



Department  
for Environment  
Food & Rural Affairs



Llywodraeth Cymru  
Welsh Government

# Proposed Fisheries Management Plan for king scallops in English and Welsh Waters

## Annexes

Date: July 2023

Version: public consultation



## **Annexes**

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## Annex 1: Evidence Statement for king scallops

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## Introduction

This evidence statement presents the current state of knowledge of king scallop (*Pecten maximus*) fisheries in English and Welsh waters.

In line with the policy objectives of the Fisheries Act 2020, the evidence presented here will cover:

- Stock sustainability, in relation to maximum sustainable yield (MSY) or a suitable proxy
- Fishery management approaches
- Ecosystem interactions
- Economic significance
- Social significance
- Climate change (mitigation and adaptation)

Defra would like to acknowledge the advice, evidence and support that has been provided by the Association of Inshore Fisheries Conservation Authorities (IFCAs), Centre for Environment, Fisheries and Aquaculture Science (Cefas), Environment Agency, Joint Nature Conservation Committee (JNCC), Marine Management Organisation (MMO), Natural England, Seafish, and our stakeholders, throughout the development of this Fisheries Management Plan (FMP) and the evidence that underpins it.

All data for the fishery included within this FMP are considered to be accurate at the time of compilation and represents the best available data at the time of drafting. Fisheries data are inherently variable due to retrospective amendments and corrections to reported data, meaning revisions of a dataset may differ from another. Issues can sometimes be identified via ongoing data quality and assurance checks and retrospectively amended. Moreover, the methods used to produce estimates are constantly being assessed, iterated, and improved meaning those figures requiring additional processing may vary slightly compared to other similar datasets depending on the methods in use. Assumptions have been made, for example, even distribution of landings across International Council for the Exploration of the Sea (ICES) rectangles in order to apportion the data to the FMP area resulting in uncertainty in the absolute landings figures. In addition, fluctuations between years may need to be interpreted with caution due to the uncertainties described above in the data sets.

## Scope, methodologies and method

### MMO data extracts

The scope defined for the Marine Management Organisation (MMO) data extracts presented in this FMP are described in Table 1 and sets out the ICES divisions within English and Welsh waters that are covered by this FMP. All landings data

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used within this evidence statement is publicly available through the MMO Sea fisheries annual statistics report (2021)<sup>1</sup> and the Data Collection Framework Fisheries Dependent Information data call<sup>2</sup>

Plan	King Scallops in English and Welsh waters
Fishery	English and Welsh waters
ICES division	4b, 4c, 7a, 7d, 7e, 7f, 7g, 7h, 7j
Species (code)	King scallops (SCE)

**Table 1: Scope of MMO data extracts included in the King Scallop FMP for English waters in terms of ICES division and species code.**

## Seafish economics data extracts

This report includes data collected by Seafish during the Fleet Economic Surveys and is estimated based on the methodology described in the UK Economic Fleet Estimates and Fleet Enquiry Tool<sup>3</sup> as well as information shared with Seafish as part of Data Collection Framework work by MMO.

Following our methodology, all economic data was collected and estimated by Seafish fleet segments which group all vessels catching different species using different gears to 33 homogeneous groups. To separate economic values by FMP area and species, individual vessel level economic performance and employment indicators were partitioned following these steps:

- Individual vessels landings by rectangle were partitioned to FMP area based on MMO methodology published as part of the UK commercial sea fisheries landings by Exclusive Economic Zone (EEZ) of capture report.
- The FMP species economic dependency for each vessel in the fleet in relevant years was calculated. The calculations are based on associated species and FMP area definition calculated as part of step 1.
- FMP economic dependency at vessel level is multiplied by each economic variable to obtain gross value added (GVA), operating profit, net profit, and full-time equivalent jobs (FTE) by FMP species. An assumption was made that all stocks/species landed by vessel are contributing to the total economic results by the same share as value landed.
- All results calculated at vessel level are summarised to FMP level.

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1 UK sea fisheries annual statistics report 2021 - GOV.UK ([www.gov.uk](http://www.gov.uk))

2 Fisheries Dependent Information - European Commission ([europa.eu](http://europa.eu))

3 UK Economic Fleet Estimates and Fleet Enquiry Tool - Methodology Report — Seafish

## Biology of the target species

### Life history

Evidence underpinning this life history section of the king scallop evidence statement has been sourced from [The Marine Life Information Network \(MarLIN\)](#).

King scallops (*Pecten maximus*) are filter-feeding bivalve molluscs that prefer mixed sediments consisting of muddy sand, sandy gravel, or gravel, possibly interspersed with small stones, rocks, boulders and low-lying reef from extreme low-water down to 110 metres (m). Most individuals are found between 20m to 70m and, being highly adapted filter feeders, they prefer moderately strong tidal flows and reduced exposure to strong wave action. They feed on suspended phytoplankton, algae and other micro-organisms that arrive through the water column<sup>4</sup>. Their asymmetrical shells – the right valve is convex – allow them to nestle securely into softer sediments as they create a recess for their cup-shaped shells. They lie stationary and slightly open on the seabed, filtering the water that passes over their gills. The animals can swim using water jets ejected around the hinge of the shell and use this unusual movement as an ‘escape’ strategy. After an initial phase in the plankton adult scallops are relatively sedentary. King scallops are hermaphrodites (both male and female) and can become reproductively mature at about 3 years old (approximately 60 millimetres (mm) to 90mm in shell length)<sup>5</sup>.

King scallops can be present in densities of 5 to 6 metres squared (m<sup>2</sup>) although a more normal density is 0.2m<sup>2</sup>. The life span of the king scallop is 20 years or more, but specimens normally reach 10 to 11 years of age in exploited populations<sup>3</sup>. The most abundant year classes in exploited populations are generally 4 to 6 years old<sup>6</sup>. The life cycle of the king scallop can be divided into the free-swimming larval phase and the largely sedentary juvenile and adult phase. In general, the potential spawning season is long, from April to September or October, but the timing and duration vary geographically. During spawning, gametes are released to the water column and fertilisation occurs externally. Fertilisation success is related to the density of scallop on the seabed as is the case with most species with external fertilisation. The larval development period is 2 to 3 weeks. Larvae survival is

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4 Brand, A.R., 1991. Scallop ecology: Distributions and behavior. In *Scallops: biology, ecology and aquaculture* (ed. S.E. Shumway), pp. 517-584. Amsterdam: Elsevier. [Developments in Aquaculture and Fisheries Science, no.21.]

5 Marshall, C.E. & Wilson, E. 2008. *Pecten maximus* Great scallop. In Tyler-Walters H. and Hiscock K. *Marine Life Information Network: Biology and Sensitivity Key Information Reviews*, [on-line]. Plymouth: Marine Biological Association of the United Kingdom.

[marlin\\_species\\_1398\\_2019-03-21.pdf](#)

6 ICES. 2021. Scallop Assessment Working Group (WGScallop). *ICES Scientific Reports*. 3:114. 106 pp. <https://doi.org/10.17895/ices.pub.956>



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promoted by good concentration and quality of food in the water column. This condition is dependent on physical conditions such as temperature, nutrient supply and light penetration<sup>3</sup>.

Recruitment is usually unpredictable as it depends not only on successful spawning and larval production, but also on retention of larvae or transport of larvae into the area suitable for settlement. Settlement in a particular area may be unpredictable leading to unstable age structure. As a consequence of this, scallop beds frequently show a regional separation of year classes and spatial variability in age structure. On settlement, king scallops secrete a byssus thread after metamorphosis for attachment to the substrate on the seabed. Settled king scallops have been found on stones, empty shells, bryozoans, hydroids and the algae *Laminaria saccharina* and *Desmarestia*. King scallops generally lose the byssus soon after metamorphosis and few specimens larger than 15mm shell length are found attached. King scallops are usually recessed into the sediment so that the upper (left flat shell, the right shell is cupped) valve is level with or just below the surface of the sediment. The juvenile and adults are sedentary, and they swim in response to stimulation by light, water currents, vibration, fishing gears or predators. For species, like king scallops, in which the mobility of the adult is very limited, the geographical distribution of a population is likely to be governed mainly by barriers to the dispersal of the larvae<sup>7</sup>.

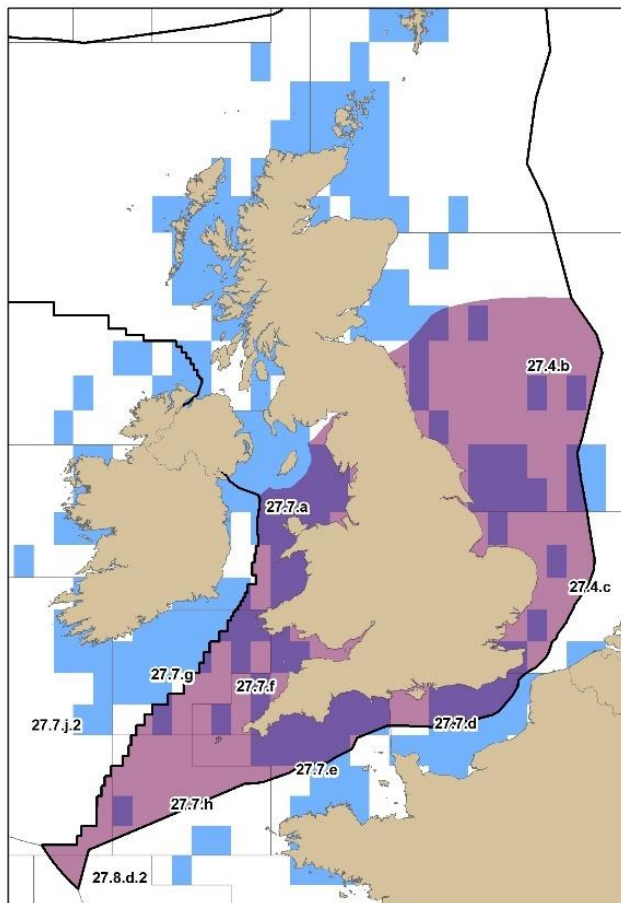
### Distribution within FMP area

The king scallop is a generally coastal species which occurs along the European Atlantic coast from northern Norway, south to the Iberian Peninsula and has also been reported off West Africa, the Canary Islands, Madeira and the Azores. This FMP only applies to fishing activity within English and Welsh waters (Figure 1). The fisheries covered by this FMP occur in ICES areas 4b and c (North Sea), 7a (Irish Sea) & 7d to h (English Channel and Celtic Sea).

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<sup>7</sup> Duncan, P. F., A. R. Brand, Ø. Strand, and E. Foucher. 2016. The European Scallop Fisheries for *Pecten maximus*, *Aequipecten opercularis*, *Chlamys islandica*, and *Mimachlamys varia*.

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**Figure 1: UK map representing the recorded distribution of king scallop populations (blue) and the geographical area covered by this King Scallop FMP (purple). Informed by data from Ocean Biodiversity Information System (OBIS) and accessed from the Marine Life Information Network (MarLIN)**

## Fleet characteristics

The scope and methodologies applied for MMO and Seafish data extraction applied in this document can be found at the beginning of this document in Scope, Methodologies and Method.

### Total number of vessels

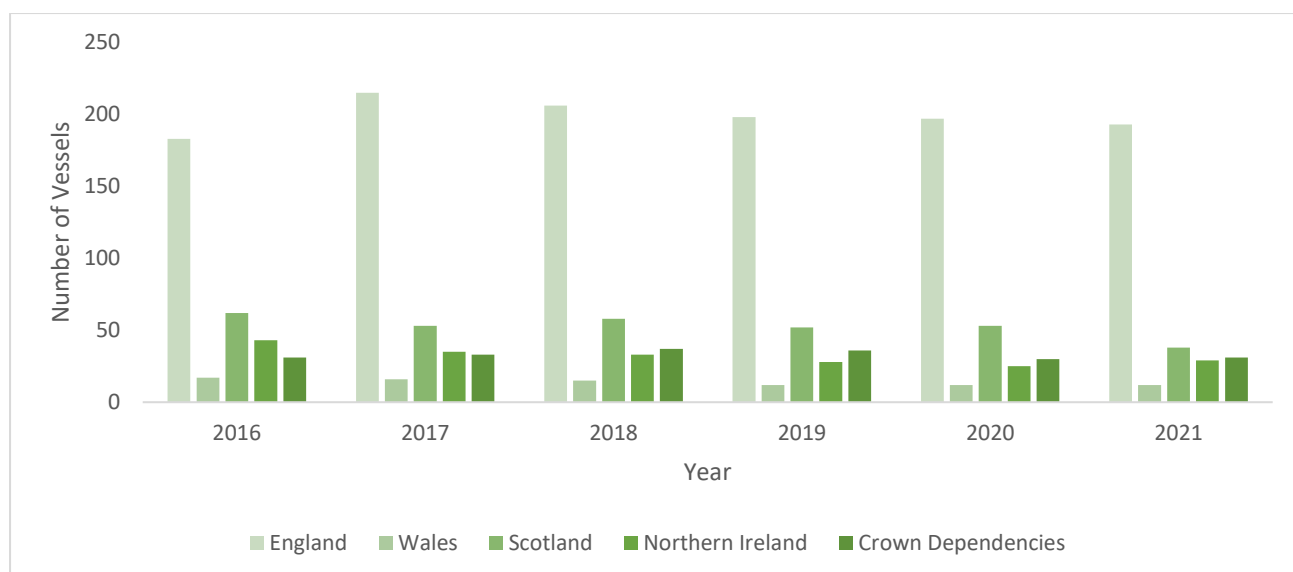
The total number of UK and Crown Dependency (CD) vessels that caught king scallops in English and Welsh waters between 2016 and 2021 are set out in Table 2. The vast majority (more than 54 % over 2016 to 2021) of vessels fishing for king scallops were registered in England.

	2016	2017	2018	2019	2020	2021
<b>England</b>	183	215	206	198	197	193
<b>Wales</b>	17	16	15	12	12	12
<b>Scotland</b>	62	53	58	52	53	38
<b>Northern Ireland</b>	43	35	33	28	25	29
<b>Crown Dependencies</b>	31	33	37	36	30	31
<b>Total</b>	<b>336</b>	<b>352</b>	<b>349</b>	<b>326</b>	<b>317</b>	<b>303</b>

**Table 2: Number of UK and CD vessels involved in the king scallop fishery in English and Welsh waters between 2016-2021 categorised by home nation of registry.**

Over the six-year period, the total number of UK and CD vessels that fished for king scallops declined slightly between 2016 and 2021, with 336 vessels in 2016 and 303 vessels in 2021. This can be visualised in Figure 2, which shows the total number of vessels that caught king scallops in English and Welsh waters between 2016 and 2021, split by the reported home nation of vessels. Vessel numbers have declined over this period for Scotland (by 39%), Wales (by 29%) and Northern Ireland (by 33%). Meanwhile vessel numbers have remained relatively stable over this period for England and Crown dependencies .

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**Figure 3: Total number of UK and CD vessels involved in the king scallop fishery in English and Welsh waters by home nation of registry between 2016 to 2021.**

## Landings

### Total landings (tonnage and value)

King scallops are a commercially important shellfish species in the UK. In 2021, there were 24,653 tonnes of king scallops caught by all UK and CD vessels in UK and CD waters at a value of £44.46 million (Table 3).

	2016	2017	2018	2019	2020	2021
<b>Liveweight (tonnes)</b>	25,457	22,471	21,029	20,135	17,855	24,653
<b>Value (£ million)</b>	60.30	59.20	55.77	46.39	34.05	44.46

**Table 3: Landings of King Scallops by liveweight (tonnes) and value (£ million) from UK and CD vessels in all UK and CD waters between 2016-2021**

King scallop fisheries around the English and Welsh coastlines represent a valuable commercial species, making up 12% of all seafood caught in these waters in value terms. Within the proposed king scallop FMP area (English and Welsh waters), UK landings over the last six years have ranged from 9,387 tonnes to 15,504 tonnes per year (Table 4). The liveweight of king scallops landed by UK and CD vessels over this time period has increased, with the exception of 2020, which could be explained by the impact of COVID-19 on industry.

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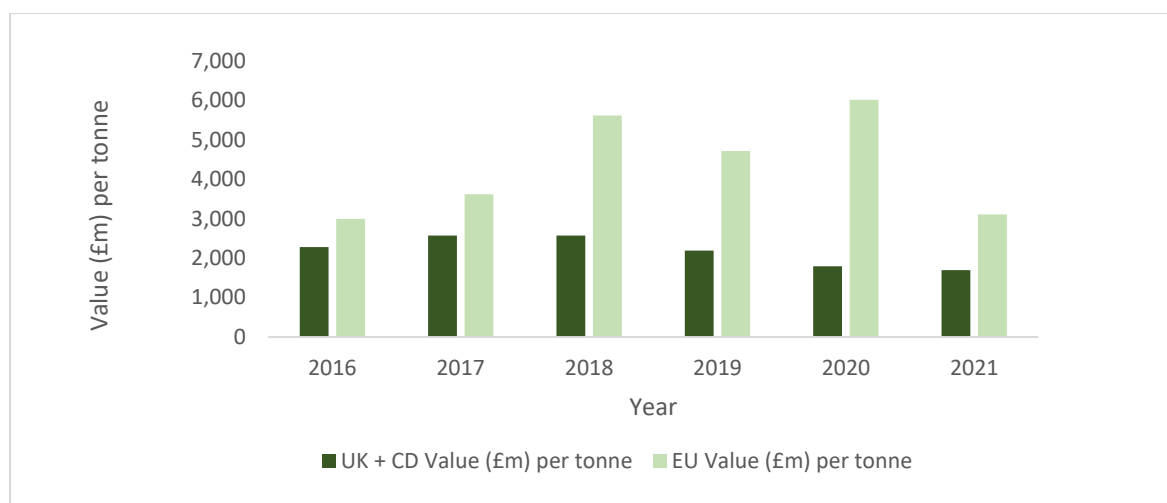
	2016	2017	2018	2019	2020	2021
<b>Liveweight (tonnes) landed by UK and CD vessels</b>	9,357	10,808	11,240	11,571	10,375	15,504
<b>Value (£m) landed by UK and CD vessels</b>	21.33	27.85	28.91	25.35	18.58	26.36
<b>Liveweight (tonnes) landed by EU vessels</b>	2,686	2,321	2,338	1,852	1,846	3,512
<b>Value (£m) landed by EU vessels</b>	8.06	8.40	13.14	8.74	11.10	10.93

**Table 4: Weight (tonnes) and value (£m) of king scallop landed in the FMP waters by the UK and CD vessels and EU vessels between 2016 and 2021.**

The king scallop stocks are internationally exploited, with EU vessels landing between 14 to 22% of the total king scallops that are fished within this FMP area (Table 4). The value from the king scallops landed is greater from EU vessels than it is from UK and CD vessels. Between 2016 to 2021 EU vessels account for between 26 to 37% of the total value of king scallops. The difference in value per tonne of scallops landed between the EU vessels and the UK and CD vessels can be seen in Figure 3.

These fisheries are not governed by EU or national total allowable catches (TACs), and English waters stocks have not been subject to routine monitoring or formal assessment prior to 2017. In Wales, an annual Habitats Regulatory Assessment (HRA) for the Welsh inshore scallop fisheries have been undertaken since 2012.

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**Figure 3: Value (£m) per tonne of king scallops landed by (a) UK and CD vessels and (b) EU vessels in the FMP waters between 2016 to 2021.**

### Landings by vessel nationality (UK vessels)

Landings are dominated by English registered vessels (48% based on landed weight in 2021) and Scottish registered vessels (46% based on landed weight in 2021), as shown in Table 5.

	2016	2017	2018	2019	2020	2021
<b>Wales</b>	400	293	245	192	182	263
<b>Scotland</b>	2,665	4,764	4,637	5,334	5,703	7,197
<b>Northern Ireland</b>						
<b>Ireland</b>	529	330	419	214	131	512
<b>Jersey</b>	-	0	-	-	-	-
<b>Isle of Man</b>	362	161	189	155	91	130
<b>Guernsey</b>	-	1	6	1	-	-
<b>England</b>	5,401	5,258	5,744	5,677	4,266	7,403
<b>TOTAL</b>	8,924	10,065	9,982	10,294	9,510	12,770

**Table 5: Landings by liveweight (tonnes) of king scallops in all English and Welsh waters by UK and Crown Dependencies vessels subdivided by nationality.**

## Landings by ICES rectangle

15, 504 tonnes of King scallops were taken by UK vessels and 3,512 tonnes were landed by EU vessels from English and Welsh waters in 2021. Most of the king scallop landings were caught in the Celtic Sea and the Channel. This can be seen in Figure 4, with 5 notable hotspots for landings across the Celtic Sea (ICES rectangle 29E5), the Channel (ICES rectangle 30F0, 29E9 and 37E9) and the North Sea (37E9).

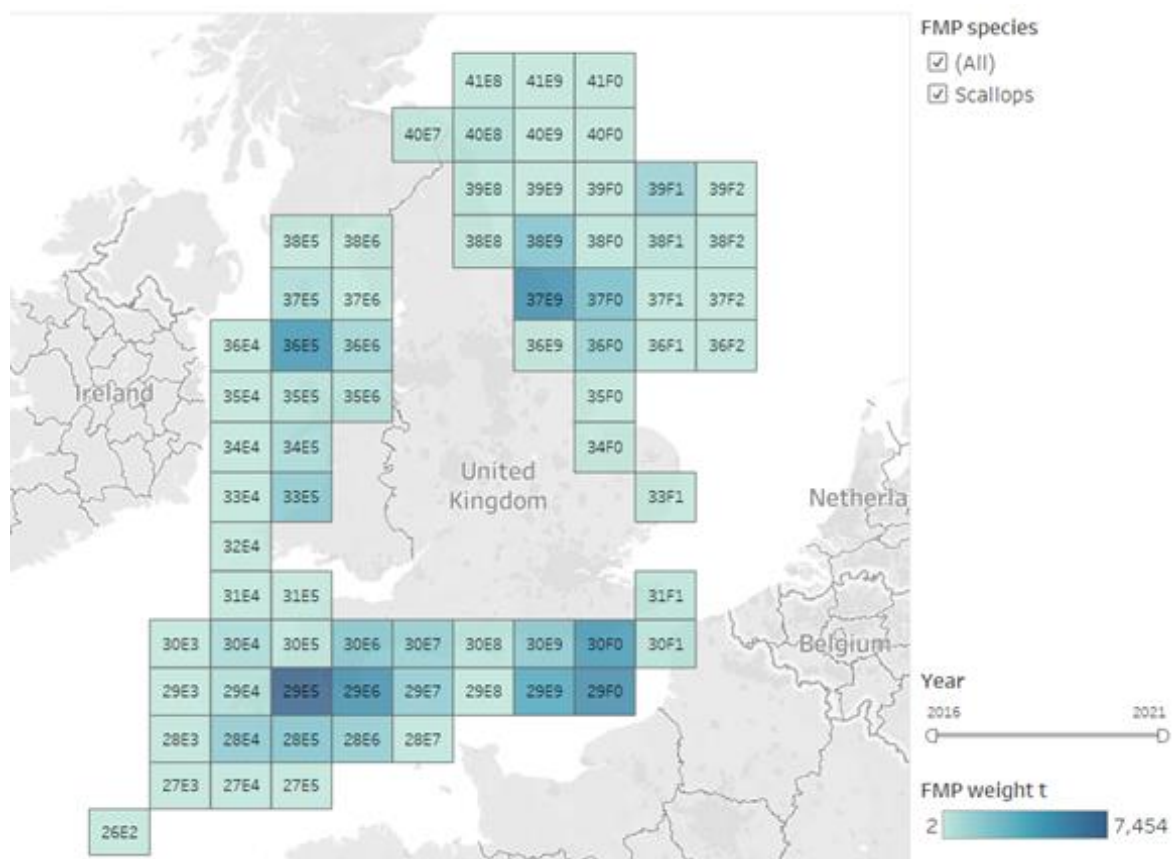


Figure 4: Spatial distribution of king scallop landings (by liveweight) by UK and CD vessels by ICES rectangles in English and Welsh waters between 2018 to 2021.

## Landings by vessel length (UK vessels)

Table 6 shows UK and CD vessel landings (in liveweight tonnage) of king scallop in the FMP area between 2016 to 2021 subdivided by the vessel length. The majority of landings in weight are taken by vessels over 10m across all years, accounting for between 90 to 93% of the total landings.

King scallop landings in vessels over 10m increased from 2016 to 2019, followed by a drop of approximately 10% from 2019 to 2020. Due to the timing, it is possible that this was impacted in some sense by COVID-19 but bounced back again in 2021 increasing by 44% from 2020 levels. Scallop landings for vessels

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under 10m has seen a gradual decline between 2017 to 2020 but increased significantly in 2021, more than doubling the landings generated in 2020.

	2016	2017	2018	2019	2020	2021
<b>10m and under</b>	948	1,024	852	798	702	1,597
<b>Over 10m</b>	8,409	9,784	10,389	10,774	9,673	13,907
<b>TOTAL</b>	9,357	10,808	11,240	11,571	10,375	15,504

Table 6: Landings by liveweight (tonnes) of king scallops in English and Welsh waters by UK and Crown Dependencies vessels subdivided by vessel length.

## Gear types used to catch king scallops (UK vessels)

### Dredge fishery

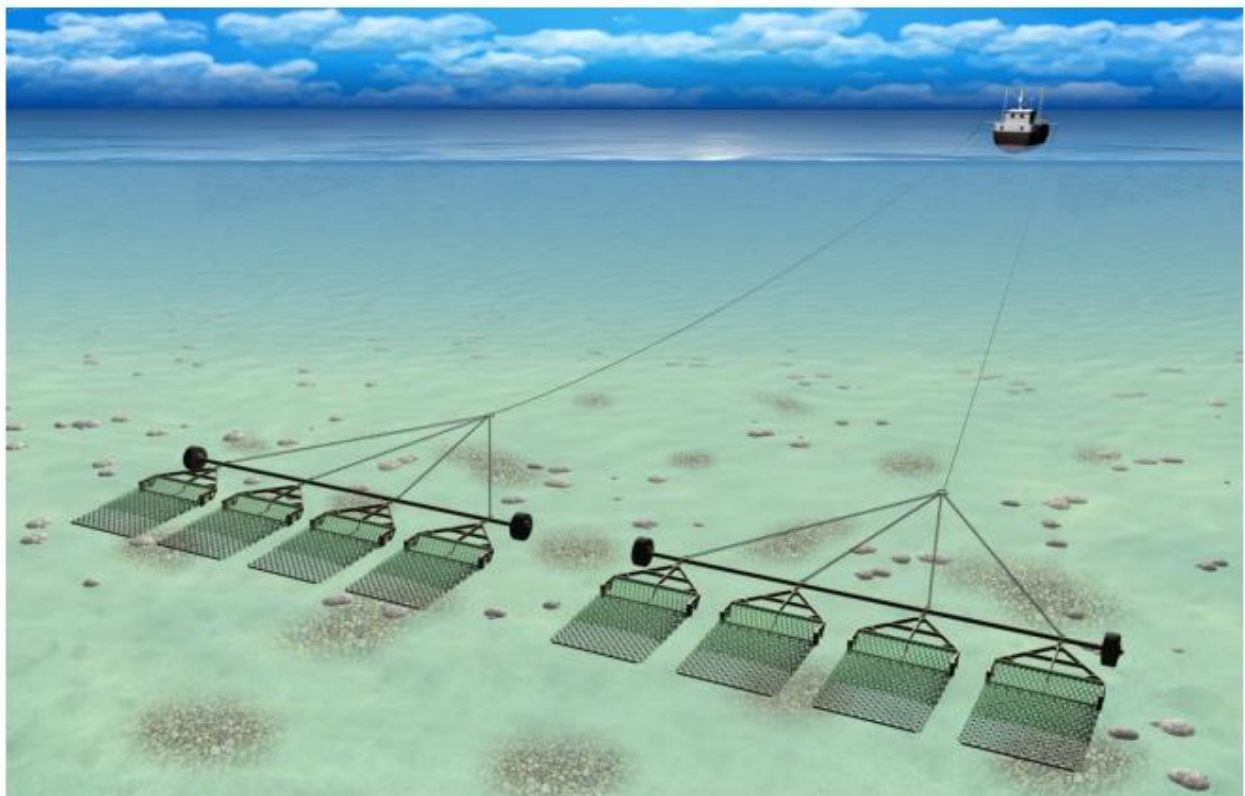
More than 95% (see Table 7) of king scallops are targeted using spring-loaded dredges, known as a Newhaven dredge. Dredges are rigid structures that are towed along the seabed to target various species of shellfish (see Figure 5). In the UK, the main dredge fishery is for king scallops, and to a lesser extent queen scallops, mussels, oyster, and razor clams. Each dredge is designed specifically to suit the fishery and target species. Scallop dredges consist of a triangular frame, about 750mm wide, with a toothed bar at the front to flip the scallops out of the seabed and into a collecting bag behind it. This bag is made of chain links forming a chain mesh on the bottom, and chain or netting on the top.





**Figure 5: A diagram representing a Newhaven scallop dredge**

Several of these dredges are towed behind a heavy spreading bar, usually one bar from each side of the vessel but with some vessels using multiple bars. The length of bar and number of dredges is dictated by the power of the vessel and its length of side deck to work the dredges over. The number can vary from three or four on a small 10m boat, up to 18 to 20 on a 30m boat (see Figure 6).



**Figure 6: A diagram illustrating a scallop dredge fishing boat in action**

The vessels and rigging are very similar to that of beam trawling, with the beam trawls being replaced by the steel bar with multiple dredges towed behind it. There is strict legislation on the size and number of dredges used in various areas around the UK (Seafish Basic Fishing Methods guide<sup>8</sup>) as well as some area restrictions on tow bar length around England.

## Hand-dived fishery

King scallops are also fished by commercial and recreational divers. However, data on hand diving in England is limited and this is an area that the FMP will look to address.

Welsh Government are not aware of any current commercial diving for king scallops within the Welsh zone. Recreational diving for king scallops does take place in the Welsh zone, however, data for this activity is not currently available.

## Alternative methods of king scallop removal

Whilst landings of king scallops are dominated by vessels using scallop dredges (96% in 2021, see Table 7), a small proportion are also landed by beam trawlers (2.2%, in 2021) and other gear types such as demersal trawls (1.4% in 2021) and pots and traps (0.5% in 2021).

	2016	2017	2018	2019	2020	2021
<b>Beam trawl</b>	207	174	224	201	291	334
<b>Demersal seine</b>	0	-	-	0	-	-
<b>Demersal trawls</b>	43	67	81	46	66	210
<b>Dredge</b>	8,950	10,464	10,846	11,242	9,910	14,848
<b>Drift and fixed nets</b>	3	2	7	3	16	6
<b>Handlines</b>	0	0	0	1	0	1

<sup>8</sup> Basic Fishing Methods — Seafish

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<b>Other mobile gears</b>		24	50	50	25	46
<b>Other passive gears</b>	138	54	1	0	-	-
<b>Pelagic seine</b>	5	0	-	-	-	-
<b>Pots and traps</b>	11	23	31	28	66	60
<b>TOTAL</b>	9,357	10,808	11,240	11,571	10,375	15,504

**Table 7: Landings by liveweight (tonnes) of king scallops in all English and Welsh waters by UK and CD Vessels subdivided by gear type.**

The FMP working group are aware of a trial of potting with LED lights for king scallops, or ‘disco scallops’, as an alternative method of fishing<sup>9</sup>. All removals of scallops from English and Welsh waters are to be considered through this FMP and therefore the expansion of potting with lights for scallops will be monitored through this FMP.

## Key recreational fisheries

Recreational fishing of king scallops is likely to be limited due to the high barrier to entry (for example, diving equipment). Although this activity varies by Inshore Fisheries and Conservation Authority (IFCA) region and they are controlled and managed by byelaws. For example, The Category Two Permit Conditions within Devon and Severn IFCA’s Diving Permit Byelaw controls and regulates the recreational catch of scallops and includes catch control measures such as daily bag limits. The Devon and Severn IFCA estimates that less than 5% of king scallops in that area are dive caught, both commercially and recreationally<sup>10</sup>. The Government of Jersey estimates that about 10% of king scallops in their territorial waters are dive caught, both commercially and recreationally<sup>11</sup>.

9 Robert Enever, Philip D. Doherty, Jon Ashworth, Mark Duffy, Pete Kibel, Melanie Parker, Bryce D. Stewart, Brendan J. Godley, Scallop potting with lights: A novel, low impact method for catching European king scallop (*Pecten maximus*), Fisheries Research, Volume 252, 2022, <https://doi.org/10.1016/j.fishres.2022.106334>.

10 <https://www.devonandsevernifca.gov.uk/Environment-and-Research/Research/Molluscan-Research-in-D-S-IFCA-s-District/Scallops>

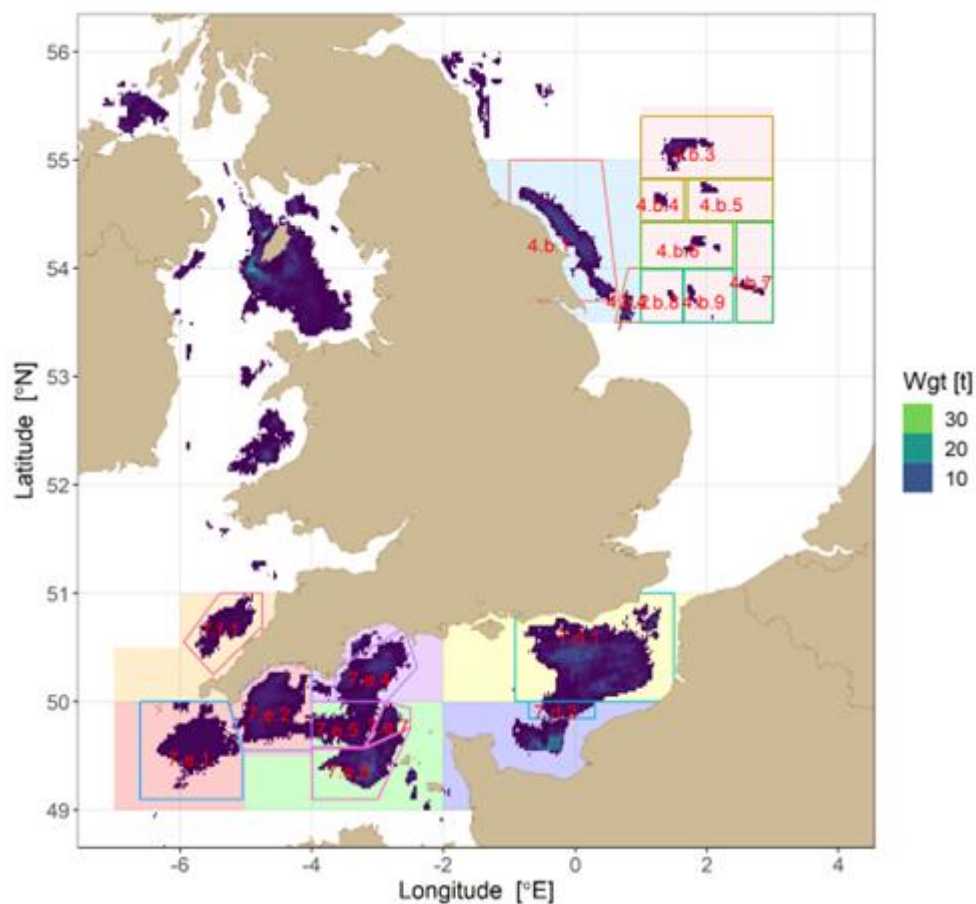
11 <https://www.gov.je/Environment/LandMarineWildlife/FishShellfish/pages/scallops.aspx>

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There is limited data available on the numbers of recreational fisheries in English and Welsh waters, with no reported scallops through existing recreational data frameworks such as the [sea angling diary](#) programme. To accurately estimate stock abundance and status of king scallops, the FMP will need to support monitoring the recreational fisheries that target them.

## Stock assessments

The main king scallop beds in English and Welsh waters are shown in Figure 7. These have been determined based on fisheries activity data from the Vessel Monitoring System (VMS).



**Figure 7: The main king scallop beds (purple patches) around England and Wales based on VMS fisheries activity data (such as for vessels over 12m in length). The colour scale of gives average annual landings (in tonnes) per grid-point in English waters over the 2012-2021 period. Coloured lines denote the King scallop beds that are surveyed by Cefas.**

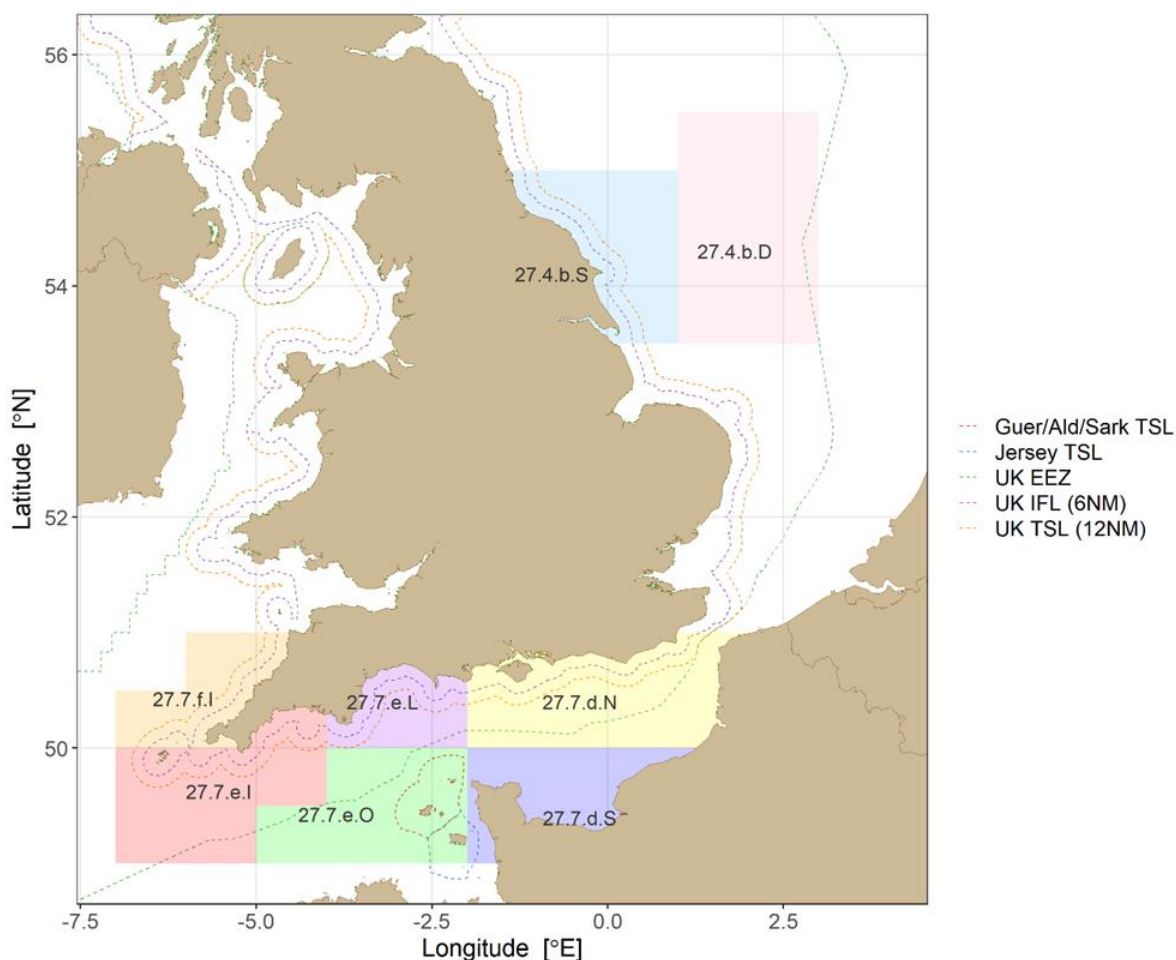
## Stock assessment units

### English waters

There are eight stock assessment units for king scallop in English waters, which can be shown in Figure 8 (coloured grids denote stock assessment units). The high

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density of scallops inside these areas has been verified by annual dredge surveys, in comparison with the low density found outside these areas based on UWTV surveys. Some genetic information exists that suggests that there is a differentiation between the scallop population in the southwest part of the English Channel and the other populations within the English Channel<sup>12</sup>.



**Figure 8. King scallop stock unit assessment areas (coloured grids) defined by Cefas in English waters. The dashed lines indicate the Territorial Sea Limits (TSLs) of the UK and the Channel Islands, the UK Exclusive Economic Zone (EEZ), and the UK Inshore Fisheries Limit (IFL).**

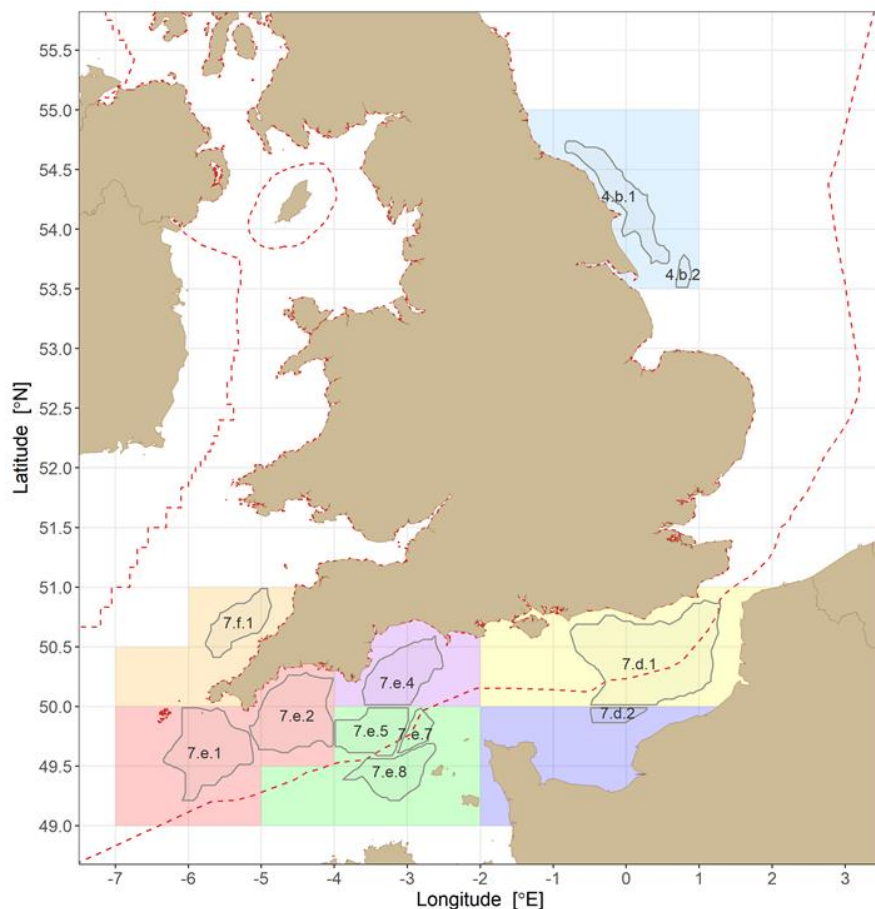
In English waters, the current division of the assessed areas is based on beds or groups of beds where there is similarity in growth rates, and a likelihood of local retention of larvae. Figure 9 highlights which beds within the assessment areas are

12 Handal, W., Szostek, C., Hold, N. et al. (2020) 'New insights on the population genetic structure of the great scallop (*Pecten maximus*) in the English Channel, coupling microsatellite data and demogenetic simulations', *Aquatic Conservation: Marine and Freshwater Ecosystems*, 30(10), pp. 1841-1853. <https://doi.org/10.1002/aqc.3316>



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surveyed by Cefas. These areas are then approximated using ICES rectangles (the basic unit of spatial landings reporting).



**Figure 9** The main king scallop beds (grey outline) around England that are surveyed by Cefas. Each scallop bed that is surveyed has been labelled in reference to its location in the ICES division. The coloured shaded areas indicate different assessment areas. The red dashed line indicated the boundary of the UK EEZ.

As shown in Figure 8, two stock assessment areas have been designated for ICES Division 27.7.d in the eastern English Channel, namely 27.7.d.N and 27.7.d.S, which are split along the 50°N line. This split, dictated by the resolution of landings data, allows a separation of the faster growing Baie de Seine stock from the rest of the eastern Channel. There is also evidence of strong local retention of larvae in the Baie de Seine. Three stock assessment areas have been designated for ICES Division 27.7.e to reflect slow-growing inshore areas south of Cornwall (27.7.e.I), faster growing areas within Lyme Bay (27.7.e.L), and offshore scallop beds further to the south (27.7.e.O).

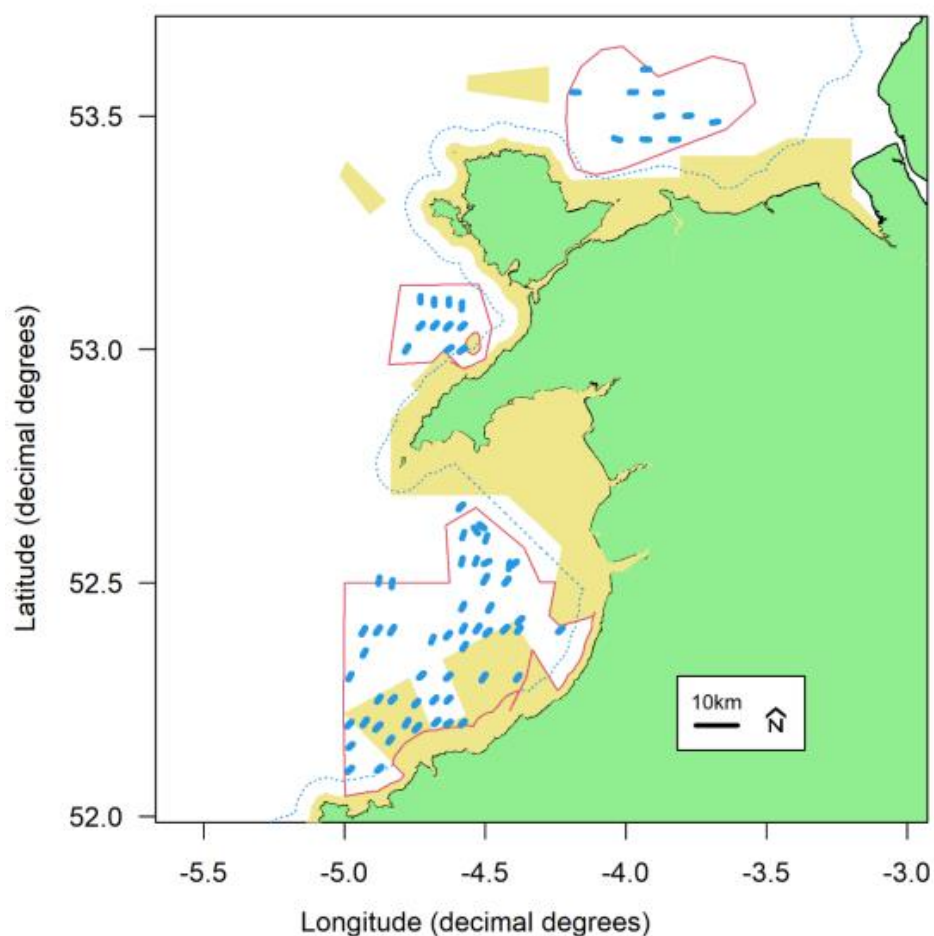
Of the eight assessment areas shown in Figure 8, only six are surveyed regularly. The area in the southern part of the eastern English Channel (27.7.d.S) has only been surveyed once by Cefas, in 2018, due to difficulties obtaining permission from French Authorities to survey in EU waters. The inner Baie de Seine area is regularly

## Annex 1: Evidence Statement for king scallops FMP

assessed by the Institute Francais de Recherche pour l'Exploitation de la Mer (IFREMER). As of 2022, the Dogger Bank area (27.4.b.D) has only been surveyed once in 2021.

### Welsh waters

There are three stock assessment units for king scallop in English waters, which can be shown in Figure 10. In Welsh waters, the assessment areas are based on the geographical location of the identified beds. All areas have been surveyed regularly since 2012. As of 2022, assessments have only been conducted for the most southern ground, in Cardigan Bay.



**Figure 10: King scallop stock unit assessment areas defined by Bangor University in Welsh waters (denoted by red lines). Map of haul positions (blue marks) conducted during the 2021 Welsh scallop survey, showing areas closed to commercial scallop dredging (beige). The blue dotted line indicates the 3 nautical mile boundary from the shore.**

## Stock assessment methodology

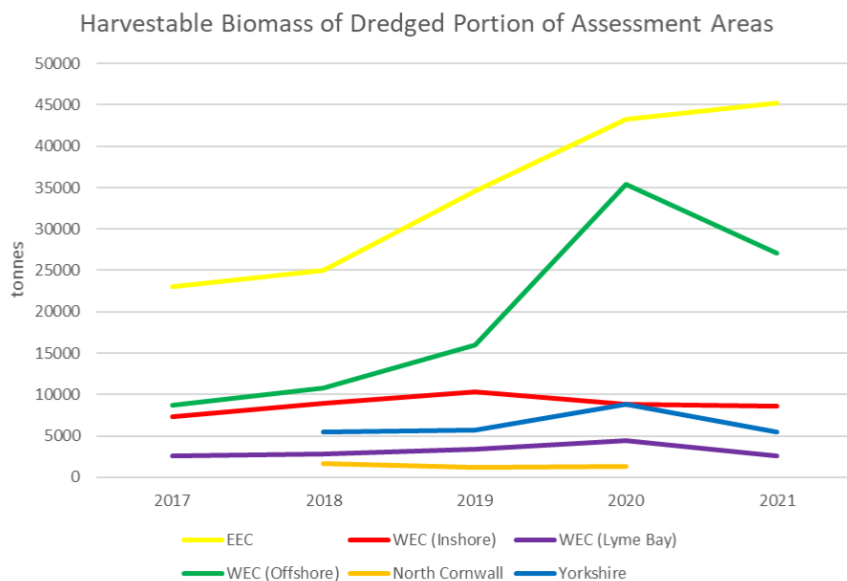
### England

The English assessment establishes estimates of harvestable biomass (biomass above minimum landing size and in areas in which dredgers can operate), and the exploitation rate experienced by harvestable scallops. The level of exploitation in individual assessment areas, or the local harvest rates, are estimated by comparing total international landings (obtained through the data call of the ICES scallop working group, [WGScallop](#)) to the harvestable biomass derived from dredge survey results. The most recent ICES data call is from 2021, which includes all landings that were recorded until the end of 2020. Together with the dredge survey results, this allows an estimation of harvest rates for the 2017 to 2020 period.

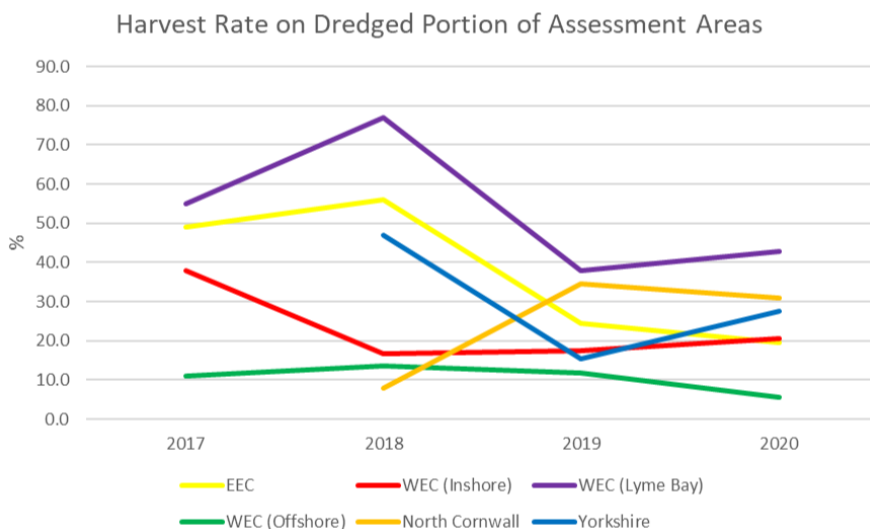
The evolution of the harvestable biomass of the dredged portions of six of the assessment areas is shown in Figure 11. Due to a lack of regular survey data, Areas 27.7.d.S (Eastern English Channel South) and 27.4.b.D (Dogger Bank) are excluded. The evolution of the harvest rates (%) of the same six assessment areas is shown in Figure 12. For Area 27.7.f.I (North of Cornwall) and Area 27.4.b.S (Yorkshire/Durham) insufficient data are available to allow for the estimation of harvest rates that are consistent with MSY. Of the four assessment areas for which MSY estimates have been determined, the harvest rate of the dredged portion of the stock during 2017 – 2020 has consistently exceeded the sustainable level in Area 27.7.e.L (Lyme Bay), most recently in 2020 by a factor of two (Figure 13). Conversely, in the neighbouring Area 27.7.e.O (Western English Channel Offshore), the harvest rate has been consistently below the MSY proxy. In the other two areas, Area 27.7.e.I (Western English Channel Inshore) and Area 27.7.d.N (Eastern English Channel North), the harvest rate in 2019 to 2020 has been around the MSY level. The most up-to-date king scallop stock assessment is available at: <https://www.gov.uk/government/publications/assessment-of-scallops-stocks-202021>



## Annex 1: Evidence Statement for king scallops FMP

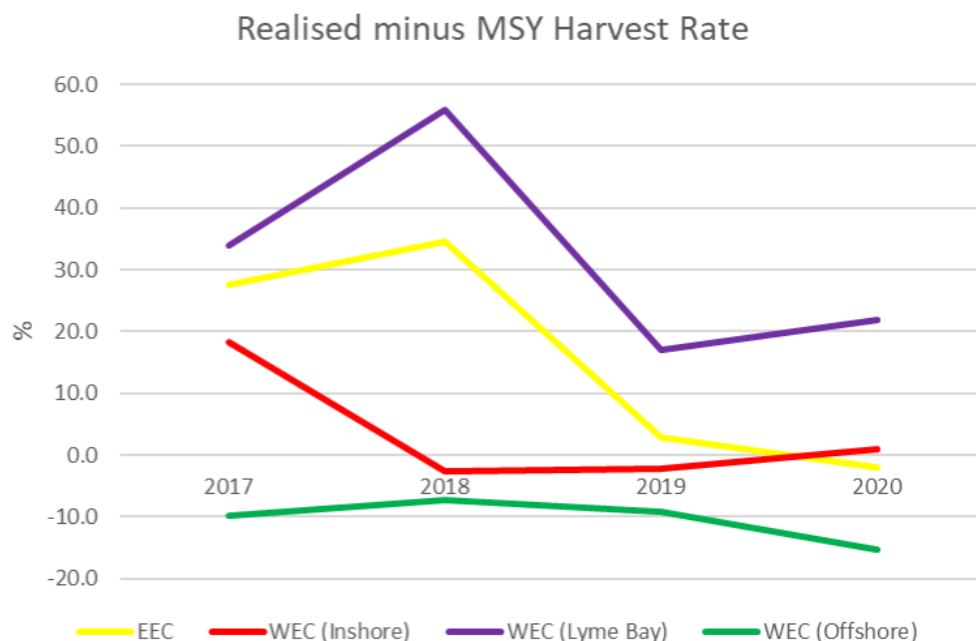


**Figure 11. Harvestable biomass in the dredged parts of the king scallop assessment areas: Eastern English Channel (EEC, 27.7.d.N), Western English Channel (WEC) Inshore (27.7.e.I), Lyme Bay (27.7.e.L), Offshore (27.7.e.O), North of Cornwall (27.7.f.I), and Yorkshire\Durham (27.4.b.S). Years refer to 12-month periods starting from the dredge survey during that year.**



**Figure 12. Realised harvest rate on the dredged portion of the King scallop assessment areas: Eastern English Channel (EEC, 27.7.d.N), Western English Channel (WEC) Inshore (27.7.e.I), Lyme Bay (27.7.e.L), Offshore (27.7.e.O), North of Cornwall (27.7.f.I), and Yorkshire\Durham (27.4.b.S). Years refer to 12-month periods starting from the dredge survey during that year.**

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**Figure 13. Realised minus MSY harvest rate on the dredged portion of the King scallop assessment areas: Eastern English Channel (EEC, 27.7.d.N), Western English Channel (WEC) Inshore (27.7.e.I), Lyme Bay (27.7.e.L), and Offshore (27.7.e.O). Due to limited availability of sampling data, MSY harvest rates have not been determined for North of Cornwall (27.7.f.I) and Yorkshire/Durham (27.4.b.S). Years refer to 12-month periods starting from the dredge survey during that year.**

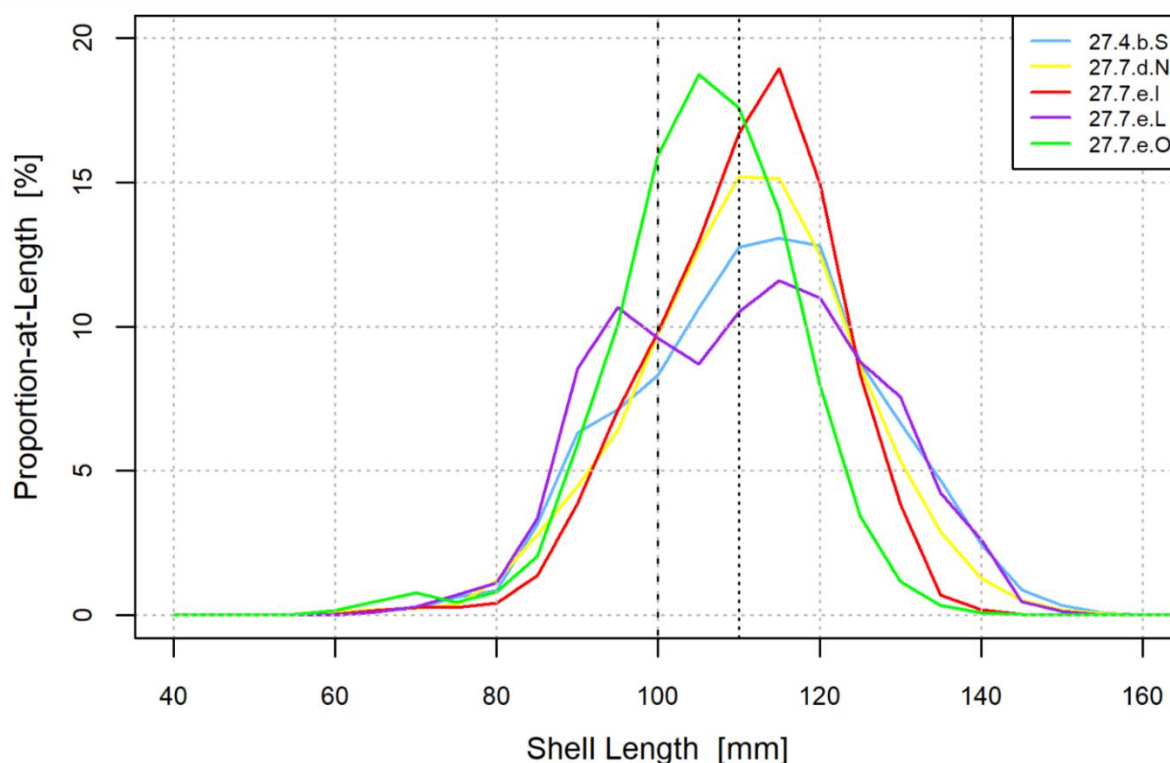
The population age structure of king scallops in the assessed areas is unknown. Preliminary work on age determination suggests much more dynamism in the population structure than is apparent in the length distributions, indicating variability in growth rates (in space and/or time). Further investigations to understand this variability would require a higher sampling effort than is currently possible.

However, the age distribution of catches from the dredge survey, as well as of commercial landings, can be estimated based on size distributions. For Area 27.7.f.I (North of Cornwall), sampling data are insufficient for estimating the population size distribution. Although a size distribution for Area 27.4.b.S (Yorkshire/Durham) has been calculated, fewer sampling data are available from there than from other assessment areas, and the results are less reliable. In four of the five assessed areas for which size distributions can be determined the most frequently found sizes are between 110mm to 120mm shell length, which can be seen in Figure 15. The exception is Area 27.7.e.O (Western English Channel Offshore), where the maximum of the size distribution is less and falls between 100mm to 110mm. As mentioned above, it is unknown to what extent the size differences between neighbouring areas are associated with genetic differences, such as to what extent scallops in the offshore area belong to a biologically distinct population.

In Area 27.7.e.L (Lyme Bay), in addition to the main maximum of the size distribution around 115mm, a similarly high number of caught animals are around 95mm in length, which is below the minimum landing size (MLS). This high proportion of

## Annex 1: Evidence Statement for king scallops FMP

young animal's results in high discard rates. Without evidence to the contrary, our assumption is that discard survival of king scallops is high. Nonetheless, discarding is associated with some losses to the stock in addition to the reported landings. Especially in the Lyme Bay area, the harvest rates shown in Figure 12 are therefore considered low estimates.



**Figure 14.** Length distributions of king scallops for those assessment areas with sampling data for the 2017 to 2021 period. The MLS of 110mm in Area 27.7.d.N (Eastern English Channel North) is indicated by the dotted line. The MLS of 100mm in all other areas is indicated by the dashed line.

## Wales

Bangor University explored the use of three different assessment models to assess the scallop stock in ICES statistical rectangle 33E5, roughly covering Cardigan Bay<sup>13</sup>. The models produced estimates of spawning biomass and MSY.

The assessment area was defined because the king scallop landings from this area represented approximately one third of total landings from all ICES statistical rectangles within Welsh territorial waters (0-12 nautical miles) over the period 2012 to 2016. At the time the assessment models were explored, only data from 2012 to 2016 were available for both survey and commercial. Further, there is evidence from a larval connectivity study that this ground is mainly self-recruiting and therefore

<sup>13</sup> <https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.809690>

## Annex 1: Evidence Statement for king scallops FMP

might be suitable to be considered as a stock unit for assessment and management purposes<sup>14,15</sup>.

It was concluded that the time series was too short for the models to produce reliable results. Currently available time series of survey and commercial data may be more informative to further explore statistical modelling approaches for king scallop in Welsh waters. Further information can be found in the Welsh waters scallop survey and stock assessment report<sup>16</sup>.

## Data collection to support stock assessments

### English data collection

In England, Cefas have carried out scallop surveys twice a year since 2016 as part of the king scallop stock assessment project. This is a highly collaborative project between the fishing industry (catchers and processors), Defra, Cefas and Seafish in English waters. It was formalised in 2017 with the establishment of a Project Steering Board. The data streams used to carry out the stock assessment include:

- International landings as submitted to the ICES Scallop Working Group (WGScallop)
- Dredge surveys using a commercial fishing vessel, conducted annually in all assessment areas
- Underwater television (UWTV) surveys from RV *Cefas Endeavour*, conducted cyclically in one assessment area per year
- Size distributions in commercial landings from the scallop Industry Self-Sampling Scheme (ISSS)

Dredge surveys have been carried out in the commercially fished parts of all assessed areas since 2017 and are used to estimate scallop biomass available to the dredge fishery. This is done based on the total number of animals caught and their size distribution. UWTV surveys are conducted outside the main fished areas to obtain an estimate of the size of the unfished part of the scallop population. These animals can potentially contribute to recruitment in the fished areas through larval transport. The scale and magnitude of larval transport in stock dynamics is a subject of ongoing research.

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14 Close, H. (2014) 'Connectivity between Populations of the Scallop *Pecten maximus* in the Irish Sea and the Implications for Fisheries Management', Bangor University, MSc thesis, pp. 82.

15 Hold *et al.*, 2021 Hold, N., Robins, P., Szostek, C. L., Lambert, G., Lincoln, H., Le Vay, L., Bell, E. and Kaiser, M. J. (2021) 'Using biophysical modelling and population genetics for conservation and management of an exploited species, *Pecten maximus* L.', *Fisheries Oceanography*, 30(6), pp. 740-756. <https://doi.org/10.1111/fog.12556>

16 <http://sustainable-fisheries-wales.bangor.ac.uk/documents/Welsh%20waters%20scallop%20surveys%20and%20stock%20assessment.pdf>.

## Welsh data collection

In Welsh waters, scientific surveys have been conducted by Bangor University from the RV *Prince Madog* since 2012<sup>17</sup>. The surveys sample three main fishing grounds; Cardigan Bay, Liverpool Bay and north of the Llyn Peninsula (as shown in Figure 11). The initial survey also included Tremadog Bay, but this area was not sampled further due to high densities of static gear. These fishing grounds were designated after consultation with the fishing industry in 2012. Surveys have been conducted from 2012 to 2022, with the exception of 2015. In addition, the 2016 survey was conducted in two parts. The survey timing within each year also varied between April and July most years, and September to December in 2016. There is currently no fisheries-dependent biological sampling in Wales.

## Stock status

### English published assessments

The evidence to support the development of the king scallop FMP is obtained from annual stock assessments that have been carried out by Cefas since 2017. The latest version was published in 2022, describing the 2020-21 assessment, and can be accessed from the Government Publishing Service<sup>18</sup>.

### Welsh published assessments

The latest assessment report published, as of 2022, was in 2019. It included a detailed data analysis of surveys up to 2019 and presented three different assessment model explorations for the Cardigan Bay ground using data from 2012-2016<sup>13</sup>.

## Stock assessment evidence gaps

Qualitative and quantitative assessments for the majority of commercially important fish stocks are routinely undertaken by ICES expert working groups, particularly demersal, pelagic and elasmobranch fish species. Stock assessments for key shellfish stocks are more commonly undertaken at a national level due to being outside the UK-EU TAC regime. Scallop assessments pertinent to the English Channel, the Celtic and North Sea are undertaken unilaterally by France and

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<sup>17</sup> Delargy *et al.*, 2019: Delargy, A., Hold, N., Lambert, G. I., Murray, L. G., Hinz, H., Kaiser, M. J., McCarthy, I. and Hiddink J. G. (2019) 'Welsh waters scallop surveys and stock assessment', Bangor University, Fisheries and Conservation Report No. 75. Pp 48

<sup>18</sup> <https://www.gov.uk/government/publications/assessment-of-scallops-stocks-202021>.

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England on their own data holdings. The results of these assessments are presented to the ICES scallop working group (WGScallop). However, as of 2022, no ICES stock assessments are being undertaken for king scallop stocks in UK waters.

Assessments of the status of king scallop stocks are conducted since 2017 by Cefas as part of a collaborative project with the UK fishing industry, Defra and Seafish. Stakeholder confidence in these assessments remains limited partly due to the short time series of data used in the assessments. Ongoing work to improve the understanding of the efficiency of fishing gear, optimal stock unit delineation and how these factors affect assessment of stock status in relation to reference points. However, some evidence gaps persist and are listed below.

### England

- Insufficient size sampling data in two of the regularly assessed areas: Area 27.7.f.I (North of Cornwall) and Area 27.4.b.S (Yorkshire/Durham). This prevents the estimation of MSY in these areas.
- Insufficient knowledge of the population age structure, which prevents more accurate modelling of population dynamics than based on size structure.
- The accuracy of calculated growth rates is limited by the accuracy of visual age determination. The analysis of stable oxygen isotopes in shell carbonate is a more accurate age determination method but too expensive to be employed on a routine basis.
- Uncertainty about the efficiency of commercial dredges in regard to the relationship between the caught number of animals and the total number of animals in the path of the fishing gear. This translates into uncertainty in the estimation of absolute harvestable biomass and is the subject of ongoing research.
- Uncertainties about stock boundaries. This requires further genetic research.

### Wales

- The stock(s) status in Wales remains unknown. However, with the longer time series now available, ongoing work by Bangor University is investigating whether assessment models can be developed further.
- Data gaps, such as the lack of fishery-dependent biological data, limits the choice of statistical approaches and increases uncertainty in stock assessments.

These evidence gaps have been added into the King Scallop Evidence and Research Plan under objective 1, which can be found in Annex 2.

## Ecological impacts

King scallop fisheries have the potential to impact the wider marine environment, which can cause disruption to ecosystem state and function.

## Seafloor disturbance

The fishing method primarily used to target king scallops is dredging. Of all fishing gears, dredging is considered to cause the most damage to non-target benthic communities and seafloor habitats. The level of damage caused varies greatly between different types of seabed and groups of organisms, with biogenic reefs and benthic epifauna being the most vulnerable. This damage can have severe consequences for biodiversity, due to removing structurally complex species like hydroids, and negatively impact recruitment, including for scallops. This is because these habitats are key nursery and feeding areas for a wide range of species. There can also be physical impacts to the seabed, such as homogenisation and resuspension of sediments, causing alterations in seabed topography and nutrient cycling<sup>19</sup>. Understanding the efficiency of scallop dredges is important for understanding the impact of dredging on the seabed, as it has been shown that dredges with a catch efficiency higher than the benthic depletion rate would cause a greater environmental impact.

Defra sought advice from the JNCC and Natural England on the potential risk posed by the FMP king scallop fisheries to the features in Marine Protected Areas (MPAs). The UK's Statutory Nature Conservation Bodies (SNCBs) were also commissioned to provide advice on whether king scallop fisheries are likely to affect any of the UK Marine Strategy (UKMS) descriptors and our ability to achieve the targets for Good Environmental Status (GES). The evidence showed that the king scallop fisheries risked the UKMS descriptor for Seafloor Integrity (UKMS descriptor 1,6). The details of this risk and the mitigation method at the national and FMP level is set out in Annex 7.

## Bycatch

Around the British Isles, the proportion of bycatch species in king scallop dredges is variable, with findings suggesting a range of 15% to 53% and a mean of 19%<sup>20</sup>. This bycatch is dominated by other commercial species, including queen scallop, brown crab, and spider crab. Dredging is unlikely to cause large-scale mortality of bycatch species populations due to the low proportion of individual species. King scallop dredge bycatch levels in the English Channel were low in comparison to other towed

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19 Steward, BD., Howarth, LM. (2016). Chapter 14 - Quantifying and Managing the Ecosystem Effects of Scallop Dredge Fisheries. *Developments in Aquaculture and Fisheries Science*. 40:585-609

20 Claire L. Szostek, Lee G. Murray, Ewen Bell, Gwladys Lambert, Michel J. Kaiser, Regional variation in bycatches associated with king scallop (*Pecten maximus* L.) dredge fisheries, *Marine Environmental Research*, Volume 123, 2017, <https://doi.org/10.1016/j.marenvres.2016.11.006>.



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mobile fishing gears and other dredge fisheries around the UK<sup>21</sup>. JNCC, Natural England and the SNCBs deemed the king scallop fisheries to be a low risk to bycatch at this stage. The details of this risk and the mitigation method at the national and FMP level is set out in Annex 7 of the FMP.

## Environmental impacts

King scallop fisheries are sensitive to environmental change, such as climate change and marine pollution, but they also are one of the contributors to change which can exacerbate the environmental impacts.

### Climate change

Scallop stocks and fisheries are sensitive to the environmental change brought about by climate change – such as ocean warming and ocean acidification. Climate change and warming oceans are changing the distribution of commercially important shellfish species<sup>22</sup>. Crustaceans (such as crabs and lobsters) are considered to be more tolerant to the changes in ocean acidification than bivalve molluscs such as scallops<sup>23</sup>.

Scallop larvae are particularly sensitive to the changes in ocean acidification, with experiments of predicted ocean acidification levels demonstrating deformity in larval shell formation and increased mortality<sup>24, 25</sup>. These impacts can have significant economic implications to the scallop fisheries. A recent US model showed that under worst-case ocean acidification impacts, the US Atlantic Sea scallop fishery could decline by more than 50% by the end of this century<sup>26</sup>.

Climate change is impacting the sectors and vessels that target scallop species. Modelling from 1930 to 2010 showed global declines in MSY of exploited

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21 Szostek 2015. Population characteristics and environmental interactions of the king scallop fishery in the English Channel. PhD Thesis. Bangor University

22 Mieszkowska, N., Burrows, M. and Sugden, H. (2020) Impacts of climate change on intertidal habitats relevant to the coastal and marine environment around the UK. MCCIP Science Review 2020, 256–271. doi: 10.14465/2020.arc12.ith

23 Kroeker, KL., Kordas, RL., Crim, RN., Singh, GG. (2010). Meta-analysis reveals negative yet variable effects of ocean acidification on marine organisms. *Ecology letters* 13:1419-1434

24 Andersen S, Grefsrud ES, Harboe T. Effect of increased pCO<sub>2</sub> level on early shell development in great scallop (*Pecten maximus* Lamarck) larvae. *Biogeosciences*. 2013;10: 6161–6184.)

25 White M. M., Mullineaux L. S., McCorkle D. C., and Cohen A. L. (2014) Elevated pCO<sub>2</sub> exposure during fertilization of the bay scallop *Argopecten irradians* reduces larval survival but not subsequent shell size. *MEPS* 498: 173–186

26 Jennie E. Rheuban et al, Projected impacts of future climate change, ocean acidification, and management on the US Atlantic sea scallop (*Placopecten magellanicus*) fishery, *PLOS ONE* (2018). DOI: 10.1371/journal.pone.0203536



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populations, with populations around the British Isles among the most negatively affected worldwide. The projected changes in maximum potential catch of key species and the resulting changes in net present value over a 45-year period were investigated. Findings suggested that maximum potential catch will decrease, resulting in a median 10% decrease in net present value. Value decreases further when considering future trends in fuel prices. The study highlights the key factors influencing the future profitability of UK fisheries and the importance of enhancing adaptive capacity<sup>27</sup>.

Whilst these stocks and fisheries are affected by this change, they are also one of the contributors. All fishing activity leaves a carbon footprint, which can further exacerbate the environmental impacts of climate change. For the UK fishing sector, actions are required to lower the emissions of fishing vessels and the wider seafood production chain to meet UK and Devolved Administration Net Zero targets<sup>28</sup>. These mitigating actions include technological, managerial, and behavioural changes that can increase energy efficiency of the fishing sector, transitioning to alternative fuels and energy sources, and reduce the direct impact that fisheries have on marine carbon stores.

The contribution of carbon emissions from scallop fisheries comes from vessel emissions, as well as potentially through the disruption and release of stored carbon from the marine environment from fishing gears impacting the seafloor. Over the last few decades, the fleet of scallop dredges in the UK have expanded substantially. This is most notable in the under-15m fleet, which have increased from 120 vessels between 2005 and 2009 to 203 vessels between 2015 and 2019. The over-15m fleet have increased marginally in comparison, from 74 to 86 over the same time period. Unsurprisingly with the growth in this fleet, the total carbon emissions have also increased over this timeframe by 37%<sup>29</sup>. Mitigating these carbon emissions is required to support the UK's efforts to reach Net Zero. The details of this risks brought about from climate change to the scallop fisheries, and those that are enhanced by the fisheries, along with their proposed mitigations at the national and FMP level is set out in Annex 7 of the FMP.

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27 Jones, M. C., Dye, S. R., Pinnegar, J. K., Warren, R., & Cheung, W. W. (2015). Using scenarios to project the changing profitability of fisheries under climate change. *Fish and Fisheries*, 16(4), 603-622

28 Net-zero-strategy-beis.pdf (publishing.service.gov.uk)

29 Englehard, G.H., Harrod, O.L., Pinnegar, J.K. (2022) Carbon emissions in UK Fisheries: recent trends, current levels and pathways to Net Zero. C8118. CEFAS.

## Marine litter

Marine pollution is a significant driver of biodiversity and ecosystem change within marine habitats<sup>30</sup>. Across fisheries, marine pollution such as eutrophication, marine litter (including plastics and end-of-life fishing gear), and underwater noise can have a negative impact on stock abundance and health. Any persistent, manufactured or processed solid material discarded, disposed, or abandoned in the marine and coastal environment is classed as marine litter. An estimated 5-13 million tonnes of litter enter the oceans each year<sup>31</sup>, predominately made up of plastic. Identifying and tracing the source of the marine litter has been a focus to support mitigation measures. A recent study assessing the quantity of marine litter on the seafloor in the North Sea found 27% of the study areas contained litter and that fishing gear was the dominating source<sup>32</sup>. At a global scale, it is estimated that 5.7% of all fishing nets, 8.6% of all traps, and 29% of all line are lost each year<sup>33</sup>. There are two types of waste fishing gear. These are end of life fishing gear and ghost fishing gear (for example, lost pots and traps). Due to the nature of the gear used, which is largely metal, scallop dredging is considered unlikely to be a major contributor to marine litter compared to other fisheries. JNCC, Natural England and the SNCBs deemed the king scallop fisheries to be a low risk to marine litter (UKMS descriptor 10) at this stage. The details of this risk and the mitigation method at the national and FMP level is set out in Annex 7 of the FMP.

## Economic importance

King scallops are commercially important shellfish species in the UK. In 2021, the total landed weight of scallops from all UK waters was 24,653 tonnes (liveweight) with a first sale value of £44.46m (as shown in Table 3 of the Landings chapter). King scallops make up 12% of seafood caught in English and Welsh waters in terms

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30 IPBES (2019): Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. S. Díaz, J. Settele, E. S. Brondízio E.S., H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K. J. Willis, and C. N. Zayas (eds.). IPBES secretariat, Bonn, Germany. 56 pages.

31 Jambeck, JR., Geyer, R., Wilcox, C. (2015). Plastic waste inputs from land to sea. *Science*. 347 (6223): 768-771.

32 Buhl-Mortensen, L., Buhl-Mortensen, P. (2017). Marine litter in the Nordic Seas: Distribution composition and abundance. *Marine Pollution Bulletin*. 125 (1-2):260-270.

33 Richardson, K., Hardesty, BD., Wilcox C. (2019). Estimates of fishing gear loss rates at a global scale: A literature review and meta-analysis. *Fish and Fisheries*. 20: 1218-1231.  
<https://doi.org/10.1111/faf.12407>

of monetary value, making them one of the top three most valuable species in English and Welsh waters across all seafood<sup>34</sup>.

## **Economic dependence by fleet segment**

The total number of vessels that have economic dependence on the scallop fishery has declined slightly between 2016 and 2021 (as seen in Table 2 of the Fleet Characteristics chapter), with 336 vessels in 2016 and 303 vessels in 2021. Economic dependence is defined here as the percentage of revenue associated with value of landings of king scallops in the FMP managed area compared to total fishing income.

The majority of vessels that fish for scallop are from England, followed by Scotland. Between 2016 to 2021, more than 55% of the total number of vessels that landed scallops in English and Welsh waters had less than 20% economic dependence on the fishery (Figure 15) and caught less than 20% of the total landings (Figure 16). At the other end of the scale, those vessels that had 80% to 100% economic dependence on the scallop fishery made up less than 17% of the total number of vessels (Figure 17) and landed on average a quarter of the total landings (Figure 18). The majority of landings were caught by those vessels in the middle that have between 20% to 80% economic dependence on the fishery. These vessels made up less than a third of the total vessels but landed more than half of the scallops that were caught in the FMP.

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34 MMO, 2021

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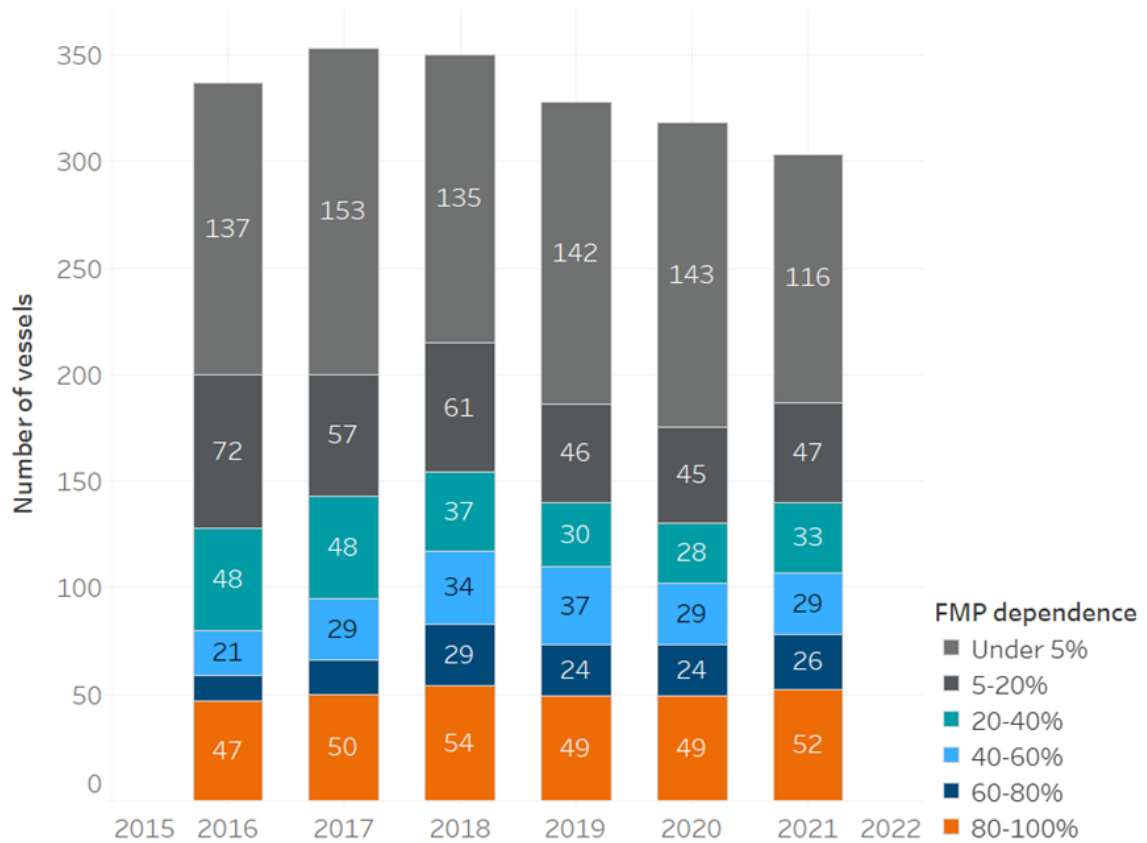


Figure 15. Number of UK and Crown Dependencies vessels involved in the King scallop fisheries in English and Welsh waters by level of economic dependence (based on value [£] of landings).

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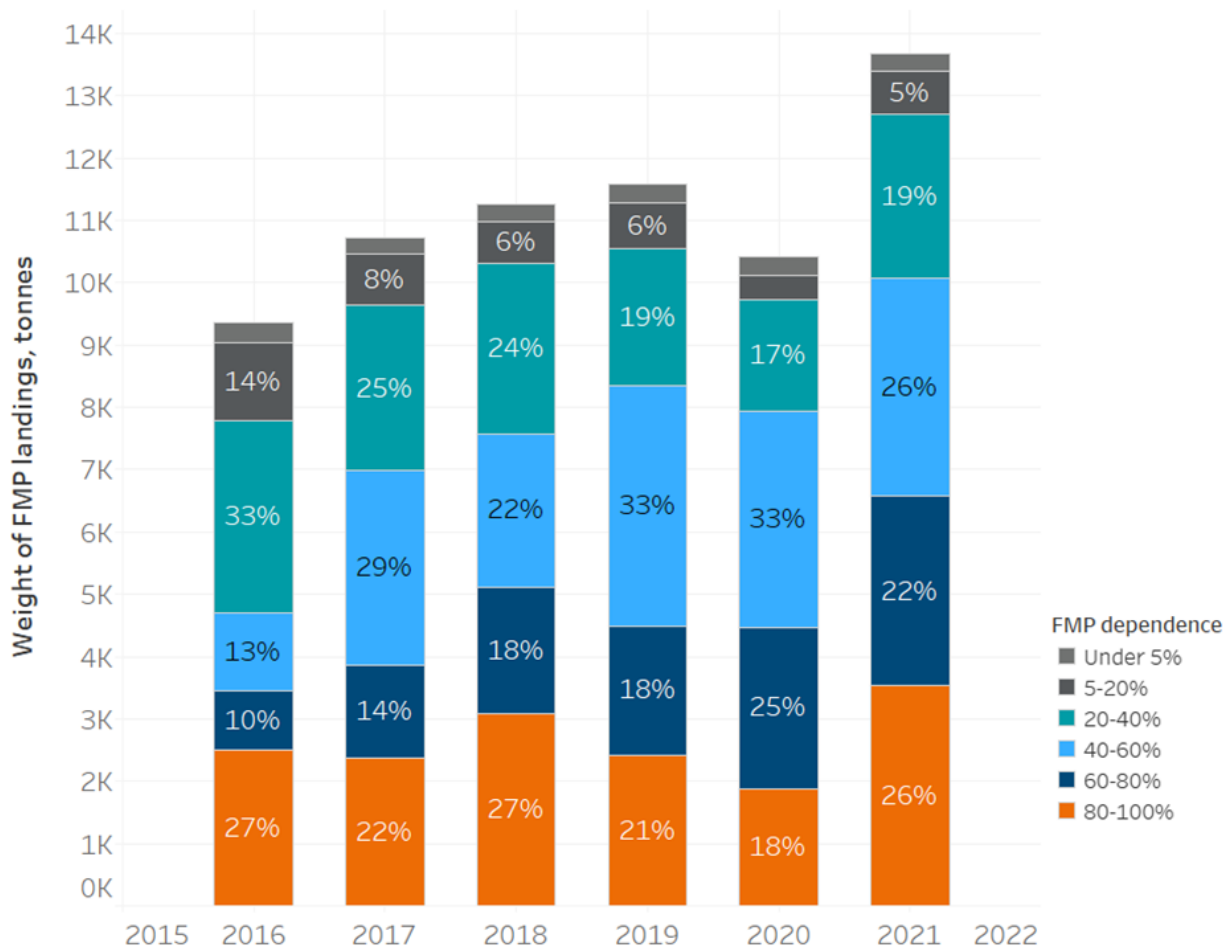


Figure 16. Total weight of scallop landings (liveweight tonnes) from English and Welsh waters by UK and CD vessels belonging to different economic dependence group and percentage of each group landings compared to total scallop landings from FMP in relevant years.

## Ports reliance on the king scallop fishery

Figure 17 shows the value of king scallop landings from English and Welsh waters by ports as a proportion of the total value of landings in the relevant ports by all UK fishing vessels in 2016 to 2021.

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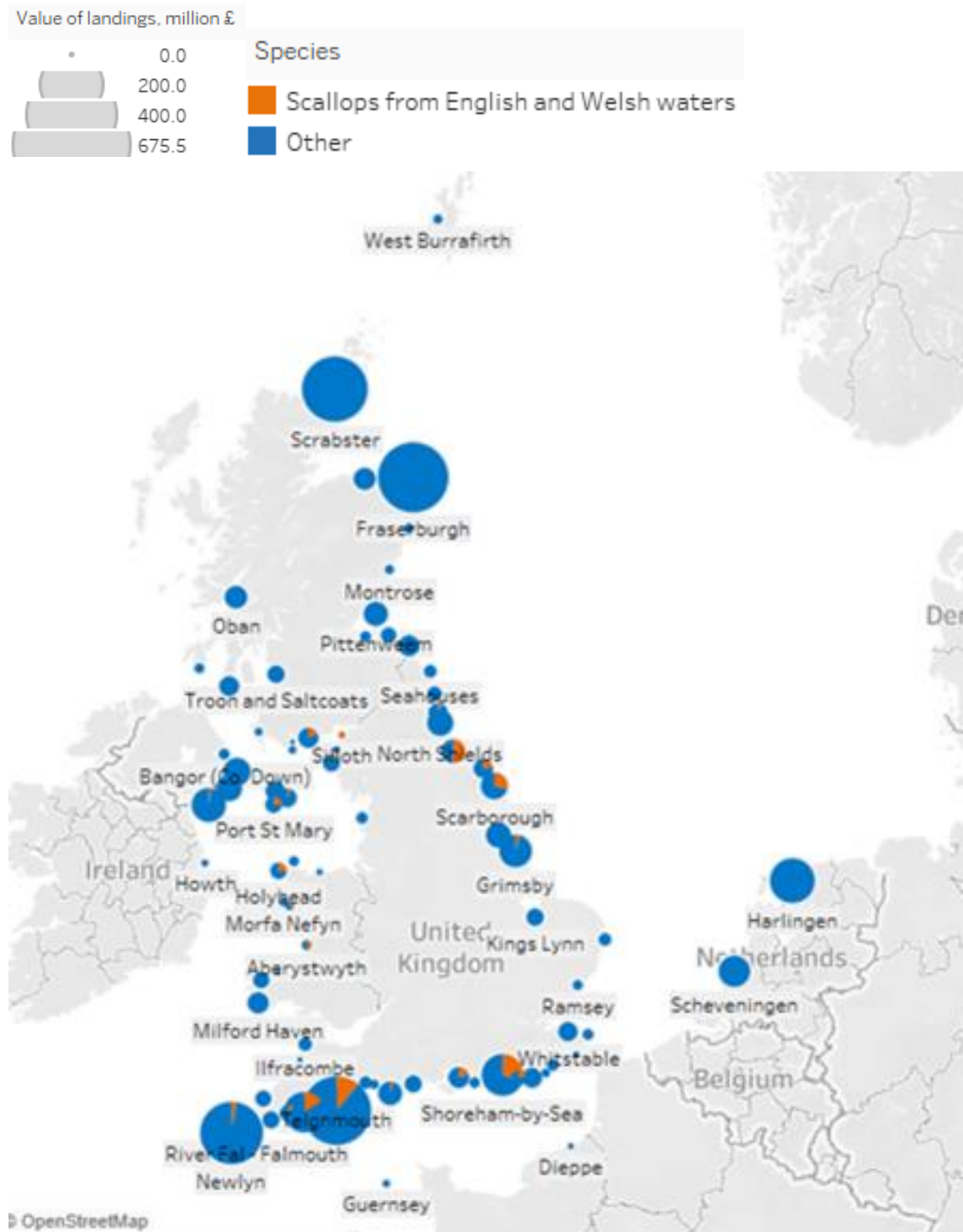


Figure 17: Ports reliance on FMPs related value (£) of king scallop landings by UK and CD vessels between 2016 to 2021\* <sup>35</sup>

35 Only ports with FMP related weight of landings >1 tonne are selected. In addition, Peterhead was removed from the map as the share of value of landings related for FMP is low and mapping big ports scales down smaller ports with relatively more significant value of landings corresponding to FMP.

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Shoreham-by-Sea port had the greatest landings with 5,012 tonnes landed in 2021 at a value of £7.87m. Six of the top 10 ports with the highest value of scallops landed from the fishery are in the South (Channel) or South-West (Celtic Sea) and three of the four remaining ports being in the North-East, and the last in Wales (Table 8)

Rank	Port of Landing	Port Nationality	Liveweight (t)	Value (£)
1	Shoreham-by-Sea	England	5,012	7.87
2	Brixham	England	2,298	3.90
3	Hartlepool	England	1,514	2.76
4	Plymouth	England	1,175	1.59
5	Scarborough	England	656	1.30
6	Portsmouth	England	636	1.27
7	Newhaven	England	526	0.83
8	Whitby	England	363	0.69
9	Exmouth	England	314	0.69
10	Pwllheli	Wales	277	0.58
	TOP 10		112,770	21.47

**Table 8: Landings by value (£) and weight (liveweight tonnes) of king scallops in English and Welsh waters by UK and CD Vessels categorised by port.**

## Economic data

In this section, economic indicators have been defined as follows:

- Economic dependence: percentage of revenue associated with value of landings of stocks/species in FMP managed area compared to total fishing income.
- Fishing income: value of fish landed associated with FMP.

## Annex 1: Evidence Statement for king scallops FMP

- GVA: a measure of the value of goods and services produced by an industry. GVA is calculated as the sum of operating profit and crew share.
- Operating profit: the difference between total income and operating costs.
- Net profit: the result of subtracting finance costs, depreciation and interest costs from operating profit.
- GVA to fishing income margin: the economic efficiency and profitability of operations, and evolution over time.

Table 9 and Figure 19 sets out the economic performance indicators associated with king scallop landings from English and Welsh waters. The GVA is normally considered to be a proxy of sector contribution to gross domestic product and is important as a measure of value created by the sector to society. Operating as well as net profits are measures representing business performance and important for business owners as indicators of their business profitability. Operating profit only accounts for operating costs, while net profit is also considering depreciation of the capital invested and financial business costs, such as loan interest. Margin of each economic indicator as a ratio of fishing income could show economic efficiency and profitability of the operations and its evolution over time.

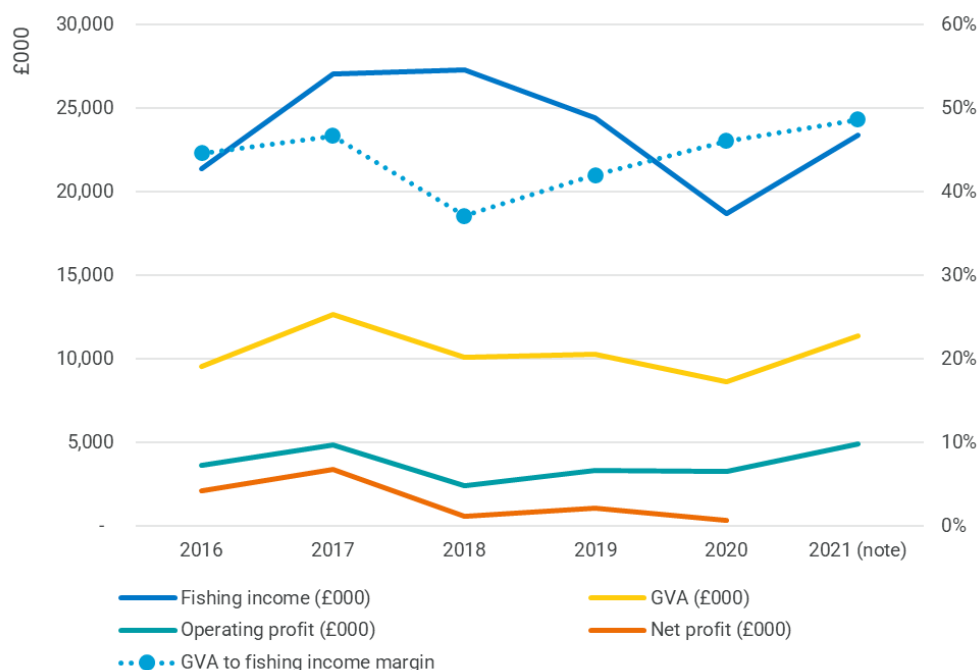
As shown in Table 9 and represented more visually in Figure 19, most measures (fishing income, GVA, operating profit and net profit) dropped in 2020, in line with COVID-19 impacting the fishing industry. The GVA remained relatively stable at around £10m between 2016-2021. Whereas operating profit, fishing income, and net profit have all been more volatile but have followed no clear trend.

	2016	2017	2018	2019	2020	2021
<b>Fishing income (£000)</b>	21,368	27,043	27,260	24,425	18,672	23,377
<b>GVA (£000)</b>	9,535	12,625	10,112	10,248	8,603	11,360
<b>Operating profit (£000)</b>	3,607	4,815	2,421	3,344	3,243	4,887
<b>Net profit (£000)</b>	2,104	3,360	605	1,061	339	-
<b>GVA to fishing income margin</b>	45%	47%	37%	42%	46%	49%



## Annex 1: Evidence Statement for king scallops FMP

**Table 9: Economic performance indicators associated with king scallop FMP in 2016 to 2021. Factors impacting economic performance are analysed in more detail as part of Economics of the UK Fishing Fleet annual reports<sup>36</sup>.**

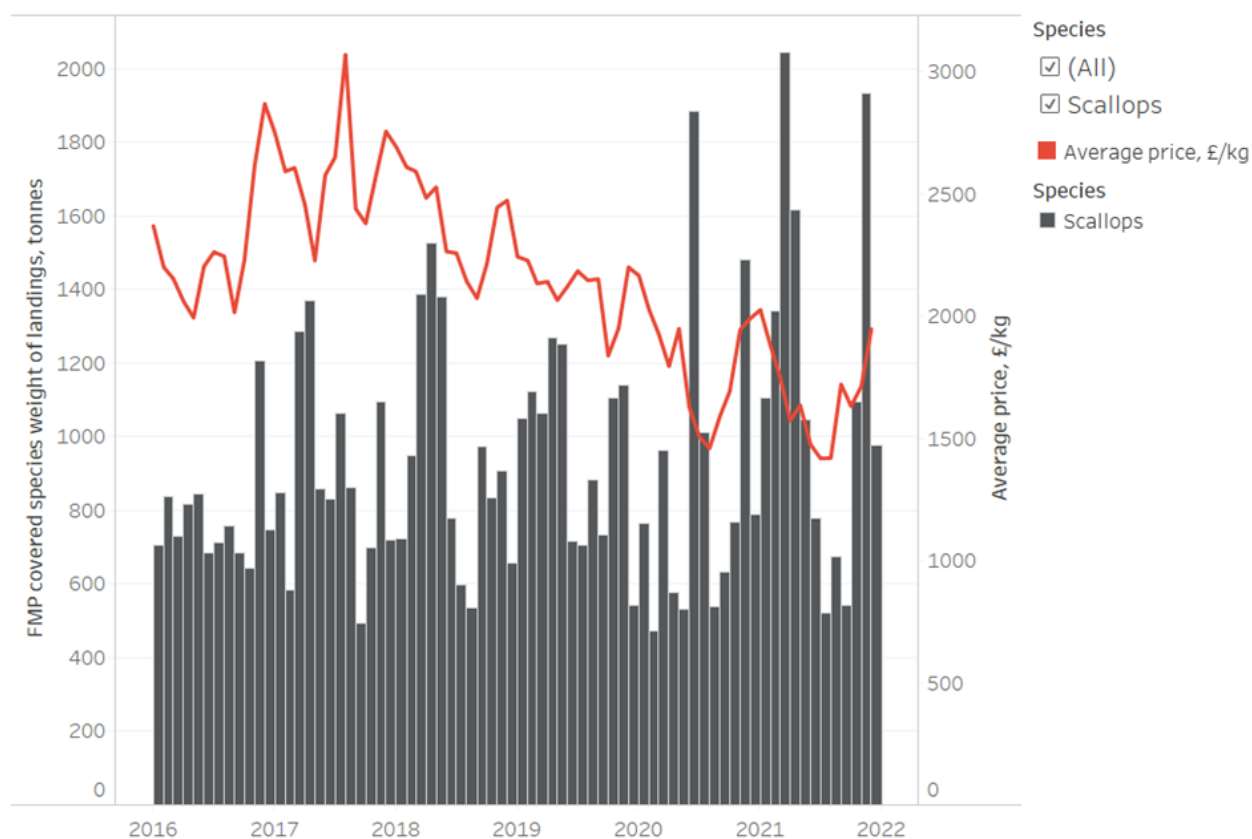


**Figure 18: Economic performance indicators associated with King scallop FMP between 2016 to 2021. The indicators used are fishing income operating profit; GVA to fishing income margin; GVA; net profit.**

Figure 19 shows the weight of scallops landed from the FMP area per month in 2018 to 2021 and average price evolution during the same period. There is a clear seasonality in the scallop fishing, with significant variation in weight of scallops landed between months. The average price per kilogram of scallops landed in English and Welsh waters has been on a downward trend between 2017 and 2021, but remains very volatile, potentially caused largely by the fluctuations in weight of scallops landed.

<sup>36</sup> [Economics of the UK Fishing Fleet 2020 — Seafish](#)

## Annex 1: Evidence Statement for king scallops FMP



**Figure 19: Weight (liveweight, tonnes) of scallops landed from the FMP area per month (grey bars) in 2016-2021 and average price (orange line) evolution during the same period.**

## International sales and exports

Non-quota shellfish are economically valuable for trade, accounting for 11.2% of all fish exports (including exports of fish products) in 2021. The 44,900 tonnes of non-quota shellfish species exported over this year was valued at £331.5 million, equating to around one fifth of the money generated from total fish exports. The species with the greatest export value in 2021 scallops (£75.7 million), crabs (£67.2 million) and European lobster (£46.8 million)<sup>37</sup>.

HMRC trade data does not distinguish between queen or king scallops. The UK is a net exporter of scallops, which are relatively high value. In 2021, there was a trade surplus of £56 million – exporting £76 million and importing £20 million<sup>38</sup>.

### Exports

In 2021, the UK exported 6,600 tonnes of scallops valued at £76 million. While this is an increase from 2020 when the UK exported 5,900 tonnes valued at £69 million, this is the first year-on-year increase since 2016 where scallop exports peaked at

<sup>37</sup> MMO, 2021

<sup>38</sup> Defra analysis of HMRC trade data, 2022

## Annex 1: Evidence Statement for king scallops FMP

12,900 tonnes. Scallop exports in 2021 represented 4% of UK exports (including fish products) in terms of value and 2% of tonnes. France is the largest scallop export market (78% of tonnes) followed by Italy (12%) and Spain (5%). France may not be the final destination for a substantial amount of exported scallops with likely onward transportation to elsewhere in the EU<sup>39</sup>.

### Imports

In 2021, the UK imported 1,400 tonnes of scallops valued at £20 million. The level of scallop imports has remained broadly stable over from 2017 to 2021 – importing between 1,200 to 1,400 tonnes in each year. Scallop imports in 2021 represented 1% of UK imports (including fish products) in terms of value and 0.2% in terms of tonnes. France (53%), Canada (19%), the United States (10%) and the Netherlands (10%) make up 92% of the scallop import market for the UK<sup>40</sup>.

### Economic impacts of COVID-19

COVID-19 restrictions caused considerable changes across the catching sector over 2020. The initial lockdown had significant operational impacts on the UK catching sector. Fishers targeting shellfish (compared to pelagic or demersal species) were the most acutely affected by the COVID-19 lockdown due to their reliance on domestic food service, as well as the international export market. This had a knock-on effect on other seafood sectors such as processors, gear manufacturers and auctions. Comparing January-September 2019 with January-September 2020, total shellfish (both quota and non-quota) landings values fell 36%, landings weight fell 19%, and average price fell 21%<sup>41</sup>. At its worst, shellfish values fell by 56% in April 2020 compared to April 2019 following the first government-imposed lockdown.

## Social importance

### Employment (FTE) by fleet segment

Figure 20 shows employment calculated in full time job equivalents and partitioned based on the same methodology used for economic performance indicators. Socio-demographic characteristics cannot be partitioned to FMP level, however use of fleet segments associated with FMP can help to understand potential demographic profile of employees.

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39 Defra analysis of HMRC trade data, 2022

40 Defra analysis of HMRC trade data, 2022

41 Seafish, 2021

## Annex 1: Evidence Statement for king scallops FMP

Overall FTE associated with the scallop fishery has declined between 2016 and 2021. This decline in FTE is more prominent in the under 15m scallop dredges, which has decreased from 147 FTE in 2016 to 92 FTE in 2021. Conversely, over 15m FTE has increased slightly by 9.7% over the same period.

In 2019 and 2020, FTE were considerably lower across all fleet segments, which could be an impact of COVID-19 restrictions that caused considerable changes across the catching sector over 2020. The initial lockdown had significant operational impacts on the UK catching sector. Fishers targeting shellfish (compared to pelagic or demersal species) were the most acutely affected by the COVID-19 lockdown due to their reliance on domestic food service, as well as the international export market.

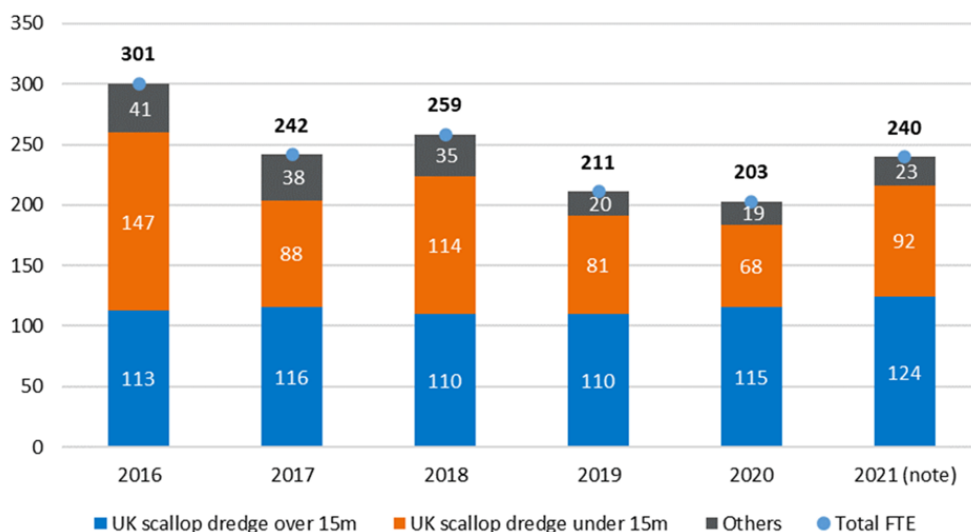


Figure 20: Employment (FTE) associated with FMP by Seafish fleet segments in 2016 to 2021.

## Fishery management

### Biological reference points for fisheries management

As of 2022, biological reference points are not used in the management of king scallop fisheries in UK waters. However, they can form an essential part of evidence-based fisheries management plans and are therefore described here. Ideally, the estimation of the fishing mortality that generates MSY would be based on a full analytical assessment, including an estimate of the stock-recruitment relationship. ICES has developed a modelling technique for finfish called Surplus Production model in Continuous Time (SPiCT), that estimates MSY without a stock-recruit relationship however, these models have not yet been tested for sedentary species such as scallops.

For stocks that a direct estimation of MSY is not yet possible, ICES uses proxy reference points that have been found to be reasonable approximations to MSY reference points. The fishing mortality which generates 35% of the virgin spawning potential (F35%SpR) is a commonly used reference point, not only within ICES advisory areas, but also globally<sup>42</sup>. Reference points are currently only defined for four areas in English waters (Table 10). No biological reference points have yet been defined for king scallops in Welsh waters.

Most fully analytical fish stock assessments use a time series of age composition of the landings, along with other data such as total landings or catches and a survey series, to estimate the rate at which the fishery is exploiting the stock. These data sources are not yet available for king scallops along the English coast. Instead, scaled length distributions were used to determine gear selection parameters to facilitate a length-based cohort method. Length-based methods are routinely used for shellfish assessments, where only size structure of the removals is available, and is typical for many shellfish species, where routine age determination is problematic. The length-based model uses growth parameters to determine the time spent in each size class and projects the spawning stock biomass and catch expected from a batch of recruits (a yield and spawner per recruit model). This model estimates that, to achieve F35%SpR<sup>43</sup>, the harvest rates listed in the table below would be required.

Area	MSY Proxy Harvest Rate
------	------------------------

42 [https://www.st.nmfs.noaa.gov/Assets/stock/documents/workshops/nsaw\\_5/gabriel\\_.pdf](https://www.st.nmfs.noaa.gov/Assets/stock/documents/workshops/nsaw_5/gabriel_.pdf)

43 SPR stands for spawning (products) per recruit, and “products” are biomass, egg production, or related metrics. F stands for fishing mortality. As such, = a stock to attain only 35% of the spawning biomass per recruit which would have been obtained under conditions of no fishing mortality

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27.7.d.N	21.5%
27.7.e.I	19.5%
27.7.e.L	21.0%
27.7.e.O	20.9%

**Table 10: Biological Reference Points for King scallop in England.**



Department  
for Environment  
Food & Rural Affairs



Llywodraeth Cymru  
Welsh Government

# Proposed Fisheries Management Plan for king scallops in English and Welsh Waters

## Annex 2: Research plan for king scallops

Date: July 2023

Version: public consultation





## King Scallop FMP objectives

This document summarises key evidence and research needs for English and Welsh king scallop (*Pecten maximus*) fisheries, which have been identified through a number of forums. This is a draft document, which will be continually updated as research needs are identified throughout the development of the King Scallop FMP.

This document draws upon a number of different resources, for example:

- King Scallop Science Group (SSG) discussions
- Project UK Channel scallop Fisheries Improvement Plan (FIP) Action Plan
- Cefas evidence provisioning for FMPs
- Defra Shellfish NQS Evidence Plan

There may therefore be some overlap between research needs included. **Research needs will therefore be reviewed and prioritised at a later stage.**

## Annex 2: Research plan for king scallops

Reference	Research need	Description of activities and overall aim(s)	Progress
<b>FMP objective 1 Develop a science evidence base to inform the development of harvest strategies and harvest control rules for individual scallop stocks.</b>			
1.1	Develop existing (or new) stock assessment methodologies, indicators, and reference points for all stock units.	<ul style="list-style-type: none"> <li>a) (For England) Improve size sampling data in two of the regularly assessed areas: Area 27.7.f.I (North of Cornwall) and Area 27.4.b.S (Yorkshire/Durham).</li> <li>b) Increase scallop size sampling of commercial catches for targeted scallop beds around England and Wales.</li> <li>c) (For England) Improve knowledge of the population age structure, for example, develop age reading methodologies and consistency across England and Wales.</li> <li>d) (For England) Improve the accuracy of calculated growth rates (limited by the accuracy of visual</li> </ul>	<ul style="list-style-type: none"> <li>• Cefas have reported on the status/ development of selected stocks around England since 2017<sup>3</sup>.</li> <li>• The efficiency of spring-loaded dredges is estimated in current assessments using results from depletion studies (Palmer et al).</li> <li>• Ongoing work at Cefas to determine a methodology for estimating dredge efficiency using novel technology<sup>4</sup> has made progress but has not yet provided alternative efficiency coefficients.</li> <li>• With the longer time series now available, ongoing work by Bangor University is investigating whether assessment models can be developed further (however stock status remains relatively unknown).</li> </ul>

<sup>3</sup> Lawler and Nawri (2021). Assessment of king scallop stock status for selected waters around the English coast 2020/2021.

<sup>4</sup> Radio Frequency Identification, RFID.

Annex 2: Research plan for king scallops

Reference	Research need	Description of activities and overall aim(s)	Progress
		<p>age determination), for example through analysis of stable oxygen isotopes in shell carbonate (more accurate but too expensive to be employed on a routine basis).</p> <p>e) (For England and Wales) Evaluate uncertainty about the efficiency of commercial dredges, such as the relationship between the caught number of animals and the total number of animals in the path of the fishing gear.</p> <p>f) (For England and Wales) Address uncertainties about stock boundaries and define stock assessment units (gather other evidence on biological stock units for example, using genetic analyses).</p> <p>g) (For Wales) Address data gaps which limit the choice of statistical approaches and increases uncertainty in stock assessments (for example the lack of fishery-dependent biological data).</p>	<ul style="list-style-type: none"> <li>Genetic research for stock boundary definition is limited due to the evolutionary timescales over which genetic signals are developed and the small numbers of individuals needed to exchange genes to homogenise genetic signals. Newer genetic techniques may be more robust, however other methods may be required.</li> </ul>

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Reference	Research need	Description of activities and overall aim(s)	Progress
		<ul style="list-style-type: none"> <li>h) Develop or carry on existing time series of survey abundance indices for stock assessment purposes<sup>1</sup>.</li> <li>i) Map the location and extent of known scallop beds in England<sup>2</sup>.</li> <li>j) Develop and define reference points related to point of recruitment impairment (PRI) for each stock*.</li> </ul>	
1.2	Develop a more accurate measure for fishing effort, currently measured by kilowatt days at sea (number of days at sea multiplied by engine power).	<ul style="list-style-type: none"> <li>a) Improve information on fishing effort, aiming for spatially defined area swept estimates.</li> <li>b) Assess potential for gathering data on number of dredges deployed (for example, through updates to Catch app and eLog).</li> </ul>	To be progressed.

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## Annex 2: Research plan for king scallops

Reference	Research need	Description of activities and overall aim(s)	Progress
1.3	Analyse processor yield data to map out seasonal variations in meat yield for fisheries around the UK.	a) Identify seasons when meat yield is poor and fishing for scallops is unlikely to be economically viable. This may assist with identifying sensible seasons to close a fishery to control fishing activity.	<ul style="list-style-type: none"> <li>SICG Working Group members have offered support with this research need, for example as Macduff shellfish scallops originate from offshore areas, they can provide an offshore to inshore comparator, as well as a 7d-7e comparator.</li> </ul>
1.4	Investigate how biomass target reference points could be used to support output controls for UK scallop fisheries.	a) Increasing understanding of how an output control based management system could be practically implemented. b) Review of the Isle of Man output control based management model.	<ul style="list-style-type: none"> <li>International Council for the Exploration of the Sea (ICES) reference point framework being reviewed in 2023.</li> </ul>
1.5	Determine a suitable scale for management units, considering stock assessment	a) Define appropriate management units in order to support a regionalised management system which avoids the risk of effort becoming concentrated in limited areas.	To be progressed.

Annex 2: Research plan for king scallops

Reference	Research need	Description of activities and overall aim(s)	Progress
	units and enforceability.		
1.6	Determine a suitable methodology for monitoring and standardising scallop catch per unit effort (CPUE) data.	<p>a) Develop a methodology for standardising CPUE data for example, accounting for variations in gear performance – overlap with research need 1.1.</p> <p>b) Develop a nuanced, area specific CPUE threshold (acts as a ‘backstop’ to protect stocks if the ‘catch limit’ is set too optimistically, for instance a drop in CPUE is an indicator of over exploitation).</p>	To be progressed.
1.7	Investigate the movements of early life stages.	a) Improve understanding of larval ecology to help identify scallop grounds which would benefit from closures.	To be progressed.
1.8	Assess whether it is the meat or gonad weight	a) Gather anecdotal data through conversations between scientists, fishers, and processors.	<ul style="list-style-type: none"> <li>Meat quality is lowest just after spawning as individuals put so much resource into spawning. Meat quality and gonad weight are best just before spawning - so fishing before spawning may maximise - which could negate</li> </ul>

Annex 2: Research plan for king scallops

Reference	Research need	Description of activities and overall aim(s)	Progress
	which drives value.	b) Determine the optimal time to harvest stocks in terms of profit, and with the aim of: <ul style="list-style-type: none"> <li>• Informing discussions around spawning closures</li> <li>• Moving towards more efficient management of the resource</li> </ul>	any benefits of a spawning closure (SSG, pers. comms.).
<b>FMP objective 2 Develop a Harvest Strategy and Harvest Control Rules to ensure fishing effort is responsive to status of stocks by developing appropriate fisheries management measures.</b>			
2.1	Evaluate benefits and trade-offs of different management interventions (technical measures and input/output measures), to identify scenarios where	a) Analyse case study examples (from within the UK and beyond) to identify strengths and weaknesses of different management measures. b) Review management of English stocks which are currently fished at MSY to identify what works well/ what could be improved. c) Assess the effectiveness of stock, season, and spatial closures on stock abundance to scallop dredging. d) Appraisal of dredge management success.	<ul style="list-style-type: none"> <li>• Cefas review of Western Waters Effort Regime (WWER) alternatives (Reeves, 2020).</li> <li>• SICG report on management options (SICG, 2018).</li> </ul>

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Reference	Research need	Description of activities and overall aim(s)	Progress
	<p>'multiple wins' are possible.</p>	<p>e) Evaluate and effectively communicate the benefits of various management interventions/scenarios.</p> <p>f) Explore opportunities to understand industry views on management options (for example, using case studies such as the Isle of Man LTMP<sup>5</sup>) with respect to:</p> <ul style="list-style-type: none"> <li>• Equitability of fishing opportunities across sectors</li> <li>• Balancing equitable opportunity against stock sustainability</li> <li>• More complex management of English and Welsh scallop fisheries</li> </ul>	

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5 LTMP = Long-term Management Plan.



Annex 2: Research plan for king scallops

Reference	Research need	Description of activities and overall aim(s)	Progress
2.2	Review potential rebuilding strategies for example for WEC Lyme Bay, including specified timeframe.	a) Review rebuilding strategies with the aim of facilitating restoration of sustainable fisheries.	<ul style="list-style-type: none"> <li>ICES is undertaking a review of reference points and rebuilding strategies in 2023. While not specifically addressing scallops, the frameworks they produce could be of use.</li> </ul>
<p><b>FMP objective 5: Assess the interactions with the marine environment and potential impacts associated with scallop fisheries and develop an action plan to reduce damaging impacts.</b></p>			
5.1	Review, develop, and trial sustainable and affordable alternative gear to support sustainable fisheries.	a) Reviewing which fishing methods are used, the environmental impacts of the different methods, and innovations in catching methods. b) Determine options for optimal gear for fishing king scallops, in terms of ecological sustainability and economic viability.	To be progressed.

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Reference	Research need	Description of activities and overall aim(s)	Progress
5.2	Investigate how effort thresholds could be implemented to manage impacts on benthic environments.	<ul style="list-style-type: none"> <li>a) Effort should be managed in supplement to other management measures to prevent expansion of the fishery's environmental footprint and impacts on benthic habitats.</li> <li>b) Assess potential case study examples, such as Shetland box which implements an 'in and out scheme.'</li> </ul>	<ul style="list-style-type: none"> <li>• Review case study examples where effort controls have been implemented, such as Cardigan Bay's flexible permit scheme.</li> <li>• Determine how this management measure could be applied in a UK scallop fishery context.</li> </ul>
5.3	Identify where most productive scallop fishing grounds are located.	<ul style="list-style-type: none"> <li>a) This information will allow fishers to more efficiently target stocks and reduce environmental footprint.</li> </ul>	<ul style="list-style-type: none"> <li>• Industry based surveys.</li> <li>• Combine with VMS and iVMS data.</li> </ul>
5.4	Assess the impact of scallop dredging outside of Marine Protected Areas (MPAs) on commercial fisheries	<ul style="list-style-type: none"> <li>a) Undertake research to reduce ecological and environmental impacts of scallop fishing, including. defining where direct effects of the fishery remain a concern for ETP species (including identifying ETP species and location).</li> </ul>	To be progressed.

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Reference	Research need	Description of activities and overall aim(s)	Progress
	populations, endangered, threatened and protected (ETP) species, biodiversity, and the implications this has for ecosystem functioning and resilience.		
5.5	Reviewing the mitigating options to seabed abrasion from dredging.	a) Undertake research to reduce seafloor impacts of scallop fishing.	To be progressed.
5.6	Define where direct effects of the fishery remain a concern for habitats,	a) Undertake research to reduce impacts of scallop fishing on vulnerable marine habitats.	To be progressed.

Annex 2: Research plan for king scallops

Reference	Research need	Description of activities and overall aim(s)	Progress
	including MPA, Vulnerable Marine Ecosystems (VME) and commonly encountered habitats (including identifying habitat species and location).		
<p><b>FMP objective 6: Explore ways to address gear and other inefficiencies that currently exist within UK scallop fisheries in order to reduce environmental impacts.</b></p>			
6.1	Explore the relationship(s)/ trade-off(s) between gear efficiency, environmental impact, and carbon footprint.	<ul style="list-style-type: none"> <li>a) Identify and gather evidence required to review relationship(s)/ trade-off(s) between gear efficiency, environmental impact, and carbon footprint.</li> <li>b) Identify key constraints that impede innovation within the UK scallop industry.</li> </ul>	To be progressed.

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Reference	Research need	Description of activities and overall aim(s)	Progress
		c) Evaluate trade-offs and identify potential improvements to gear design/changes in management.	
<b>FMP objective 7: Explore the impacts of marine spatial squeeze, including the potential impact of nomadic larger UK scallop vessels, on the UK scallop fisheries from an environmental, economic, and social perspective.</b>			
7.1	Identify essential supporting habitats for all life stages and investigate loss of habitat to offshore marine development.	a) Identify habitats which are essential for supporting scallop fisheries in order to evaluate potential threats/ whether protection is required.	To be progressed.
7.2	Review potential solutions to gear conflict where there are interactions between fisheries on shared fishing	a) Review available evidence on interactions between scallop fisheries and other fisheries to: <ul style="list-style-type: none"> <li>Identify hotspots where conflict occurs (for example, in the SW of England; off the coast of Hartlepool)</li> </ul>	To be progressed.

Annex 2: Research plan for king scallops

Reference	Research need	Description of activities and overall aim(s)	Progress
	grounds (for instance between scallop dredgers and the potting sector).	<ul style="list-style-type: none"> <li>Inform future management measures across relevant fisheries (such as zonal management).</li> </ul>	
<b>FMP objective 8: Develop Climate Change mitigation and adaptation measures for UK scallop fisheries</b>			
8.1	Quantify the carbon emissions (emissions/per kg of catch) derived from dredging, both blue carbon and emission generations of fishing activity.	a) Inform work towards reducing the contribution of scallop fisheries to climate change.	To be progressed.
8.2	Assess impacts of seasonal closures in	a) Evaluate whether rotational closures (such as fishing during only the most productive half of the	<ul style="list-style-type: none"> <li>Comparative study between carbon footprint of fishing year-round, and carbon footprint of fishing around seasonal closures.</li> </ul>

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Reference	Research need	Description of activities and overall aim(s)	Progress
	terms of carbon footprint.	year) reduce the overall carbon footprint of the fishery by improving catch efficiency.	
<b>8.3</b>	Reviewing the indirect impacts of climate change on scallop fisheries (for example toxic diatom blooms).	a) Undertake research to facilitate preparation/adaptation of scallop fisheries to climate change.	To be progressed.
<b>8.4</b>	Investigate impacts of climate change on species distribution and fishing opportunity.	a) Undertake research to facilitate preparation/adaptation of scallop fisheries to climate change.	To be progressed.
<b>8.5</b>	Assess the (ecological, economic, and social) impacts	a) Undertake research to facilitate preparation/adaptation of scallop fisheries to climate change.	To be progressed.

Annex 2: Research plan for king scallops

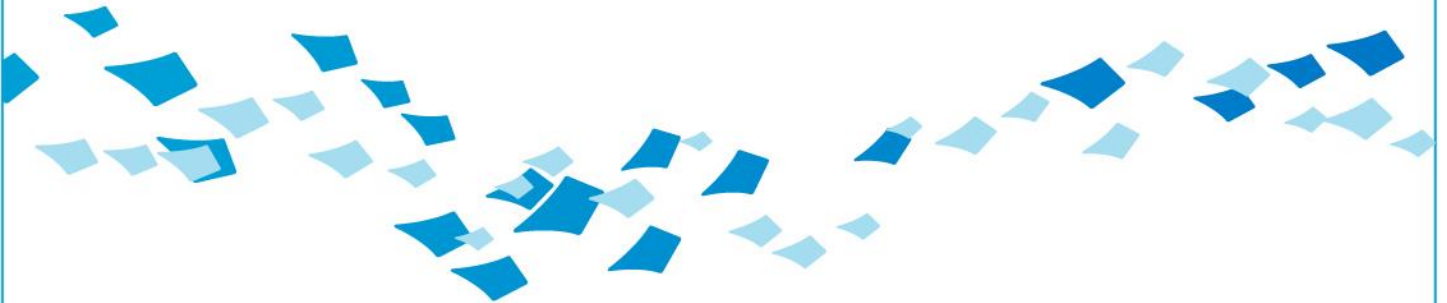
Reference	Research need	Description of activities and overall aim(s)	Progress
	of ocean acidification on scallop fisheries in the UK.		



Here to give the UK seafood sector  
the support it needs to thrive.



# King Scallop Fisheries Management Plan Stakeholder Engagement Report



Written by Seafish on behalf of the Scallop Industry  
Consultation Group Working Group.

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*November 2022*

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## 1. Summary

This report presents a summary of stakeholder feedback gathered Seafish for the Scallop Industry Consultation Group Working Group (SICGWG) from informal stakeholder engagement activities delivered to develop the draft King Scallop FMP for England and Wales. The report summarises feedback gathered from stakeholders at in-person events in England and Wales; from online events targeted England, Wales, and Northern Ireland; and from emails and letters send directly to the dedicated Seafish FMP inbox. The purpose of the report is to provide a summary of feedback which the SICGWG can use to refine FMP content.

The King Scallop FMP is part of Defra and Welsh Government's 'fronrunner phase' for FMP development in England and Wales and the first to undertake informal stakeholder engagement activities to support development of the draft plan.

Between September and November 2022 inclusive, Seafish and the SICGWG hosted a series of in-person and online events as part of informal engagement to:

- Raise awareness about development of the king scallop FMP for English and Welsh waters amongst stakeholders, and;
- Present draft FMP aims, objectives, and proposed management intervention to stakeholders in order to gather feedback to determine whether they are fit for purpose and set the right direction of travel for English and Welsh king scallop fisheries.

This report was compiled by Seafish based on information gathered through the stakeholder engagement events and is presented to the SICGWG for the group to review and action as appropriate.

Meeting notes for each individual engagement event are presented in Annex 1.

## 2. Overview

### 2.1 Attendance and representation

In total 239 stakeholders attended the events hosted by Seafish and the SICGWG as summarised in table 1. This included representation from the catching sector (individual fishers, producer organisations, and associations, and scallop divers), processors, Inshore Fisheries and Conservation Authorities (IFCAs), non-governmental organisations (NGOs), and scientific researchers. The 'other' column in table 1 includes private individuals. Some stakeholders opted to attend more than one meeting meaning there is some duplication in total numbers of individual attendees presented in table 1.

In table 1, the column named 'SICGWG presenters' includes the chair, industry representative presenting on behalf of the SICGWG, and Seafish representative presenting the overarching FMP timetable and taking meeting notes.

It should also be noted that some attendees opted did not sign the attendance register or fill in all requested information (e.g. business) and this is reflected in both total attendance record and in individual meeting notes presented in annex 1.

Table 1: Summary of attendance, by sector, at SICGWG King Scallop FMP engagement events, September - November 2022

Event location and date	Format	SICGWG	Industry	Government /	NGO	Other*	Total
		presenters		public body /			
				research			
SICG Edinburgh (8 <sup>th</sup> Sep)	Hybrid	3	17	16			36
Shoreham-by-Sea (27 <sup>th</sup> Sep)	In-person	3	9	1			13
Brixham (5 <sup>th</sup> Oct)	In-person	3	17	2			22
Plymouth (6 <sup>th</sup> Oct)	In-person	3	7	3			13
Western Channel event (11 <sup>th</sup> Oct)	Online	3	12	7			22
Hartlepool (13 <sup>th</sup> Oct)	In-person	3	3	5			11
Eastern Channel event (19 <sup>th</sup> Oct)	Online	2	3	6	2		13
Bangor, Wales (18 <sup>th</sup> Oct)	In-person	3	2	6	1	1	13
North Sea event (27 <sup>th</sup> Oct)	Online	3	7	11	1		22
Kirkcudbright (2 <sup>nd</sup> Nov)	In-person	3	5	2			10
Peterhead (3 <sup>rd</sup> Nov)	In-person	3	11	2			16
Wider stakeholders' event (9 <sup>th</sup> Nov)	Online	3	10	10	4		27
Irish Sea / Celtic Sea / Wales event (9 <sup>th</sup> Nov)	Online	3	8	8	2		21
	<b>Total</b>	<b>38</b>	<b>111</b>	<b>79</b>	<b>10</b>	<b>1</b>	<b>239</b>

## 2.2 Event format

The SICGWG delivered a mix of in-person and online stakeholder engagement events to ensure as many stakeholders as possible had the opportunity to discuss and provide feedback on draft FMP aims and objectives; proposed management intervention; and the evidence supporting these.

Locations of in-person events were initially proposed based on MMO landings figures for king scallops as an indication of fleet activity and local importance. Industry insight and advice was provided by SICGWG members to finalise the list of venues so that events were held in areas where industry attendance and interest in the FMP was likely to be highest. Venues were selected at central locations to ensure that stakeholders were able to travel from neighbouring ports to attend in-person events.

Although the scope of the FMP is limited to English and Welsh waters, in-person engagement events were held in England, Wales, and Scotland; this approach reflects the fact stakeholders around the UK have an interest in English and Welsh king scallop fisheries through both nomadic scallop fishing vessels and processors using raw materials harvested from waters remote to their sites.

Five online events were held using Microsoft Teams to broaden the reach of engagement activities beyond the ports selected for in-person events. Online events were based on sea area (e.g. North Sea) to allow the SICGWG to discuss area-specific issues with attendees, however online events were open to all stakeholders with an interest in the FMP, regardless of their location. On 9<sup>th</sup> November a general 'wider stakeholders' event was hosted to capture feedback from any groups or sectors, including NGOs and academic researchers.

In-person and online events comprised of:

- An overview of the legislation background to the FMP project and development process, delivered by Defra (and Welsh Government in Welsh events) members of the SICGWG;
- An overview of the king scallop FMP development time and milestones, delivered by Seafish, and;
- An overview of the draft aims and objectives of the FMP as agreed by the SICGWG, actions that need to be taken to achieve the objectives of the FMP and proposed initial management intervention (TAC) for the king scallop fishery in England and Wales, delivered by industry representatives of the SICGWG.

After presentation of both the aims and objectives, and the proposed management intervention, meeting chairs facilitated open discussion and feedback from attendees focused on the following questions:

- Are proposed FMP aims and objectives appropriate for the English and Welsh King scallop fisheries – if not, what alternatives would you suggest and why?
- Will proposed objectives deliver the aims of the FMP – if not, why not? What alternatives should the SICGWG consider or explore?
- Is the proposed management intervention for the King scallop FMP appropriate – if not, why not?
- What alternatives should the SICGWG consider or explore and what evidence should be taken into account in supporting alternative proposals?

A dedicated FMP email inbox, hosted by Seafish, was made available for attendees to share further thoughts and feedback on the FMP. This report summarises

information gathered via email between the Shoreham event on 27<sup>th</sup> September and the completion of the draft report on 18<sup>th</sup> November. Information was received from individual businesses / vessel owners, industry associations, and consortia of seafood businesses and producer organisations. The email inbox will remain live and further feedback received through this channel will be passed to the SICGWWG.

## 2.3 Promotion of events

Promotion of stakeholder engagement events was achieved through:

- Direct communication with stakeholders, including:
  - Email correspondence via the Scallop Industry Consultation Group (SICG) and SICGWWG, Shellfish Industry Advisory Group (SIAG), with members asked to help pass on information to colleagues, peers, association / organisation members
  - Social media content shared through Seafish channels
  - Email correspondence via the Defra FMP Comms & Engagement Group
  - Email correspondence via IFCAs, Regional Fisheries Groups, and the Future of Inshore Fisheries (FOIF) mailing list
  - Circulation through Seafish alerts and newsletters
  - Email correspondence to all stakeholders who registered an interest in the scallop FMP via a dedicated email address which was included in all promotional materials
  - Circulation of online event joining details to individuals who had attended in-person events and provided contact details
  - Direct communication with the eNGO community via Defra's eNGO group
- Publication of two articles in the trade newspaper Fishing News – one by SICG Chair Jim Portus and one by Seafish / Defra comms – including background information to the FMP process and dates for all king scallop FMP engagement events

## 3. Summary of notes from King Scallop FMP engagement events

### 3.1 Overview of the FMP development process

Defra and / or Welsh Government representatives from the SICGWWG presented an overview of the FMP development process, detailing legislative changes leading to the development of FMPs, concepts of collaborative management, and the selection of the king scallop FMP as a 'fronrunner' plan in England and Wales.

### 3.2 Feedback on the FMP development process

General feedback on the development process for the king scallop FMP is presented below:

- Unanimous support for the formalisation of an effective system of collaborative management in which the industry and regulators work more closely together. Importance was placed on the co-management structure being enshrined in the FMP

to ensure longevity. There is a need to look at case studies of where fishery co-management has been successful / unsuccessful to learn lessons from these examples. Attendees stressed the need for transparency throughout the co-management process and, at the SICG meeting, cited 'three pillars' of effective co-management: participation, transparency, and deliverability.

- Attendees at several meetings, and via email correspondence, raised concerns about the ambitious timeline for development of the FMP and questioned if the timeline allowed for sufficient engagement with stakeholders, particularly given the significant changes that could arise as a result of FMPs.
- There was a lack of clarity around 'legislative hierarchy', i.e. how the FMP will interact with other legislation such as IFCA bylaws, the Trade & Cooperation Agreement, and Multi-year Strategies. There was a perceived risk that the FMP could make the management landscape more complex, more difficult for fishermen to abide by rules, and make enforcement more difficult.
- There is a need to define key terms, such as '*well managed fisheries*' so that it is clear exactly what the FMP aims to achieve.
- Attendees asked how the FMP will align with other government legislation, such as the UK net-zero strategy and carbon plans.
- Concern was raised about setting the 'direction of travel' for king scallop fisheries without definitive evidence or consensus on decisions amongst stakeholders as this could be difficult / impossible to overturn in the future if set as a principle at the outset.

### 3.3 Overview of FMP aims and objectives

Representatives of the SICGWG presented the first draft of proposed aims and objectives for the king scallop FMP. The proposal sets out an overarching vision ("*Contribute to sustainable and well managed UK king scallop fisheries*") and three objectives as follows:

- Deliver biological, social, and economic sustainability;
- Deliver effective fisheries management of English and Welsh fisheries applicable to all fishing vessels, and;
- Deliver effective management that contributes to ecosystem functionality.

Objectives are further divided into a series of sub-objectives identified by the SICGWG as areas of work that should be taken forward. The purpose of this presentation was to show the proposed direction of travel for king scallop fisheries in England and Wales and show how the SICGWG had developed the work to date. Open discussion was invited on the draft content with a focus on determining the appropriateness of proposal.

### 3.4 Feedback on draft FMP aims and objectives

Draft FMP aims and objectives were widely agreed to be sensible and appropriate in the English and Welsh king scallop fishery context. Feedback from attendees at all events was largely positive with minor points of clarification or amendment sought on the more detailed sub-objectives, for example:



- All objectives have the same weighting in terms of importance to the fishery, but actions must be prioritised as some issues are more pressing than others, for example implementing appropriate management measures to protect stocks should take precedence over actions to promote consumption. Objectives and actions should be phased to reflect relative importance. In meetings where this was discussed in detail actions 1.1 (Develop a robust evidence base) and 2.1 (Develop a harvest strategy and harvest control rules) were considered highest priority.
- Clarification around the use of the term 'bioeconomic' sustainability and how this is defined;
- Given that the king scallop FMP is a joint plan between England and Wales, attendees questioned how disagreements could be resolved if the administrations have different opinions on delivery or implementation of the FMP.
- Suggested additional considerations for specific sub-objectives, including:
  - Efforts to improve efficiency should not put additional pressure on stocks;
  - Gear regulations should be reviewed as part of efforts to improve efficiency to allow and incentivise innovation in the catching sector;
  - Careful consideration of where objectives should state 'UK' fisheries as opposed to 'English and Welsh' fisheries;
  - Importance of stating in the objectives that changes and improvements should be made only 'where necessary';
  - The need for the FMP to set targets for fishing pressure and stock biomass, timeframes for improvement; and detail what management options are available if these targets are not met;
  - Expand on improved data collection with a focus on transparency and accountability, as well as the role that new technologies such as remote electronic monitoring (REM) can play.
  - No specific objectives are included in the draft relating to support for English and Welsh coastal communities.

### 3.5 Overview of proposed management intervention

Representatives of the SICGWG's FMP drafting group presented the single proposed management option of setting a total allowable catch (TAC) for king scallop fisheries in English and Welsh waters. Representatives of the SICGWG presenting at events stated that the proposal of a TAC is based on a combination of evidence including:

- SICG proposed management interventions study 2019;
- Cefas report 'Management options for UK scallop fisheries' 2020;
- Case studies of global scallop fisheries;
- Project UK FIP recommendations;
- Trade and Co-operation Agreement considerations (setting of tonnage limits for NQS);
- Outputs of the UK Scallop Conference 2019, and;
- Recommendations from the newly formed Scallop Science Group.

The SICGWG acknowledged that the proposal of a TAC would not work alone. Representatives of the SICGWG presenting the proposal acknowledged that complimentary measures would need to be applied alongside a TAC to minimise fishing mortality and environmental impact.



Other SICGWG members suggested that a TAC is not a proven path for scallop management in the UK and that the evaluation of other stock reactive effort-based management measures, complemented by seasonal closures and gear restrictions would be a more equitable way to manage the fishery and far easier to operate within the TCA restrictions (more information presented on other management considerations in section 3.8).

Although presentations from the SICGWG detailed the process through which a TAC was selected as a possible management option for further consideration, at some events there were questions around why a single proposal was tabled at stakeholder engagement events for discussion as opposed to number of options. Some SICGWG members disagreed with the interpretation of evidence cited in support of TACs and raised other UK specific scallop management regimes as being appropriate for further appraisal.

### **3.6 Feedback on proposed management interventions**

A single management intervention (TAC) was proposed and presented at these stakeholder engagement meetings. The proposal of a TAC divided stakeholder opinion and a more detailed summary of points raised by stakeholders both in support of, and against, the proposal of a TAC for king scallop fisheries in English and Welsh waters is presented in section 3.7.

There was a perception amongst many attendees that the proposal of a TAC was synonymous with an ITQ. Representatives of the SICGWG presenting the proposal stressed that the proposal was *not* for an ITQ however this interpretation was a contributing factor in the feedback received on the proposal of a TAC, as summarised in section 3.7.

At most meetings it was agreed that the status quo of king scallop fishery management in England and Wales was not appropriate and that management changes are required to deliver long-term stock and environmental sustainability and economic viability of the industry.

Attendees were asked to provide feedback on the proposal of a TAC and to identify alternatives that should be further considered or explored by the SICGWG and to provide evidence in support of these proposals.

Key themes emerging from discussion on management interventions are summarised below:

#### **Divergent opinions on TACs**

Feedback gathered on the proposal of introducing a TAC for king scallop fisheries was mixed and no consensus was reached in these meetings. Predominantly Scottish-owned, larger, often nomadic, full-time scallop vessels expressed more support for the proposal of a TAC. Owners and operators of different vessel sizes based in the English Channel were against the proposal of a TAC. Attendees against

the proposal of a TAC favoured alternate stock reactive effort-based management system (e.g. days at sea limits), spatial or seasonal measures, gear restrictions to harmonise with Marine Scotland or a combination of these measures. Some attendees against the proposal of a TAC were in favour of a 'scientifically based catch limit' for king scallop fisheries.

Stakeholders in Peterhead, Kirkcudbright, Hartlepool, and Bangor were mostly in favour of the proposal of a TAC; stakeholders in Shoreham, Brixham, and Plymouth were mostly against the proposal of a TAC. Non-industry attendees (e.g. NGOs), though relatively few in number, seemed to broadly support the proposal of TACs though did so on the basis that other spatial, temporal or effort-based measures would be applied alongside catch limits.

Stakeholders in Shoreham, Brixham, Plymouth, Kirkcudbright, Peterhead and in 3 of the online events have raised concerns of how the management of NQS through the Trade and Cooperation Agreement will affect the king scallop FMP, particularly if a TAC was to be implemented in English and Welsh waters.

### **Acknowledgement that a 'one size fits all' approach won't work**

Across all events there was agreement that a one size fits all approach will not work for king scallop fisheries. This was primarily related to vessel size (boats working in specific local areas compared to larger, nomadic vessels fishing around the coast) and comments were gathered on:

- Varying economic needs between different vessel sizes and the need to remain economically viable;
- Full time vs. seasonal scallopers and the ability (or inability or choice) of vessels to move between sectors in response to catches, economics, or available fishing opportunities;
- Existing management measures such as spatial restrictions in different parts of the UK EEZ, as well as closures in EU waters which can drive displacement of effort to UK waters;
- Seasonality and local market preferences.

Attendees agreed that future management of king scallop fisheries should be equitable in design, effective in nature, and safeguard king scallop stocks. Management should encompass all vessel sizes, from all nations, and incorporate all commercially harvested king scallops in English and Welsh waters.

### **Concerns regarding industry consolidation**

Some stakeholders raised concerns around the risk of consolidation of the sector because of management changes, this was particularly raised as a concern in discussing the proposal of a TAC. There was a general sentiment amongst those against the proposal of a TAC that a king scallop TAC would lead to consolidation of quota / fishing opportunities and that allocation would be inequitable due to historical landings records, and that they would be 'priced out' of the fishery.

It was noted in several meetings that TAC is often interpreted as an individual transferable quota (ITQ) as used in whitefish fisheries and this led to concerns about transfer and consolidation of quota / fishing opportunities; attendees stated that a '*scientifically assessed cap*' on landings would be a more appropriate term. However, some attendees felt that regardless of terminology, the use of a limit on scallop catch could cause issues due to potential conflict with tonnage limits set through the TCA.

Examples exist in other countries (e.g. Norway and New Zealand) where safeguards have been implemented alongside TACs to prevent consolidation and such complimentary measures should be reviewed by the SICGWG.

### **Discussion on equitable allocation of fishing opportunities**

Ensuring equitable allocation of fishing opportunities determined by future management measures, such as tonnages or days at sea limits, was a key theme through all meetings. This should acknowledge diversity of the fleet in terms of location, vessel size, patterns of fishing activity (e.g. inshore / offshore fisheries and existing seasonal / spatial closures), and the different needs of full time and seasonal scallopers.

Concerns were raised in some meetings and via correspondence that any track record-based allocation of fishing opportunities would benefit full-time scallopers and could disadvantage seasonal scallopers.

Attendees acknowledged that introduction of any management measures should consider protections for smaller scale, inshore, and community fleets.

### **Widespread desire for harmonisation of technical measures**

Regardless of management options discussed, there was widespread support for the harmonisation of management measures around England and Wales (and other adjacent administrations outside of the scope of the FMP) to make the management landscape less complex. There were suggestions that efforts to harmonise management should also consider a review IFCA bylaws. Stakeholders specifically cited differences in regulations on maximum dredge numbers, ring sizes, and tooth spacing between different administrations as a challenge and as a driver of displacement. It was noted that the application of different technical measures may be required on a stock-by-stock basis, and as such any efforts to harmonise management measures must be carefully assessed to understand the likely impact of changes.

## **3.7 Summary of feedback in support and against setting a TAC for king scallop fisheries**

Feedback **in support** of a TAC:

- Current Western Waters effort regime (WWER) for vessels over 15m in length does not currently restrict fishing effort. Uptake of effort is lower than the limits set meaning that vessels can exert more effort and stocks are unprotected, although this situation is likely to change in 2023 due to the EU waters closure to scallop fishing for 4.5 months, which is likely to displace UK nomadic vessels back into UK waters and therefore increase effort uptake. SICGWG representatives and attendees acknowledged that a TAC alone does not limit fishing effort.
- Current WWER is based on historical fishing activity rather than biological limits and are not responsive to changes in stock status.
- TACs can be set in line with scientific advice and can respond to changes in stock status.
- TACs can be stock specific and as such can be used to effectively manage effort on individual stocks based on their status.
- TACs afford fishermen to focus on innovating to reduce costs and improve quality of products, optimising economic return from the resource.
- TACs incentivise vessel owners to improve efficiency and selectivity, though this would be subject to enacting suitable changes to gear specifications in legislation to allow for changes. Improved efficiency would in turn reduce the impact of scallop dredging on the marine environment by reducing time spent at sea.
- TACs would provide vessel owners and seafood businesses with stability in fishing opportunities.
- The Trade and Cooperation Agreement between the UK and EU establishes a tonnage limit for non-quota stocks, this will dictate what UK vessels can catch in EU waters and vice versa, alignment between management regimes (both using tonnage) might be more straightforward for the catching sector.
- TACs can be applied in a way that is equitable to different sectors, i.e. output controls can be set in a way that allows different sized vessels to catch different amounts of king scallops to remain economically viable.
- There are examples from other countries where safeguards have been introduced alongside TACs to prevent consolidation, including Norway and New Zealand, and this could be achieved in the UK.
- Effort based systems can encourage fishermen to go to sea in adverse weather conditions to 'utilise every day available'.

#### Feedback **against** a TAC:

- TACs can lead to consolidation within the industry, i.e. accumulation by larger operators.
- TACs favour large operators and will disproportionately impact smaller vessels and coastal communities.
- Focus on a TAC overlooks management measures in place around the UK which are already working and delivering fisheries at MSY, e.g. effort restrictions, seasonal closures (mandatory or voluntary / seasonal).
- Allocation of a TAC would be unfair and would disproportionately impact some operators over others.
- TACs can become a 'target' rather than an upper limit leading to the unintended consequence of increased fishing effort if parts of the sector increase effort to reach the 'target'.
- Setting a TAC based on historical stock assessments is no more accurate than setting effort-based limits based on historical records of fishing effort.
- TACs do not protect stocks during spawning seasons.

- Lack of clarity on how a TAC would be applied to EU vessels fishing in UK waters and how the FMP will interact with the TCA. The TCA already sets a global tonnage limit on EU vessels' catches of NQS from UK waters, however the tonnage limit is not split by species. Attendees were concerned that this could lead to EU vessels unilaterally exceeding a TAC set for king scallop in UK waters.
- TACs could disincentivise efficiency improvements as fishers have their allocated share of the TAC.
- TACs are inflexible unless transfers or swaps are permitted, however allowing transfers will lead to consolidation.
- *N.b. some attendees and correspondents who were against the proposal of a TAC were in favour of stock reactive effort-based management, further information on effort-based management is presented in section 3.8.*

### 3.8 Additional management options proposed by stakeholders for consideration

Several formal letters were submitted to Seafish following stakeholder engagement events to provide a critique of proposals, this information is incorporated into the summarised feedback in section 3. One letter included an additional suite of management proposals for consideration by the SICGWG. The letter was signed by 16 individual stakeholders including vessel owners (single and multiple), processors, and producer's organisations.

A summary of the four key elements of the alternative management proposal is presented here:

1. **Stock assessment** – Continued assessment of king scallop stocks by Cefas in England and Bangor University in Wales to determine if current harvest rates, by stock, are appropriate. The SICG Project Steering Board (PSB) should serve as a forum for discussion of stock assessment outputs and make recommendations to the SICGWG to alter effort allocations or seasonal closures as required.
2. **Industry funding for science** – Application of an industry levy on scallops landed in the UK could be used to support stock assessment work. The levy could be administered by Seafish via processors and / or merchants. If possible, levies should be applied to all vessels catching scallops in UK waters.
3. **Managing fishing effort** – Setting area-based effort limits based on the previous year's assessed MSY harvest rate. This management approach would be responsive to changes in stock status and would allow fishing effort to be proactively managed in order to achieve targets. Allocation should then be discussed at SICG / SICGWG level. This measure is considered by co-signatories to deliver the same benefits as a TAC system and deliver the stated FMP aims and objectives, but with fewer negative consequences.
4. **Closed seasons** – Setting area-based seasonal closures based on stock life cycle, stock levels, risk of displacement, and regionally specific spatial and temporal scales. Examples of this type of spatial and temporal management already exist, for example in area 7.d where voluntary and mandatory closures are already in place.
5. **Harmonisation of technical measures** – This group is primarily concerned with harmonisation of maximum numbers of dredges permitted in different jurisdictions. Harmonised measures should be applied to all vessels fishing in English and Welsh

waters to ensure management is non-discriminatory, a prerequisite of the TCA. As part of this objective measures introduced in different IFCA jurisdictions should also be reviewed.

Signatories to the letter believe that the management proposal outlined above is more appropriate in the English and Welsh king scallop context because:

- Effort control can be set in line with scientific advice and can respond to changes in stock status.
- Effort can be stock specific and as such can be used to effectively and directly manage effort on individual stocks based on their status.
- Effort allocations afford fishermen to focus on innovating to reduce costs and improve quality of products, optimising economic return from the resource as days at sea are finite.
- Effort control incentivise vessel owners to improve efficiency and selectivity (i.e. reduce time spent at sea) which in turn reduces the impact of scallop dredging on the marine environment.
- Annual effort allocation would provide vessel owners and seafood businesses with stability.
- Effort allocation and spatial management can be applied in a way that is equitable to different sectors, i.e. input controls can be set in a way that allows equitable access to scallop stocks to remain economically viable.
- TAC systems can encourage fishermen to go to sea in adverse weather conditions to utilise available TAC as the period comes to an end.

## Annex 1: Individual notes from king scallop FMP engagement events

The meeting notes within Annex 1 reflect the views and comments provided by attendees at each event and therefore may not always be factually correct.

### 08.09.22 SICG Edinburgh

**Event:** Scallop Industry Consultation Group (SICG) meeting  
**Date:** 08-09-2022  
**Time:** 1000-1300  
**Location:** Edinburgh

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
SICG Edinburgh (8 <sup>th</sup> Sep)	Hybrid	3	17	16			36

#### Record of Discussions:

1. SICG members were reminded of their equal partnership and terms of reference in the SICG working group (SICG WG), which has been commissioned by Defra as delivery lead to collaboratively develop the king scallop fisheries management plan (FMP) for English and Welsh waters. Whilst other front-runner FMPs may focus mainly on stock sustainability, the king scallop FMP will take a holistic approach by addressing biological *and* socio-economic factors to ensure fishing practices can continue into the future.
2. It was highlighted that the FMP will apply to all vessels fishing within English and Welsh waters, setting out a suite of guiding principles for management which can be adapted to manage different sectors of the fleet.
3. Members were invited to comment on draft FMP aims and objectives and one potential direction of travel for a management intervention/Harvest Control Rule (HCRs). Following a review of evidence gathered across prior stakeholder discussions, members' focus was drawn to assessing whether total allowable catches (TACs) would be an appropriate tool for managing sustainability within scallop fisheries. Group members did not unanimously agree that a TAC was the most appropriate or only tool for managing English and Welsh king scallop stocks sustainably. Consensus was not reached on this issue.

#### Member's comments on FMP objectives and TAC proposals are summarised below:

4. It was questioned whether Rights-Based Management (RBM) had been considered as an option for managing scallop fisheries. Working group members clarified that whilst this had not yet been discussed in detail no management options are off the table. Marine Scotland have discussed RBM in the context of NQS fisheries and would be in favour of an output-based quota approach.



2. Members highlighted that we are now at a key point for determining tangible actions and conclusions regarding scallop fisheries management.
3. Members highlighted the change in position in that appropriate management measures have now been proposed by the working group. It was explained that HCRs have been proposed based on evidence gathered through a number of previous discussions and workshops, with the purpose of opening discussions around the pros and cons of such measures.
4. A key purpose of stakeholder engagement will be to ask stakeholders if they agree with the chosen direction of travel, prioritise management measures, focusing on identifying which management measures should be addressed as an immediate priority whilst longer term management is developed.
5. Questions around how latent capacity should be addressed to facilitate scallop fisheries management. Defra have carried out work to begin to understand the level of latent capacity but further consideration is needed as to its impact and whether it needs to be addressed (as a priority).
7. This will be an iterative process, and members highlighted that sharing of information and lessons learned from other shellfish front-runner FMPs will be facilitated through Seafish's role as delivery lead on the crab, lobster, and whelk FMPs, as well as Shellfish Industry Advisory Group acting as an umbrella group for other species specific shellfish groups. Regular meetings between Defra colleagues and delivery leads also provide a forum for feedback and review.
8. Recognition that there will be factors that the FMP is unable to control, such as any future regulations brought in by the EU, and management should remain flexible and adaptable to account for such factors.
9. Regarding environmental impact assessments, the Joint Nature Conservation Committee (JNCC) and Natural England (NE) will provide conservation advice identifying any impacts of scallop fishing on marine habitats which are sufficiently high risk that mitigating management measures should be included within the first iteration of the FMP.
10. Members questioned how potential conflicts or disagreements of the direction of travel will be resolved through the process of FMP development and delivery. It was highlighted that the two FAs which have commissioned this FMP (Defra and Welsh Government) are closely involved in the FMP development process, therefore reducing the risk of conflicting views on FMP content once we reach the sign-off stage. Members highlighted the importance of transparency within the SICGWG and drafting group structure and clarifying and agreeing how we define co-management in this context.
- 11 Members noted that the setting of a formal new TAC will have implications within the BREXIT TCA.



## 27.09.22 Shoreham-by-Sea

**Event:** SE King Scallop FMP Stakeholder engagement in-person meeting  
**Date:** 27-09-2022  
**Time:** 1700-1900  
**Location:** Shoreham-by-sea, The Gather Inn

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Shoreham-by-Sea (27 <sup>th</sup> Sep)	In-person	3	9	1			13

### Record of Discussion:

#### **General comments:**

1. Attendees questioned the ambitious timeline of FMP delivery, with concerns raised around whether there is sufficient time remaining to deliver a well-considered FMP. WG members reminded attendees that this is an iterative process, and the first version of the FMP will set out a 'direction of travel' for management of English and Welsh scallop stocks which can be improved and built upon in future as more evidence becomes available.
2. Questions were raised around how the (English and Welsh) king scallop FMP will be harmonised with its Scottish counterpart. Attendees were advised that the Scottish government are currently prioritising whitefish FMPs, thus Marine Scotland have not directly engaged with frontrunner shellfish FMPs. The SICG WG are in communication with Marine Scotland, who may adopt elements from this FMP when they come to develop their own for Scottish waters.
3. As many attendees were viewing proposed objectives and HCRs for the first time at this meeting, there was a request that stakeholders present at this meeting should have a further opportunity to feed into the development of the king scallop FMP.
4. Attendees questioned why only Total Allowable Catch (TAC) has been proposed by the SICG working group as the principle management intervention for English and Welsh scallop fisheries, and non-SICG members requested to view additional information on the eight management options discussed by the SICG in 2019.

#### **Are proposed FMP aims and objectives appropriate for the English and Welsh King scallop fisheries – if not, what alternatives would you suggest and why?:**

5. General agreement that draft aims and objectives are 'sensible and logical', and set a good foundation for environmentally and socio-economically sustainable scallop fisheries.
6. Attendees highlighted that the detail of how these high level objectives are achieved will require careful consideration.
7. Acknowledgment that the incompatibility of the different modes of fishing is going to make addressing the social and economic elements of the fisheries difficult.

***Is the proposed management intervention for the King scallop FMP appropriate – if not, why not?:***

8. Agreement that a 'one size fits all' approach to scallop fisheries management will not work, and that effort controls could be tailored to different fishing areas and sectors of the fleet to achieve sustainable evidence-based fisheries management.
9. The FMP's management proposals should acknowledge that different sectors of the fleet fish in different ways. For example:
  - a. Some U10s continue to fish for scallops into summer months (outside of 6 nm when inshore closures are active) in order to maintain profitability.
  - b. Smaller vessels often have the capability to change gear and diversify during closures whilst larger vessels may not have this option.
  - c. There is little difference in the amount of weather which can be worked by ~10-14 m vessels, whilst vessels >15 m are typically able to fish more days of the year.
  - d. When defining different sectors of the fleet the FMP should also account for vessel *capacity*, e.g. "monster U10s" with >14 dredges a side.
10. There is a need to remain mindful of any scallop fishery management implemented in EU waters. For example the planned 5 month closure of EU waters to all scallop fisheries from 15<sup>th</sup> May 2023 will likely cause displacement of vessels into UK waters.
11. Attendees were asked whether they agreed that implementation of a TAC for English and Welsh king scallop fisheries was the appropriate direction of travel, the majority of industry attendees disagreed with this proposal, with suggestions that there is insufficient evidence to support this approach in the context of English and Welsh scallop fisheries.
12. Discussions were held around why TACs might not be an appropriate way to manage English and Welsh scallop fisheries:
  - a. Questions raised around whether the UK has the capability to enforce individual TACs on EU vessels in UK waters with regards to the global NQS tonnage limit as per the TCA. It was highlighted that the TCA (and MYST's) should not be seen as a road-block to FMP development, with the NQS global tonnage seen as a temporary solution to be renegotiated in 2026.
  - b. Concerns raised that quota allocation would 'cut the pie too thinly'.
  - c. Wording of management proposal should be changed from "TAC" to "*scientifically assessed catch limit*".
  - d. Comments made about TACs only benefitting full time scallopers over others.
13. Many attendees raised concerns regarding the mention of ITQs as a management proposal within the slide pack. It was highlighted that the following questions will require answers in order to inform HCR development and discussions around reactive effort control:
  - a. How does devolution prescribe that quota should be allocated across the DAs?
  - b. Will allocation of quota be based on track record, and if so how can equitable access be ensured across those adopting a seasonal fishing pattern compared to those preferring to fish year round?
  - c. What are our options for allocating TAC across the fleet?
  - d. How will stakeholders be able to feed in their views on how TACs could be managed and implemented?

***What alternatives should the SICGWG consider or explore and what evidence should be taken into account in supporting alternative proposals?***

14. Attendees highlighted that the English 7D scallop fishery had been seasonally fished for only 6 winter months for over 4 decades. This ensures that scallop are not targeted during their spawning period, and offers the fisheries a rest bite during the summer months, when vessels typically go beaming.
15. Industry attendees consider that this fishing practice has safeguarded the Eastern Channel scallop stock, and therefore suggested that any future management structure should be 'respectful' of the long term fishing pattern in this area.
16. Attendees suggested that future management of English and Welsh scallop fisheries could build upon the eastern English Channel's current management model, enhancing the long established system of seasonal closures to ensure that effort management is agile and responsive to trends in stock status:
  - a. Management of scallop fisheries outside of 6 nm<sup>1</sup> could draw upon management within 3-6 nm zone, where fishers in the eastern Channel have experienced a consistently productive scallop fishery over a number of decades. This was largely attributed to IFCA regulated fishery closures within the 3-6 nm zone for 6 months over summer (~May-September). This has the dual advantage of allowing stocks to recover over summer when meat quality / yield is poor, and scallops are roe-less, whilst fishers maintain profitability by fishing when prices are highest over winter.
  - b. The "good news story" of management based on seasonal area closures in the eastern Channel should be considered as a case study for a viable management model. In the English Channel, Cefas stock assessments are showing that the majority<sup>2</sup> of scallop assessment areas are already fished at a harvest rate below MSY Candidate Harvest Rate (%).
  - c. Questions were raised around:
    - i. Whether we need to move towards a TAC-based management regime considering the proven long-term success of seasonal closures and effort restrictions in protecting and restoring English Channel scallop fisheries.
    - ii. Whether seasonal closures would be effective in all areas.
17. It was suggested that current effort management<sup>3</sup> measures could be built upon to develop an appropriate evidence-based management regime for English and Welsh scallop stocks:
  - a. At present, entrants into English and Welsh scallop fisheries are controlled using effort management<sup>3</sup>, closed seasons and technical conservation measures, with evidence from eastern English Channel stock assessments suggesting stocks in this region have increased in stability under such a management regime.
  - b. This suite of management measures could be extended to encompass all sectors of the fleet in all sea areas, and be enhanced to ensure they are responsive to trends in stock status.
  - c. This may require some degree of tailoring for different sectors of the fleet, e.g. using hours at sea maybe more appropriate to moderate effort of U10s.

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<sup>1</sup> Some fishers consider the scallop fishery outside of 6 nm in the eastern Channel notably less productive in comparison to the 3-6 nm fishery. It was suggested that this may be due to the shorter (2 month) closure.

<sup>2</sup> 3 out of 4 English Channel assessment areas are fished at a harvest rate below MSY, with only the exception of 27.7.e.L in the western Channel.

<sup>3</sup> The Western Waters Effort Regime (WWER) details a days at sea based approach to managing the over 15 metre Area VII scallop (and crab) fishing sector.

- d. Effort management could be 'future proofed' by monitoring the Cefas annual scallop stock assessment to determine whether stocks are being fished at levels achieving MSY. If catches are too high, a suite of responsive management measures could be enforced to reduce effort on the stock (e.g. longer area closures, reduced 'days at sea' whilst fishery is open, gear limits etc.)

## 05.10.22 Brixham

**Event:** Brixham King Scallop FMP Stakeholder engagement in-person meeting  
**Date:** 05-10-2022  
**Time:** 1000-1200  
**Location:** BTA Training Room, The New Fish Quay, Brixham, TQ5 8AW

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Brixham (5 <sup>th</sup> Oct)	In-person	3	17	2			22

### Record of Discussion:

#### ***Feedback on the FMP development process***

1. Defra provided information on the iterative approach to FMPs noting that this is the first iteration of the king scallop FMP and there may be a need to revise the plan in the future. Attendees discussed the role of the SICGWG as a co-owner of the FMP and how the plan would be amended as required and whether this would require additional stakeholder engagement and / or public consultation.
2. The plan will apply to all removals of king scallops from English and Welsh waters so there is a need for meaningful engagement with scallop divers.
3. More information is required on how the FMP will interact with other legislation, e.g. the IFCA bylaws, other FMPs, the Trade and Co-operation Agreement, and Multi-year Strategies. IFCA bylaws already exist in the area limiting vessels to 12 hours of fishing per day and mandatory closed seasons; attendees questioned how much more management is required when vessel owners already feel pressured and how lessons can be learned from IFCA jurisdictions that could be applied nationally or in other regions. It was noted that it is not the intention of the FMP to repeal / replace IFCA bylaws. The king scallop FMP is a joint English-Welsh plan and Wales does not have IFCA bylaws or inshore bylaws.
4. Attendees saw the FMP as an opportunity to harmonise regulations and introduce management measures at a national 'base level', whereby local regulators, e.g. IFCA, could apply more stringent measures but could not undermine the FMP.
5. Existing scallop fishery management is complex and the FMP should aim to simplify the process. Fishermen are presented with too much information and a fragmented management landscape (different IFCA bylaws, mandatory and voluntary closures, competition for space with other users).
6. Specific concerns around the need for a system to allow for new entrants was raised by one of the younger attendees in the room
7. Question was raised around the potential for a decommissioning scheme to reduce the impact on the fisheries

### **Overall Aims and Objectives**

8. Draft aims and objectives of the FMP were well received and agreed as appropriate for the king scallop fishery.
9. Spatial squeeze is a significant issue in the region and loss of fishing grounds has already led to a concentration of effort and, in some cases, diversification of vessels into other fisheries which can lead to unintended consequences. Objectives regarding spatial squeeze must take this into consideration.
10. Attendees encouraged regulators to look at the current economic state of the fishery, pressures including high fuel prices, high steel prices, and labour availability are already impacting the financial viability of many businesses. It is important that the FMP does not exacerbate these issues or add to the pressure felt by seafood businesses dependant on the king scallop fishery.
11. Following the Covid-2019 pandemic the 'bounce back' of the scallop fishery has been slowed due to issues in accessing EU markets (non-tariff barriers like transport documentation) and competition from French markets. These considerations should be factored into objectives around trade and business resilience.

### **Proposed management intervention - TAC**

12. Attendees discussed the use of terminology, both in the FMP and in other literature e.g. Cefas Management options for UK king scallops in Western Waters, 2020, around the need to 'improve the fishery'; however, current Cefas stock assessment shows that most king scallop stocks are already being exploited at MSY. The effectiveness of existing management regimes (combination of effort limits (DAS) and closed areas / seasons) to deliver these fisheries at MSY should be further explored and used to further inform the FMP's management intervention proposals.
13. Definition of a TAC is important: clarity is needed around exactly what is meant here as perceptions will vary depending on whether the group is discussing a scientifically assessed tonnage / cap on landings or a quota type allocation as used for some whitefish. If the proposal is for a scientifically assessed tonnage then there are ways other than a TAC of keeping within this limit.
14. Concerns were raised about the proposal of a TAC and attendees cited examples from other sectors, e.g. whitefish, where quotas are perceived to have led to consolidation of fishing opportunities by larger interests with the ability to purchase rights. Attendees felt that TACs disadvantage smaller operators and make it harder for new entrants to join the fishery as costs become prohibitive. These concerns were largely based on the perception of TACs as being synonymous with individual transferable quotas (ITQs).
15. Some attendees thought that a TAC could incentivise over-exploitation of king scallops by encouraging, spatial and temporal measures to restrict fishing activity during periods of poor product quality were seen as preferable.
16. Some attendees felt that there was no clear consensus for the selection of a single management intervention (TAC) to be proposed for the FMP; the 2019 SICG management proposals were intended to serve as a suite of possible measures, not a list of measures which should be applied in isolation. The SICGWG reiterated that the proposal of a TAC is not intended as an isolated intervention and that the group states that *"a TAC will not work alone, [and] further work is required to develop complimentary measures to accompany this intervention."*
17. King scallop fishing activity in English waters in particular is also influenced by EU legislation and the FMP should take this into account. For example, planned seasonal closures in the eastern Channel in 2023 will likely result in a displacement

of effort to English waters. The enforcement of tonnage limits via the TCA also presents a risk of displacement.

18. Attendees asked how management measures will apply to other métiers, e.g. beam trawlers, which land their bycatch of king scallops. The FMP must effectively manage all removals of king scallops and then manage each fishery proportionately.
19. Attendees asked if decommissioning in the UK was being discussed, particularly if there is a desire to reduce scallop fleet capacity. It was confirmed that decommissioning is not currently being discussed as part of the draft FMP.
20. Concerns were raised that giving different regions opportunities to change management regimes unilaterally could lead to a more complex and fragmented management landscape which would have a significant impact on nomadic vessels in particular. Attendees were in agreement that more harmonisation of management measures between different areas is required to make it easier for businesses to abide by the rules and for regulators to enforce the rules. There is not a 'one-size-fits-all' approach for king scallops but simplicity is key to ensuring that all stakeholders buy in to a single approach which applies to all vessels.
21. The interaction between the FMP and TCA was discussed, clarity is required around how the FMP could apply management measures to EU vessels operating in UK waters when the TCA already sets out a global tonnage limit for NQS catches by EU vessels in UK waters.
22. Attendees were specifically asked if they agreed with the TAC direction of travel and there was a unanimous "no" in response, attendees preferring to explore a reactive effort control system alongside closed seasons and Tech-Con measures.

## 6.10.22 Plymouth

**Event:** Plymouth King Scallop FMP Stakeholder engagement in-person meeting  
**Date:** 06-10-2022  
**Time:** 1000-1200  
**Location:** Auction Room, Fish Quay, Plymouth, PL4 0LH

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Plymouth (6 <sup>th</sup> Oct)	In-person	3	7	3			13

### Record of Discussion:

#### **Feedback on the FMP development process**

1. The small-scale, 'inshore' fleet is not well represented, and the diverse nature of the sector makes it difficult for smaller operators to engage effectively on issues like the development of FMPs. There is no single voice of the small-scale sector. There were concerns that fisheries policy often inadvertently undermines the small-scale sector as a result of poor engagement as regulators do not always have a full understanding of the bigger picture. As such, management discussions like the proposal of a TAC should be approached with caution.
2. Attendees sought clarity on how the Retained EU Law (Revocation and reform) Bill 2022 could impact the FMP development process.
3. More information is required on government priorities regarding small-scale fisheries and coastal communities vs. large-scale operators and businesses.
4. It is vital that the six Defra 'frontrunner' FMPs are not developed in isolation to ensure that objectives do not contradict each other. It was noted that Seafish is the delivery lead on the crab & lobster and whelk FMP. Defra has oversight of the other English FMPs and Defra / Welsh Government has oversight of the shared king scallop FMP.
5. The importance of consistent and meaningful engagement with industry in developing the FMP and the SICGWG was praised for bringing draft content to the table for review and to facilitate discussion.

#### **Overall Aims and Objectives**

6. Delivering the aims and objectives of the FMP is largely based on ensuring there is robust scientific evidence; there must be commitment from regulators and researchers to invest in long-term survey and stock assessment work. This will ensure that management decisions are based on the best available evidence. In some areas this will require a review of current survey methods, e.g. the survey vessel is currently unable to fish inside the D&SIFCA jurisdiction meaning data are unavailable for that area.
7. Objective 3.2 (Look at ways to address inefficiency in the scallop sector) should include exploration of technical measures to allow innovation in gear design to move away from the Newhaven dredge. This should allow for experimentation and gear



trials. However, it is important that any effort to increase efficiency only happens when there is effective management on removals of scallops and this should be captured in the environmental aspects of the FMP. Attendees discussed ongoing gear trials of different dredge designs at Bangor University but felt that legislation hinders innovation as only Newhaven dredges are allowed to be fished. It was suggested by attendees that any increase in efficiency should have a corresponding reduction in effort to protect stocks.

8. Objective 1.1 (Develop a robust evidence base) should also consider improving understanding of dredge efficiency both in terms of understanding effort and scientific research. Fishing efficiency is based on a number of factors including the vessel characteristics, skill of the skipper, and type of seabed. Any future management of the king scallop fishery is predicated on better understanding of dredge efficiency.

### ***Proposed management intervention - TAC***

9. Attendees questioned the need for better regulation of <10m vessels (slide 13); many of these vessels work inshore and are already heavily regulated by IFCA bylaws. The SICGWG highlighted the role of the FMP as a means of reviewing regulations to ensure that they are driving good management that delivers environmental, social, and economic benefits.
10. There was agreement that harmonisation of regulations is a good idea, not just between administrations but also in using the FMP to look at harmonisation between IFCA jurisdictions and attendees stressed the importance of having IFCA involvement throughout the FMP development process.
11. Concerns were raised about the proposal of a TAC with attendees citing the risk of consolidation of the industry and the associated impact on small, coastal communities as the key issue. Attendees felt that catch limits / quotas inherently attract a monetary value and become tradeable which leads to bigger industry interests accumulating fishing opportunities to the detriment of smaller operators and small communities.
12. A TAC is not the only way of delivering sustainable harvest, whilst attendees acknowledged the need for a scientifically assessed limit on removals, they felt that this could be achieved in other ways. For example, effort can be limited by DAS, vessel size, or maximum dredge numbers.
13. Impact of TACs on inshore communities needs careful consideration. Need to consider implications of allocation mechanism on the different sectors from a social and economic perspective.
14. Discussions around TACs can incentivise operators to increase effort to build a track record. If allocations are based on track records then effort will inevitably increase.
15. There are fundamental questions around how the FMP will interact with the tonnage-based system applied through the TCA.
16. Attendees asked how a TAC would be allocated at the devolved administration level. If each administration has to administer it's own TAC then they could have a disproportionate impact on the management of English and Welsh fisheries.
17. Concerns were raised that a TAC could disproportionately impact:
  - a. Smaller vessels with no alternative fisheries;
  - b. Larger, 'full-time' scallopers who cannot move between fisheries.
18. Under-10m vessels are already restricted by both weather and distance they are able to travel from ports and this should be considered when exploring better regulation of the small-scale sector.

19. Attendees were specifically asked if they agreed with the TAC direction of travel and there was a unanimous “no” in response, attendees preferring to explore a reactive effort control system alongside closed seasons and Tech-Con measures.
20. Question was asked about how well-managed inshore fisheries are managed globally. Inshore Canadian case study was mentioned, which is managed by a TAC
21. Questions raised from the IFCA about how they fit into all of this. It was explained to them that it was hoped they both feed into the process and take away stuff from the FMP given the FMP is ultimately looking to set a direction of travel for the fisheries in question.

## 11.10.22 Western Channel Online Event

**Event:** Western Channel King Scallop FMP Stakeholder engagement in-person meeting

**Date:** 11-10-2022

**Time:** 1400-1530

**Location:** Microsoft Teams

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Western Channel event (11 <sup>th</sup> Oct)	Online	3	12	7			22

\* **Note:** Slide detailing the 8 SICG management proposals was included after the Shoreham event, having taken onboard comments from attendees that it would be useful.

### Record of Discussion:

#### General comments:

1. Referring to the said statement: 'Are the proposed interventions appropriate?' and queried whether that should be in plural. Member states that it was meant in the plural, and this is referring to the 8 proposed management interventions that were put forward by the SICG.
  - a. They have picked out one of the suggested 8 proposed management interventions and this is the Total Allowable Catch (TAC).
2. The summary slide narrowed environment to biology and going onto talk about social and economic objectives but moving on from there 'social' was abandoned. The 'economic' was lightly touched on meaning that most of the focus is on the biology.
  - a. However, this does not encapsulate sustainable development.
  - b. Was the focus on 'biology' deliberately emphasised?
  - c. Where does 'social' fit into the objectives?
  - d. How do we go about addressing the redistribution of fishing opportunities to several fishing communities?
  - e. Does the draft FMP focus on the biological aspect of setting a management intervention and the socioeconomic factors are to be picked up on a later stage by DEFRA?
  - f. Member states that for the SICG WG the economic and social sustainability aspect of this FMP is very important. When putting together the science subgroup, there was a person dedicated to representing the economic and socioeconomic aspect.

2. Additionally, there was concern raised with the potentiality of a few companies and businesses owning the rights to fishing opportunities therefore there needs to be a greater focus on redistributing opportunities within the fishery.
3. Need to be mindful about going down a one-track management intervention route, since there are other management approaches that have evidence backing and are working in our waters.
4. There is a need for a formal definition for what a TAC is, whether that is a formal TAC similar to what exists in the finfish industry or a scientifically assessed safe catch limit. Members have stated that the wording around a TAC needs to be changed and given a formal definition.
5. The concern amongst some members is that when the draft FMP sets a direction, it is difficult to amend this through the iterative process of formalising an FMP. For example, if the idea of a TAC is taken forward as the main management intervention, this decision further down the timeline would be difficult to reverse.
  - a. Need to be careful and consider the evidence that is chosen to support the idea of TAC as a management intervention.
  - b. In the past there has been a negative experience of a single management approach in the Isle of Man. Where the lack of an evidence base meant no fishing for queen scallops from 2012 until 2020 (when a TAC of 557 tonnes was set). In March 2015, Isle of Man Queen Scallop licences were given out but no further licenses are currently being issued until the stock recovers to a level considered by the department.
6. In the Shoreham in person meeting, the 8 management interventions decided on by the SICG WG was not presented to the attendees.
7. If Defra is going to change the way in which fishing opportunities are distributed, what are the expected consequences of that decision? What is the legal position on this?
  - a. Need to gain clarification on the mentioned point of legal ownership of the FMP being with both English and Welsh governments but if there wasn't a consensus between the two bodies how does the iterative process continue?
  - b. Would the iterative process continue until a consensus is reached?
  - c. Would there be a resolution process?
  - d. What is the legal position within the TCA with regard to the creation of a new TAC species?
8. Is there an email address for skippers to get in contact and have their voices heard regarding the draft FMP? Members have stated that the fisheries management team at Seafish can be contacted regarding this at: [fisheriesmanagementplans@seafish.co.uk](mailto:fisheriesmanagementplans@seafish.co.uk)
9. There were mixed feelings with regard to the adoption of a scallop TAC.

## 13.10.22 Hartlepool

**Event:** Hartlepool King Scallop FMP Stakeholder engagement in-person meeting  
**Date:** 13-10-2022  
**Time:** 1700-1900  
**Location:** Hodgson Fish, Hartlepool

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Hartlepool (13 <sup>th</sup> Oct)	In-person	3	3	5			11

### Record of Discussion:

#### General comments:

1. Attendees questioned why Marine Scotland were not involved to which it was explained that Marine Scotland sit on the co-management group and as fisheries are devolved, they can decide themselves what they do. It was explained that the scope of the FMP is England and Wales, as Scottish Government have not prioritised a king scallop FMP, but would be keeping a close eye on what is being developed.
2. Attendees questioned why Defra did not step in with legislation in the late 90's/early 00's when scallop fishing was at its peak. Members of the SICG WG explained that now we have a defined timeline due to the FMP process, to bring management in. As Defra now have a statutory obligation to deliver the content of these FMPs, the best time for stakeholders to feedback and input into the process is now. Attendees were reassured that current management measures and legislation will not change overnight, and a great deal of consideration will be given as to how to introduce the FMPs.
3. Questions were raised as to how the FMPs will interact with IFCA permits, seasonal closures and curfews but as the detail of the FMPs is still yet to be decided, its important the SICG WG know what needs to be addressed.

#### **Are proposed FMP aims and objectives appropriate for the English and Welsh King scallop fisheries – if not, what alternatives would you suggest and why?:**

4. Agreement that a 'one size fits all' approach to scallop fisheries will not work and that measures must be kept regional, as the North Sea is totally different to the channel and the channel is different to Welsh waters etc. Ring sizes, tooth bar spacing etc are different region to region.
5. Ten years ago, Cardigan Bay had a very prolific fishery across the winter period for the small day boats, but this got closed for particular ecosystem measures and has never reopened. Attendees admitted concerns about objective 3, the "green" objective, and how the press may interpret this objective and proposed the WG tread very carefully with how they approach this objective. More positive press is needed

around scallop dredging and the acknowledgements and efforts of industry in bringing about greater ecosystem protection.

6. The Dogger Bank was raised as an area that needed management measures as it depressed the market and created much negative press, when all the processing sector needed to do was to regulate how much was being caught and how much factories would take at that time.
7. Points were raised around permits as a measure; whilst permits are good for those who can get them, those that can't are having to fish further offshore which is problematic for smaller vessels (weather, fishing alongside bigger boats). Smaller boats had difficulty obtaining inshore permits as they do not have a track record, so boats have been unable to diversify to scallops and fish local grounds whereas some are able to further down the coast (not consistent).
8. Rotational closures, across specified boxes, also mentioned during the above discussion as a measure that works well in some areas
9. It was agreed, management is needed, but it needs to be carried out carefully and this will be paramount to getting it right.
10. A good model for others to learn from in terms of scallop management and a sustainable fishery is the Scarborough fishery. Only 3 permits available for this fishery and works very well in terms of effort on the ground and what is being caught. If you go beyond the fishery, it's virtually barren. Permitting was felt to be a positive way to deliver sustainable fisheries
11. Cefas have carried out a stock assessment since 2016 in the North Sea and the Channel, which assesses the tonnage in the active scallop grounds and the grounds that are not open to scallop fishing. Defra are funding this and the data will feed into the FMP.

***Is the proposed management intervention for the King scallop FMP appropriate – if not, why not?:***

12. Total Allowable Catch (TAC):
  - a. Attendees agreed on the idea of a TAC, but it needs to be spread out over a period of time and the allocation has to be right.
  - b. Allocation is very important and the smaller boats need to be considered. In Hartlepool, nomadic boats fish and land if the catch is good (which encourages others to come) and move on when the catch drops. This results in little or nothing left for smaller boats outside the inshore area. Would take local (small) boats approx. a week to catch the same amount as a larger boat catches in a day.
  - c. Little and often means a higher market price and everyone does a little better out of it and reduces the chance of a 'boom-and-bust' fishery.
  - d. If TAC was put in place, then it needs to be carried over 52 weeks and not just for a Christmas market. The demand for UK scallops drops off once the French fishery opens, even though French meat quality is much poorer.
  - e. It would be important that there was quota left by Q4 for the important Christmas markets and that it wasn't all taken early in the year.
  - f. Processors and fishermen working together with a TAC in place would likely enable better planning for factories and business stability
13. CPUE:
  - a. Hartlepool is an all-weather harbour so Nomadic boats who land to Hartlepool have easy access. Concerns were raised that if scallops appear off this coast up to Flamborough head, these boats can come clear the fishery out and move on again once landed into Hartlepool.

### **General discussion:**

#### 14. Fuel prices:

- a. Locally it has impacted the fleet terribly and it's not just fuel but steel and packaging too.
- b. Kilkeel fuel is 1.15 per litre on the harbour wall.
- c. French fleet got subsidies to keep fishing when this arose in France.
- d. Price has doubled in Hartlepool to 1.16 per litre.
- e. Processors also have increased costs so cannot subsidise the fleet. Pre Brexit, a lorry of fish to Spain was £1900 but now the cost has risen to £3275, with a further 10% added as a fuel surcharge.
- f. This week alone, the fuel surcharge is 24% and now as refrigeration units cannot use red diesel, which means white diesel adds another level of cost.
- g. A tooth spacing bar cost £15 at the start of 2022 and now costs £27. A set of boat wires at the start of 2022 cost £1000 and is now £1350.
- h. A TAC could allow vessels to be more efficient and use less fuel for the same amount of scallops fished potentially. Trialling different gear may enable fuel savings and knock on habitat benefits if combined with more efficient catching.

#### 15. Labour:

- a. NE coast fish prices do not get the increased prices like they do in the Southwest coast or Scotland. Since covid, processors do not want fish that needs filleting, as there are no foreign nationals coming into Britain and processors cannot get staff. Pre Brexit, pre pandemic, there would always be individuals looking for work, but now it is near impossible to find workers.
- b. Some processors are exploring options around sponsorship of international workers, but the costs involved are very high and this is very admin intensive. They require visas and housing which requires personnel to focus on this as their primary job, which is again very expensive.
- c. The FMP needs to ensure it does not introduce anymore policies that make it more difficult to allow new entrants into the industry.
- d. It was also discussed how fishing practices that could need less labour or more consistent times when labour is needed, would help the onshore side of the industry

## 18.10.22 Bangor

**Event:** Welsh King Scallop FMP Stakeholder engagement in-person meeting  
**Date:** 18-10-2022  
**Time:** 1700-1900  
**Location:** Bangor University, Ffesteniog Room

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Bangor, Wales (18 <sup>th</sup> Oct)	In-person	3	2	6	1	1	13

### Record of Discussion:

Representatives from the SICG WG, Welsh Government, and Seafish provided attendees with an overview of the FMP programme, draft content of the king scallop FMP (aims, objectives, and management proposals), and details of the FMP timeline and stakeholder engagement process.

The chair provided a context on the various management challenges that the UK scallop industry has faced over recent years, and the overarching ambition to design and deliver a management regime which is capable of delivering sustainable fisheries, and allows businesses to plan for the future.

### General comments:

#### ***Are proposed FMP aims and objectives appropriate for the English and Welsh King scallop fisheries – if not, what alternatives would you suggest and why?***

- Attendees from local industry expressed their support for the scallop fishery management style implemented by the permit-based [Isle of Man \(IoM\) king scallop fisheries long-term management plan \(LTMP\)](#), specifically mentioning a positive opinions on:
  - Bag limitations (Daily Catch Limit (DCL) within 0-12nm limit of 700kg per vessel);
  - Curfews (no fishing 1800-0600); and
  - Capped/restricted access to the fishery (permitting system). Concerns were raised regarding the exclusion of certain fishers from the IoM scallop fishery due to the limited number of permits available (however, the two industry Welsh industry attendees noted that they applied each year for IoM permits).
- Industry attendees expressed that any management regime developed must result in the ability to plan ahead for the fishing season.
- Questions were raised around whether the dynamics of seasonal area closures (e.g. lasting 6 months) in the Irish Sea are effective at protecting the sustainability of scallop stocks. Issues highlighted around boats being constrained to one area (a



- 'closed box') where scallop beds become depleted due to 'honey pot fishing'. It was suggested that rotational closures would be preferred.
4. Concerns were raised around the sequential displacement into neighbouring districts caused by IFCA closures. Suggestions that a joined up approach should be adopted for management of inshore scallop fisheries, which will require input from inshore fishers and fisheries managers.
  5. Suggestions that Objective 1 should be more environmentally focussed. Working group members in attendance provided an explanation that additional detail has been drafted to support each objective presented in the slide pack, however agreed that how Objective 1 is presented should be reviewed as the single bullet reflects a very large amount of work.
  6. Defra highlighted that the 'must haves' for the first iteration of the scallop FMP are primarily stock focussed. Cefas attendees provided a summary of ongoing work to assess the biological status of scallop stocks, with the caveat that comprehensive monitoring systems still need to be developed for some areas. Ongoing work includes:
    - a. Catch monitoring;
    - b. Scientific surveys (i.e. calculating the biomass on the ground at the start of the season);
      - i. In English waters, surveys are funded by Defra and voluntary industry contributions;
      - ii. In Welsh waters, Bangor University coordinates surveys which are currently funded through the EMFF (alternative funding sources are now under review).
    - c. Mapping what other species are being caught as bycatch
    - d. Surveying unfished areas where there are thought to be scallops present to assess how these areas feed into larval supply etc.
  7. Questions around the link between FMPs and the UK Marine Strategy / GES indicators. It was highlighted that an important part of the FMP process is reducing human stressors in the marine environment, which will be addressed through the environmental objectives included within the FMP (Objective 3). An SICG WG is scheduled for the end of October 2022 at which Defra to feed work conducted by the JNCC regarding GES.
  8. Attendees expressed support for an evidence based FMP, suggesting that the precautionary approach to management should be avoided where possible.

***Will proposed objectives deliver the aims of the FMP – if not, why not? What alternatives should the SICGWG consider or explore?***

9. The group expressed a positive response to the objectives proposed in the draft king scallop FMP, and the proposal of a catch limit. However, there was recognition by industry attendees that they represent only a small subset of Welsh industry.
10. Industry attendees were asked by SICG WG members whether they are 'happy with the local scallop fishery as it stands'. This was met with general agreement that scallop catches are good, and they have the ability to diversify into whelking when needed.
11. Suggestion that market drivers should be taken into account when designing catch limits/TAC systems, for example allowing for a 12 month fishery to ensure that effort is not concentrated in one part of the year.
12. Industry were asked whether they would be supportive of harmonising the Irish Sea closure with the French Bay de Seine closure (the Bay de Seine fishery currently opens 2 weeks earlier). Industry did not have strong views either way, highlighting

that there are pros and cons, for example the French fishery opening earlier draws boats away from the Welsh fishery, allowing increased opportunity for those who remain.

***Is the proposed management intervention for the King scallop FMP appropriate – if not, why not?***

13. Industry attendees were asked for their opinions on TACs as a management proposal (with SICG WG members emphasising that a TAC-based system does not equal ITQs). Industry attendees expressed no strong views either way, however highlighted:
  - a. The need to avoid 'honey pot' scenarios, and
  - b. Reiterated support for management in the IoM scallop fishery
14. It was highlighted that fisheries management is a dynamic and ongoing activity, and that Defra are already starting to look into the short-long term management measures required for the front-runner FMPs.

***What alternatives should the SICGWG consider or explore and what evidence should be taken into account in supporting alternative proposals?***

1. No alternative management measures were proposed.

## 19.10.22 Eastern Channel Online Event

**Event:** Eastern Channel King Scallop FMP Stakeholder engagement online meeting  
**Date:** 19-10-2022  
**Time:** 1400-1530  
**Location:** Microsoft Teams

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Eastern Channel event (19 <sup>th</sup> Oct)	Online	2	3	6	2		13

### Record of discussion:

#### **King Scallop Fisheries Management Plan timeline**

1. 'Bioeconomic sustainability' can be a term that does not encapsulate the social and economic aspects of sustainability initiatives. This term may need to be replaced in the objectives of the draft FMP.
2. Within the second objective there lacks mention of a proportionality approach to management of fishing vessels regarding how the different sized vessels contribute to the King Scallop fishery.
  - a. A one size fit all approach may not be appropriate for this plan.
  - b. Several members agreed that the second objective may need revisions.
3. The term 'working group' needs to be clarified when referring to either the SICG working group or the "drafting group". The SICGWG is responsible for delivering on the draft FMP.
4. The different elements of the King Scallop fishing fleet are well represented on the SICG except for the hand dived scallop sector where they could be better represented. It is likely that some IFCA's have contacts for hand dived scallop fishers (commercial and/or recreational) in the respective areas since they are responsible for issuing permits.
  - a. It would be good to get more people involved in the stage of the public consultation particularly when it comes to the hand dived scallop fishers.
5. In terms of the timeline following the public consultation. The feedback brought to this meeting will be fed back to the SICG working group and the intention is to take that feedback back to people who were initially consulting on the draft FMP.
6. What is the action plan for the potential of an NGO demonstration against the proposed management interventions for the King Scallop FMP plans?

7. To note that the only responses that will be noted regarding this public consultation would be at the event itself.

***King Scallop draft FMP management intervention***

8. Referring to the line in the power point: 'better regulation of 10m-15m scallop sector'. Within the IFCA regions that are many management measures currently already in place so there needs to be clarification over what the 'better regulation' is referring to.
  - a. Several members expressed that there are gaps in the current IFCA regulations and no control over the number of vessels harvesting scallops in these areas.
  - b. Outside of the IFCA regions there is very little control of the under 10m vessels and no limit to scallop entitlement for the under 10m vessels.
9. Questions were raised regarding how the TAC would be allocated and whether a TAC would be the best and most effective form of fisheries management measures for the scallop fishing industry.
  - a. The TAC is only a suggested form of management, and it does not necessarily mean that it would be implemented.
  - b. Discussions in the future need to take into consideration a definition of a TAC and what it would imply.
  - c. The decision to go down a single management intervention was not voted on by the SICG working group.
  - d. The responses in different areas such as Hartlepool and Bangor have been positive and in other areas negative.
10. Discussions were had regarding the different points of evidence that were considered when management inventions are proposed:
  - a. Concern was raised regarding the focus on global examples rather than UK based examples, and it was noted that permitting schemes in operation in the IoM and NE have also been provided by event attendees as examples of capping outtake.
  - b. Questions were asked about the interpretation of the documents relied upon when the single management invention was proposed.

## 27.10.22 North Sea Online event

**Event:** North Sea Online Event- King Scallop  
**Date:** 27-10-2022  
**Time:** 1400-1530  
**Location:** Microsoft Teams

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
North Sea event (27 <sup>th</sup> Oct)	Online	3	7	11	1		22

### Record of Discussion:

#### ***Contribute to sustainable and well managed UK King Scallop fisheries***

1. Could the remit include future potting for scallops?
2. 'The FMP should cover all methods of capture'
3. The method of harvesting scallops using disco lights are undergoing trials and there is need to remain mindful regarding these emerging methods in the FMP draft.
  - a. There are scallop boats in the east of Yorkshire that are trialling the lights, but permits are needed for these. Permits are very limited, but NEIFCA are gathering evidence to see if there is scope to allow for more permits.
  - b. If boats are not able to afford this permit, then they are not able to use the disco lights.
  - c. This is an issue for the MMO to sort since it deals with the implementation of permits and gear trials.
  - d. There is currently a scheme that is undergoing trials to diversify the scheme to the inshore fleet.
  - e. To explore this further the issue of setting permits needs to be backed up by scientific findings and this topic can be directed towards the scallop science group.
4. In the Northeast of England there has been the use of beam trawls to target scallops instead of the traditional dredging method. The difference remains that the dredges are managed for scallop harvesting in those areas but the beam trawls are not.
5. Discussions were held around the topic of gear conflict and how the interactions between the static and active fleet could be managed.
  - a. There was a mention that the FMP draft in its current stage does not address this topic in enough detail.

- b. Noted was the mention that spatial squeeze should be added to the objectives.
  - c. Spatial management measures will be needed to manage static gear and its conflict with active gear.
6. The term 'bioeconomic' needs to be split into environmental, social and economic. The reason as to why the term bioeconomic was first used was because of the Isle of Man and their practices of bioeconomic sustainability in their fishing industry.
7. The price of Scallops in the current market does not reflect the value of the harvested scallops. There was a mention that scallops from a pot were fetching £2.50 each. There was also the concern surrounding the import of scallops into the UK which are sold at very low prices in supermarkets.

### ***Proposed management measures- Management interventions***

8. 'Be good to hear folk's views on input vs output controls'

### ***Open discussion session***

9. Discussions were held around the use of TACs as a management intervention.
- a. Questions raised whether the inshore fleet would be disadvantaged if quotas were to be implemented.
10. Many attendees raised concerns regarding spatial management and gear conflict; as well as implementing marine protected areas or buffer zones.
- a. In the area between the 6nm and 12nm limits, dredges have been used in this area since 2013. However, due to the open nature of these grounds there is no closed seasons between the dredges and the potters. Consequently, there occurs conflict.
  - b. It was suggested and supported by several members, a six-month alternating season between static gear users and active gear users. Allowing equal access to fishing grounds.
  - c. There was a call to send in creative ideas for management for discussions in the future. These should be sent through to [fisheriesmanagementplans@seafish.co.uk](mailto:fisheriesmanagementplans@seafish.co.uk)
11. There were also concerns surrounding the data collection areas since CEFAS data is primarily outside of the 6nm limit and IFCA data is inside the 6nm area.
- a. The data can potentially be used to understand the contribution of non-fishable areas to fishable areas within a single stock.
  - b. The idea of closed zones can work places such as Shetland but around the mainland this might be more difficult to implement.

## 02.11.22 Kirkcudbright

**Event:** Kirkcudbright King Scallop FMP Stakeholder engagement in-person meeting  
**Date:** 02-11-2022  
**Time:** 1700-1900  
**Location:** Selkirk Arms Hotel, High St, Kirkcudbright, DG6 4JG

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Kirkcudbright (2 <sup>nd</sup> Nov)	In-person	3	5	2			10

### Record of Discussion:

#### ***Timeline on the King Scallop FMP***

1. There was agreement that the king scallop FMP is an obvious frontrunner based on economic value of the fishery and on the work already developed by the SICG, and others, to explore alternative management options.
2. Attendees discussed FMP development processes if the SICGWG, Defra, and Welsh Government were unable to agree consensus on management amongst different stakeholders, including industry and NGOs.
3. Defra provided additional information to attendees on the review process for the FMP and that the FMP would have to go to public consultation and Secretary of State sign off again in the future if significant changes are made to future iterations of the plan.

#### ***The Overall Aims and Objectives***

4. Attendees agreed that the draft aims and objectives presented by the SICGWG were appropriate for the king scallop fishery, discussion focused on the need for prioritisation and phasing of objectives to ensure that those with the highest priority are addressed first. The group felt that objectives around data provision and improving management of the fishery were most important and should take priority over objectives focused on promoting consumption of shellfish. Prioritisation should be based on available evidence.
5. Objectives around addressing inefficiencies in the king scallop fishery should include a move to a more permissive management regime which incentivises innovation and allows for the development and trial of new scallop gears.
6. Clarity was sought around how the FMP will interact with existing legislation immediately after publication; Defra clarified that the FMP will set out the 'direction of travel' and would not immediately repeal or replace existing legislation. The FMP will set a framework for management of king scallop fisheries in English and Welsh waters but, in England, IFCA's can still enact bylaws based on regional specifics.
7. There was strong support for the concept of collaborative management being central to the draft FMP though attendees did cite previous negative experiences of 'co-management' initiatives. Attendees stressed the importance of 'getting the

fundamentals of co-management' right in the FMP to ensure that principles of co-management are adhered to in the long term and that co-management decisions are not unilaterally overruled by regulators. This would undermine trust and buy-in to the process. Co-management was seen as a mechanism of providing long-term stability in fisheries management that will endure changing political priorities. Following publication of the FMP in Autumn 2023 it is vital that the SICGWG remains involved in delivery.

8. Attendees cited management changes, e.g. closure of Dogger Bank fishery, as events which have damaged working relationships between regulators and industry.
9. The objectives of the FMP should include a proposed co-management structure and industry should be a core part of this process.
10. Terms such as '*well managed fisheries*' should be defined in the FMP so it is clear exactly what the plan aims to deliver. Traditionally this has been seen as exploitation at MSY or a suitable proxy, however there are different ways to assess fishery performance so terms should be defined. This is vital to ensure that the impact of the FMP can be assessed.

### ***Proposed management intervention - TAC***

11. There was broad support for the proposal of a TAC from attendees, the proposal was considered sensible and attendees cited successful examples of TACs being used elsewhere, however the following points were raised and discussed:
  - a. TACs should be based on individual stocks and how this could be done is not clear;
  - b. TACs could cause a race to fish which may put excessive pressure on stocks at certain times of the year;
  - c. It is not clear how stock specific TACs would be allocated and then enforced
  - d. EU vessels fishing in UK waters will be limited by tonnage limits for NQS through the TCA in the future, attendees felt that it would be more challenging to manage English and Welsh fisheries using another tool (e.g. effort limits) if tonnage limits are already being applied to non-UK vessels in English and Welsh waters.
12. The term TAC has legal connotations which will be perceived negatively by some stakeholders (i.e. can be interpreted as synonymous with ITQs), so catch limitation would be a more appropriate term. The concept of an ITQ leads to valid concerns about consolidation of the catching sector.
13. Attendees discussed the need to balance biological, social, and economic impacts of any future management regime, for example if a TAC was applied and then scientific advice recommended very low or no take, then the catching sector would be economically unviable. It was noted that good fisheries management should prevent stocks reaching this level.
14. It was noted that current assessments largely show king scallop stocks are being exploited in line with MSY, this has been achieved using effort limitations; days at sea (DAS) limits could be used further to safeguard stocks and would reward more efficient vessels.
15. However, it was pointed out that time series data show a gradual decrease in landings per unit effort for king scallops (though the trend is complicated by the impact of the Covid-19 pandemic on fishing activity) and that this does not signal a working management system.
16. Any management system should be equitable between different parts of the fleet (e.g. smaller vessels and larger vessels), attendees discussed examples of TAC 'top-slicing' to ensure that non-sector and <10m operators have sufficient access to fishing opportunities.



17. Concerns were raised that TACs could reduce competition within the catching sector (i.e. if each vessel is guaranteed their tonnage then competition is reduced), attendees discussed the economic aspects of this point and that being more economical would make vessels more profitable and, as a result, more competitive. For example this could include vessels targeting scallops at specific times of the season when prices were likely to be high.
18. New legislation (seasonal closures) have been introduced by the EU for king scallop fisheries in EU waters and it is important that any management measures introduced in English and Welsh waters take this into consideration to avoid contradictory management or unintended consequences.
19. After the five year transition period ends access to UK waters could impact UK access to EU waters and the FMP must take this into account. FMPs should set the negotiating position for UK fisheries management. Concerns were expressed about the linkage between EU access to UK waters and UK access to EU markets.
20. King scallop stocks are largely stable but queen scallops are much more variable and this must be taken into account when developing the king scallop FMP; variation in the queenie fishery has the potential to influence effort on the king scallop fishery.
21. Closed seasons are already in place elsewhere, e.g. Baie de Seine, and could be considered alongside a TAC as a means of further protecting fisheries, maintaining stocks, and minimising environmental impact.
22. Wider concerns were raised regarding novel capture methods for scallops, e.g. using underwater lights and static gears, as a driver of both spatial squeeze (more static gear in the water) and potential ecological and safety concerns of widespread deployment of battery arrays to power lights.
23. There is a risk that changes to management (e.g. reducing effort) on the king scallop fishery in isolation will disproportionately impact 'full-time' scallopers compared to 'part-time' scallopers who may be able to enter different fisheries more easily.
24. Efforts to improve efficiency only make sense when the fishery is managed to limit total output, otherwise improving efficiency could put more pressure on stocks.
25. External, non-legislative, factors already limit fishing effort in some areas, e.g. the weather in the Western Channel over winter effectively limits the ability of vessels to fish here, and these factors should also be considered in developing the FMP.

### 03.11.22 Peterhead

**Event:** Peterhead King Scallop FMP Stakeholder engagement in-person meeting  
**Date:** 03-11-2022  
**Time:** 1700-1900  
**Location:** Palace Hotel, Prince St, Peterhead, AB42 1PL

#### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Peterhead (3 <sup>rd</sup> Nov)	In-person	3	11	2			16

#### Record of Discussion:

##### ***Timeline on the King Scallop FMP***

Attendees discussed provisions to change FMPs as required, how often this can be done, and what the process for change would be. This was seen as a necessity to ensure that the FMP is fit for purpose and is responsive to fishery or legislative changes. Defra provided an overview stating that every FMP will be reviewed after six years, with interim reviews at three years, but that this can be done on an ad-hoc basis determined by the need to adapt parts of the plan and when new evidence arises. The concept of co-management, as being proposed in the FMP, means that the SICGWG should be able to request formal reviews as required.

1. There was a desire to ensure that principles of co-management are adhered to throughout the FMP development process, and specifically that the SICGWG and the new Scallop Science Group are involved in refinement of the FMP following public consultation.

##### ***Overall Aims and Objectives***

2. Attendees agreed that the draft aims and objectives presented by the SICGWG were appropriate. There was strong support for the equal weighting of biological, social, and economic priorities in the draft FMP.
3. External challenges, for example spatial planning issues as a result of offshore wind development and MPA designations, should also form part of the co-management discussion. There was a perception amongst attendees that the fishing sector is 'last in the queue' in spatial management discussions but stressed that the industry needs stability in long-term access to fishing grounds in the same way that other users (e.g. offshore wind and oil / gas) are able to via licensing. Whilst there has been huge investment in these marine industries attendees stressed that there has also been significant investment in the seafood industry and that this should be reflected in future management regimes.
4. Prioritisation and phasing of objectives was raised and objectives 1.1 (Develop a robust evidence base) and 2.1 (Develop a harvest strategy and harvest control rules) were considered the highest priority actions.

5. Regarding action 3.1 (Assessing interactions with the marine environment) attendees felt that the FMP must enable fishers to try different things, e.g. new gears, and that the Scallop Science Group has an important role in steering this process. Industry needs the ability to innovate to deliver biological, social, and economic benefits.
6. There is a need to look at ways of reviewing existing closures and de-designating sites where appropriate. In addition to protecting fishing areas, co-management should mean there are opportunities to review existing legislation to ensure that benefits are being delivered.

### ***Proposed management intervention - TAC***

7. There was unanimous agreement that current management regimes for king scallop fisheries are not fit for purpose and that a change is required, however there was concern that the industry would not have an equal say in co-management processes and development of future management regimes. It was acknowledged that in a changing political landscape the FMP could serve to provide stability by committing regulators to the delivering plans.
8. Concerns were raised about gear conflict and spatial squeeze, particularly between mobile and static gear sectors. Different FMPs must not be developed in isolation to ensure that objectives are not contradictory and that spatial issues are adequately address to reduce interactions and conflict.
9. Attendees pointed out that concerns have already been raised through the SICG that DAS limits must now be expended entirely in UK waters as management of NQS in EU waters is now via a tonnage limit through the TCA. As a result attendees felt that the DAS limit was not effectively reducing fishing effort.
10. The proposal of a TAC was considered an appropriate measure for the king scallop fishery, attendees believed that existing effort-based regimes (e.g. WWER) were not fit for purpose and did not deliver effective management. Attendees noted that TACs should be set based on biological evidence, not on historical records of activity.
11. There was uncertainty about how a TAC would be applied to all vessels fishing in English and Welsh waters when EU vessels are already limited by global tonnage limits (not species-specific limits) via the TCA. Data are not publicly available to understand the proportion of king scallops in EU catches of NQS from UK waters, this information would be necessary to allocate fishing opportunities under a TAC. Attendees stressed it was important that management did not put up barriers to legitimate EU access to UK waters but that it did not incentivise increased fishing effort.
12. Attendees discussed the approach of using a suite of measures, such as a TAC combined with seasonal closures, but noted that spatial closures lead to displacement of effort and stressed the importance of assessing the risk and impact of unintended consequences in changing management regimes. Seasonal closures may suit parts of the fleet (e.g. part-time scallopers) but would impact other sectors more significantly, particularly if they are unable to move between fisheries (i.e. dedicated, 'full-time' scallopers).
13. The long-term development of harvest control rules which are flexible and responsive to changes in stock status was well received and considered necessary for the king scallop fishery.
14. Part of the function of the newly formed Scallop Science Group should be to review and critique scientific outputs to ensure that management decisions are based on the best available evidence. The link between good science and management was noted but the risk of scientific advice leading to overly cautious approaches to

management was also raised as a concern. Most king scallop stocks are currently in a good state, and it was stressed that it is important to introduce good management not to maintain this, rather than waiting until stocks are depleted to introduce measures to rebuild them.

## 09.11.22 Wider Stakeholder Event

**Event:** King Scallop FMP Wider Engagement  
**Date:** 09-11-2022  
**Time:** 11:00-12:30  
**Location:** Microsoft Teams

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Wider stakeholders' event (9 <sup>th</sup> Nov)	Online	3	10	10	4		27

### Record of Discussion:

#### ***Harvest Standard Specifications (HSS) by CEFAS***

CEFAS alongside the work of the SICG in developing the King Scallop FMP will be developing a document which goes into the technical details and performance metrics of the fishery. The HSS looks at hard and soft limits instead of target levels. In the first iteration it will focus on the stocks and the species and in future iterations it could include the ecosystem approach. In the first iteration, there is a primary focus on how to identify stocks that may be based genetics, migration etc. There will be a general scientific guidance on how to identify stocks. For example, the use of length-based metrics assessments for shellfish is more appropriate. The application of the harvest strategy will be through the FMP plan process itself.

#### General comments:

1. Request that the slides from the presentation could be sent to everyone in attendance at these meetings. An overview of the HSS would be useful to go in the Seafish handout. Members have also stated that the development of the HSS is an iterative process that would require feedback as it is developed. CEFAS to present this to the SICG working group.

#### ***Objectives and aims of the Scallop Fisheries Management Plan***

2. Several spoke about which objectives should be prioritised more than others. For example, a lesser focus on 'increasing promotion and consumption of scallops in the UK' but to focus more on 'harvest control rules'.
3. Elaborate the last aim under objective 1 about inefficiencies. Members have stated that the 'inefficiencies' should be about gear efficiency and looking at more strategic fisheries for example to have efficient fishing with fuel use and catch efficiency. Members have clarified that this is about practical and legislative inefficiencies needing consideration'.
4. Looking to agree on a coordinated management approach around the UK is a positive approach.

5. Enquiry about whether there will be an ongoing call for surveys and stock assessments. How will this be resourced going forward? Members have stated that it was industry funded stock assessments historically and in the last two year these have been funded by Defra but Defra has also funded these stock assessments. The 2-year point relates to additional funding from Defra.
6. Members are looking at a scallop levy between industry and Defra to fund stock assessments for the future.
7. Does the point of funding relate to the aim of objective 3: 'Explore ways to address current inefficiencies within UK Scallop fisheries in order to reduce environmental impact'?

### ***Proposed management interventions***

8. Many members have expressed that local bylaws are highly regulating the 10m-15m scallop sector already, so asked to elaborate on the 'better regulations of 10m-15m scallop sector'. Members stated that these were the key elements to come out of the 2019 work done by the SICG and the feedback was that not all the regulations apply to all sectors of the fleet. One of the aims of the FMP is that the regulations will be applicable to all vessels and all sizes of vessel and of the different nations.
9. Under 15m sector has a fair breath of regulations within the IFCA sectors. However, the under 10m vessels do not have any form of scallop entitlement and left as an open fishery would mean a concerning future for the industry. An open fishery is difficult to manage.
10. Attendees had mixed feelings with regard to the introduction of a TAC as the single management intervention. A scientifically justified catch limit sat better with some industry reps than a TAC.

### ***What happens after the stakeholder engagement events?***

11. The FMP is a joint FMP with the Welsh government, and it is a joint sign off between the two government bodies.
12. If a TAC is used as the sole management approach, will the FMP consider sharing between the Defra and the Welsh government, arrangements for this need to be made before the sign off before Secretary of State. Members have stated that no further detail on this has yet been discussed but a TAC has been suggested at this stage to gather extensive feedback. TAC isn't being considered as the sole management approach but rather an option as part of a potential suit of measures.
13. Many expressed that a cooperative agreement of a TAC is not the correct terminology to be stated and catch limits are a far better approach to be taken up based on evidence led sustainable tonnages that can be removed from one stock.
14. Regarding the Wellbeing and Wellness Act and Environment Act in Welsh government, how will these priorities align with the FMP.
  - a. Additionally, the Trade and Cooperation agreement on setting global tonnages, how would this interact with the King Scallop FMP?
15. Concerning the CEFAS report from last year looking at MSC best practise for sustainable scallop fisheries, TACs have been used and successful in sustainable management.
16. The MSC standard states that the harvest strategies should be in response to the state of the stock. The channel for example is made up of 5 stocks and to consider that going forward. To be careful that there is not overexploitation of one single stock or area.
17. Pros and cons of the TAC approach should be elaborated on in the drafting of the FMP.

18. Although Scotland has a very different situation, they will look to this management plan in the future. The Scotland government will most likely be looking at the King Scallop FMP next year.

## 09.11.22 King Scallop-Irish Sea, Celtic Sea, Wales online event

**Event:** King Scallop-Irish Sea, Celtic Sea, Wales online event  
**Date:** 09-11-2022  
**Time:** 14:00-15:30  
**Location:** Microsoft Teams

### Attendees:

Event location and date	Format	SICGWG presenters	Industry	Government / public body / research	NGO	Other*	Total
Irish Sea / Celtic Sea / Wales event (9 <sup>th</sup> Nov)	Online	3	8	8	2		21

### Record of Discussion:

#### ***Timeline on the King Scallop FMP***

1. The sign off process was mentioned to be owned by Welsh and English government but there lacked mentioned of the Welsh legislative senate being part of the sign off process. The 'submission to Defra' should be corrected to include the Welsh government sign off. Members clarified that the FMP is owned by Welsh government and Defra therefore the sign off is done by both parties.
2. In response to questions raised about whether the Welsh <10m fleet were consulted on the 2019 SICG management proposals, attendees were informed that the SICG, whilst predominantly >15m catchers and processors given the groups original remit, there are <15m reps in the group to disseminate the information more widely and that one of those reps is Welsh.
3. There was some discussion around the need for evidence-based decisions and that more evidence is required. It was emphasised that the FMP isn't just about management but that it will also identify evidence gaps and help us move towards an evidence based management approach.

#### ***The Overall Aims and Objectives***

4. Several mentioned expressed the need to circulate the slides beforehand to be able to discuss in greater detail. There is a lot of detail to digest in the presentation and it would help those coming along to the meeting for the slides to be able to comment on these. Members have expressed that these are the same slides shown in every previous King Scallop stakeholder events and approved by the SICG working group. A two-page handout was previously sent out by Seafish and these can be circulated again given that people get in contact via the Seafish email address.
  - a. The meetings are a relatively short time frame.
5. How will the Retained EU Law Bill going through government at the current moment in time affect the governments focus on the FMP delivery?



- a. Are there legislative powers within the Retained EU Law Bill that would affect the delivery of the King Scallop FMP?
  - b. Have the impacts of this bill going through government been taken into consideration?
  - c. Members have expressed that they are trying to identify how some of those retained laws would impact future management plans. They have been able to identify around 400 areas of legislation that would need to be amended.
6. In terms of 'Objective 3: Deliver effective management that contributes to ecosystem functionality', Wales has a very different idea on how some of those aims can be achieved. There is unique Wales legislation around fishing that would apply to these aims and needs to be understood.

### ***Proposed management intervention- TAC***

7. Questions were raised whether the members of the science sub-group agree on a TAC being the best strategy going forward?
8. There can be a better tailored approach for Welsh communities than a 'one size fits all' approach of a TAC. If a TAC is taken forward as the only management measure, then it would not meet some of the aims under objective 3 for Wales.
  - a. Given the 2019 recommendations that has been put forward, were the under 10m fleet consulted when coming up with the 2019 recommendations?
  - b. Member stated that there has been calls for evidence and consultations certainly at least by Defra, results of which still have not been published.
9. There have been limited surveys within the wider Irish Sea (in English waters) and along the Welsh coast and these areas need to be included in the current annual surveys carried out by industry vessels and overseen by CEFAS
10. Therefore, in order to implement an evidence-based management strategy there needs to be more work to ensure that more evidence is collected in such areas. Members have stated that the 5 years of data do not cover all English and Welsh waters. Efforts must be taken to fill those gaps and there are legal obligations to do that.
11. Since King Scallops are already a non-quota species, the species does not need to be considered at the same standards as quota species when considering management approached. There will be difficulty faced when having to get all areas in England and Wales to agree to one management approach. By working with the Maximum Sustainable Yield (MSY) of a fishery alongside comprehensive stock assessments. Individual tonnage limits can be agreed upon using the individual stock assessments within specific areas. Catch limits can be derived for respective areas of stocks considering sustainability criteria.
12. There is a resounding agreement that the current system for the management of King Scallops is inefficient, and it cannot carry on in the same way.
13. The Fisheries Act (Sec 6) is clear that the FMP must identify the evidence available to assess stocks and if lacking, set out the steps to collect the evidence. The plan must also set out the approach to managing the stock within sustainable limits or take a precautionary approach. This existing legislation should be better considered when making management decisions.
14. Concerning the final draft of the FMP, do the three objectives stated on the relevant slide encapsulate all the eight objectives stated within the Fisheries Act?
  - a. Once the final FMP is signed off, which objectives will be the first to be prioritised in the FMP delivery?
  - b. Members stated that this is a phased approach, not everything will be included in the first iteration. The FMPs are not about delivering every objective of the fisheries act and some aims will be prioritised over others.

**For more information please contact:**

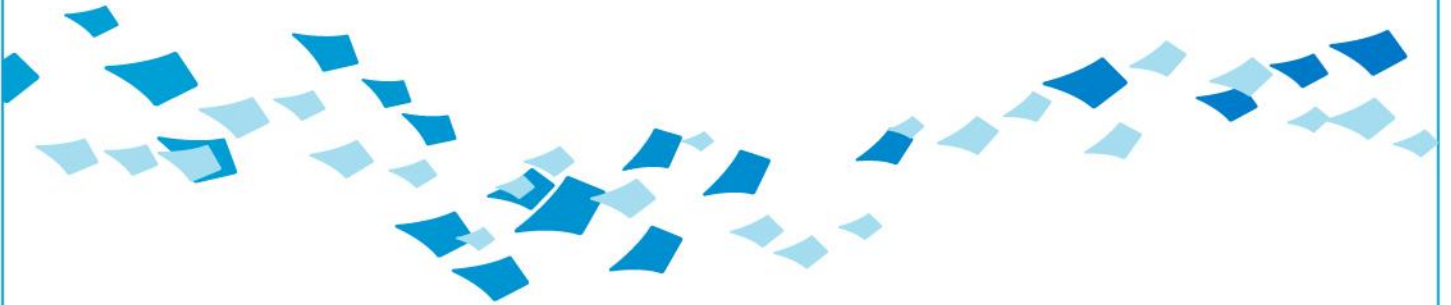
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## Additional engagement in Wales on the Proposed King Scallop Fisheries Management Plan for England and Wales

During December 2022 and January 2023, the Welsh Government undertook further engagement with king scallop fishers in Wales to allow further opportunity for comment on the proposed king scallop FMP.

Engagement consisted of informal one-to-one conversations or comment by email and focussed on the proposed objectives of the FMP, how well the existing management regime in Wales works and how it could be improved.

Seven fishers took part in the engagement and provided responses.

Measure	Existing measure working well	Perceived issues with existing measures	Improvements suggested
<b>Minimum Conservation reference Size (MCRS) of both 110 and 100mm within the Welsh zone.</b>	110mm MCRS within 12nm protects juveniles and increases spawning.	Larger vessels required to fish outside 12nm may fish inside 12nm and take undersize scallop.	Standardise MCRS to 110mm across the Welsh zone.
<b>MCRS</b>		Thought there are greater meat yields in scallops >115mm.	Explore benefits of increasing MCRS to 115mm.
<b>Closed Areas</b>	Protects marine environment and provides additional spawning and recruitment.	There is insufficient evidence to support existing closed areas.	Review closed area boundaries on the basis of scientific evidence.
<b>Open Areas</b>		Areas which remain open are available to a range of vessel sizes. No ground for smaller inshore vessels to fish without steaming long distances. Larger vessels have greater power and towing ability than smaller vessels and will deplete stocks.	Consider zones exclusively for smaller vessels with limited tow capacity including within 1nm.
<b>Catch Limits</b>		No current limits on catches which mean unlimited amounts of scallops being taken in Welsh zone regardless of status of stocks.	Weekly catch limits would enable greater control over amount of scallops taken to protect stock from over-exploitation. Suggestion of 2 bags/day to

			support an inshore, N Wales fishery for smaller vessels which cannot travel greater distances.
<b>Measure</b>	<b>Existing measure working well</b>	<b>Perceived issues with existing measures</b>	<b>Improvements suggested</b>
<b>Harmonisation</b>		Some of the current legislation in Wales was inherited from different sea fisheries committees and is disparate or not fit for purpose.	Harmonisation of legislation across the Welsh zone, including permitting of all vessels.
<b>Effort controls</b>		No limits on time at sea which enables vessels with the capability to fish around the clock.	Consider curfews such as daylight hours only within the Welsh zone.
<b>Effort controls</b>		Currently no curfews in Caernarfon Bay which would support the smaller vessels which fish there.	12-hour curfews, daylight hours only would enable greater control of fishing in this area.
<b>Gear efficiency</b>		Dredge efficiency is low.	Improve dredge efficiency through research to improve catches, reduce fuel consumption and protect the environment. Light weight gear 1-3nm- less damaging to seabed.
<b>Dive Fisheries/Closed areas</b>		There are currently no commercial hand dived fisheries which are more selective and sensitive to seabed.	Open small parts of currently closed, sheltered inshore areas over the summer months to enable safe diving for king scallops.

Measure	Existing measure working well	Perceived issues with existing measures	Improvements suggested
<b>Gear in Gear Out Technology (GIGOT)</b>		Concerns about illegal fishing within 12nm and MPAs.	GIGOT integrated with VMS would ensure compliance.
<b>Permits</b>		Permits are valid within 6nm only. Scallop takes place elsewhere in the Welsh zone without a permit.	Review of historic byelaws causing this issue will enable permitting to cover the Welsh zone, enabling improved sustainable management through conditions.
<b>Effort limits</b>		Not enough limitations on dredges. This does not support lower powered vessels which can work safely within the 6nm closer to home ports.	Propose a limit of 3 aside from 1-6nm in specific areas.
<b>Catch limits</b>		No limit on number of scallops taken within Wales.	25 bags/day or 600kg could be considered to support a small inshore fishery for <8m vessels.
<b>Vessel size and power</b>		Existing limitations don't go far enough to protect stocks and support smaller vessels.	Allow smaller vessels to fish within 1nm to enable smaller vessels to work safely.  Limit to 180 hp within 1-3 miles.
<b>Rotation</b>		No rotation of scallop grounds meaning same areas are constantly fished.	Identify inshore areas within 1-3nm for smaller vessels and rotate areas to enable recovery.

## **Summary**

Reoccurring comments received during discussions are summarised below:

- Review of existing closed areas in the Welsh zone using best available evidence.
- Curfews in specific inshore areas of the Welsh zone.
- Harmonisation of existing legislation including MCRS inside and outside the 12nm limit.
- Consideration of further vessel size and gear restrictions.

Welsh Government and the SICG will consider the comments received as a part of overall feedback from ongoing stakeholder engagement.



Department  
for Environment  
Food & Rural Affairs



Llywodraeth Cymru  
Welsh Government

# Proposed Fisheries Management Plan for king scallops in English and Welsh Waters

## Annex 5: Legislative context and governance for the King Scallop FMP

Date: July 2023

Version: public consultation





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## Wider Policy Context

The Fisheries Management Plan (FMP) includes objectives relating to reducing impacts on the wider marine environment, to ensure the health of our seas for future generations. The king scallop FMP has divided its objectives into three categories:

- To deliver biological, social and economic sustainability
- To deliver effective management of all English and Welsh fisheries applicable to all king scallop removals from all methods from all nations (UK and EU)
- To deliver effective management that contributes to ecosystem functionality

The objectives set out in this FMP link to and complement other policy areas and projects ongoing in English and Welsh government.

This FMP directly links to the following key policy areas and projects:

- UK Marine Policy Statement
- UK Marine Plans
- The Marine Strategy Regulations 2010 and Good Environmental Status (GES)
- Defra 25 Year Environment Plan
- International Action Plan on Bycatch
- Project UK Channel king scallop Fisheries Improvement Project
- Project UK North Sea, West of Scotland and Irish Sea king scallop Fisheries Improvement Project
- King scallop Multi-year Strategy (MYSt) being developed with the European Union (EU) through the Specialised Committee on Fisheries (SCF)
- Shellfish Industry Advisory Group (SIAG) shared shellfish objectives
- Well-being of Future Generations (Wales) Act 2015
- Environment (Wales) Act 2016
- Welsh National Marine Plan 2019
- Assessing Welsh Fishing Activities (AWFA) Evaluation of fishing activity interactions with features of Welsh Marine Protected Areas (MPAs).

## Precautionary approach

There are a number of existing management measures in place for scallop fisheries, as outlined in Annex 6, which are likely to be contributing positively to providing some level of protection to stocks in some areas. However, this is not widespread across all stock areas as demonstrated by stock assessment outcomes which estimate that some scallop stocks in English waters are being fished above the

## Annex 5: Legislative context and governance for the King Scallop FMP

maximum sustainable yield (MSY). Nor do all existing measures, particularly those controlling fishing effort, apply to all sectors fishing for scallops in English and Welsh waters.

Without evidence, management decisions will be more precautionary. The FMP is working towards evidence-based management where decisions and management interventions are based on high quality data that informs science management and a good understanding of ecosystem, biological and social implications of resulting management actions. Alongside developing a scientific evidence base (as set out under Objective 1), work already underway to strengthen existing measures will continue, as well as prioritisation of additional work to identify and progress opportunities for further improvements to existing management.

These initiatives include reviewing and potentially expanding the scope and/or duration of the existing annual scallop fishery closure in the International Council for the Exploration of the Sea (ICES) area 7d to provide increased protection to spawning stocks. This is both in response to new measures introduced in other areas for example, EU waters, which increases the risk of stock being negatively impacted by displaced fishing effort, and to ensure closure timings and duration are in line with the best available scientific evidence.

Opportunities for broad alignment of measures, where appropriate, will also be prioritised in the short-term whilst overarching management approaches are developed and the evidence base improved. Broad alignment of management could include broad alignment of technical measures, such as maximum dredge numbers permitted in certain areas, with the aim of providing more immediate increased protection to stocks. More information on the actions and timelines required to develop management measures is set out in the FMP under Fishery Management Strategy.

As set out under Objective 1, around developing a science evidence base, a priority area is to 'explore potential funding packages to support ongoing stock assessments'. Continuation of the king scallop stock assessment in English waters is crucial, not only to provide a long-term time series of data, but as an ongoing source of scientific information which will continue to be monitored closely and inform if immediate or precautionary action is required to protect stocks. Evidence gained from stock assessments is already, and will continue to, inform existing management measures such as closures and priority areas where increased protection may be required.

It is envisaged that a proposed new co-management group, created to deliver the FMP, should not only be involved in the prioritising and commissioning of future research to address evidence gaps, but also for setting out the process required where insufficient evidence is available. This should be actioned in the short-term to ensure there is a clearly understood process identifying 'when' and 'how'

## Annex 5: Legislative context and governance for the King Scallop FMP

precautionary measures will be employed until such time as the relevant evidence becomes established. This should cover 'what' management measures would be considered appropriate in the context of the precautionary approach and will go some way to ensure that the FMP meets the requirements of the Fisheries Act 2020. The Scallop Science Group (SSG) would be engaged in this process to ensure that risks of serious or irreversible harm to the stocks or the marine environment are avoided.

## Roles and responsibilities in relation to the king scallop FMP

The Department for the Environment, Food and Rural Affairs (Defra) is responsible for UK fisheries policy and governance. Fisheries management is carried out by devolved fisheries administrations; Welsh government; Marine Scotland; and Department of Agriculture, Environment and Rural Affairs in Northern Ireland. Collectively, including Defra, these organisations are known as the UK Fisheries Policy Authorities<sup>1</sup>.

The King Scallop FMP applies to the management of king scallop fisheries in English and Welsh waters; therefore, the other devolved administrations have no formal responsibility for the delivery of this plan. However, Defra and Welsh government will continue to engage with devolved departments and governments on future king scallop management measures.

## Development of the FMP

The development of this FMP has been delivered through the Scallop Industry Consultation Group Working Group (SICGWG). This co-management group provides a forum for industry, regulators, policy makers and researchers to come together to work towards the delivery of the FMP goals.

Responsibility for the physical drafting of the FMP sat with a sub-group of volunteers from the SICGWG, who met fortnightly for the majority of the FMP development process. The wider SICGWG were regularly updated on progress being made by the sub-group and were called upon when fundamental decisions needed to be made regarding the FMP development.

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<sup>1</sup> Fisheries Policy Authorities are defined in Section 52 Interpretation of the Fisheries Act 2020: the Secretary of State, Scottish Ministers, Welsh Ministers, and the Northern Ireland Department

## Roles and responsibilities of key groups engaged with the king scallop fisheries and FMP

- **Scallop Industry Consultation Group Working Group (SICGWG)** - this is the industry-led co-management group, established in 2019, and commissioned by Defra and the Welsh government in April 2022 as the delivery partner for the King Scallop FMP. The group includes representatives from all UK government departments, including the Crown Dependencies, and representatives of industry representing the wider SICG. It has worked collaboratively to produce the first iteration of the King Scallop FMP, developing short and longer-term proposals that enable the fisheries to be better managed and help achieve the objectives of the Fisheries Act 2020. SICGWG members have regularly attended other related meetings to further promote development of the King Scallop FMP, including presentations at Regional Fisheries Groups (RFG), Inshore Fisheries and Conservation Authorities (IFCA) conferences, and Fisheries Management and Innovation Group (FMIG) meetings. The work of the SICGWG has synergised with work being carried out by the Shellfish Industry Advisory Group (SIAG) and the two scallop Fishery Improvement Project (FIP) steering groups throughout.
- **Scallop Industry Consultation Group (SICG)** - this group, established in 2012 by Defra to assist UK Fisheries Administrations to manage dredge fishing effort limits imposed by the EU Western Waters (WW) Effort Regime (ICES Areas 6 and 7), comprises of representatives from the commercial fishing sector (catchers and processors) and plays a pivotal role in helping develop the future fisheries management for king and queen scallops throughout domestic waters and in those waters of the EU where UK boats operate. Throughout the development of the FMP, the SICGWG has maintained close communications with the SICG as a means of seeking stakeholder views on the future management of English and Welsh king scallop fisheries.
- **Scallop Science Group (SSG)** - this is a new group of independent scientists (biologists, social scientists, economists) drawn together to advise the SICGWG specifically on the development of appropriate management interventions and associated evidence needs in support of the FMP development work in 2022.
- **English king scallop Stock Assessment Project Steering Board (PSB)** - the primary role of the PSB is to oversee and help the Centre for Environment, Fisheries and Aquaculture Science (Cefas) deliver the king scallop stock assessments in selected English waters. This highly collaborative project between the scallop industry (catchers and processors)

## Annex 5: Legislative context and governance for the King Scallop FMP

and Cefas, supported by Seafish was formalised in 2017 with the establishment of a PSB, to oversee the design of data collection techniques for dredge and underwater Television surveys. The formalising of the project resulted in an industry-led agreement which saw the scallop industry contribute to the annual dredge surveys via a voluntary levy administered through the UKs key scallop processors- a temporary measure until such time as an industry wide science levy could be established. This project has led to greater mutual trust and confidence in the results produced, with the industry feeling like it has some ownership of the results produced. The stock assessments produced by Cefas form a fundamental aspect of the evidence base on which the King Scallop FMP has built upon.

- **Shellfish Industry Advisory Group (SIAG)** - the SIAG is focused on contributing to the strategic management of UK shell fisheries. Its UK-wide membership enables the group to maintain an oversight on all matters related to the management of shellfish fisheries. The SIAG crab and whelk management sub-groups were heavily involved in the development of the other shellfish front-runner FMPs. The SIAG's role in the development of the King Scallop FMP has been in developing cross-cutting shellfish objectives. Throughout the development of the FMP, the SICGWG has maintained close communications with the SIAG as a means of seeking stakeholder views on the future management of English and Welsh king scallop fisheries.
- **Wider stakeholders** - those with an interest in the king scallop fisheries in English and Welsh waters, have had the opportunity to engage informally on the development of this FMP through existing fisheries groups and forums and through a series of stakeholder engagement events designed by Seafish specifically to gather feedback on the King Scallop FMP. Further information on the engagement events can be found in Annexes 3 and 4.

Engagement on the implementation of the plan will continue through existing fisheries stakeholder working groups, namely the SICGWG.

## Co-management process

All future fisheries management decisions need to be taken in the context of the Fisheries Act 2020 objectives, the Joint Fisheries Statement (JFS) policies, and the principles set out in the Environment Act.

A key aim of this industry-led co-management working group was to develop the king scallop FMP in English and Welsh waters that complies with and fits the objectives of the Fisheries Act, on behalf of Defra and Welsh Government, who will have ownership of the FMP once published. The development of the FMP will be an on-going iterative process meaning that there will be a requirement for a co-

## Annex 5: Legislative context and governance for the King Scallop FMP

management group to be closely involved in subsequent iterations as the plan evolves over time.

Through the stakeholder engagement process, unanimous support was received for the formalisation of an effective system of co-management, with industry at the heart of the management decision making process. For this reason, the importance of co-management has been enshrined in the FMP itself.

A review of the current SICGWG membership may take place during the early stages of plan implementation to enable positive development of the FMP. The SICGWG will maintain strong links to a broad range of stakeholders to ensure further iterations of the FMP receive due consideration.

The co-management group will continue to work closely with Defra and Welsh Government in ensuring all relevant stakeholders remain informed and have the opportunity to comment, and where appropriate, co-design any proposals which deliver the goals of the FMP. Key stages of stakeholder communication will be identified by future delivery plans for each goal. Communication with identified stakeholders will include, but not be limited to, face to face or online discussions/forums, mailshots and formal consultations.

Whilst the future co-management group will be concerned primarily with the management of king scallops in English and Welsh waters, given the nature of the UK scallop industry, it will need to be mindful of management across all UK fisheries. It will need to acknowledge cross-border differences and consider fully the devolved responsibilities and priorities of the UK Fisheries Administrations and the various governance structures already in place at regional and local levels, including but not limited to IIFCAs in England, the Scottish Fisheries Management and Conservation Group (FMAC) Scallop sub-group, the Northern Ireland Scallop Association (NISA), the Scottish Regional Fisheries Groups and the Crown Dependencies.

Fishing industry acceptance and willingness to provide support is key for the effective delivery of an FMP. Consequently, the co-management group will need to liaise closely with other groups considering matters relating to non-quota species shellfish management measures under the Trade and Cooperation Agreement (TCA), given scallops make up a significant proportion of the UKs non-quota species catch inside and outside the UK Exclusive Economic Zone (EEZ) and those developing future multi-year strategies (MYSts) and in particular the Channel king scallop pilot MYSt being developed with the EU.

## Informal stakeholder engagement activities

As part of the FMP development process, Seafish, on behalf of the SICGWG, developed a series of informal stakeholder engagement events from September to

## Annex 5: Legislative context and governance for the King Scallop FMP

December 2022. A full summary of these events, including the format of sessions and key themes emerging in stakeholder feedback, is presented in the stakeholder engagement report in Annex 3. These events were promoted via social media, industry media including Fishing News, and posters in ports and harbours. Members of the SICGWG were encouraged to promote the events within their local communities. The purpose of these events was to:

- Raise awareness about the development of the king scallop FMP for English and Welsh waters
- Present draft FMP aims, objectives, and proposed management interventions to stakeholders
- Gather feedback to determine whether they are fit for purpose and set the right direction of travel for English and Welsh king scallop fisheries

In total, the SICGWG delivered 14 stakeholder engagement events, engaging with 239 stakeholders in total, using a combination of in-person and online meetings. This included representation from the catching sector (individual fishers, producer organisations and associations, and scallop divers), processors, IFCA's, non-governmental organisations (NGOs), and scientific researchers.

In-person stakeholder engagement events were held at selected ports and harbours in England, Wales and Scotland. Locations were selected based on both MMO landings statistics and perceived local importance of king scallop fisheries, which was informed by industry representatives of the SICGWG. Online events were held via Microsoft Teams and were based on sea area (for example the North Sea, Irish/Celtic Sea, and Western Channel) to facilitate discussion of area-specific issues facing king scallop fisheries. All events were open to any stakeholder with an interest in the FMP. An online 'wider stakeholders' meeting was held to cater to non-fishing interests including NGOs.

In addition to stakeholder engagement events, a dedicated FMP email inbox was hosted by Seafish to gather feedback from stakeholders outside of formal events.

A stakeholder engagement report, which summarised the format and reach of events, meeting attendance and representation, comments received by email and key themes emerging from stakeholder feedback was compiled by Seafish for the SICGWG. This included individual meeting notes from all in-person and online events. The stakeholder engagement report was used by the SICGWG and FMP drafting group to refine the FMP content on aims, objectives, and proposed management interventions. The stakeholder engagement report can be found in Annex 3.

Welsh Government undertook additional stakeholder engagement in Wales to ensure all fishers had the opportunity to comment on the objectives and possible FMP proposals. Fishers were offered an over the phone discussion which covered



## Annex 5: Legislative context and governance for the King Scallop FMP

an introduction to the FMP, proposed plan objectives, current king scallop management in Wales, discussing what works well and where improvements could be made. A summary of the additional Welsh stakeholder engagement can be found in Annex 4. The Welsh Government plans to conduct further engagement with stakeholders with environmental interests.



Department  
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Llywodraeth Cymru  
Welsh Government

# Proposed Fisheries Management Plan for king scallops in English and Welsh Waters

## Annex 6: Current management and enforcement in King Scallop fisheries

Date: July 2023

Version: public consultation



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## Aims of fisheries management

The overarching aim of fisheries management is to preserve the long-term sustainable use of fisheries resources whilst minimising any potential negative environmental, social or economic impacts. In English waters this is managed in line with the Defra Environmental Improvement Plan<sup>1</sup> and associated legislation such as the Fisheries Act 2020<sup>2</sup> and The Marine and Coastal Access Act 2009<sup>3</sup>. Driven by the government's aim for clean, healthy, safe, productive, and biologically diverse oceans, the objectives of fisheries management, as reflected and supported by this FMP, are to contribute to achieving the objective of protecting the marine environment for current and future generations and to ensuring marine businesses are supporting sustainable growth in the economy.

Whilst the scope of this FMP is king scallop fisheries in English and Welsh waters, some scallop stocks in the English Channel are likely to be classed as shared, based on the geographical location of stock units and biological links between areas. Similarly, whilst the EU leaves scallop fishery management to its Member States, the fisheries in EU waters are international, with multiple states fishing upon the same stock units. The UK and EU have committed to exploring the development of Multi-Year Strategies (MYSts) for shared non-quota stocks, with king scallops being agreed as one of the first species on which to pilot development of a MYSt. The MYSt will take into account existing measures in English and EU waters. For example, the French management system is complex, with a range of quotas, and layers of temporal restrictions (seasonal and daily hours), with access and quota being determined at a local level. It is important that the MYSt process and the FMP process do not work in isolation, with FMPs feeding into the development of MYSts.

## England and Wales national measures

King scallops are a non-quota species and therefore lie outside of the current total allowable catch (TAC) and quota regime. Management of king scallop fisheries is devolved in the UK, with management currently in place in England and Wales applied at national, regional, and local levels largely through legislation, fishing licence

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<sup>1</sup> [Environmental Improvement Plan 2023 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/environmental-improvement-plan-2023)

<sup>2</sup> [Fisheries Act 2020 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/2020/12)

<sup>3</sup> [Marine and Coastal Access Act 2009 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/2009/23)

## Annex 6: Current management and enforcement in King Scallop fisheries

conditions and byelaws. Some such measures are applied via retained EU law; a form of UK domestic law created to preserve the substantive law of the UK after EU exit.

The main controls applied relate to the technical specifications of gear used, Minimum Conservation Reference Sizes (MCRS) and fishing activity limits, which are broken down into further detail below.

## Fishing activity/effort limits

A retained EU Regulation, commonly referred to as the Western Waters (WW) effort regime<sup>4,5</sup>, places an annual upper limit on the amount of kilowatt (kW) days at sea effort UK 15m and over vessels can utilise to fish for scallops in the English Channel, Irish sea and some areas of Scottish waters (ICES areas 5, 6 and 7).

Whilst management of scallop fisheries within the UK is devolved, WW effort allocations are agreed and applied at a UK level given the nomadic nature of the scallop fleet in certain sectors and areas. This effort pool is administered by the Marine Management Organisation (MMO) in a system which sets a maximum number of days per quarter that any 15m and over UK vessel with a scallop entitlement may fish. These limits are revised on a quarterly basis in discussion with UK Fisheries Administrations and industry.

The overall UK effort limit for scallops, which applies to both king scallops and queen scallops, is 3.3 million kW days. Whilst the limit has not changed since being retained to UK law it now only applies to UK vessels in the specified areas of UK waters. The EU WW Regulation continues to apply to EU vessels in EU waters only.

The TCA<sup>6</sup> between the UK and the EU includes conditions defining access of EU vessels to UK waters for king scallops, and all other non-quota species, and vice versa. Levels of access are applied via global tonnage-based fishing activity limits based on the track record period of 2012-2016 and apply until 2026, when the TCA adjustment period comes to an end.

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<sup>4</sup> [Council Regulation \(EC\) No 1954/2003 of 4 November 2003 on the management of the fishing effort relating to certain Community fishing areas and resources and modifying Regulation \(EC\) No 2847/93 and repealing Regulations \(EC\) No 685/95 and \(EC\) No 2027/95 \(legislation.gov.uk\)](#)

<sup>5</sup> [Council Regulation \(EC\) No 1415/2004 of 19 July 2004 fixing the maximum annual fishing effort for certain fishing areas and fisheries \(revoked\) \(legislation.gov.uk\)](#)

<sup>6</sup> [UK/EU and EAEC: Trade and Cooperation Agreement \[TS No.8/2021\] - GOV.UK \(www.gov.uk\)](#)

## Annex 6: Current management and enforcement in King Scallop fisheries

In addition to effort limits, there is a requirement for over 10m vessels using a mechanised dredge to have additional authority (entitlement), as part of their fishing licence, to fish for scallops. There is a limit to the number of licences that have been issued, to cap the overall capacity of the scallop fishing fleet.

### Scallop dredge technical measures

The main legislative framework which sets out gear specifications and usage limits in England is the Scallop Fishing (England) Order 2012<sup>7</sup>. This Order applies to all vessels operating in English waters and places restrictions on the number of dredges that can be employed at any one time within and outside the 12 nautical mile zone. It also specifies technical measures defining the type of dredge that can be used.

Key scallop legislation in Wales is the Scallop Fishing (Wales) (No.2) Order 2012<sup>8</sup> and The Scallop Dredging Operations (Tracking Devices) (Wales) Order 2012<sup>9</sup>, also amended by the Fisheries Act 2020.

The Scallop Fishing (Wales) (No.2) Order 2010 prohibits the activity of king scallop dredging within 1 nautical mile (nm) of shore and in clearly defined areas around the Welsh coast including the majority of European marine sites in Wales and places spatial restrictions on the number of dredges that can be employed at any one time. The Order also specifies technical measures defining the type of dredge that can be used. The Order further restricts vessel engine size, prohibits king scallop fishing in all Welsh territorial waters from 1 May to 31 October each year, and limits the minimum size of scallop allowed to be retained.

The Scallop Dredging Operations (Tracking Devices) (Wales) Order 2012, also amended by the Fisheries Act 2020 requires each vessel to have an active and functioning satellite tracking system fitted which transmits every ten minutes.

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<sup>7</sup> [The Scallop Fishing \(England\) Order 2012 \(legislation.gov.uk\)](#)

<sup>8</sup> [The Scallop Fishing \(Wales\) \(No.2\) Order 2010 \(legislation.gov.uk\)](#)

<sup>9</sup> [The Scallop Dredging Operations \(Tracking Devices\) \(Wales\) Order 2012 \(legislation.gov.uk\)](#)

## Protection of juvenile and spawning scallops

The Minimum Conservation Reference Size (MCRS) sets the minimum sizes that various species, including scallops, can be retained and landed and are set based on the estimated size at maturity, to allow younger animals to breed before they are removed from the stock. In English and Welsh waters, the minimum landing size (MLS) at which king scallops may be retained is 100mm round shell length, except for the Irish Sea (Division 27.7.a) and the Eastern Channel (Division 27.7.d), where it is 110mm. These values originate from the EU Technical Conservation Regulation but are now retained in the corresponding UK legislation: [Regulation \(EU\) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures, amending Council Regulations \(EC\) No 1967/2006, \(EC\) No 1224/2009 and Regulations \(EU\) No 1380/2013, \(EU\) 2016/1139, \(EU\) 2018/973, \(EU\) 2019/472 and \(EU\) 2019/1022 of the European Parliament and of the Council, and repealing Council Regulations \(EC\) No 894/97, \(EC\) No 850/98, \(EC\) No 2549/2000, \(EC\) No 254/2002, \(EC\) No 812/2004 and \(EC\) No 2187/2005 \(legislation.gov.uk\)](#)

Since 2013 seasonal closures have been introduced in ICES area 7d in English waters, to provide enhanced protection to king scallop stocks during spawning seasons. The benefits of this closure in terms of stock protection are largely associated with reducing fishing pressure on stocks during the spawning season, which occurs between May and October, allowing the remaining stock a chance to spawn as well as increasing protection for juvenile scallops to grow to spawning size and MCRS before encountering scallop gear. The 7d closure in English waters complements similar closures in place in French waters, which were introduced into EU Regulation 2022/1357 in 2022. The complementary closures provide increased protection to what is likely to be classed as a shared stock in the Channel. The UK and EU will discuss MYSTs for joint management of shared non-quota stocks, which will consider existing measures.

The scope and method by which closures in English waters have been applied have evolved over time, as scientific evidence around the status of stocks has increased. Existing and potential future seasonal closures will be regularly reviewed to ensure the measure remains effective and can be applied flexibly to account for stock status, including spawning times and factors affecting fishing behaviour and activity levels, such as possible alterations to closure timings and duration.

## National Monitoring, Control and Enforcement

The MMO (in English waters) and the Welsh Government (in Welsh waters) take a blended approach to the monitoring and management of fisheries in England and Wales. This includes a combination of risk-based intelligence led inspections of fishing vessels both at sea and in port, as well as physical inspections of both merchants and transporters of first sale fisheries products.

MMO and the Welsh Government also undertake a wide range of desk-based monitoring of fisheries activities which includes (but is not limited to) the use of vessel monitoring systems (VMS), the monitoring of quota uptake and compliance with fisheries regulations, through data supplied by the fishing industry as well as the assessment of scientific evidence. The MMO and Welsh Government have the ability to add additional controls to fishery activity through the implementation of vessel licence conditions, as well as introducing byelaws. In Welsh waters, Welsh Ministers have the powers to bring into force statutory instruments for the purpose of fisheries management.

See MMOs compliance and enforcement strategy: [Compliance and Enforcement Strategy - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

## Codes of practice, regulations & rules enforced

Regulations are focused on reducing the main risks for non-compliance in the fishing industry which relate to non or inaccurate reporting, the retention of prohibited or below MCRS organisms, the use of illegal fishing gear and fishing in areas where this activity is restricted. To limit these risks the MMO, Welsh Government and local Inshore Fisheries Conservation Authorities (IFCAs) conduct at sea and shoreside patrols whereby retained catch and fishing gear is inspected for compliance. The use of VMS and in the case of restricted fishing areas, enhanced VMS, can be used as a tool to monitor and encourage higher compliance.

In addition, the MMO and Welsh Government apply a fishing vessel licensing regime along with control measures such as the use of logbooks and/or catch record data and sales notes from merchants in order to monitor fishing activity and compliance with national and local regulations.



## Regional Inshore Fisheries Management

In addition to the MMO's management and monitoring responsibilities, scallop dredging within the 6nm limit of the English Coast is managed by regional IFCAs. IFCAs have a duty to sustainably manage the inshore marine environment and have general duties in relation to conservation and biodiversity. IFCAs are responsible for producing byelaws within their districts to ensure effective management of marine habitats in the inshore area.

To implement byelaws, IFCAs are required to gather evidence, evaluate options and propose the management solutions. Proper evaluation of the outcomes of implementing the byelaws must be conducted to ensure the effectiveness of the actions taken. The IFCAs adopt a consistent approach to byelaw making.

Byelaws created by IFCAs do not have effect until confirmed by the Secretary of State, though emergency byelaws made pursuant to section 157 of the Marine and Coastal Access Act 2009 have effect without confirmation.

Provisions set out in section 156 of the [Marine and Coastal Access Act 2009 \(legislation.gov.uk\)](https://www.legislation.gov.uk) allow a byelaw to prohibit or restrict the exploitation of sea fisheries;

- In specified areas or during specified periods
- Limiting the amount of sea fisheries resources a person or vessel may take in a specified period
- IFCAs continually monitor the effectiveness of their byelaws and, when they are no longer deemed effective, are repealed or modified. Section 158 of the 2009 Act makes provision for byelaws to cease to have an effect after a specified period (known as a "sunset clause"). Best practice dictates that IFCA byelaws should include sunset clauses or specified review points.

Byelaws should be proportionate and targeted to a specific issue. A byelaw should only be used when it can demonstrate existing activities are having an impact on the achievement of IFCA objectives, the marine environment or Marine Protected Area (MPA) conservation objectives, or there is a significant risk of them doing so in the future.

In some instances, it is possible for IFCAs to introduce voluntary measures. These can include informal or voluntary Codes of Practice, which can be an effective tool to enable compliance. Where an activity is likely to have an effect on MPAs but there is uncertainty about the degree of risk and harm, a precautionary measure can be used to prevent harm.

## Annex 6: Current management and enforcement in King Scallop fisheries

In Wales, inshore fisheries are managed by the Welsh Government with the following measures:

- No dredging within 1nm
- Spatial closures to protect European Marine Sites (EMS)
- VMS within 12nm (10min)
- 150 VCU (N) and 221kw(S)
- Technical dredge specifications
- Seasonal Closures
- MLS 110mm inside 12nm and 100 below 52.30'N
- Vessel length requirements
- Permitting out to 6nm



Department  
for Environment  
Food & Rural Affairs



Llywodraeth Cymru  
Welsh Government

# Proposed Fisheries Management Plan for king scallops in English and Welsh Waters

## Annex 7: King Scallop FMP environmental considerations

Date: July 2023

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## Introduction

All Fishery Management Plans (FMPs) are subject to legal and environmental obligations arising from the Habitats Regulations, Marine and Coastal Access Act 2009, UK Marine Strategy Regulations 2010, and the Environmental Principles policy statement for the Environment Act 2021. These obligations have been set out in the table below.

**Table 1: Summary of relevant environmental legislation and FMP obligations**

Environmental UK legislation and frameworks	FMP obligations
<p><b>The conservation of Habitats and Species Regulation 2017</b></p> <p><b>The Conservation of Offshore Marine Habitats and Species Regulations 2017</b></p>	<ul style="list-style-type: none"> <li>• FMPs and their measures must not result in adverse impact to site integrity for European Marine Sites.</li> <li>• FMPs and their measures must not result in an adverse impact to site integrity for Offshore Special Areas of Conservation and Special Protection Areas (SPAs).</li> <li>• The competent authority must undertake a Habitats Regulation Assessment (HRA) to determine whether the FMPs (including proposed management measures) may have an impact on Marine Protected Areas (MPAs) features or site integrity.</li> </ul>
<p><b>Marine and Coastal Access Act 2009</b></p>	<ul style="list-style-type: none"> <li>• FMPs and their measures must not hinder the conservation objectives of Marine Conservation Zones (MCZs).</li> <li>• FMPs may need to undertake an MCZ impact assessment to determine whether it (including proposed management measures) may have an impact on MPA conservation objectives.</li> </ul>
<p><b>UK Marine Strategy (UKMS) Regulations 2010</b></p>	<ul style="list-style-type: none"> <li>• The UKMS requires the UK to take the necessary measures to achieve or maintain Good Environmental Status (GES) through the development of a UK Marine Strategy.</li> <li>• The UKMS identifies FMPs as a tool to support the delivery of GES.</li> </ul>

Environmental UK legislation and frameworks	FMP obligations
<p><b>Environment Act 2021</b></p>	<ul style="list-style-type: none"> <li>When developing fisheries management measures or policies, FMPs must have due regard to the Environmental Principles Policy Statement in the Environment.</li> </ul>

Any future management framework and measures developed will be considered for the assessments outlined in the table above where appropriate.

## Wider environmental risks

Defra sought advice from the Joint Nature Conservation Committee (JNCC) and Natural England on the potential risk posed by the king scallop fisheries to the features in MPAs. JNCC and Natural England were also commissioned to provide advice on whether king scallop fisheries are likely to affect any of the UK Marine Strategy (UKMS) descriptors and our ability to achieve the targets for GES. The evidence and advice provided by JNCC & Natural England underpins the suggested measures put forward in the sections below.

### Risks and impacts arising from king scallop fisheries to the designated interest features of Marine Protected Areas (MPAs)

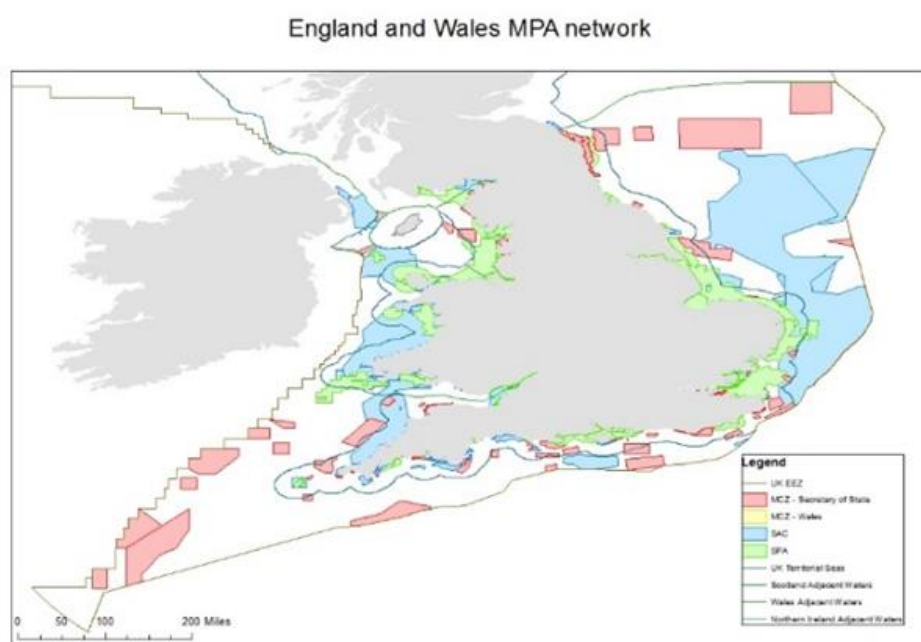
Although this FMP considers all forms of king scallop fishing, the main environmental pressures on MPA features is from scallop dredge fishing activity. Figure 1 shows the distribution of MPAs relevant to the England and Wales King Scallop Fisheries Management Plan. Between 2016 to 2021, more than 95% of king scallop fisheries across England and Wales used dredges to catch king scallops. The scallop fishery typically occurs over sedimentary habitats and is distributed around the coast of the UK. In English and Welsh waters, the greatest concentration of effort is typically in the Channel region. Elements of the fleet can be quite nomadic, and patterns of effort can vary from year to year. The main environmental pressures of dredges on MPA features include:

- Removal of target and non-target species
- Abrasion and disturbance of the substrate on the surface of the seabed
- Penetration, disturbance, and abrasion of the substrate below the surface of the seabed

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- Visual disturbance
- Changes in suspended solids

The assessment of the impact of fishing activity within MPAs has already been carried out for a number of MPAs by the Inshore Fisheries and Conservation Authorities (IFCAs), Marine Management Organisation (MMO) and Welsh Government. Stakeholders have worked closely with regulators to help develop measures to address impacts within inshore and offshore MPAs. Therefore, appropriate management is either already in place or soon to be introduced to ensure any fishing within MPAs is compatible with the MPA's conservation objectives. Across a number of MPAs in England and Wales, scallop dredging is partially restricted or no longer permitted.



**Figure 1:** Map of the English and Welsh Marine Protected Areas Network categorised by Marine Conservation Zones (MCZ), Special Areas Conservation (SACs), and Special Protection Areas (SPAs).

Whilst management within an MPA considers fishing activity that occurs within the site boundaries, there remains the potential for fishing activity occurring outside of an MPA to still have impacts on the features protected within an MPA. This can happen when either the pressure exerted by the fishery impacts protected features beyond its spatial footprint or when the feature of an MPA is mobile and travels outside the site. Bycatch from scallop dredge fisheries on mobile species that are designated features of MPAs has been identified as a low risk.

Scallop dredging can result in the bycatch of fish, crustaceans, and other invertebrates. Based on current evidence, bycatch of sensitive species is considered a low risk. There is the potential to include fish and crustaceans that are features of protected sites but due to their behaviour, they often move beyond the boundary of

## Annex 7: King Scallop FMP environmental considerations

the MPA site. If bycatch mortality of these species outside of the MPA site is high, then it can adversely impact the population within the site. This could result in the MPA conservation objective for that species not reaching its target of a maintained or restored population status.

Whilst studies are available on the impacts on bycatch from scallop dredging, the spatial and temporal scales at which the evidence has been generated is limited. This means that it cannot be concluded with high certainty that there is no bycatch of these species at any scale across the entire fishery. To mitigate the potential risk caused by scallop dredging on the bycatch of mobile species, the FMP proposes setting out a monitoring and reporting plan to enable listed mobile species bycatch to be properly understood and effective management measures put in place outside of MPA sites, where relevant.

## Highly Protected Marine Areas (HPMAs)

Whilst MPAs are designated to protect specific features and can support the recovery of the marine environment to a good, healthy state, HPMAs are being designated to protect all species and habitats – including spawning and nursery grounds for commercially important species - within the HPMa boundary and associated processes in order to allow protection and full of marine ecosystems. The first three pilot HPMAs (North East of Farnes Deep, Allonby Bay, and Dolphin Head) were selected following a 12-week consultation and analysis of responses and their ecological importance. The sites will be designated before 6 July 2023, and Defra are currently exploring options for additional sites. Future options will also be subject to consultation.

Management measures within HPMAs will need to align with the conservation objective of HPMAs. Recovery to a more natural state will be achieved by prohibiting extractive, destructive and depositional activities within each site. This would include activities such as dredging and anchoring. Non-damaging levels of other activities to the extent permitted by international law will be allowed. Fisheries management measures, including MMO and IFCA byelaws will be used to prohibit or restrict fishing activities from occurring within the site.

## Risks and impacts arising from king scallop fisheries to UK Marine Strategy Descriptors

Under the UK Marine Strategy Regulations (2010), the UK has a responsibility to take the necessary measures to achieve or maintain GES, set out through the



## Annex 7: King Scallop FMP environmental considerations

UKMS. The UKMS provides the policy framework for delivering marine policy at the UK level and sets out how the vision of clean, healthy, safe, productive, and biologically diverse oceans and seas will be achieved. The target for GES is measured through 11 qualitative descriptors, which describe what the environment will look like once GES has been achieved.

The following environmental risks in English and Welsh waters arising from king scallop dredge fisheries have been identified:

- Risk 1: Seafloor integrity
- Risk 2: Bycatch of sensitive species from scallop dredging
- Risk 3: Litter from fishing gear

### **Risk: Seafloor integrity**

Seafloor integrity (UKMS descriptor 1, 6) in this context refers to the extent of physical disturbance as a result of human activity. The risk to seafloor integrity as a result of scallop dredging is considered high due to the benthic pressure and disturbances associated with the towed dredge.

There are also knock-on related impacts on biodiversity (UKMS descriptor 1) and food webs (UKMS descriptor 4) as a result of seafloor integrity being impacted. Collectively, this is considered a high-risk issue as there is a clear link between the scallop dredge activity and failure to meet GES indicator targets<sup>1</sup>.

### **Actions for mitigating risks to seafloor integrity**

*FMP level:* The FMP recognises the need for its strong engagement in a strategic approach to reducing the impacts of fishing on the seafloor.

In the update to [UK Marine Strategy Part 1](#) (2019) Defra made a commitment to assess the feasibility of setting up a partnership working group, referred to here as the Benthic Impact Working Group, with key stakeholders to identify solutions for reducing the impacts of fishing on seafloor integrity. Once convened, this group should provide strategic oversight and direction for delivering future advice, including identifying, developing and trialling possible mitigation or management options, in partnership.

We are exploring the potential of a focused benthic impact working group that would complement existing groups considering pressures on benthic habitats. Its proposed

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<sup>1</sup> <https://moat.cefas.co.uk/biodiversity-food-webs-and-marine-protected-areas/benthic-habitats/physical-damage/>.

## Annex 7: King Scallop FMP environmental considerations

aim would be to identify and implement measures that can reduce the impact of fishing activity on the seabed. The FMP will make a significant contribution to the implementation and co-ordination of this group once established. The FMP will facilitate the involvement and alignment across scallop fisheries to support the scale of the action required to mitigate the seafloor integrity impacts. This will include working in partnership to map current fished areas alongside areas where scallop fishing is not permitted or feasible, such as in some MPAs, in HPAs and offshore windfarms, which will improve understanding of the overall footprint of the fishery. The work will also consider where further changes to scallop fishing grounds may occur in the future, for example new offshore developments, or an increased MPA network. An evidence-based assessment of the interactions between the scallop fishery and the marine environment will be carried out to inform the development of an action plan for reducing damaging impacts (as set out in FMP objective 3.1) and considering these aspects within the wider context of spatial squeeze.

### **Desired outcome**

The FMP helps to drive the formation of a Benthic Impact Working Group in which evidence will be considered to develop further recommendations on the potential effects of fishing activities (alongside other activities) on seafloor integrity and the state of benthic habitats. The group will contribute significantly to a partnership approach to delivering a reduction in benthic impacts around England and Wales. Ultimately the FMP should contribute to a reduction in benthic impacts, advancing the achievement of Good Environmental Status (within the meaning of the Marine Strategy Regulations 2010) for seafloor integrity while maintaining economic viability of the fleets.

### **Timeframe**

Short-term: commencement of the Benthic Impact Working Group by the end of 2023 to ensure a tangible mechanism for delivering identified actions exists in the year that this FMP is published.

Mid-term: contribution to the achievement of GES for seafloor integrity.

## **Risk: Bycatch of sensitive species from scallop dredging**

Bycatch is the incidental catch of unused or unmanaged species and is globally recognised as a major threat to marine fisheries and ecosystem functioning<sup>2</sup>. The bycatch rate within king scallop fisheries is highly dependent on gear type, environmental factors (for example, season, fishing areas), fishery specific factors (for example, diving or dredging) and data collection method (for example, fishery dependent or fishery independent surveys)<sup>3</sup>. Based on current evidence, bycatch of sensitive species in king scallop fisheries are considered low-risk.

Scallop dredging has the potential to impact biodiversity (UKMS descriptor 1), commercial stocks (UKMS descriptor 3) and food webs (UKMS descriptor 4). Bycatch in the fishery is thought to be at levels low enough to be unlikely to have population level effects for UKMS descriptors relating to birds, seals and cetaceans and the impacts on these components of UKMS descriptors are therefore thought to be low risk. Bycatch of sensitive fish (under UKMS descriptors D1 and D4) is identified as medium risk. Improved reporting of sensitive species (as defined in UKMS assessments) would improve the ability to accurately assess this risk. Regardless of risk under UKMS, under part B of the Fisheries Act Ecosystem Objective, incidental catches of sensitive species should be minimised and, where possible, eliminated.

### **Actions for mitigating risks to bycatch of sensitive species:**

National level: The Bycatch Mitigation Initiative published in August 2022 sets out in more detail policy objectives and actions that should be taken to achieve the ecosystem objective in the Fisheries Act. Existing monitoring programmes, such as the [Bycatch Monitoring Programme](#) and [Clean Catch UK](#), are dedicated to better monitoring, reducing and where possible, eliminating bycatch through developing and trialling technology to enhance on the ground bycatch reporting capabilities, as well as testing bycatch avoidance devices in the field.

FMP level: Reducing bycatch, even when the risk is low, is complex and requires solutions that are tailored to the different fisheries. To mitigate the potential risk caused by scallop dredging on the bycatch of mobile species, the FMP will

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<sup>2</sup> Komoroske LM and Lewison RL (2015) Addressing fisheries bycatch in a changing world. *Front. Mar. Sci.* 2:83. doi: 10.3389/fmars.2015.00083

<sup>3</sup> Öndes, F., Kaiser, M. J., & Murray, L. G. (2018). Fish and invertebrate by-catch in the crab pot fishery in the isle of man, Irish sea. *Marine Biological Association of the United Kingdom. Journal of the Marine Biological Association of the United Kingdom*, 98(8), 2099-2111. doi: <https://doi.org/10.1017/S0025315417001643>

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implement a bycatch monitoring and reporting plan to enable listed mobile species bycatch to be properly understood and effective management measures put in place. Details of the monitoring plan are as follows:

- Improve the understanding of bycatch of sensitive mobile species in scallop fisheries through existing data collection, monitoring, and R&D
- The FMP will encourage participation amongst scallop fishers to:
  - Collect data on recording accidental bycatches along with the geographical location of these bycatches
  - Accept observers on board to support independent surveys
  - Discuss barriers and challenges with existing self-reporting processes
- Evidence generated will be reviewed after two years, and detailed next steps will be set out in an updated FMP, after the next review. This will include the identification of hotspots/high risk areas, as well as an assessment of additional evidence requirements to support the uptake of effective management measures, and the evaluation steps required to measure their effectiveness

### **Risk: Litter from fishing gear**

Marine litter is described as any persistent, manufactured or processed solid material discarded, disposed, or abandoned in the marine and coastal environment is classed as marine litter. Due to the nature of the gear used, which is largely metal, scallop dredging is considered unlikely to be a major contributor to marine litter (UKMS descriptor 10). As a result of this, it is considered a low risk at this stage.

#### **Mitigation:**

National level: The UK is committed to lead efforts to protect the marine environment from marine litter. The UK has been addressing the issue domestically, with policies such as single use plastic bans, as well as through endorsing an ambitious global treaty to end plastic pollution by 2040. At the regional level, Defra is working with other Contracting Parties to the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) to implement the second Regional Action Plan on Marine Litter, which includes action to tackle marine litter from land and sea-based sources, including fishing. The UK supports taking a whole-life cycle approach that will prevent and divert material from becoming a source of litter. Defra is reviewing domestic measures to ensure more end-of-life fishing gear is collected and managed sustainably. Existing monitoring programmes assess seafloor litter, surface litter and beach litter, alongside ongoing research initiatives to support the reuse and repurpose of end-of-life fishing gear back into the

fishing industry to support a circular economy and to reduce the impacts generated from fishing waste.

FMP level: The FMP will review evidence being generated through existing monitoring programmes over the next two years. An evidence plan will be set out in a future iteration of the FMP to assess the scale of impact generated by scallop dredge litter, along with any required research to support mitigating any risks identified.

## Other environmental considerations – Climate Change

Scallop stocks and fisheries are sensitive to the environmental change brought about by climate change – such as ocean warming and ocean acidification. Whilst these stocks and fisheries are affected by this change, they are also one of the contributors. All fishing activity leaves a carbon footprint, which can further exacerbate the environmental impacts of climate change. The contribution of carbon emissions from scallop fisheries comes from vessel emissions, as well as potentially through the disruption and release of stored carbon from the marine environment from fishing gears impacting the seafloor. To support the scallop fisheries to continue to sustainably harvest their stocks under changing climate, whilst also reducing their contribution to the cause, there is a need to move towards climate adaptive fisheries management. Set out below are the risks brought about by climate change (A-C), along with existing national activities to mitigate these risks, and proposed mitigating solutions at the FMP scale.

### Climate change impacts

#### **Risk: Climate change impacts king scallop stocks and fisheries**

Climate change and warming oceans are changing the distribution of commercially important shellfish species<sup>4</sup>. Crustaceans (such as crabs and lobsters) are considered to be more tolerant to the changes in ocean acidification than bivalve

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<sup>4</sup> Mieszkowska, N., Burrows, M. and Sugden, H. (2020) Impacts of climate change on intertidal habitats relevant to the coastal and marine environment around the UK. MCCIP Science Review 2020, 256–271. doi: 10.14465/2020.arc12.ith

## Annex 7: King Scallop FMP environmental considerations

molluscs such as scallops<sup>5</sup>. Scallop larvae are particularly sensitive to the changes in ocean acidification, with experiments of predicted ocean acidification levels demonstrating deformity in larval shell formation and increased mortality<sup>6,7</sup>. These impacts can have significant economic implications to the scallop fisheries. A recent US model showed that under worst-case ocean acidification impacts, the US Atlantic Sea scallop fishery could decline by more than 50% by the end of this century<sup>8</sup>.

### **Mitigation:**

National level: The UK undertakes ocean acidification monitoring to allow trends in pH changes over time to be identified. In-situ ocean acidification data is gathered from two established monitoring stations in the UK (Western Channel Observatory and Stonehaven), supporting global ocean acidification monitoring and sharing efforts. Alongside this monitoring, the UK continues to build the evidence base on the impacts of climate change on fish and shellfish stocks and fisheries through the existing research and development projects. For example, the UK and devolved governments co-funds the Marine Climate Change Impact Partnership (MCCIP). The MCCIP provides a coordinating framework for the UK, delivering high quality evidence on the latest marine climate change impacts, and guidance on adaptation advice to policy advisors and decision makers.

In addition, Defra's Marine Natural Capital and Ecosystem Assessment (mNCEA) includes sampling, collation, and data analysis to baseline the location, extent and condition of marine natural capital assets in English seabed environments. Marrying this intel up with known climate change impacts to scallops can support in identifying which stocks might be most vulnerable to the changes in ocean acidification and ocean warming. The increasing evidence base from the programme shows how species interactions effect the ecosystem services our natural assets provide; this information will be crucial in moving towards an ecosystem approach to fisheries management.

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<sup>5</sup> Kroeker, KL., Kordas, RL., Crim, RN., Singh, GG. (2010). Meta-analysis reveals negative yet variable effects of ocean acidification on marine organisms. *Ecology letters* 13:1419-1434

<sup>6</sup> Andersen S, Grefsrud ES, Harboe T. Effect of increased pCO<sub>2</sub> level on early shell development in great scallop (*Pecten maximus Lamarck*) larvae. *Biogeosciences*. 2013;10: 6161–6184. )

<sup>7</sup> White M. M., Mullineaux L. S., McCorkle D. C., and Cohen A. L. (2014) Elevated pCO<sub>2</sub> exposure during fertilization of the bay scallop *Argopecten irradians* reduces larval survival but not subsequent shell size. *MEPS* 498: 173–186

<sup>8</sup> Jennie E. Rheuban et al, Projected impacts of future climate change, ocean acidification, and management on the US Atlantic sea scallop (*Placopecten magellanicus*) fishery, *PLOS ONE* (2018). DOI: 10.1371/journal.pone.0203536

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FMP Level: The FMP will collate relevant evidence generated from these existing monitoring and research programmes over the next two years. An evidence plan will be set out in the next FMP to assess the scale of impact generated by a changing climate to both the scallop stocks and the fisheries. The FMP will propose an evidence strategy to address existing evidence gaps and set out how it proposed to move towards climate adaptive management.

## Climate change mitigation- reaching Net Zero

### **Risk: Fishing vessel emissions contribute to carbon dioxide levels**

Between 2016 to 2021, more than 95% of king scallop fisheries across England and Wales used dredges to catch king scallops. Currently, scallop fisheries specific vessel emissions are not yet known for England and Wales. However, recent analysis has shown that the total UK scallop dredge fishing fleet segment (which comprises of 209 vessels) produced 10.2% (85kt CO<sub>2</sub>e) of the total carbon emissions at sea each year across the UK's fishing fleets<sup>9</sup>.

The scallop dredging fleet has expanded substantially on average from between 2005-to 2009 to 2015-2019, and with it has seen a rise in total carbon emission by more than 37%. The increase in fleet size has been seen in the smaller scallop dredges (under 15m length), with vessel numbers on average increasing from 120 between 2005-2009 to 203 between 2015-2019. Less of an increase has been seen in the over 15m dredges, which expanded on average from 74 to 86 over the same time period. Whilst total emissions are up by 37% over this time frame, overall, per-vessel emissions have decreased for the fleet by – 8%<sup>11</sup>.

### **Mitigation:**

National level: The Climate Change Act 2008 (Amended in 2019) sets a legally binding target of achieving net-zero greenhouse gas emissions (GGE) by 2050 across the UK economy, with an ambition of a 78% reduction by 2035. To support these targets, all sectors will need to develop pathways to reduce their GGE and utilise alternative clean energy. The UK seafood sector will need to consider how they will reduce emissions to contribute to meeting the Net Zero target. These mitigating actions could include technological, managerial, and behavioural changes to increase energy efficiency or transition to alternative fuels and energy sources, and reducing the direct impact that fisheries' have on marine carbon stores. Defra is in the process of investigating the feasibility and potential of existing carbon

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<sup>9</sup> Engelhard, GH., Harrod, OL., Pinnegar, JK. (2022). Carbon emissions in UK fisheries: recent trends, current levels, and pathways to Net Zero. Defra project – in review.

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mitigating solutions, and is collaborating across government, with industry and academic organisations to understand the current evidence gaps and latest innovations to support the development of pathways towards Net Zero for the UK fishing fleet. Existing government led funding schemes, such as the Fisheries and Seafood Scheme (FaSS), are open to support the fishing sector to transition to Net Zero, and support businesses to adapt to the new conditions brought about by climate change.

**FMP Level:** The FMP will set out a research plan to analyse the carbon dioxide emissions generated by the scallop fisheries in England and Wales. The outcome of this research will identify where efforts can be made to reduce carbon emissions on the fishing activity itself or through the supply chain.

### **Risk: Fishing gear impacts blue carbon habitats**

Healthy coastal and marine environments can provide nature-based solutions to help tackle climate change. For example, certain marine habitats (including those that are home to scallops such as sandy/ gravelly sediments), are able to store carbon - these are known as blue carbon habitats. If left undisturbed, these habitats can contribute to GHG emissions reductions. Habitat disturbance through fishing practices may affect seabed carbon dynamics. Whilst seabed sediments are known to be one of the largest stores of organic carbon and capture, the fate of the resuspended sediment as a result of activities in contact with the seabed, for example mobile bottom fishing gears like scallop dredges, is particularly uncertain and often ignored in seabed biogeochemistry models. The number of studies that have directly measured the effect of bottom trawling on seabed carbon stores in controlled experiments is very limited meaning that the evidence-base needed to support justifications for designating sites to provide long term carbon stores are severely lacking.

#### **Mitigation:**

**National level:** The UK continues to build the evidence base on blue carbon habitats in the UK, including marine sediments. While Defra appreciates the benefits of a precautionary approach, further evidence is required to understand the trade-offs and wider consequences of decisions and ensure a net positive outcome. Defra and the industry therefore continue to build the evidence base on carbon seabed dynamics, through research on carbon stocks and accumulation rates; emissions or changes in stock/accumulation due to human activities (including vulnerability to fishing activity) and climate change; and seabed recoverability timescales. The Blue Carbon Evidence Partnership is looking to progress blue carbon evidence base to address some of the uncertainties in this area.

**FMP Level:** The evidence around the risks and impacts of scallop dredging on blue carbon habitats within English and Welsh waters remains uncertain, but existing



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research & development and evidence partnerships have the potential to address gaps in these areas. The FMP will collate relevant evidence generated from these existing projects over the next two years. An evidence plan will be set out in the next FMP to assess the scale of impact generated by scallop dredging, along with any required research to support mitigating the risk identified.

## Climate change adaptation

### **Risk: Fisheries are not able to adapt to the changes in scallop stocks as a result of climate change**

#### **Mitigation:**

National Level: The Climate Change Objective in the Fisheries Act ensures that future fisheries management policy can, where appropriate, adapt to any future impacts of climate change on the UK fishing industry to support climate adaptive fisheries management. Evidence will be collected modelling the potential movement of fish stocks and the impacts this will have on regional fisheries. As stocks move into and out of UK waters, assessments of stock levels will be conducted to adapt allocation of fishing opportunities.

FMP Level: During every FMP review cycle, new evidence around climate change impacts requiring adaptation of the fishery will be integrated into the specific FMP affected. Where evidence on the risks and opportunities afforded by Climate Change are absent, the precautionary objective will be enacted until such as time as the evidence can be collected.

## Consideration of the Ecosystem Objective

The ecosystem objective of the Fisheries Act 2020 determines that fisheries are managed using an ecosystem-based approach so as to ensure that their negative impacts on marine ecosystems are minimised and, where possible, reversed, and incidental catches of sensitive species are minimised and, where possible, eliminated. The Fisheries Act defines an ecosystem-based approach as an approach which (a) ensures that the collective pressure of human activities is kept within levels compatible with the achievement of good environmental status (within the meaning of the Marine Strategy Regulations 2010 (S.I. 2010/1627)), and (b) does not compromise the capacity of marine ecosystems to respond to human-induced changes.

Scallops are commercially caught using 'scallop dredges'. These are rigid, 'toothed' structures which flip the scallops from the seabed and into the chained collection

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bag. Usually, these scallop dredges are installed on beams on either side of the vessel, with three-four per side on a small vessel, or up to around 20 dredges on a large vessel. The size selectivity of the scallop dredges can be improved by altering the sizes of the chain rings, whereby a larger ring size should capture larger scallop sizes.

Due to their penetrative nature and close contact with the seabed, scallop dredges have the potential to cause substantial physical disruption to the seafloor. The main pressures associated with scallop dredging are abrasion and penetration of the seabed and associated habitats including damage to organisms living on and in the seabed; changes in suspended sediments which can lead to smothering and siltation of some habitats and removal of target and non-target species. Scallop dredging, like other commercially towed fishing gears, can cause loss of biodiversity and it can reduce the complexity of benthic habitats by flattening substrates and removing structurally complex species such as hydroids, bryozoans, and seaweeds<sup>10</sup>. Overall, species diversity and richness, the total number of species and the number of individuals, have been found to decrease significantly with increased fishing effort<sup>11</sup>.

The effects of scallop dredging on marine ecosystems vary with different seabed types, levels of natural disturbance, local hydrography, fishing intensity and the characteristics of the ecological community associated with the habitat in question<sup>12</sup>. Mobile sediments appear more resilient than others, particularly in areas adapted to high levels of natural disturbance<sup>13</sup>. However, determining the full effects of dredging remains difficult, as most fishing grounds have been exploited for decades, long before scientific studies began<sup>14</sup>.

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<sup>10</sup> Sewell, J. & Hiscock, K., 2005. Effects of fishing within UK European Marine Sites: guidance for nature conservation agencies. Report to the Countryside Council for Wales, English Nature and Scottish Natural Heritage from the Marine Biological Association. Plymouth: Marine Biological Association. CCW Contract FC 73-03-214A. 195 pp.

<sup>11</sup> Veale, L. O., Hill, A. S., Brand, A.R. (2000). An in situ study of predator aggregations on scallop (*Pecten maximus* (L.)) dredge discards using a static time-lapse camera system, *Journal of Experimental Marine Biology and Ecology* 225:11-129

<sup>12</sup> Bradshaw, C., Veale, L., Hill, A., Brand, A.R., 2000. The effects of scallop dredging on gravelly sea-bed communities. In: Kaiser, M.J., de Groot, (Eds), *Effects of fishing on non-target species and habitats*. Blackwell Science, Oxford, UK, p-83-104

<sup>13</sup> Stewart, B. D., Howarth, L. M., 2016. Quantifying and managing the ecosystem effects of scallop dredge fisheries. *Scallops- Biology, Ecology, Aquaculture and Fisheries*. Ed. 3: C14

<sup>14</sup> *ibid*

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Section 7 of this FMP outlines the specific environmental risks arising from king scallop fisheries to MPA features and the achievement of good environmental status (within the meaning of the Marine Strategy Regulations 2010) and identifies mitigation to ensure this FMP contributes to the achievement of GES. Furthermore, work undertaken under Objective 3 of this FMP is likely to contribute to the achievement of the Ecosystem Objective.