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## **MSC Pre-Assessment for UK Western Channel and Celtic Sea edible crab fishery**

# **Project UK Fisheries Improvements**

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Prepared For: Project UK Fisheries Improvements.

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## Glossary

CFP	Common Fisheries Policy
CL	Carapace Length
DCF	Data Collection Framework
Defra	Department of the Environment and Rural Affairs
EMS	European Marine Sites
ETP	Endangered, Threatened & Protected
EU	European Union
EC	European Commission
FAO	Food and Agriculture Organisation of the United Nations
FCR	Fisheries Certification Requirements
FIP	Fishery Improvement Project
GPRS	General Packet Radio Service (mobile telephony)
ICES	International Council for the Exploration of the Sea
IFCA	Inshore Fisheries & Conservation Authority
JRC	European Commission Joint Research Centre
LTL	Low Trophic Level
NFFO	National Federation of Fishermen's Organisations
MCZ	Marine Conservation Zone
MLS	Minimum Landing Size
MMO	Marine Management Organisation
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
PI	Performance Indicator
PO	Producer Organisation
PRI	Point at which recruitment is impaired
PUKFI	Project UK Fisheries Improvements
RBF	Risk Based Framework
SAC	Special Area of Conservation
SAGB	Shellfish Association of Great Britain
SG	Scoring Guidepost
SPA	Special Protected Area
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable catch
UoA	Unit of Assessment
UoC	Unit of Certification
VHS	Very High Frequency
VME	Vulnerable Marine Ecosystem
WGCRAB	ICES Working Group on the Biology and Life History of Crabs



# 1 Introduction

## 1.1 Aims/scope of pre-assessment

This report presents an update of the Marine Stewardship Council (MSC) pre-assessment of the UK Western Channel and Celtic Sea edible crab (*Cancer pagurus*) fishery that was originally included as part of Project Inshore<sup>1</sup> in 2013. As such, the primary aims of this update of the earlier pre-assessment are 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<sup>2</sup>, which includes a number of changes since the time of the original pre-assessment.
- Present revised pre-assessment scoring and supporting rationale.

As this pre-assessment is 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 ( $\geq 80$ ). 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.

Project UK Fisheries Improvements (PUKFI) 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,

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

<sup>2</sup> 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<sup>3</sup> 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)<sup>4</sup>. In addition, the 2013 pre-assessment results are presented in an online database<sup>5</sup> 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.

### 1.4 Unit(s) of Assessment

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

**Table 1: Unit of Assessment**

<b>Target Stock:</b>	Edible crab ( <i>Cancer pagurus</i> ) Western English Channel and Celtic Sea
<b>Fishing Method / gear type:</b>	Pots and traps
<b>Fishing Fleet</b>	Eligible UK registered vessels <sup>6</sup>
<b>Area:</b>	ICES areas VIIe, VIIh & part of VIId, and areas VIIf & VIIg

Other future eligible fishers may include vessels that sign-up to and comply with the rules of the candidate fishery (yet to be fully determined) at the core of this assessment.

### 1.5 Total Allowable Catch (TAC) and Catch Data

The distribution of edible crab fisheries around the UK is illustrated in **Fig 1**, and the relative distribution of catches by the UK fleet is illustrated in **Fig 2**.

No TACs are set for the Western Channel & Celtic Sea edible crab fishery.

<sup>3</sup> 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.

<sup>4</sup> <http://www.seafish.org/industry-support/fishing/project-inshore/project-reports/stage-two-reports>

<sup>5</sup> <http://msc.solidproject.co.uk/msc-project-inshore.aspx>

<sup>6</sup> Assumed to be those vessels that sign-up to the client group management unit, and meet and comply with its rules – assumed to primarily comprise those vessels located and operating from South West ports, as well as those vessels in membership of regional POs.

Stock assessment is undertaken at the geographical level of the Western Channel (ICES areas VIIe, h & part of d) and the Celtic Sea (ICES areas VII f & g) and encompasses an area fished by fleet segments registered to the UK, Ireland, France and the Channel Island (see **Fig 3**).

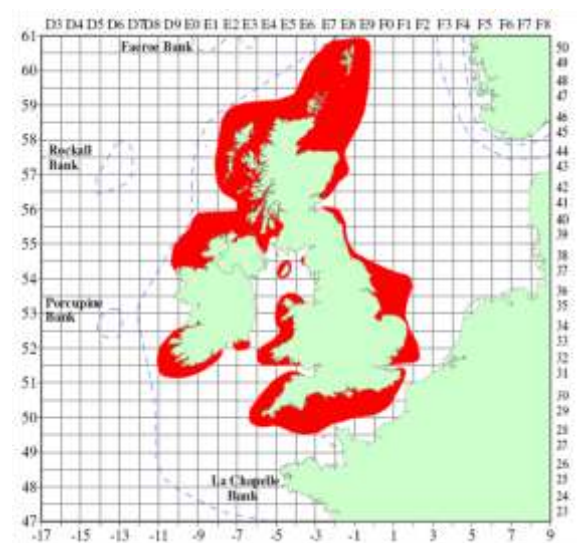
Total landings were around 8,000t for the areas covered by the Western Channel stock assessment for each of the years 2013-2015, comprising 5,000t from the UK, 2,000t from France, and 1,000t from the Channel Islands. Landings for the Celtic Sea stock assessment area are estimated at 3,000t, comprising 2,000t from the UK, and 1,000t from Ireland.

The Unit of Assessment (UoA) comprises the Western English Channel edible crab stock. The Unit of Certification (UoC) is limited to the regional UK crab potting fleet.

**Table 2: Catch Data for Western English Channel Edible Crab**

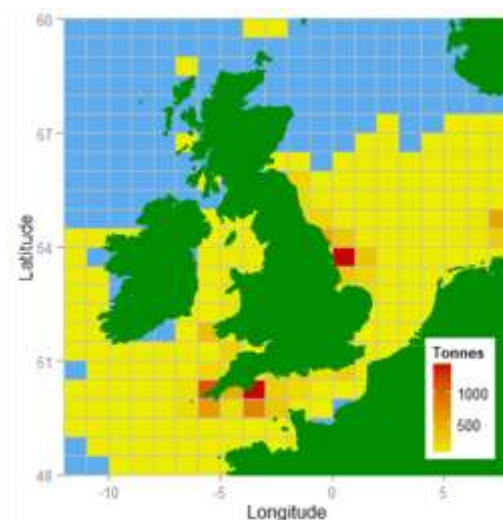
Total Allowable Catch	Year		Amount	n.a.
UoA share of catch	Year	2015	Amount	11,200t
UoC share of catch	Year	2015	Amount	7,441t
Total green weight catch by UoC	Year	2015	Amount	7,441t
	Year		Amount	

**Fig 1 – UK brown crab fisheries**



**Source:** Bannister (2009) – from Addison 2004

**Fig 2 – Average crab landings by English and Welsh vessels by ICES rectangle, 2006-2013**



**Source:** Cefas (2014) Edible crab (*Cancer pagurus*) Stock Status Report 2014.

## 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 / Inseparable Stocks (IPI) / 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. The species caught are easily recognizable and can be separated and recorded accurately. 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 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.

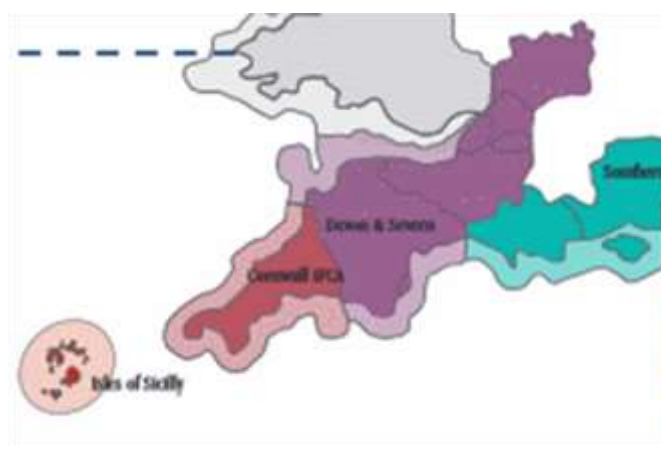
The UK Western Channel and Celtic Sea edible crab fisheries comprise coastal inshore pot and trap fisheries prosecuted by smaller (mainly under-10m vessels) and deeper water, more offshore, fisheries conducted by larger vessels that split time between inshore and offshore locations. The smaller vessels tend to operate on an exclusively local basis. The larger vessels tend to shift grounds seasonally, as they respond to economic pressures – movements that may take them to other parts of western European waters.

The fishery that is subject to this pre-assessment comprises catches and landings of UK registered vessels targeting edible crab in the Western Channel (ICES areas VIIe & h, and part of VIId) and the

**Fig 3 – Stock unit areas Western Channel (VIId, e, h) & Celtic Sea (VIIf & g)**



**Fig 4 – IFCA areas within Unit of Assessment**







Celtic Sea (ICES areas VIIIf & g) (see **Fig 3**). It excludes the operations of vessels registered in Ireland, France and the Channel Islands<sup>78</sup>.

Fishery management jurisdiction is organised on two different scales around England. Beyond 6 nautical miles, Defra and the MMO are responsible for managing crab fisheries whereas from the coast out to 6 nautical miles, responsibility lies with the Inshore Fisheries and Conservation Authorities (IFCAs). This stock unit and jurisdiction over inshore management within this area rests with four IFCAs – the Southern, Devon & Severn, Cornwall, and Isle of Scilly IFCAs (see **Fig 4**). The Western Channel & Celtic Sea stock units and IFCA boundaries do not match, which can make interpreting results for each management unit challenging. There are 10 IFCA within England, and their regions extend from the coast out to 6nm. Given that one functional area is based on species biology and the other is based on governmental logistics, however, differences are to be expected.

Inshore fisheries out to 6nm are, in England, subject to management by Inshore Fisheries and Conservation Authorities (IFCAs). For this fishery, jurisdiction rests with the Southern IFCA, the Devon and Severn IFCA, the Cornwall IFCA, and the Isles of Scilly IFCA (see **Fig 4**), though these areas are also subject to, and need to be compliant with, UK legislation. Outside 6nm UK registered vessels are subject to management by Defra and the Marine Management Organisation (MMO) of the UK, and subject to EU CFP legislation in its original form or as interpreted in UK law, or as interpreted by French, Irish or Channel Islands legislation where these authorities have jurisdiction.

The most productive crab fishing grounds are to be found off Start Point, south Devon (under the control of the D&S IFCA), and around the Channel Islands (under local management). Other productive fisheries are conducted along the rocky Cornish (under Cornwall IFCA and IoS IFCA) and Brittany (under French jurisdiction) coasts, and there is a mid-Channel open water fishery (largely under UK MMO management).

Vessels are fitted out to set and recover fleets of pots, operating, according to scale and fishing pattern, between 50 and as many as 2,000 pots per vessel. The technique can be varied to target different species – through choice of pot design, and the location of where the pots are set. Accordingly many, though not all, vessels vary fishing activity across the year as they target different fishing opportunities. The main alternate fishing opportunities available are those for lobster and whelks, and to a lesser degree seasonal fisheries for cuttlefish and spider crab.

Potting and trap fisheries capture marine species other than the target species – so that edible crab fisheries have a lobster bycatch, and conversely lobster fisheries have a (proportionately lesser) edible crab bycatch. All pots and traps are baited<sup>9</sup>, and this actively attracts a number of other bycatch species which can be found in pots on a regular basis, though generally in very small numbers. These include velvet and shore crabs, wrasse and other finfish, and whelks and starfish. The level of bycatch found tends to diminish the further offshore the pots are set, and the greater the depth at which they are set.

Crab is also caught as a bycatch in fisheries deploying other gear. Aside from pot fisheries specifically targeting lobster, the main other fisheries are gill net and tangle net fisheries (used, mainly inshore, for capture of a range of demersal finfish), beam trawl fisheries (mainly offshore), and to a lesser

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<sup>7</sup> This pre-assessment focuses on the English fisheries, and on this basis excludes the Welsh crab fishery

<sup>8</sup> Larger crab vessels (grouped as “vivier” vessels) are operated on a nomadic basis, relocating to more economically rewarding grounds as opportunities arise, including targeting whelk fisheries; these vessels are registered in various parts of the UK, including Northern Ireland and Scotland, and at least part of this fleet exploits Western Channel and Celtic Sea edible crab fishery.

<sup>9</sup> fresh bait (such fish frames and parts of fish) is used where edible crab is targeted; “smelly” bait (such as salted mackerel or herring) is used when lobster is targeted





degree in demersal trawl fisheries. These fisheries are responsible for slightly over 2% of all edible crab landings.

## **2.4 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 below presents details on whether stock assessments have been undertaken and management and stock status reference points are available; the proportion of catch and whether the species is considered main or minor; and whether the outcome status of the species will be scored using RBF.



Table 3: Summary of how primary and secondary species are assessed within Principle 2

Scientific name	Species	Retained or discarded	% of catch	Main of Minor	Stock assessment	Management limit or ref points	Primary or secondary	Stock status ref points	RBF or default
<i>Homarus gammarus</i>	lobster	R	<2%	ma	Y	reference points	P <sub>ma</sub>	y	default
<i>Gadus morhua</i>	cod	R	<½ %	mi	y	reference points	P <sub>mi</sub>	Y	default
<i>Dicentrarchus labrax</i>	bass	R	<½ %	mi	Y	reference points	P <sub>mi</sub>	y	default
<i>Necora puber</i>	velvet crab	R	<½ %	mi	Y	management limit	S <sub>mi</sub>	y	default
<i>Maia brachydactyla</i>	spider crab	R	<½ %	mi	Y	management limit	S <sub>mi</sub>	y	RBF
<i>Palinurus elephas</i>	crawfish	R	<½ %	mi	N		S <sub>mi</sub>		RBF
<i>Pollachius pollachius</i>	pollock	R	<½ %	mi	N		S <sub>mi</sub>		RBF
<i>Buccinum undatum</i>	whelk	D	<1%	ma	Y	management limit	S <sub>mi</sub>	y	default
<i>Labridae</i>	wrasse	D	<½ %	mi	N		S <sub>mi</sub>		RBF
<i>Asterias spp.</i>	starfish	D	<½ %	mi	N		S <sub>mi</sub>		RBF
<i>Carcinus maenas</i>	green crab	D	<½ %	mi	N		S <sub>mi</sub>		RBF
<i>Conger conger</i>	conger	D	<½ %	mi	N		S <sub>mi</sub>		RBF
<i>Raja brackyura</i>	blonde ray	D	<½ %	mi	Y	management limit	S <sub>mi</sub>		RBF
<i>Raja microocellata</i>	small-eyed ray	D	<½ %	mi	Y	management limit	S <sub>mi</sub>		RBF
<i>Raja clavata</i>	thornback ray	D	<½ %	mi	Y	management limit	S <sub>mi</sub>		RBF
<i>Mustelus mustelus</i>	smoothhound	D	<½ %	mi	N		S <sub>mi</sub>		RBF

## 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 Crick Carleton during the first half of December 2016. Investigation comprised review of published material, desk research and analysis, and phone contact with representatives of fishery management organisations, fishery scientists and the fishing industry.

### 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 – managers, scientists and control and enforcement services
- Local fishery managers (IFCAs)
- Producer Organisations and Fishermen's Organisations
- Vessel Owners and fishermen
- Supply chain participants / representatives

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**

It is noted that there is a risk that other edible crab landed into the South West of England by vessels that are not in membership of the Unit of Certification could be sold as MSC certified product, or landed to ports landed elsewhere by non-member vessels could carry the MSC logo. The subsequent Chain of Custody assessment would analyse these risks in detail.

## 5 Preliminary evaluation of the fishery

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

Table . The fishery met level 60 for all Principle 2 and 3 PIs, but failed to reach level 60 for two Principle 1 PIs, and as such the fishery would automatically fail the MSC assessment.

**Table 6: Summary of Likely Scoring Levels.**

Principle	Component	PI	Performance Indicator	Likely scoring level
1	Outcome	1.1.1	Stock status	≥80
		1.1.2	Stock rebuilding	
	Management	1.2.1	Harvest Strategy	<60
		1.2.2	Harvest control rules and tools	<60
		1.2.3	Information and monitoring	≥80
		1.2.4	Assessment of stock status	≥80
2	Primary Species	2.1.1	Outcome	≥80
		2.1.2	Management	60-79
		2.1.3	Information	≥80
	Secondary species	2.2.1	Outcome	≥80
		2.2.2	Management	60-79
		2.2.3	Information	60-79
	ETP species	2.3.1	Outcome	60-79
		2.3.2	Management	60-79
		2.3.3	Information	60-79
	Habitats	2.4.1	Outcome	≥80
		2.4.2	Management	≥80
		2.4.3	Information	≥80
	Ecosystem	2.5.1	Outcome	60-79
		2.5.2	Management	≥80
		2.5.3	Information	≥80
3	Governance policy &	3.1.1	Legal and customary framework	≥80
		3.1.2	Consultation, roles and 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	≥80
		3.2.3	Compliance and enforcement	≥80
		3.2.4	Management performance evaluation	≥80

## 5.1 Key findings from the pre-assessment

### *Principle 1*

Level 60 was **not** met for the following PIs:

- 1.2.1 – Harvest Strategy
- 1.2.2 – Harvest control rules and tools

These relate to the design, establishment and application of a coherent Harvest Control Rule. Whilst management using Technical Measures does provide some safety net with respect to maintenance of the stock above  $MSY_{limit}$  it does not constitute, in the context of the MSC standard, an adaptive management regime, and cannot be demonstrated as being effective in moving stock towards and maintaining it at  $MSY_{target}$ . Until these issues are satisfactorily addressed the fishery will **fail** assessment.

Level 80 was met for the remaining three PIs within Principle 1.

The edible crab is **not** considered LTL.

### *Principle 2*

The Level 60 was met for all PIs in Principle 2.

There is insufficient clarity with regard to information on the extent of interaction with secondary species, and with ETP species, and this adversely impacts the development and application of strategic to manage and mitigate impacts. In addition, outcomes with regard to ETP populations and ecosystem impacts fall short of SG80 requirements.

Altogether seven out of 15 PIs fall short of a score of SG80, and these will draw a significant number of conditions unless redressed prior to entering full assessment.

### *Principle 3*

Level 60 was met for all PIs in Principle 3.

Level 80 was not met for the PI 3.2.1: Fishery specific objectives. A clearer and more coherent of the management objectives for this fishery are required to meet the SG80 level.

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

The Risk-Based Framework (RBF) is not required for Principle 1. There is some anecdotal indication that the fishery impacts a number of secondary species, but does so at a very low and occasional level. These species are treated as minor secondary species, where no RBF is required, and attracting a default score of SG80.



## Appendix 1 – Pre-assessment Scoring Sheets

Table A1.1: Simplified Scoring sheet – Principle 1

Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
1	Outcome	1.1.1	Stock status	N	≥80	<p>The most recent (2014) Cefas assessment of the Western English Channel edible crab stock (ICES areas VIIe &amp; h) indicates that it is at <math>MSY_{target}</math> and that the exploitation rate is around the level generating MSY (females above, males below). The status of the stock has not changed since the previous assessment in 2012.</p> <p>Exploitation rates show slight continuing decline in recent years, whilst there is some evidence that the introduction of the Restrictive Shellfish License Scheme and Buyers and Sellers legislation has resulted in fishing activity data being generally more reliable.</p> <p>2013 data suggests exploitation within this stock unit by a fleet of 221 under 10m vessels, and 38 over 10m vessels, apply an average of 41 and 96 vessel days fishing (noting that a proportion of the under 10m fleet is inactive or fished on a part-time basis) (&gt;SG80).</p>
		1.1.2	Stock rebuilding	N/A	N/A	As stock is at $MSY_{target}$ , and exploitation at levels generating MSY, stock rebuilding is not applicable.
	Management	1.2.1	Harvest Strategy		<60	<p>Stock assessment includes establishment of a minimum biomass reference point limit and <math>MSY_{target}</math>, and fishing reference points of <math>F_{MSY}</math> and a maximum reference point limit. Whilst there is a presumption that management seeks to achieve stocks at <math>MSY_{target}</math>, these are not explicitly reflected in the management of the fisheries within the region.</p> <p>The following controls seek to achieve a reasonable balance between stock strength and fishing effort and exploitation, but they do not constitute a coherent integrated harvest strategy, and lack any adaptive management component:</p> <ul style="list-style-type: none"> <li>The fishery is subject to minimum size rules (with some area based variation), vessels over 15m in size are subject to effort limits under the EU Western Waters Regime, and there are other length based restrictions with regard to fishing in IFCA areas.</li> </ul>





Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						<ul style="list-style-type: none"> <li>There are no limits on the number of pots that can be set.</li> <li>There are some specific seasonal limitations within those areas managed by IFCA's, notably in the management of the Start Point Inshore Potting Agreement fishery and in and around areas designated for conservation and environmental management.</li> </ul> <p>On balance, whilst a range of technical measures are designed to reduce the risk that stocks might fall below <math>MSY_{limit}</math> they are not designed to and not used to alter fishing activity in response to change in stock status. As such it could be argued that the harvest strategy is not sufficient to support a statement that there is an expectation that the harvest strategy is expected to achieve stock management at or around <math>MSY_{target}</math> and thus might be deemed to score below SG60.</p>
		1.2.2	Harvest control rules and tools	N/A	<60	<p>The EU Western Waters Regime places a limit upon the number of kilowatt days that the &gt;15m potting fleet can use within ICES area VII. From 2013 active management has been introduced leading to reductions in the number of days fished within this stock area. There may have also been a loss in effort (and therefore also catch) towards the end of 2013 because of the very bad weather in the run up to Christmas which is traditionally an important fishery.</p> <p>Since 2008 there has been an increase in the vessel numbers and pots used in the Lyme Bay area since the Lyme Bay Statutory Instrument came into being however it is not clear if this represents new activity or a relocation of activity from neighbouring areas.</p> <p>In large areas of the Devon and Severn IFCA district there is little opportunity to increase the area covered or number of pots on the ground due to the potential for gear conflicts with the mobile fishing fleets.</p> <p>Fishery Management measures</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> EC and UK minimum landing size of 140mm applies, but off Devon and Cornwall UK law stipulates an MLS of 160mm for males. It also restricts the proportion of the crab landed as detached claws caught by pots or creels to less than 1% by weight of total</li> </ul>



Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						<p>catch. A by-catch limit of no more than 75kg per day of crab claws taken by other gear types can be landed.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> National legislation restricts the number of shellfish licences available (in England and Wales) and also prohibits landing of berried and soft crabs.</li> <li><input type="checkbox"/> Cornwall IFCA applies an MLS of 150mm for females. Local IFCA legislation varies and is detailed in the table below.</li> <li><input type="checkbox"/> There are mid-channel potting agreements in place in this region.</li> </ul> <p>Together, all the above are such as to seek to achieve a reasonable balance between stock strength and fishing effort and exploitation, but they do not constitute a coherent integrated harvest strategy, and lack any adaptive management component.</p> <p>Cefas notes that, “Stock boundaries for edible crab remain poorly understood and both sexes move quite widely at times; females in particular have been shown to travel large distances in relation to spawning activity.” Based on the assessment units, however, collaboration between the relevant IFCAs to develop crab management appears sensible. The extent of the fishery and offshore fishing interests (vivier crabbers) suggests some discussion with French and Irish authorities would also be beneficial for Western Channel and Celtic Sea stocks respectively.</p> <p>On balance, whilst a range of technical measures are designed to reduce the risk that stocks might fall below <math>MSY_{limit}</math> they are not designed to and not used to alter fishing activity in response to change in stock status. As such it could be argued that the harvest strategy is not sufficient to support a statement that there is an expectation that the harvest strategy is expected to achieve stock management at or around <math>MSY_{target}</math> and thus might be deemed to score below SG60.</p>
		1.2.3	Information and monitoring	N/A	≥80	<p>Fishery management jurisdiction is organised on two different scales around England. Beyond 6 nautical miles, Defra and the MMO are responsible for managing crab fisheries whereas from the coast out to 6 nautical miles, responsibility lies with the Inshore Fisheries and Conservation Authorities (IFCAs). There are 10 IFCA within England, and their regions extend from the coast out to 6nm. This stock unit and jurisdiction over inshore</p>



Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						<p>management within this area rests with three IFCAs – the D&amp;S, C, and IoS IFCAs. The Western English Channel stock unit and IFCA boundaries do not match, which can make interpreting results for each management unit challenging. Given that one functional area is based on species biology and the other is based on governmental logistics, however, differences are to be expected.</p> <p>Some data on landings, effort, and fleet composition are available (SG60a); fishery removals are monitored and there is some information available to support a CPUE indicator (SG60b); landings from beam trawling and gill net fisheries are reported, but constitute only slightly over 2% of overall edible crab landings; there may be other un- / under-reported removals by other gears not accounted for (&lt;SG60c). Given the live nature of the fishery, under-sized crab and discarded bycatch are returned to the sea live, and assumed to have a high survival rate (&gt;90%).</p>
		1.2.4	Assessment of stock status	N/A	≥80	<p>The assessment is appropriate for the stock (SG80a) and estimates the status relative to reference points (SG60b). The assessment identifies some sources of uncertainty but does not take them into account (SG60c). Equilibrium assumptions apply. The assessment has not been tested and different approaches have not been explored (&lt;SG100d). The assessment may have been subject to internal, but not external, peer review (&lt;SG100e)</p>
	Number of PIs less than 60					2



Table A1.2: Simplified Scoring sheet – Principle 2

Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
2	Primary Species	2.1.1	Outcome	No	≥80	<p>The only main primary species caught in the edible crab potting fishery is lobster. Other primary species, such as occasional catches of cod and bass, are likely to be minor and will not affect scoring below 80, regardless of status.</p> <p><b>Lobster:</b> The most recent assessment (2014) indicates that the stock size is above <math>MSY_{limit}</math> but below <math>MSY_{target}</math>, and that the exploitation rate is moderate though increasing in recent years (since 2010). Exploitation is above rates consistent with <math>MSY</math> but below the maximum reference point limit. At the minimum landing sizes (MLS's) applied in this region between 99-100% of the males and 86-92% of the females should be mature. The status of the stock has not changed since the last assessment in 2012. This will lead to MSC scoring at the SG80 level.</p> <p>Lobster is expected to be above the PRI – the point where recruitment would be impaired.</p>
		2.1.2	Management	N/A	60-79	<p>Management of the Southwest lobster stock unit is according to reference points and informed by stock assessment, in turn informed by appropriate levels of data collection.</p> <p>Shark finning is not taking place.</p> <p>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. Since lobster is a secondary commercially valuable target species in this fishery, this does not apply in this case.</p> <p>In the context of other, for example finfish, primary species the level of bycatch is occasional only, and well below 2% of total catches. Review of measures to further reduce such catches is relevant, but is likely to have minimal impact of the status of these species.</p> <p>There is a strategy in place for management of lobster fisheries, and there are measures in place where considered necessary (SG60a+; SG60b+).</p>
		2.1.3	Information	N/A	≥80	<p>Qualitative and some quantitative information is available through the RBS &amp; shellfish return data collection (SG80a). This is sufficient to support a strategy for management of</p>



Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						the lobster catches as a main primary species (SG80c) and indicate any increased risk from this fishery to this species (SG80d). Data capture with respect to capture of other minor primary species is poor, reflecting the very low and occasional levels of capture of these species.
	Secondary species	2.2.1	Outcome	Yes	≥80	<p>Project Inshore identified three non-target species – velvet crab, spider crab and lobster. Of these only one, lobster, may be treated at a main (addressed above as a primary species), with the remainder addressed a secondary minor.</p> <p>Of note, lobster, velvet and spider crab fisheries are recognised as targeted fisheries (fished using different or modified gear, different bait, and with pots set in different areas and/or on different substrate) in which edible crab may be viewed as a bycatch species.</p> <p>In addition to the above, however, anecdotal and some survey evidence suggests that minor catches of a range of other species are also made.</p> <p>Since these pot fisheries are a live fishery, all non-retained bycatch is returned to the sea live – with a recognised high survival rate (&gt;90%).</p> <p>No <b>main</b> secondary species have been identified for this fishery, but a range of very low volume (&lt;½%) bycatch species can be identified as <b>minor</b> secondary species. These secondary minor species are – whelk; velvet crab; spider crab; crawfish; pollock; wrasse; starfish; green crab; conger; blonde ray; small-eyed ray. Only one of these, whelk (also the subject of a high volume targeted fishery that uses quite different gear), may involve a slightly higher volume (at &lt;1%) (see <b>Table 3</b> in the main text).</p> <p>Given their classification as minor secondary species, they are scored at or above SG80.</p>
		2.2.2	Management	N/A	60-79	<p>Whelk, velvet and spider crab fisheries and harvests are subject to periodic monitoring, but not actively managed beyond establishment of minimum sizes.</p> <p>Crawfish and pollock stocks are considered as data-poor and vulnerable to exploitation.</p>



Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						<p>Starfish, green crab and conger populations are not considered at risk, and when caught as bycatch specimens are normally returned to the sea live.</p> <p>Ray populations are considered data-poor and vulnerable to over-exploitation. Caught as bycatch to this fishery, specimens are very small and returned to the sea alive.</p> <p>None of the above is assessed as warranting a score below SG80.</p>
		2.2.3	Information	N/A	60-79	<p>Catches of commercially valuable and above minimum size specimens of crustaceans are typically recorded in shellfish returns, but for the rest data availability is poor.</p> <p>Periodic independent assessment of catches is made as part of IFCA monitoring and research programmes, but this does not form part of a coherent and coordinated monitoring of bycatch.</p>
	ETP species	2.3.1	Outcome	No	60-79	<p>No ETP species associated with this fishery were identified in the Project Inshore pre-assessment – and this is supported by available survey data. It is also the case that all catches that are not retained are returned live to the sea.</p> <p>Nonetheless, data capture with respect to incidental catches and catches of organisms of little to no commercial value is poor to non-existent and hence a proposed scoring at &lt;SG80.</p>
		2.3.2	Management	N/A	60-79	<p>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.</p> <p>Whilst anecdotal evidence suggests that interaction with ETP species are minimal, it is not clear at present what the level of potting interaction with these species is, and no management strategy to manage such impact is in place.</p>
		2.3.3	Information	N/A	60-79	<p>Catches of commercially valuable and above minimum size specimens of crustaceans are typically recorded in shellfish returns, but for the rest data availability is poor.</p>



Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						<p>Periodic independent assessment of catches is made as part of IFCA monitoring and research programmes, but this does not form part of a coherent and coordinated monitoring of bycatch.</p> <p>Despite this, this fishery is likely to have negligible impact on the populations of these ETP species.</p> <p>No specific recording of ETP species by fishermen is required or encouraged, though this is captured where independent surveys are undertaken.</p>
	Habitats	2.4.1	Outcome	No	≥80	<p>The static gear used to prosecute the fishery is in contact with the bottom, but unlikely to have significant interaction with vulnerable habitats. The habitat risk of this fishery has been identified as low risk. Evidence suggests fishery impact on the bottom is restricted to some abrasion caused by dragging pots and anchors during hauling and tide and wave action (Grieve et al., 2014).</p> <p>There are a significant number of areas given environmental protection designation within this fishery, comprising mainly SACs, SPAs, and MCZs. In most cases active management of these areas limits or excludes fishing with mobile gear, but allows fishing with static gear and impact of such fishing is monitored.</p> <p>Discrete areas on the deep water periphery of the area under assessment are designated as Vulnerable Marine Ecosystems (VMEs), where potting is excluded. These vulnerable marine habitats are protected within the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR, 2013) and any kind of fishery there might be controlled if deemed necessary.</p>
		2.4.2	Management	N/A	≥80	<p>There is a comprehensive strategy in place through the combination of International, EU, UK and local management regimes – both across the area, and where designated areas are subject to specific management conditions.</p> <p>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).</p>





Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						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.
		2.4.3	Information	N/A	≥80	Active monitoring of areas subject to specific environmental designation does take place, and irregular sampling and monitoring of habitat outside these areas is also conducted, though primarily inside the 6nm limit. Ongoing monitoring for habitat risks forms part of the strategy. Despite the foregoing, a greater level of information on the impacts of the UoA is necessary to assess the impacts of the UoC.
	Ecosystem	2.5.1	Outcome	No	60-79	There is a presumption that static potting gear impact on the ecosystem is low risk, but limited specific assessment of the impacts of potting on the ecosystem has been undertaken. Some specific assessment of parts of the Start Point managed area (subject to the Start Point Inshore Potting Agreement) has been undertaken, and this has shown overall improvements in biodiversity where mobile gear has been seasonally or totally banned in an area, and where potting continues to be conducted. Monitoring of the ecosystem impacts of pot fishing may form a part of the monitoring and management of specific designated areas, but there is not a coherent or consolidated assessment of such impacts.
		2.5.2	Management	N/A	≥80	There is an increasing focus on ecosystem management at the EU CFP and ICES advisory level (WGCRAB), and where designated areas are subject to specific environmental management (SPAs, SACs, MCZs and VMEs). Recent evidence for this includes the issuing by ICES of mixed fisheries advice and proposals for mixed fisheries multi-annual management plans. In addition, there is considerable focus at an EU level on 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



Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						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	<p>The work of the IFCA's and their predecessor Sea Fisheries Committees has ensured improved knowledge and awareness of the state of the marine environment within the 6nm inshore regime.</p> <p>This has been substantially enhanced with the national policy to identify and establish Marine Conservation Zones (MCZs), to support the assessment by Cefas of shellfish stocks in inshore English waters, and the need to design and implement a revised approach to fisheries management in European Marine Sites (EMS).</p> <p>Outside the inshore zone projects such as CHARM (eastern Channel) and MESH (western Channel) have ensured a broad brush scoping of the environmental characteristics of the other offshore areas that fall within the scope of this assessment, and increased integration of the work of environmental and fishery management institutions (through Natural England and the MMO) has resulted in greatly enhanced knowledge and understanding of the marine ecosystem. This information has been used in part to inform improved marine spatial planning.</p>
		Number of PIs less than 60:				0



Table A1.3: Simplified Scoring sheet – Principle 3

Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
3	Governance & policy	3.1.1	Legal and customary framework	N/A	≥80	<p>The Western English Channel edible crab fisheries take place exclusively within waters governed by the European Union, within the French and UK EEZs, and within the Territorial Seas of England, France and the Channel Islands.</p> <p>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).</p> <p>Management is informed by data collection and stock assessments on the basis of stock units – which in area VIIe&amp;h are organised by Cefas and Ifremer. Scientists from EU member states collaborate effectively in the provision of stock and biological information through ICES, which provides oversight in respect of management of crab stocks and exploitation through WGCRAb.</p> <p>Effective national legal systems exist throughout European Member States implementing the CFP. At a European and national level a clear legal process is evident to resolve disputes and observes the legal rights of all UK citizens, including people dependent on fishing. At both a national and EU level there is an effective mechanism for the resolution of legal disputes (scoring issue b).</p> <p>Within the UK there is an effective national legal system implementing both the CFP and domestic fisheries law. More local interests are represented in inshore management regimes applying in sea areas out to 6nm from baseline. Along the English coast within area VIIe these are under the management of the D&amp;C IFCA, the Cornwall IFCA and the IoS IFCA.</p> <p>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.</p>



Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						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	<p>These crab fisheries are managed at national and local levels, albeit within a context of collaboration between Member States. The management unit for stock purposes is the Western English Channel edible crab stock unit, with management from a UK perspective vested in the MMO outside 6nm, and the IFCAs inside 6nm.</p> <p>The division of responsibility for management of non-quota shellfish, such as edible crab, is poorly defined – both management and science. The Marine and Coastal Access Act 2009 gives joint responsibility between MMO and IFCAs. MoUs seek to clarify, but are still not explicit, instead talks in terms of general principles of collaboration &amp; joint working. The MoU recognises that further guidance is necessary.</p> <p>Consultation: lack of representation in inshore fisheries has been a historic problem, which makes effective consultation harder. IFCAs are not a statutory consultee in marine planning applications – instead this is MMO, central office.</p> <p>Overall enforcement of regulations lies with the MMO, and is devolved to the IFCAs inside 6nm.</p> <p>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 through Regional Advisory Councils (i.e. the Western Waters Advisory Council) and it and local fishermen's organisations are represented through the IFCAs. There are examples of</p>



Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						extensive consultation processes, such as on the latest reform of the CFP, and the UK establishment of MCZs.
		3.1.3	Long term objectives	N/A	≥80	<p>Clear long term objectives consistent with MSC principles and criteria are explicit in management system at EU and UK level. Minister would only sign off on either a Regulating Order or a byelaw if it is shown to be consistent with national / EU strategies.</p> <p>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 &amp; Criteria.</p> <p>There is also explicit mention of the Precautionary Approach and the Ecosystem based approach to fisheries management. At the UK level, the Marine &amp; 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 wide level which guide management decision making are fully consistent with the MSC fisheries standard and would support scoring at the SG80 level.</p>
	Fishery specific management system	3.2.1	Fishery specific objectives	N/A	60-79	<p>The IFCA byelaw review process, or any new process of byelaw application must go through the processes set out in the DEFRA guidance for IFCA’s on evidence based marine management.</p> <p>Cefas notes that, “Stock boundaries for edible crab remain poorly understood and both sexes move quite widely at times; females in particular have been shown to travel large distances in relation to spawning activity.” Based on the assessment units, however,</p>



Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						collaboration between the relevant IFCA's to develop crab management appears sensible – which have jurisdiction over a significant proportion of activity and exploitation. The extent of the fishery and offshore fishing interests (vivier crabbers) suggests some discussion with French and Irish authorities would also be beneficial for management of the Western English Channel stock unit.
		3.2.2	Decision making processes	N/A	≥80	<p>As indicated above, Cefas notes that “Stock boundaries for edible crab remain poorly understood and both sexes move quite widely at times; females in particular have been shown to travel large distances in relation to spawning activity.” It is also the case that management of fishing activity is primarily conducted locally, albeit within an overall UK and EU framework.</p> <p>Decision-making is achieved at a national level through the MMO, with significant professional inputs from the research laboratories (Cefas with respect to England and Wales), the Shellfish Committee of the Shellfish Association of Great Britain (SAGB), the Shellfish Committee of the Seafish Industry Authority, the IFCA's (England and Wales) and Inshore Fisheries Groups (Scotland), and Fishermen's Organisations and Producer Organisations.</p>
		3.2.3	Compliance and enforcement	N/A	≥80	<p>Compliance is good but variable. Monitoring and surveillance systems are well established and functioning well – to the limits of their design and available resources (given that there are no formal limits to the number of pots that can be fished by a vessel, and minimal controls on the minimum or maximum days a vessel can operate in a year.)</p> <p>Key controls comprise effort limitations under the EU Western Waters regime, variable access rules between IFCA's (including a permit scheme run by Cornwall IFCA) and applying to specific management areas (Start Point Inshore Potting Agreement; designated conservation areas), and technical measures (primarily minimum landing sizes – noting that there are some differences between IFCA's).</p> <p>Enforcement is exercised through the submission of landings data under the Buyers and Sellers Regulation, at sea observation and occasional at sea inspections (by IFCA's, and by</p>



Principle	Component	PI	Performance Indicator	RBF required (y/n)	Likely scoring level	Rationale/ Key points
						the Sea Fisheries Inspectorate and the Royal Navy), and market / trader inspections. Larger vessels – over-15m by law, moving to over-12m by law – are required to carry satellite mediated vessel monitoring systems. Smaller vessels are being encouraged to carry inshore (VHF and/or GPRS mediated) VMS. Ongoing science programmes also allow a degree of ground-truthing and elaboration of activity and landings data.
		3.2.4	Management performance evaluation	N/A	≥80	<p>The ICES Working Group WGCRAb considers information and comments on management, but this could not be considered a fishery-specific management review.</p> <p>The UK crab fishery is subject to a very coarse form of overall management (and objective), but each region tends to seek to achieve management in its own way – and so a clear management strategy and objective is not established.</p> <p>Management of the Western English Channel edible crab stock / fishery can be viewed as a mosaic of different regimes – disaggregated on the basis of whether conducted inside or outside the 6nm inshore limit, and whether or not subject to further restrictions associated with a particular area management designation (whether for environmental reasons, or to achieve some degree of gear separation).</p> <p>The Cefas Western Channel stock assessment is used to inform local management decisions – which are made separately by each IFCA within a framework formulated by the MMO. These controls are reviewed locally, but not on a coherent basis. These management decisions are, however, subject to periodic review by the SAGB Shellfish Committee.</p>
		Number of PIs less than 60:				0





## Appendix 2 – References

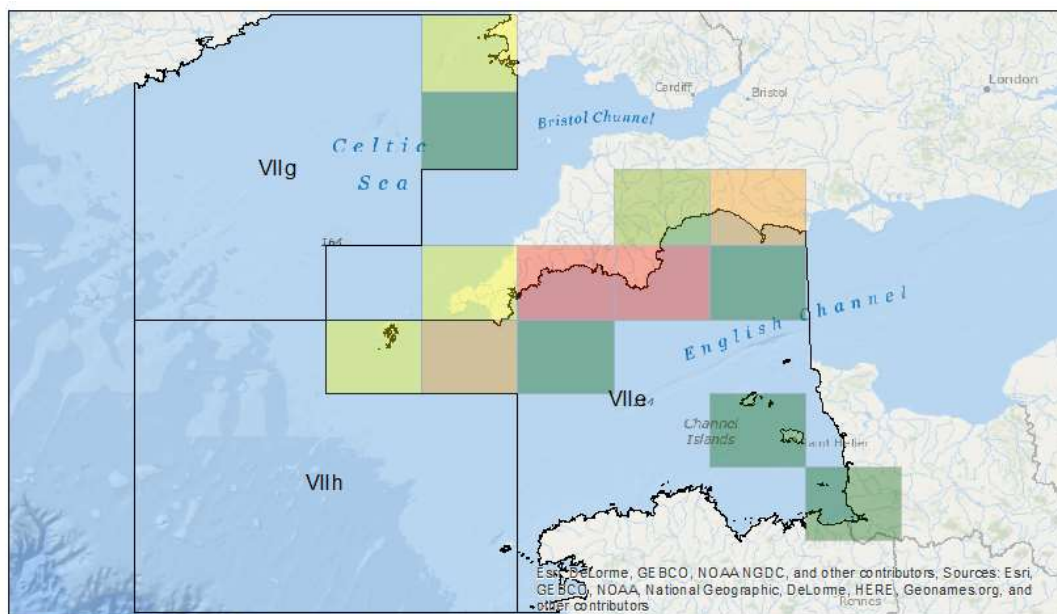
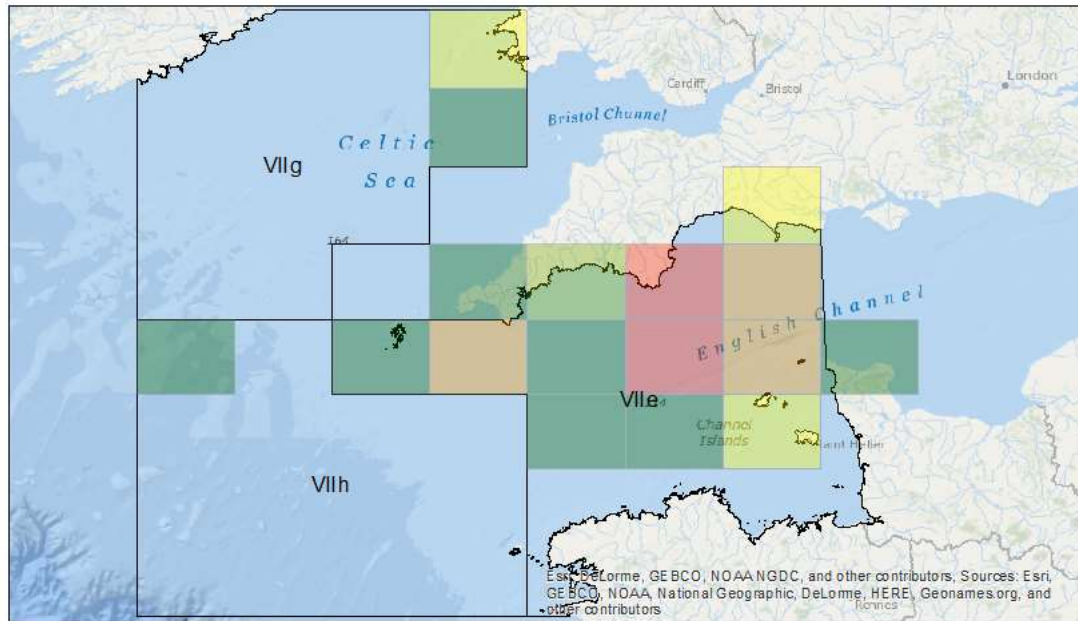
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## Appendix 3 – Graphics

Edible crab catches, by ICES square – from MMO landings statistics, 2014



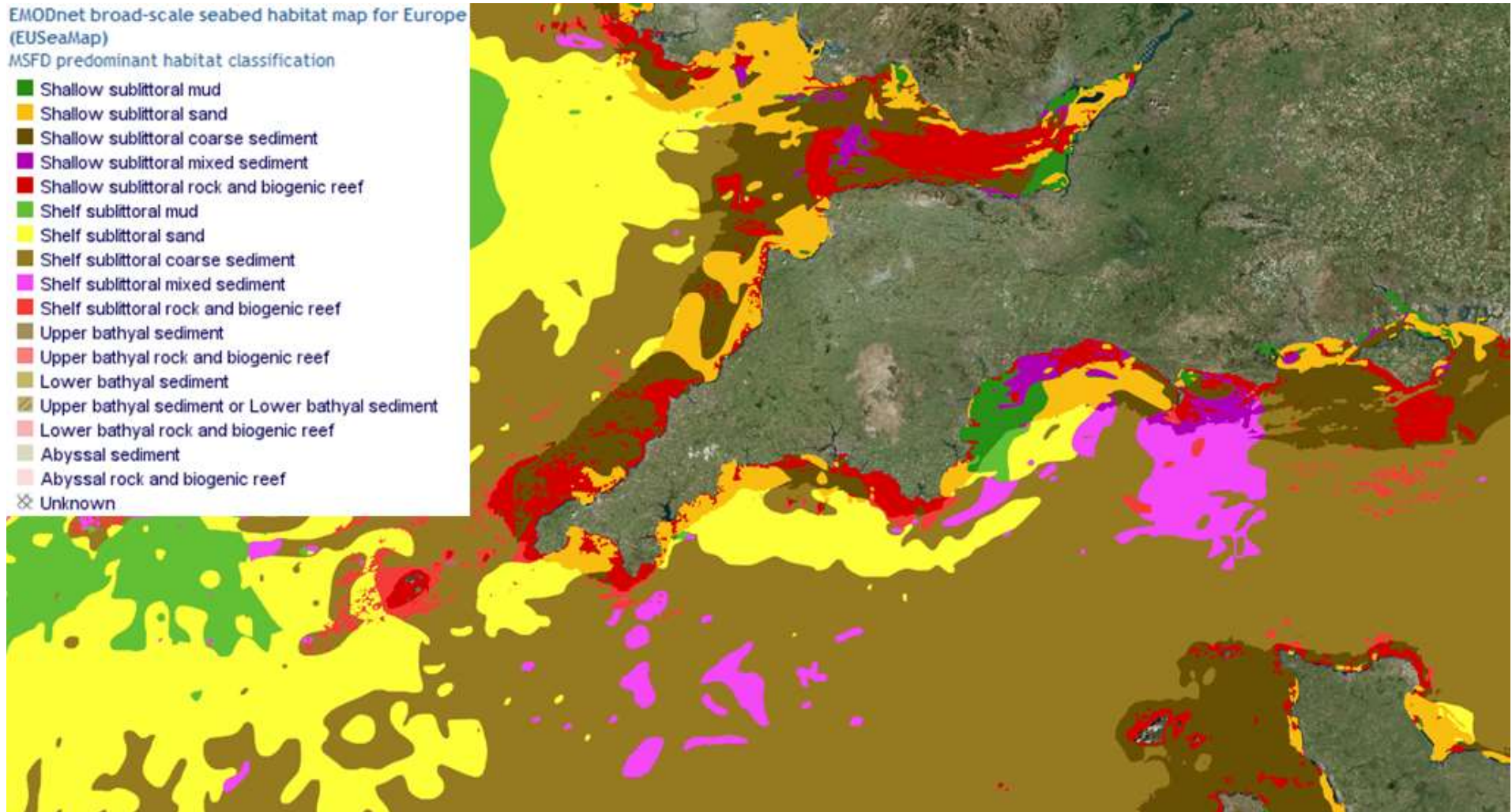


EMODnet screen grab showing seabed substrate – <http://www.emodnet-seabedhabitats.eu>

EMODnet broad-scale seabed habitat map for Europe  
(EUSeaMap)

MSFD predominant habitat classification

- Shallow sublittoral mud
- Shallow sublittoral sand
- Shallow sublittoral coarse sediment
- Shallow sublittoral mixed sediment
- Shallow sublittoral rock and biogenic reef
- Shelf sublittoral mud
- Shelf sublittoral sand
- Shelf sublittoral coarse sediment
- Shelf sublittoral mixed sediment
- Shelf sublittoral rock and biogenic reef
- Upper bathyal sediment
- Upper bathyal rock and biogenic reef
- Lower bathyal sediment
- Upper bathyal sediment or Lower bathyal sediment
- Lower bathyal rock and biogenic reef
- Abyssal sediment
- Abyssal rock and biogenic reef
- ⊗ Unknown







Designated Marine Protected Areas - <http://jncc.defra.gov.uk/page-5201>

