is below Blim so may lead to MSC scoring below the SG60 level. However, gillnet catches of monk in that area (7d) are very low, and in that area there is a targeted sole fishery, so it should be possible to demonstrate that either a) 7d sole is not a main primary species or b) that the monk gillnet fishery is not hindering its recovery or c) that there is a harmonised approach between MSC UoAs.

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					Megrim (7.b–k, 8.a–b, d): SSB is well above MSY Btrigger. This will score at the SG80 level as a P2 primary species. **Haddock (7b-k):** SSB is well above MSY Btrigger. This will score at the SG80 level as a P2 primary species. **Plaice:** There are at several stocks in the area of the fishery some of which will be defined as Primary. The 7e stock has Fmsy and MSYbtrigger proxies identified. The SSB is increasing and above MSYbtrigger. This will score at the SG80 level as a P2 primary species. The VIIf,g stock also has proxy reference points defined and SSB is predicted to be above MSYbtrigger. Again supporting scoring at the SG80 level. **Gillnet:** All main species are highly likely to be above PRI: SG80 (note challenges of obtaining an accurate catch profile and 7d sole) **Trawl:** All main species are highly likely to be above PRI: SG80 **Beam Trawl:** Main species highly likely to be above PRI: SG80
	2.1.2	Management	N/A	≥80	All main primary species are (by definition of being primary) managed according to reference points and informed by stock assessment, in turn informed by appropriate levels of data collection. Other elements of the management of relevance include the new landing obligation. It is noted that the requirement for management strategy is caveated by "if necessary", therefore the score of SG80 for PI2.1.1 implies scoring of SG80 in PI2.1.2. Shark finning is not taking place. The final scoring issues (e) is new to the latest version of the MSC standard MSC CRv2) and requires that there is a review of alternative measures to reduce unwanted catches of unwanted main primary species. This is likely to include unwanted catches of haddock (ICES 2016 Mixed Fishery Advice for 2016 identifies haddock as the likely limiting TAC for the North Sea mixed fishery). It is likely that the introduction of the landing obligation (and the reviews that informed that) could be seen as one such measure. It would be expected that a review would be scheduled to assess the efficacy of this. This may go some way toward meeting the SG80 requirement, however, this scoring issue refers to the UoA - so there is clear potential

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					for the fleet under assessment to also initiate regular reviews of alternative measures focused on the particular gear type.
	2.1.3	Information	N/A	Gillnet 60-79 Trawl: ≥80 Beam: ≥80	Primary species are typically explicitly mentioned in the EU Data Collection Framework Requirements, are subject to regular ICES working group review and assessments, supported by sampling and survey. In addition, the vessels fishing in the mixed demersal fishery of the North Sea have been subject to high levels of enforcement scrutiny as a result of stock recovery plans in recent years. Therefore, these fisheries and the fisheries that exploit them are well monitored. A possible emerging issue may be the challenge of getting accurate indication of discard levels under the new Landing Obligation requirements. It is too soon to say whether this will lead to future issues being raised in relation to information, resulting in conditions. One issue that has emerged for gillnet is the difficulty in obtaining accurate landings data for the particular gillnet fishery under consideration. For example, the catch profile in the targeted monkfish gillnet fishery is markedly different from in the whitefish gillnet fishery, yet the data for both gear types is often aggregated.
Secondary species	2.2.1	Outcome	Yes	Gillnet <60 Trawl: <60 Beam <60	Project Inshore identified the following non-commercial discard species: Green shore crab (>80); Swimming crab (>80); Lesser spotted dogfish (60-80); Nursehound (60-80); Dragonet (>80); Green sea urchin (>80); Starry ray (>80); Smelt (>80); Ocean quahog (60-80). However, none of these are expected to be main, so would not impact scoring at the SG80 level. Commercially retained fish species, which do not have reference points may also be secondary. This would include: **Gillnet:** Turbot, some sole stocks (which do not have reference points), brill, ling and ray species, (Blonde, cuckoo, thornback). **Demersal trawl:** Cuttlefish and lemon sole might both be considered main secondary species. **Beam Trawl:** Cuttlefish and Gurnard (FAO code GUX) might also be considered as "main". An MSC risk based framework exercise should be undertaken using, the Productivity Susceptibility Analysis (PSA) tool, for all main secondary species. In doing so a wider range of secondary minor species should also be included, which may help to support scoring at the SG100 level in any future full MSC

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					assessment. Without this, it is not possible to conclude 'low risk' therefore scoring has been set at <60, however, this may improve with further analysis. For example, it should be noted that for species which are subdivided into various stocks in the area of the fishery it may be possible to demonstrate that none of the stocks represent 5% of catches and need not therefore be considered main. In the case of Gurnards, it is likely that several species are aggregated in the date. If this can be disaggregated (or even estimated) then it may be possible to show that no single species is main. For cuttlefish, the high productivity may help support lower risk scores at PSA. It should also be noted that any out of scope species (i.e. birds, mammals, reptiles, amphibians) which are caught will automatically be considered secondary main, regardless of the level of catch. It is therefore likely that there will be some out of scope species identified as secondary main for all gears – if any of these are below PRI without evidence of recovery, then there will need to be a demonstrably effective strategy in place between all MSC UoAs. Further analysis be required before a full assessment, however it is anticipated that of the UoAs here trawl and beam trawl may not be hindering the recovery of any out of scope species, but for gillnet further analysis would be required to confirm this.
	2.2.2	Management	N/A	<60	Secondary species are, by definition, subject to less management. However, there is still management in place to some extent – such as restricted licencing, monitoring of catches, technical regulations (i.e. restrictions on gear). But they are subject to less science, management review, or responsive management in the form of quotas. The degree to which this management is adequate or sufficient, will be informed by the result of the risk based framework which needs to be carried out for all secondary species. It is therefore difficult to conclude given the current evidence base. In the absence of such evidence more precautionary scoring should be applied. Shark finning is not taking place. The final scoring issues (e) is new to the latest version of the MSC standard MSC CRv2) and requires that there is a review of alternative measures to reduce unwanted catches of unwanted main secondary species. It is likely that the introduction of the landing obligation (and the reviews that informed that) could be seen as one such measure. It would be expected that a review would be scheduled to assess

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					the efficacy of this. This may go some way toward meeting the SG80 requirement, however, this scoring issue refers to the UoA - so there is clear potential for the fleet under assessment to also initiate regular reviews of alternative measures focused on the particular gear type. In addition, as any out of scope species unintentionally caught will be classified as secondary main there is a requirement for a review of alternative measures to minimise UoA related catches of these. The assessors are not aware of any such review having been carried out for out of scope secondary main species. This is a requirement to meet SG60.
	2.2.3	Information	N/A	60-79	Secondary species are typically subject to a lower level of monitoring, sampling, survey. However, the fleet – namely vessels in the mixed demersal fishery are themselves highly monitored. The MSCs RBF would be used to inform the status assessment of any main secondary species. Information is more than adequate to enable this for any commercial fish species likely to be classed as secondary main – indeed many have some form of annual advice provided by ICES (albeit insufficient to warrant consideration as Primary species). A possible emerging issue may be the challenge of getting accurate indication of discard levels under the new Landing Obligation requirements. It is too soon to say whether this will lead to future issues being raised in relation to information, resulting in conditions. Additionally, any out of scope species will be considered as main, regardless of the level of catch. Therefore, information is also required to assess the impact of the UoAs on any bird, mammal, reptile or amphibian – regardless of their status. Given that the level of catches may be low, the perceived consequences to populations low, this may be a challenging requirement to meet. Further analysis may be required before a full assessment. One issue that has emerged for gillnet is the difficulty in obtaining accurate landings data for the particular gillnet fishery under consideration. For example, the catch profile in the targeted monkfish gillnet fishery is markedly different from in the whitefish gillnet fishery, yet the data for both gear types is often aggregated
ETP species	2.3.1	Outcome	No	60-79	An exercise should be undertaken to identify the ETP species in the area of the fishery with the potential to interact. Under MSC CRv2 the ETP list may differ from that in Project Inshore as not only is a wider range of international conventions included (including more listing bird species), but any out of scope

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					species which are listed as vulnerable, endangered or critically endangered on the IUCN redlist are now classified as ETP species even if they are not protected by national or international legislation. In addition, Article 13 of Council Regulation (EU) 2016/72 which sets EU fishing opportunities for 2016 lists Prohibited Species. These should also be considered ETP. This includes a number of skate and ray species which are caught in demersal fisheries (such as starry ray -*Amblyraja radiata* – and common skate - *Dipturus batis*) and shark species, such as porbeagle. **Gillnet**: Project Inshore scored this at SG60-79. There is still the potential to interact with a number of demersal species likely to be classified as ETP, in particular under the prohibitions listed in EU 2016/17. Additionally, cetaceans, seals and birds may also suffer from interactions. Some of these species may now be classified as ETP – in particular now that the latest version of the MSC standard includes a wider number of international conventions and the potential for mammals listed as EN, VU or CR on the IUCN redlist to be included. Given the lack of fishery specific analysis it is difficult to determine whether fishery impacts are highly likely to be within national and international requirements for the protection of ETP species. **Demersal trawls** are associated with wide range of non-target species captures, many including several ETP species. Shad appear in landings for English inshore fisheries for 2012. Angelshark are known to have been depleted through incidental capture in trawls as have been common skate which is also depleted. Invertebrate species are also protected and are vulnerable to damage. Recent MSC re-assessments of demersal trawl fisheries (Ekofish Group and Osprey Group) have highlighted the potential for direct impact on protected skate and ray species. Given the small size of the UoA in those assessments they were able to make a justification on the basis of likely small proportion of overall catches in order to meet SG60. Such a justification may be more difficult with a more openly defined UoA. Beam Trawl: As noted above, the main impact is likely to be on demersal species listed as ETP, such as starry ray and common skate.
	2.3.2	Management	N/A	60-79	Although the Management Strategy PIs across Principle 2 typically require a 'Partial strategy' at the SG80 level. For the ETP management PI (2.3.2) there is a requirement at the SG80 level for a 'strategy'. In other words, the management threshold is higher for ETP than for other Principle 2 components. For ETP, management strategies should be designed to manage the impact of the fishery on the ETP component

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					specifically. Project Inshore (in 2013) concluded that there were measures in place (i.e. scoring at the SG60 level) but that no ETP management strategies (using the MSC definition) were in place for any fisheries. The assessors are not aware of any regular review of the potential effectiveness and practicality of alternative measures to minimise UoA related mortality of ETP species. Therefore SG80 is not met for scoring issue e. Finally, consideration must be given to additional management measures applied at the level of the UoA. Given Project UK Fisheries Improvement is inclusive all UK vessels using the defined gear type, no such fleet specific additional measures are included for consideration here.
	2.3.3	Information	N/A	60-79	There is a challenge of accurately assessing the level of interaction and resulting impact on populations of skate and ray species prohibited under Council Regulation (EU) 2016/72. In addition, once a fuller ETP species list is compiled, it will be important to further consider the level of knowledge of the scale of impact on this wider species list. No fishery specific ETP information has been presented to inform this pre-assessment.
Habitats	2.4.1	Outcome	No	Gillnet ≥80 Trawl: 60-79 Beam: <60	**Commonly encountered Habitats:** Monkfish occurs on sandy and muddy bottoms where it lies half-buried in the sediment waiting for its prey (although may also be found on rocky bottoms). **VMEs:** VMEs within the UoA include reefs and seagrass beds **Minor habitats:** These need only be scored at SG100 level, so are not considered in the pre-assessment. **Gillnet** – previous MSC assessments of demersal set gillnets have found that there likely to be negligible risk of reducing habitat structure and function to the point where there would be serious or irreversible harm (even in the absence of any gear specific research). Project Inshore also pointed to minor localised habitat impact from anchors and ground line, including during hauling. Any minor impact would be caused by the lightweight net brushing the local seabed (sandy or mud/sand) and from the widely-spaced anchors. If fishing were to cease, any impact would be rapidly reversible, in the dynamic environment in which fishing occurs. The same conclusion would be drawn for VMEs.

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					Demersal Trawl – Project Inshore noted that "Bottom fishing activities are capable significant habitat impacts such as the removal of major physical features, reduction of structural biota, reduction in habitat complexity, changes in sea floor structure and changes to benthic communities. Benthic macro fauna are most affected by trawling activity; whereas burrowing and other smaller seabed infauna are less vulnerable. Negative impacts of trawling are greatest in those areas where seabed habitats are not subject to high levels of natural disturbance. The rates of recovery for benthic communities following intensive trawling disturbance may range from weeks to years, with rates of recovery depending on rates of immigration, recruitment and growth. Operational range of demersal otter trawls throughout English waters, including inshore and beyond 6 NM, together with the knowledge habitat interactions and range of recovery times which are relatively high for sensitive habitats". Bottom towed gear has much greater potential negatively impact the benthic habitats where monkfish are likely to be targeted, from which recovery is likely to be longer term, though not necessarily irreversible. The scale and extent of the fishery would need to be considered under full assessment. MSC habitat assessments of demersal fisheries are likely to need to present a quantitative assessment of the spatial scale, the level of impact and the rate of recovery. Without such quantitative evidence assessors are more likely to draw a more qualitative conclusion based on plausible argument at the SG60 level (i.e. serious or irreversible harm is 'unlikely' rather than 'highly unlikely'). VMEs within the UoA have the potential to be affected by bottom trawls most notably reef structures, on which the impacts of benthic gear are high. **Beam Trawl** – Due to heavy contact with the seafloor, beam trawls are considered to cause more significant damage to benthic habitats including VMEs within the UoA (notably reef structures, on which the impacts of benthic gear are high). If left unmitigated it is unlikely that the beam trawl fishery will score sufficiently to pass the habitat performance indicator. Only a very small number of beam trawl fisheries have been MSC certified and it is likely that a lot of stakeholder scrutiny will therefore fall on this section of the assessment. In order to pass 'habitat status' it is necessary to demonstrate that the fishery is "Highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm".

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					In order for a beam trawl fishery to achieve the pass mark in relation to habitat status it will therefore be necessary to construct a robust and scientifically sound argument, backed up by good levels of information and an appropriate management strategy. In practice this is likely to mean building in appropriate mitigation into the management plan, on-going research and routine monitoring.
	2.4.2	Management	N/A	Gillnet ≥80 Trawl: 60-79 Beam: 60-79	**All UoAs** – Quota allocations, effort restrictions (on days at sea), size of catch and gear restrictions and real-time closures are considered as 'management measures'. Since the time of the 2013 Project Inshore scoring exercise the Marine Conservation Zone Project has been completed (in the South West via the 'Finding Sanctuary' consultation exercise). This was set up in 2008 and led by the JNCC and Natural England to identify and recommend Marine Conservation Zones (MCZs). To date 50 sites were designated within English waters. With the developing work on MCZs and on-going work on habitat mapping, it can be concluded that a 'strategy' is in place through the combination of International, EU, UK and local management regimes (i.e. IFCA vessel size and spatial restrictions). This strategy is likely to work, and there is previous evidence of measures being implemented in order to protect at-risk habitats (e.g. ban on benthic gear in certain areas). Quantitative evidence exists to show the strategy is being implemented successfully. No direct evidence of VME compliance has been seen, though the presence of on-board VMS systems mean evidence is likely to exist. Finally, it should be noted that the habitats management PI requires "information directly about the UoA". Therefore, in particular for demersal trawl and beam trawl which had lower outcome status scores (PI2.4.1) management may need to be informed by information on the impacts of the UoA. This suggests that, for more impacting gears UoA specific information is required.
	2.4.3	Information	N/A	Gillnet ≥80 Trawl: 60-79 Beam:	High degree of knowledge in relation to habitat distribution within English inshore and offshore waters - including vulnerable habitats. VMS. Much of this data is now combined and presented at The EMODnet Seabed Habitats website (http://www.emodnet-seabedhabitats.eu), which provides a single portal for the outputs of the EUSeaMap and MESH projects and includes a seabed habitats mapping portal. This mapping portal also enables OSPAR priority habitats (VMEs) to be mapped.

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
				60-79	There is also a high degree of knowledge on the spatial and temporal patterns of fleet operations (in particular for vessels over 15m (now 12m) via VMS) but increasingly inshore vessel activity is also being reliably mapped through surveillance data or dedicated inshore projects to map fleet spatial patterns. Finally, there is a good level of research information into the impacts of different gear types onto different seabed types and the resulting rates of recovery. It should be noted that much of the information requirements are phrased in terms of 'adequacy'. Therefore, the lower outcome status scores for demersal trawl and beam trawl may imply that a greater level of information on the impacts of the UoA might be necessary. As mentioned above in relation to habitat management PI (2.4.2), it should also be noted that the habitats management PI requires "information directly about the UoA". This suggests that through the broad scale level of information of habitat impact may be sufficient, for more impacting gears UoA specific information is required.
Ecosystem	2.5.1	Outcome	No	Gillnet ≥80 Trawl: ≥80 Beam: 60-79	The Project Inshore pre-assessment (2013) concluded that this PI scored at the SG80 level for the gillnet fishery but at the SG60-79 level for the demersal trawl and beam trawl fishery due to research indicating significant change to benthic species composition functional group composition, community distribution and trophic size/structure. In addition, the inshore habitats are especially vulnerable because of spawning and nursery functions including those related to vulnerable species. On-going trawl fishery is likely to hinder recovery in relation to these issues. For some fisheries, a combination of local byelaws and habitat protection may be adequate to address these issues. Contrasting against this predicted score is evidence from recently (2016) MSC (re)certified North Sea demersal fisheries - notably Osprey Trawlers and Ekofish which focused on the removal of the target species as the most likely cause of ecosystem impact and concluded that exploitation rates in the demersal trawl fishery were highly unlikely to disrupt key elements underlying ecosystem structure and function. In these re-assessments this PI was scored at SG80 and it is most likely that any future full assessment would harmonise with these scores. However, for Beam Trawl, the level of wider ecosystem impact may be greater so slightly more precaution is applied in the scoring.
	2.5.2	Management	N/A	≥80	There is an increasing focus on ecosystem management at the EU CFP and ICES advisory level. Recent evidence for this includes the issuing of ICES of mixed fisheries advice and proposals for mixed fisheries

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					multi-annual management plans. In addition, there is considerable focus at an EU level of the marine Ecosystem. For example, the EU Marine Strategy Framework Directive requires member states to assess the current state of their seas against agreed targets for 'good environmental status' and to establish both a programme of measures to meet these targets and a monitoring programme to measure progress.
	2.5.3	Information	N/A	≥80	The Channel and Celtic Sea ecoregion is a well-studied ecosystem. Good quality information is available for key elements e.g., abiotic & biotic productivity modelling, plankton recording; CEFAS trophic work, habitat mapping & fish stock assessment. The impacts of fisheries on these elements is adequately understood e.g., habitat damage, biomass removal, species size & maturation studies, etc. And the nature of impacted communities is understood, e.g. target and bycatch spp. (composition, volume & function), ETP e.g. seal & skates / rays / birds are known; Consequences can be inferred from gear studies, impact assessments (and key elements in some cases), but not many specific studies; Some spatial data, seabird and cetacean surveys, WQ assessments, hydrographic and oceanographic studies. Biodiversity assessments can show ecological risks. Information covers both fisheries-dependent and fisheries-independent variables. No change is made from the score of SG80 predicted in Project Inshore.

Table A1.3: Simplified Scoring sheet – Principle 3

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
Governance & policy	3.1.1	Legal and customary framework	N/A	≥80	The southern Celtic Seas, Bay of Biscay monkfish stock (7.b–k, 8.a–b, and 8.d) occupies EU waters and as well as being fished by UK vessels is also fished by other EU member states, with the majority of landings by French vessels and the fleets of Spain, Ireland, Belgium all also targeting the stock. There is therefore a need in the MSC requirements of both an "effective national legal system" and also "organised and effective cooperation with other parties" (scoring issue a). Effective and organised cooperation within the EU occurs through the Common Fisheries Policy (Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy). In addition, scientists from EU member states collaborate effectively in the provision of ICES stock assessments and advice which underpins management. Within the UK there is an effective national legal system implementing both the CFP and domestic fisheries law. At both a national and EU level there is an effective mechanism for the resolution of legal disputes (scoring issue b). Finally, no "rights created explicitly or established by custom of people dependent on fishing for food or livelihood" have been identified (scoring issue c). As a result, scoring of this PI is likely to be at the SG80 level or above. The decision of the UK electorate on June 23, 2016 to leave the European Union (i.e. 'Brexit') looks likely to begin a process in which the UK will repeal key EU legislation - perhaps including the CFP, subsidiary laws and marine environmental legislation - although with the potential to absorb parts of EU legislation directly into UK legislation. Scoring in this pre-assessment is based upon the situation at the time of writing and makes no predictions about how the process will proceed. However, at the time of any full assessment it will be important to demonstrate that there is still "organised and effective cooperation with other parties" to deliver management outcomes consistent with MSC Principles 1 & 2.
	3.1.2	Consultation, roles and responsibilities	N/A	≥80	Widely dispersed and commercially important stocks such as southern Celtic Seas, Bay of Biscay monkfish stock are managed at an EU level as a 'pressure' (i.e. quota) stock. The process of management is relatively clear, transparent and well understood and the roles and responsibilities of those involved are clearly defined and understood. For example, science is coordinated at an ICES level, with input from EU member state scientists, such as from CEFAS (in England). Scientific advice is reviewed at an EU level by STECF. And fishing opportunities are set annually by the European Council

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					informed by a proposal from the European Commission (i.e. Council Regulation (EU) 2016/72 of 22 January 2016 fixing for 2016 the fishing opportunities for certain fish stocks and groups of fish stocks, applicable in Union waters and, for Union fishing vessels, in certain non-Union waters). Enforcement of the quota clearly lies with the MMO (in England) or other member states if outside UK waters (in close coordination with MMO and coordinated and reviewed via the European Fisheries Control Agency (EFCA)). The process of fisheries representation is well established and representative bodies (such as NFFO in England) are formally involved in the consultative processes of management though Regional Advisory Councils (i.e. of relevance to monkfish is the North Western Waters Advisory Council although for the fishery in area 8 the South West Waters Advisory Council may also be relevant). A recent consultation example in relation to the monkfish fishery was the carried out by the European Commission, DG for Maritime Affairs and Fisheries) on the Development of multi-annual plans for the management of demersal fisheries in western EU waters. This ran from May to September 2015 with the results of the consultation available on-line: http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/western-waters-ultiannual/doc/summary_en.pdf
	3.1.3	Long term objectives	N/A	≥80	This PI seeks to ensure that "Management Policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard and incorporate the precautionary approach". This PI assesses objectives contained in high level or broader government policy, rather than on fishery specific operational objectives. The overarching objectives which are binding on all subsidiary pieces of fisheries legislation are those defined in the EU Common Fisheries Policy Legislation. Article 2 of the CFP legislation sets out these objectives. These are explicit and in line with the MSC Principles & Criteria. There is also explicit mention of the Precautionary Approach and the Ecosystem based approach to fisheries management. At the UK level, the Marine & Coastal Access Act 2009 which establishes the MMO, states that the organisation must operate in accordance with the Government's principles of sustainable development. In 2009 the UK Government (including the devolved administrations) published a set of High Level Marine Objectives within "Our Seas: A Shared Resource" which further details these high-level objectives. These high-level objectives at both an EU and UK

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					wide level which guide management decision making are fully consistent with the MSC fisheries standard and would support scoring at the SG80 level.
Fishery specific management system	3.2.1	Fishery specific objectives	N/A	60-79	There is no EU long term management plan in place for the southern Celtic Seas, Bay of Biscay monkfish stock (7.b–k, 8.a–b, and 8.d). For other species, such a plan would normally define the overall fisheries specific objectives, so the absence of a plan means that it is harder to point to these objectives. From a P1 point of view, ICES have defined a proxy reference point which provides measurable target for stock status. In 2015 the European Commission, DG for Maritime Affairs and Fisheries undertook a consultation on the Development of multi-annual plans for the management of demersal fisheries in western EU waters. According to the summary of consultation responses, there is strong appetite for monkfish to be included in any such plan. However, no proposal has yet emerged from the Commission. In the absence of a management plan, ICES advice is provided on the basis of the ICES approach to Data-limited Stocks. This approach is detailed annually in the 'ICES Advice Basis' (Advice Book section 1.2). This clearly states that "advice is based on an ecosystem approach, within a precautionary approach to management". It can therefore be concluded that advice is provided in accordance with objectives which are consistent with MSC Principles 1 & 2. Management decision-making is therefore guided by the objectives that underpin the advice and the high-level objectives referred to in PI 3.1.3. However, given the lack of a fishery specific management plan, it is likely to be concluded that the objectives are implicit, rather than explicit - i.e. SG60.
	3.2.2	Decision making processes	N/A	60-79	The process of decision making is as follows: EU member states monitor fisheries and collect fisheries data (as per the requirements of the EU Data Collection Framework); this forms the basis to enable national scientists to contribute to the stock assessment process within the ICES working group structure; annual ICES advice is then formulated by the ICES Advisory Committee (ACOM); EC STECF then review the advice; and EU Fishery Ministers decide upon a TAC. However, in the case of species like monkfish / anglers, the absence of a long-term management plan means that there is less clarity of the management decision making because annual changes in TAC are not determined according to an agreed HCR. Although this has recently improved as annual advice is now informed by the ICES approach to Data-limited Stocks, (with monkfish / anglers defined as a Category 3 species) this is still less clearly defined and less binding on management decision-making than a formally agreed management plan. Management decision-making is further complicated in the case of monkfish /

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					anglers as: (i) the species is mainly a bycatch species in mixed fisheries taking hake, megrim, sole, cod, plaice and Nephrops meaning that it maybe the management of those other species which may take precedence and; (ii) a combined TAC is set for 2 species of *Lophiidae*.
	3.2.3	Compliance and enforcement	N/A	≥80	Monitoring, Control and Surveillance (MCS) is coordinated across EU member states and the EU waters. This enables vessels of different member states to be subject to appropriate levels of enforcement when fishing or landing catch in another member state. The European Fisheries Control Agency (EFCA) coordinates Joint Deployment Plans (JDP) to review and enhance the deployment of fisheries control across Europe. A number of over-arching pieces of legislation set out the EU control regime, such as: (i) Council Regulation (EC) No 1224/2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy and; (ii) Council Regulation (EC) No 1005/2008 of 29 September 2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing. In general, the MCS systems in Northern European waters are highly developed. All vessels over 12m are required to have VMS, electronic logbook reporting is in place along with additional controls such as the 'Registration of Buyers and Sellers' (and the resulting requirements for sales notes), designated landing ports and inspection on land and at sea. There is also a high level of enforcement coverage in the UK - i.e. MMO in England (in association with the Royal Navy Fishery Protection Squadron) and the IFCAs within their 0-6nm jurisdiction. Within the UK there is an effective judicial system to impose incremental sanctions for non-compliance with fisheries management measures. For mixed fisheries where part of the catch may be stocks covered by an EU recovery plan, then there may be additional control and enforcement requirements such as the need to 'hail' ahead of landing and reduced levels of tolerances on logbook weights. There is no evidence of systematic non-compliance. Overall, it is expected that this would enable scoring at least at the SG80 level.
	3.2.4	Management performance evaluation	N/A	60-79	Stocks which have a quota set by EU, but where advice is incomplete, are typically subject to less scrutiny at the ICES Working Group level. The monkfish fishery is subject to biannual review through the ICES Working Group for the Bay of Biscay and the Iberian Waters Ecoregion (WGBIE). Some key aspects of the management system are also evaluated, such as monitoring control and surveillance and key parts of the EU legislative and management process. However, no fishery specific reviews or

Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
					evaluations have been undertaken, which more holistically examine the performance of management, therefore SG80 is not met. The level of review provided by WGBIE is probably sufficient for SG60 to be met.

Appendix 2 References

Council Regulation (EC) No 1005/2008 of 29 September 2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing.

Council Regulation (EC) No 1224/2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy

Council Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy

Council Regulation (EU) 2016/72 of 22 January 2016 fixing for 2016 the fishing opportunities for certain fish stocks and groups of fish stocks, applicable in Union waters and, for Union fishing vessels, in certain non-Union waters

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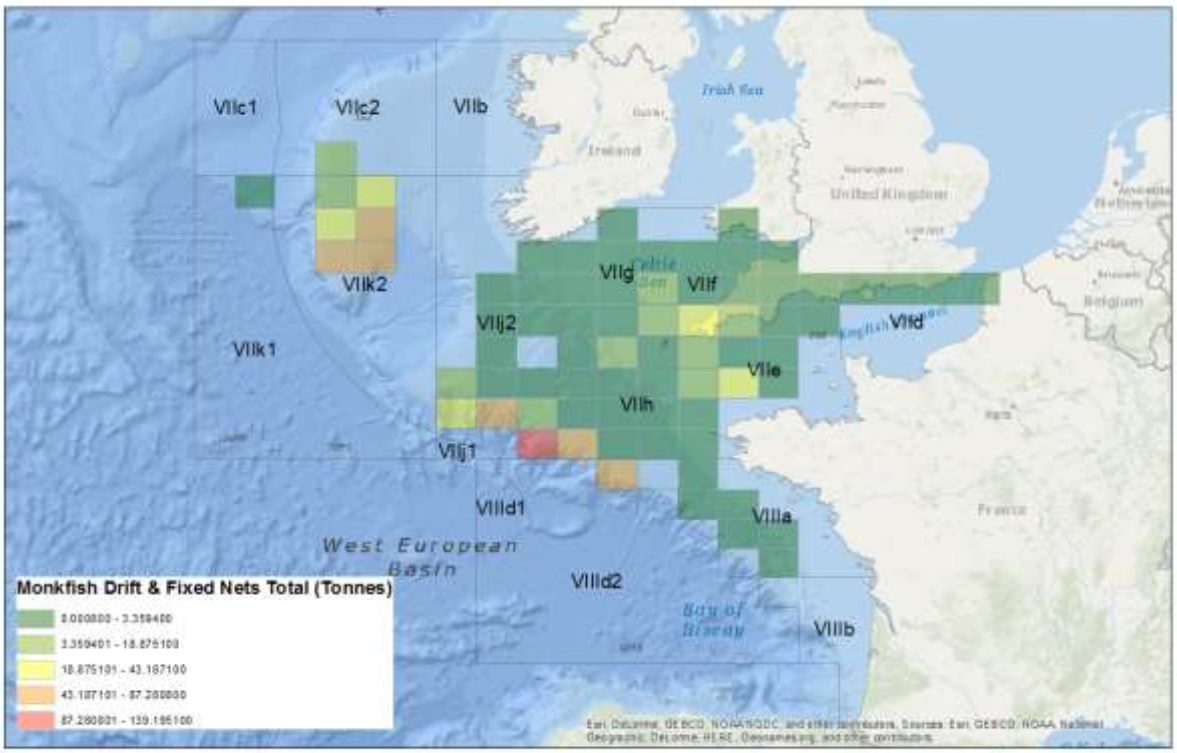
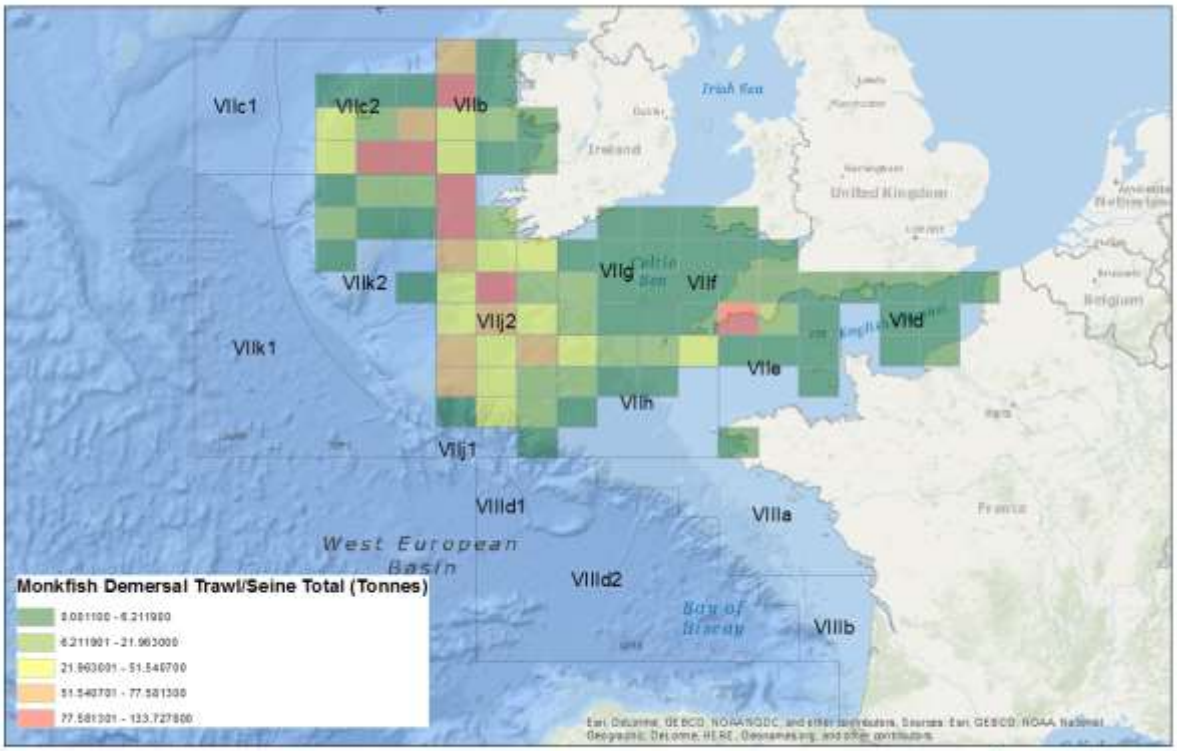
Appendix 3 UoA Spatial Patterns

UoA 1: Gillnet – under 10m (2015)



UoA 2 Demersal trawl (2015)



UoA 3 Beam Trawl