Assessment of king scallop stock status for selected waters around the English coast 2025

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Centre for Environment Fisheries & Aquaculture Science

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Executive Summary

This report details the status of selected king scallop (*Pecten maximus*) stocks around England in 2025, and development since 2019. Annual assessments have been undertaken since 2017 by the Centre for Environment, Fisheries and Aquaculture Science (Cefas), as part of a collaborative project with the UK fishing industry, the UK Department for Environment, Food and Rural Affairs (Defra), and the UK Sea Fish Industry Authority (Seafish).

The five stock assessment areas identified in 2017 as being of importance to English fisheries were: three in ICES Division 27.7.e (Western Channel Inshore, 7.e.I; Lyme Bay Area, 7.e.L; Western Channel Offshore, 7.e.O), and two in Division 7.d (Eastern Channel North, 7.d.N; Eastern Channel South, 7.d.S). Two additional assessment areas were defined in 2018: one in the approaches to the Bristol Channel (7.f.I), and another in Division 4.b (Yorkshire and Durham Coast, 4.b.S). The Dogger Bank assessment area (27.4.b.D) was added in and surveyed once in 2021. The assessment areas are defined using ICES statistical rectangles, which are the resolution at which commercial landings data are available.

Two data streams were used for the assessments of those stock units (excluding stock units 7.d.S and 4.b.D): dredge surveys using a commercial fishing vessel and international landings (UK and non-UK landings). Dredge surveys have been carried out in the commercially fished beds of the stock units, outside 6nm, and are used to produce estimates of the biomass of harvestable scallops (above minimum conservation reference size, MCRS) in those areas. Their harvest rates (HRs) are then calculated as the ratio of landings taken from the stock unit in the 12 months after the dredge survey to the estimate of harvestable biomass within the dredged areas. Those HRs are compared to MSY proxy reference points that were derived from a yield and spawner per recruit analysis updated in 2022.

International landings are compiled by the ICES scallop working group (WGScallop). At the time of publication for this report, ICES data have been compiled and published up to the end of 2024. International landings were therefore only available to derive HRs of the 2017-2023 biomass estimates. For the 2024 landings, referred to as provisional landings, only English and Welsh landings were available to this assessment. Landings are currently taken from all ICES rectangles within an assessment area; this has resulted in landings from within the assessment area but outside of the surveyed bed contributing to the calculation of the harvest rate. The effects of this are particularly evident in inshore assessment areas.

After a review of the stock assessment in 2025, the 2017 survey has been excluded from this assessment, due to the difference in the survey design between this year and subsequent years, and 2018 has been excluded pending a review of the data. Data from the Yorkshire and Durham Coast (area 4.b.S, 2019) and the Western Channel Offshore (area 7.e.O, 2019 and 2020) were also excluded from the assessment following the review due incomplete sampling across the survey beds. Following this review, the time series of abundance per area has been re-estimated and the harvest rates re-calculated. The evolution of the harvestable biomass of the surveyed fishing beds of six of the assessment areas and their harvest rates are shown in Figures ES1 and ES2 respectively.

- Trends in harvestable biomass are specific to each assessment area. Of note is the pronounced fluctuation in HB in the Eastern Channel North, the stable HB in the Western Channel Inshore, and the steady decrease in the Western Channel Offshore since 2021. The latter ended with a ten-fold drop between 2024 and 2025 which is thought to have been partly driven by unusually high levels of octopus predation.
- In the Western Channel Offshore (7.e.O), the harvest rate has generally been close to or above the HR MSY proxy since 2021.
- Harvest rates in the Western Channel Inshore (7.e.I), the Bristol Channel (7.f.I) and Yorkshire and Durham coast (4.b.S) have consistently been below the respective HR MSY proxys since 2020.
- In the Eastern Channel North (7.d.N), the harvest rate was generally at, or slightly above, the HR MSY proxy from 2019-2023. Higher than normal harvestable biomass, along with the absence of international landings data due to the timing of reporting, resulted in a lower provisional harvest rate in 2024.
- The harvest rate and harvestable biomass for the Lyme Bay area (7.e.L) has not been included in this report due to evidence of significant landings coming from outside the surveyed bed. Further work on the calculation of harvest rates will be undertaken prior to the next assessment.

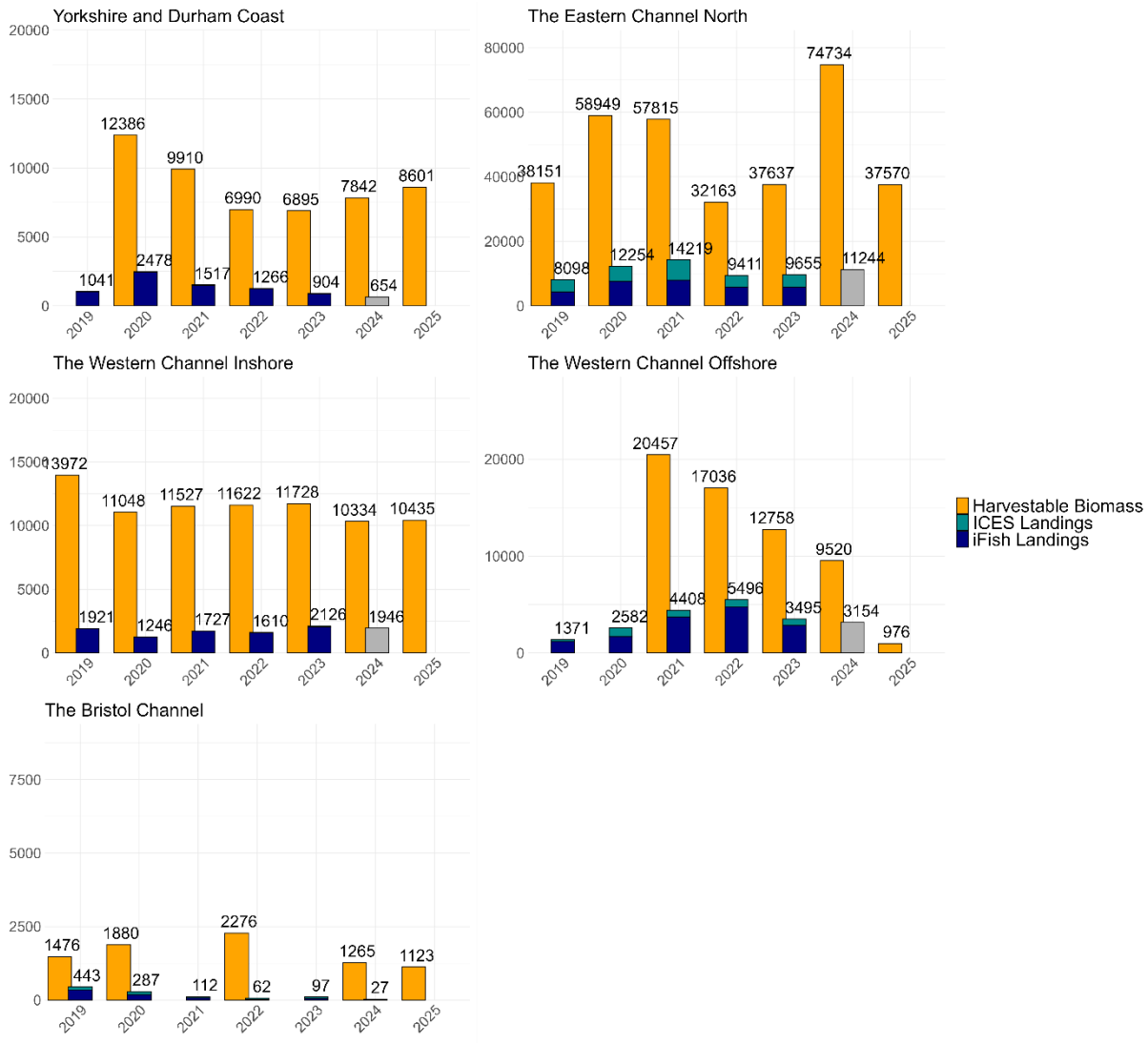

Figure ES1. Harvestable biomass (orange) per assessment area, commercial landings (blue and cyan) of the 12-month post-survey, and provisional landings for 2024 (grey). Note that the range of the y-axis differ between areas.

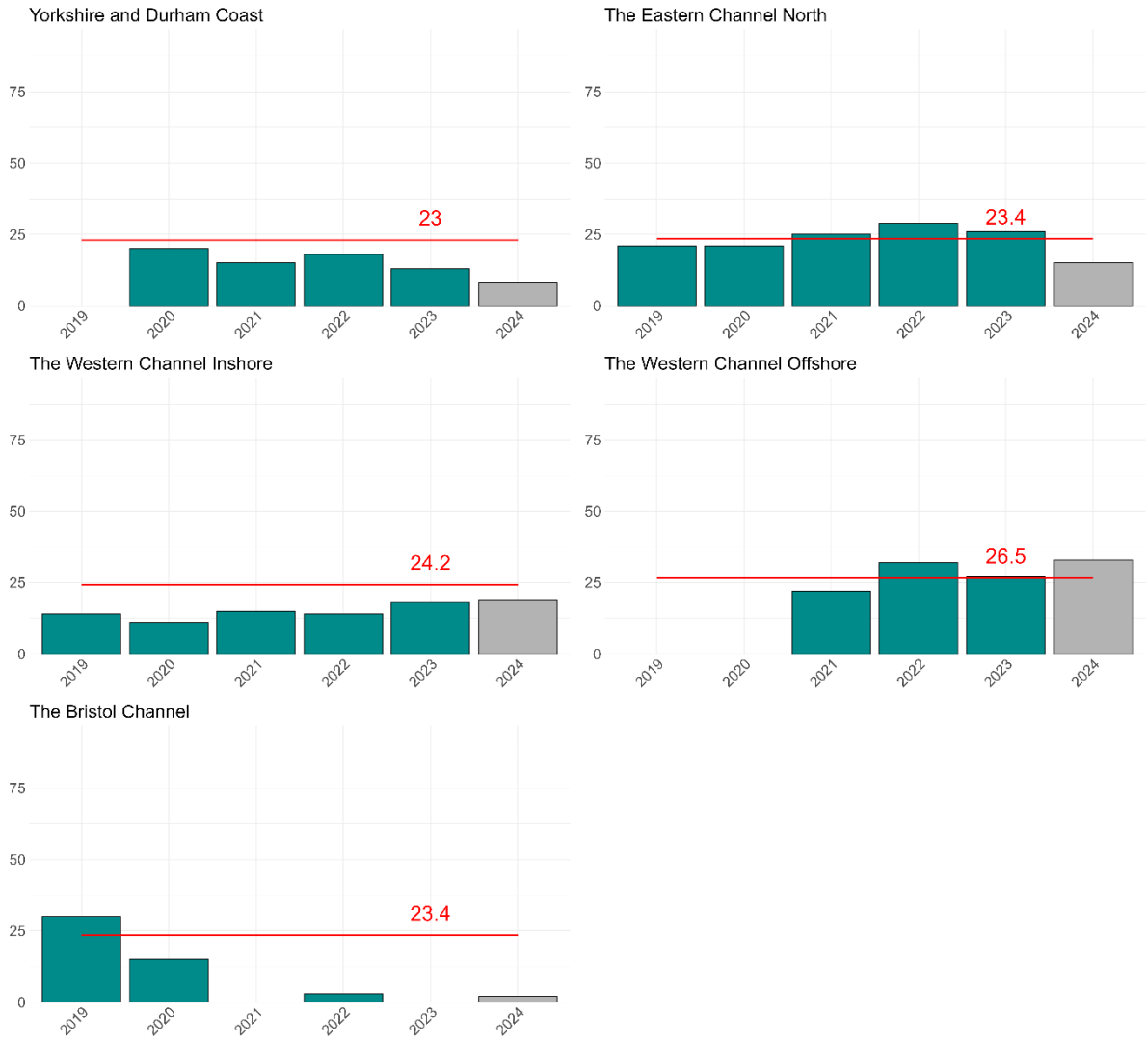

Figure ES2. Estimate of harvest rate (%) from dredge surveys, along with MSY proxy reference points (red lines). The years refer to when the survey was conducted, with harvest calculated using the landings in the following 12 months. Harvest rates calculated using published international landings are shown in cyan, whilst those calculated using provisional (England and Wales only) landings are shown in grey.

1. General

Species biology, description of the fishery and fishery management, rationale behind the stock delineation, survey design, assessment procedure and reference points calculations are detailed in a Stock Assessment Annexe (Fincham et al., 2026). A brief overview is provided here.

1.1. Stock definition

Eight stock units are defined, of which six are assessed (no assessment is undertaken for 4.b.D or 7.d.S). These stocks lie within four ICES subdivisions, 4.b, 7.d, 7.e and 7.f and these areas are further subdivided to give the stock units (Figure 1 (a)). They are hereafter referred to as '(stock) assessment areas', or 'stock unit'. Scallop beds where the main fishing activity occurs have been identified in each stock unit (Figure 1 (b)).

(a) (b)

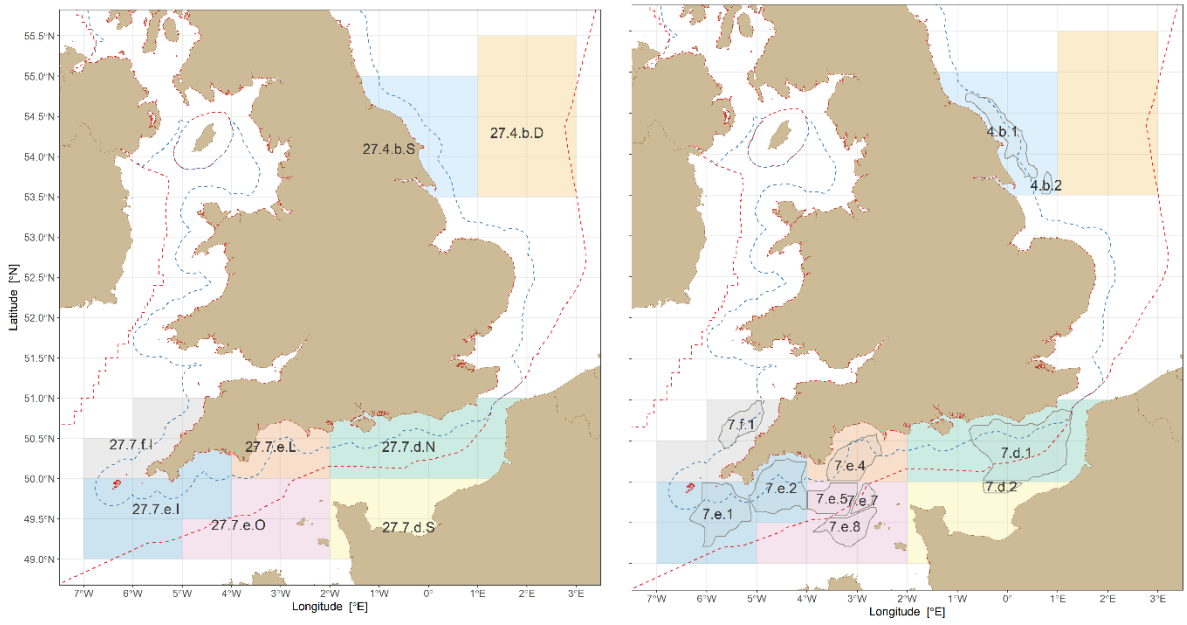

Figure 1. (a) King scallop stock assessment areas defined in the English Channel, the Celtic and North Sea; (b) King scallop stock unit assessment beds for the dredge survey. The dashed lines indicate the12nm Territorial Sea Limits (TSLs) of the UK (blue), and the UK Economic Exclusion Zone (EEZ) (red).

1.2. Summary of stock assessment methodology

The assessment is survey-based, using data from a dredge survey in commercially fished beds. The Western Channel and Bristol Channel are surveyed in May, and the North Sea and Eastern Channel in September.

The essence of the approach is to determine the harvestable biomass of scallops within each stock unit, as derived from fished beds. Survey catch rates (in numbers per m^2) at or above

MCRS (Minimum Conservation Reference Size) are raised by the gear efficiency parameter appropriate for the particular survey gear and ground type and raised to the area coverage of the surveyed fished bed.

Harvest rates are calculated for each stock unit using landing data. Harvest rate is a measure of the fishing mortality within a given area. Ideally, it is calculated from the harvestable biomass immediately prior to the start of a particular fishing season, in relation to the total removals during that season. Total removals are the combined international landings. Harvest rates are then compared to proxy reference points that were determined to establish exploitation levels consistent with the maximum sustainable yield (MSY).

During 2025, quality assurance of the scallop stock assessment and of the scallop dredge survey data resulted in the re-estimation of the harvestable biomass and harvest rates. The revised estimates are shown in Executive Summary Figures ES1-2 and Table 4. Data from 2017 2018 have not been included in this current stock assessment, due to the difference in the survey design between 2017 and subsequent years, and because 2018 data are still pending review.

2. Data

2.1. Landings data

International landings are compiled through the ICES WGScallop. Cefas submits landings data for all UK and Crown Dependency vessels landing into ports in England and Wales, and for those vessels (excluding Scotland and Northern Ireland) landing into non-UK ports. These data are extracted from the 'iFish' database and are referred to as the 'iFish landings submission'. Scotland and Northern Ireland submit landings data to ICES for their respective vessels following a similar approach.

At the time of finalising this report (May 2026), the 2025 WGScallop data call submissions were available, covering the years 2005-2024. Landings from 2022 and 2023 which were estimated in previous reports have been replaced with updated international landings. Provisional iFish landings data to the end of Q3 of 2025 were also considered reliable (Figure 2).

In most stock units, international landings have been fluctuating without clear trends over the past two decades (Figure 2), with the exception of decreasing trends in the Bristol Channel since 2013 and the Yorkshire and Durham coast since 2015.

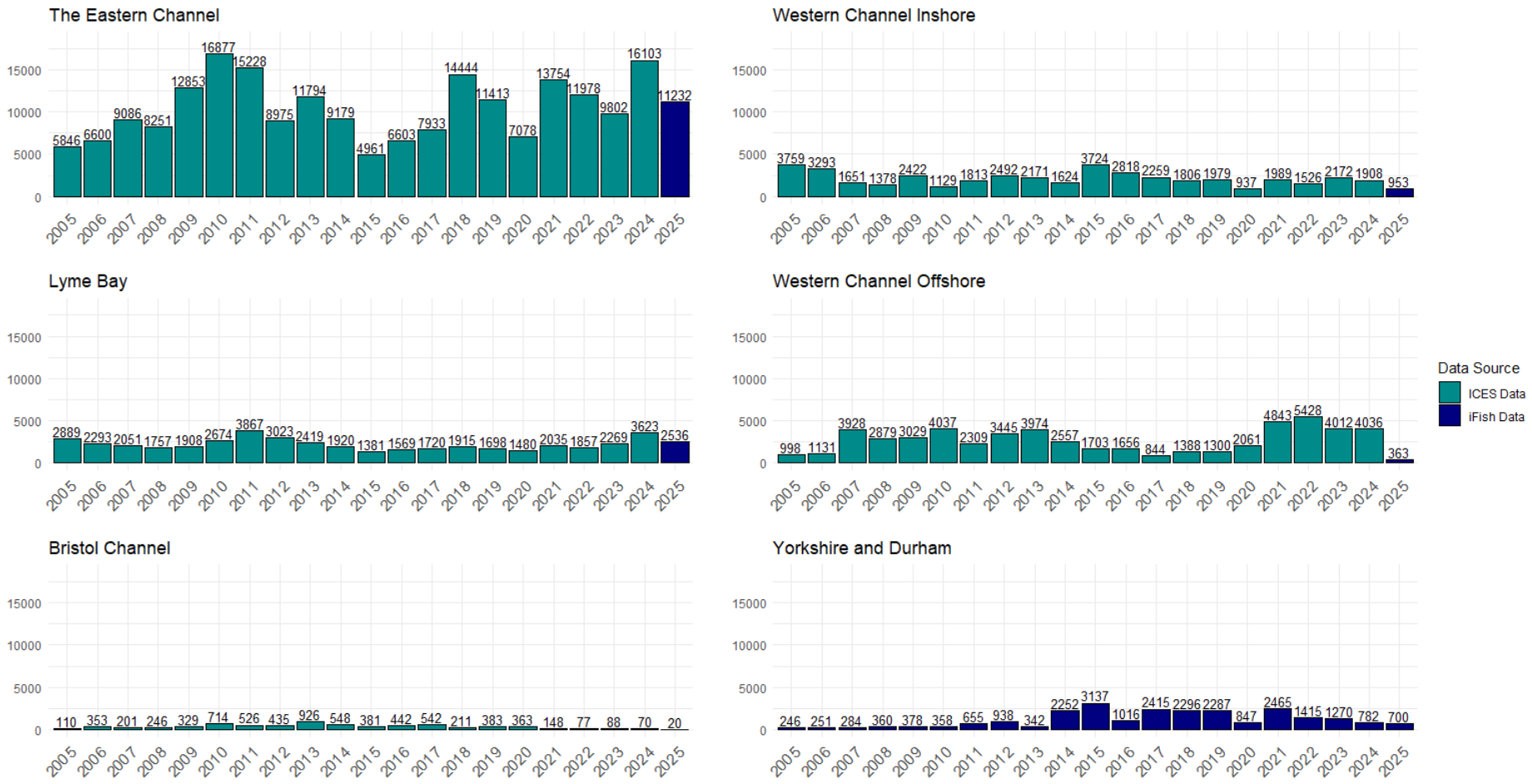

Figure 2. King Scallop landings for all stock assessment areas form 2005 - 2025, with the total landings labelled per yearly column including international landings (cyan) from the WGScallop data call and iFish landings (blue).

2.2. Dredge survey

2.2.1. Overview

The dredge survey design and station selection procedure are described in Sections 5 and 6 of the Stock Assessment Annexe (Fincham et al., 2026).

2.2.2. 2025 surveys

Between the 15th of May and 27th May 2025, the dredge survey in the Western English Channel and Bristol Channel covered seven beds over four assessment units: 7.e.1, 7.e.2, 7.e.4, 7.e.5, 7.e.7, 7.e.8 and 7.f.1 (Table 1). Five stations were missed in bed 7.e.5. due to poor weather and two stations were missed in bed 7.e.2 due to inability to survey the location and static gear (Figure 3).

Between the 17th of September and the 26th September 2025, the dredge survey in the North Sea and Eastern English Channel covered four beds over two assessment units: 4.b.1, 4.b.2, 7.d.1, 7.d.2 (Table 1). Two stations were missed after initial survey attempt in bed 7.d.1 due to rocky substrate filling the gear quickly (Figure 3).

Across the two 2025 surveys, a total of 242 stations were sampled and 18,041 individuals measured, with notable variation in the % of undersized scallops between beds, e.g. beds 7.e.8 and 7.f.1 had < 30% of scallops >MLS, vs. >75% in beds 4.b.1 and 4.b.2

Table 1. Number of valid stations, individuals measured, and individuals at 110mm and above, and percentage of individuals above MCRS per bed

	Beds Sampled 2025				
Survey	**Bed**	**Number of Stations**	**Individuals Measured**	**Individual Measured (>= 110mm)**	**% above MCRS**
September	7.e.4	24	895	433	48
	7.e.7	6	60	30	50
	7.e.8	20	280	81	29
	7.f.1	15	569	153	27
	7.e.1	12	730	371	51
	7.e.2	32	1655	750	45
	7.e.5	34	850	514	60
May	4.b.1	20	1725	1401	81
	4.b.2	2	211	158	75
	7.d.1	73	10858	5994	55
	7.d.2	4	208	107	51

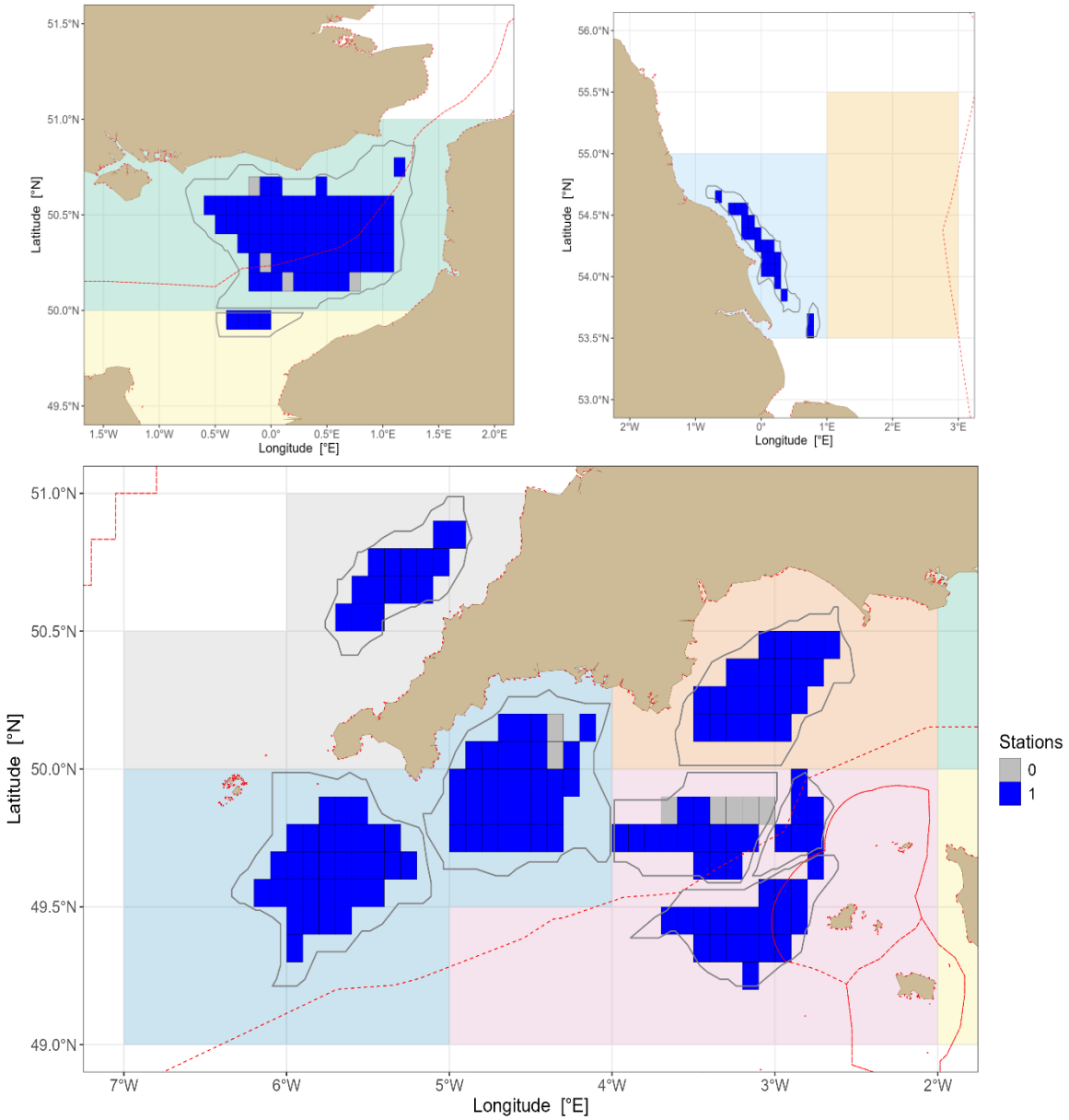

Figure 3. The number of stations sampled on the 2025 dredge survey, per grid, for the North Sea, Eastern and Western English Channel and Bristol Channel beds

2.2.3. Ground types

At each station, the skipper categorises the fishing ground as either 'clean, some stones' or 'flint, cobbles'. Each ground type has its own gear efficiency factor which is applied as a raising factor during the assessment. Information on the skipper-reported ground type at each station sampled is presented in Table 2. Ground types from all years are reported in Table SI1.

Table 2. Number and proportion of tows by ground type in each bed. Ground type as recorded from skipper observation.

Bed	Ground Type: Clean, Some Stones	Ground Type: Flint or Cobbles	Total	Tows with Flint Cobbles (%)
4.b.1	15	5	20	25
4.b.2	0	2	2	100
7.d.1	32	42	74	57
7.d.2	1	3	4	75
7.e.1	31	1	32	3
7.e.2	17	15	32	47
7.e.4	23	1	24	4
7.e.5	11	3	14	21
7.e.7	2	5	7	71
7.e.8	5	15	20	75
7.f.1	8	7	15	47

2.2.4. Size composition and raised biomass estimates

From the size samples taken at each station, total (pooled) length frequency distributions were derived at the bed level. From this, the total population number and biomass, as well as the biomass of harvestable scallops (round shell lengths ≥ MCRS), could be estimated. The harvestable biomass within 0.1-by-0.1 degree grid cells in 2025 is shown Figure 4.

To establish a measure of uncertainty around the harvestable biomass based on all survey stations, the values for individual stations within the same bed were randomly resampled with replacement ("bootstrapped") 5000 times. For each iteration, the same raising procedure was used. The uncertainty was expressed using the 25th and 75th quantiles of the resulting biomass estimates (Table 3).

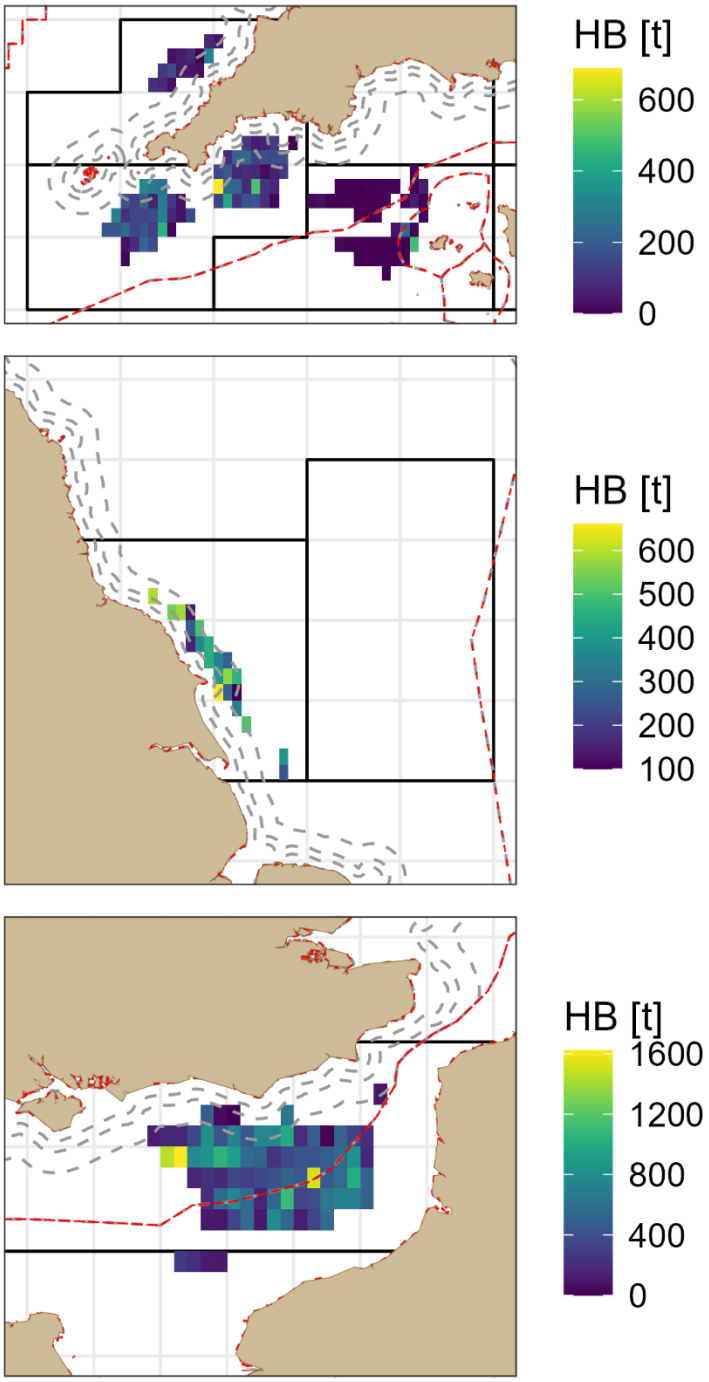

Figure 4. Estimates of harvestable biomass (tonnes) of scallops of at least MCRS, per bed in the Western Channel, north coast and Eastern Channel survey areas, from 2025 surveys. The red line indicates the boundary of the UK EEZ. The three black dashed lines indicate the outer limits of the 3-, 6- and 12- nm zones.

Table 3. Estimates of harvestable biomass per stock unit (tonnes), from 2019 to 2025, and the associated uncertainty (25 & 75) percentiles.

	25th Percentile	50th Percentile	Survey	75th Percentile
		27.4.b.S		
2019	-	-	-	-
2020	12227	12389	12386	12551
2021	9731	9906	9910	10080
2022	6816	6983	6990	7151
2023	6894	6896	6895	6985
2024	7636	7843	7842	8047
2025	8452	8598	8601	8748
		Area 27.7.d.N		
2019	37793	38147	38151	38503
2020	58469	58929	58949	59420
2021	57175	57783	57815	58455
2022	31782	32166	32163	32532
2023	37202	37624	37637	38078
2024	73265	74735	74734	76232
2025	37098	37567	37570	38046
		27.7.e.I		
2019	13774	13968	13972	14163
2020	10885	11045	11048	11210
2021	11339	11524	11527	11707
2022	11446	11626	11623	11798
2023	11519	11733	11728	11941
2024	10150	10332	10334	10519
2025	10260	10431	10436	10602
		27.7.e.O		
2019	-	-	-	-
2020	-	-	-	-
2021	19982	20455	20457	20924
2022	16533	17045	17036	17569
2023	12376	12757	12759	13127
2024	9296	9529	9520	9744
2025	880	971	977	1066
		27.7.f.I		
2019	1418	1477	1476	1538
2020	1815	1881	1880	1949
2021	-	-	-	-
2022	2214	2277	2276	2339
2023	-	-	-	-
2024	1222	1265	1265	1309
2025	1077	1121	1123	1167

2.3. Trends in English and Welsh Landings

English and Welsh landings are available from the iFish data base, 12 months post survey, from 2019-2024. When comparing the landings over recent years, there has been an increase in UK landings from the Dogger Bank (4.b.D), the Lyme Bay area (7.e.L) and the Eastern Channel North; a decrease in the Yorkshire and Durham coast (4.b.S), the Bristol Channel (7.f.I). The remaining areas within the Channel have seen fluctuations in landings throughout the survey series.

Figure 5. Landings reported though the iFish database in the 12-month period post-survey for Western Channel Inshore (7.e.I), Western Channel Offshore (7.e.O), Eastern Channel South (7.d.S), Bristol Channel (7.f.I), The Lyme Bay Area (7.e.L), Eastern Channel North (7.d.N), Yorkshire and Durham Coast (4.b.S) and Dogger Bank (4.b.D). The survey month for areas, Yorkshire and Durham Coast, Eastern Channel North, is September, and the survey month for the Western Channel Inshore, Western Channel Offshore, the Lyme Bay Area and the Bristol Channel is May.

3. Harvest rate estimates

Harvest rates for all stock units along with the MSY proxy harvest rates are given below in Table 4 and shown in the Executive Summary Figure ES2. The harvestable biomass estimates are based on the dredge survey (Figure ES1 and Table 3). The international landings are combined totals of the landings reported through the ICES Scallop Working Group (WGScallop). The harvest rate is the exploitation of the harvestable biomass as a percentage. International landings were available for 5 fishing seasons i.e. 2019-20 to 2023-24, and iFish (English and Welsh) landings were used for the 2024-25 season.

For **stock unit the Yorkshire and Durham coast (4.b.S)**, the harvestable biomass in the dredged area peaked in 2020 at 12,386t. From 2020 the harvestable biomass has fluctuated between 9,910t in 2021 to 6,859t in 2023. Landings have declined in the area, with a decrease in landings from 2,478t in 2020 to 654t in 2024.

The iFish landings for this area are 99-100% of the international landings, making the harvest rate a reasonable estimate of the harvest rate even with the ICES WGScallop reported landings missing. The harvest rate on the dredge portion of the stock has been below 23%, the MSY proxy reference, from 2020-2024.

For **stock unit the Channel (7.d.N),** the harvestable biomass from the dredged portion of the area had previously fluctuated between 32,163t (in 2022) and 58,949t (in 2020), however, in 2024, the area saw an unusually high harvestable biomass of 74,734t. The harvest rate estimates from 2019-2024, based on international landings, have been above MSY proxy (23.4%) in recent years, 2021-2023. Unusually high harvestable biomass has resulted in harvest rate (15%) being below the MSY proxy for 2024. International landings are expected to increase the harvest rate, when they are available.

For **stock unit the western Channel Inshore (7.e.I)** the harvestable biomass from the dredge portion of the area, in general has ranged between 10,334t (in 2024) to 13,972t (in 2019). The harvestable biomass appears stable throughout the survey time series. The UK landings are the majority of landings for the area. Landings have also remained stable throughout the survey time series. The HR of the dredge portion of the area has been consistently below MSY proxy (24.2%).

Unrealistic harvest rates (>1) resulted from comparing the bed harvestable biomass with the landings for the **stock unit the Lyme Bay area (7.e.L)** corresponding ICES rectangles. This suggested that a significant amount of landings originated from outside the assessed bed for this assessment area. HRs are therefore not presented here.

For **stock unit the western Channel Offshore (7.e.O)** the survey time series for this area began in 2021. Since 2021, the harvestable biomass has declined from 20,457t in 2021 to 9,520t in 2024. 2025 saw seen a sudden decrease in harvestable biomass, to 976t. This decrease is suspected to have been caused in part by the sudden increase in octopus numbers through the area which is likely to have resulted in a high level of natural mortality through predation. Landings in the area increased from 1,371t in 2019 to 5,496t in 2022, before reducing to 3,495t in 2023, and provisional landings of 3,154t were reported in 2024. The harvest rate has been above the MSY proxy value (26.5%) from 2022 to 2024.

For **stock unit the Bristol Channel (7.f.l)** the harvestable biomass from the dredge portion of the area was relatively stable in previous year, ranging from 1,147t (in 2019) to 1,123t (in 2024). Note that in 2021 and 2023 the area was not surveyed. Landings have declined throughout the time series, from 443t in 2019 – 27t in 2024. The harvest rate was not calculated in 2021 and 2023 due to the lack of survey. Harvest rates have been below the 23.4% MSY proxy for 2020, 2022 and 2024.

Table 4. Summary. International landings (UK and non-UK) over 12-month periods following annual dredge surveys in the stated years, and harvestable biomass estimates for the dredged parts of each area, harvest rate, and the MSY proxy value for harvest rates.

	International Landings (tonnes)	Harvestable Biomass in Dredged Area (tonnes)	Harvest Rate on Dredged Portion of Stock (Dredge Survey Only, %)	MSY Reference Point Harvest Rate (%)
		Area 27.4.b.S		
2019	1041	-	-	-
2020	2478	12386	20.0	23.0
2021	1517	9910	15.3	23.0
2022	1266	6990	18.1	23.0
2023	904	6895	13.1	23.0
2024*	*654*	7842	*8.3*	23.0
2025	-	8601	-	-
		Area 27.7.d.N		
2019	8098	38151	21.2	23.4
2020	12254	58949	20.8	23.4
2021	14219	57815	24.6	23.4
2022	9411	32163	29.3	23.4
2023	9655	37637	25.7	23.4
2024*	*11244*	74734	*15.0*	23.4
2025	-	37570	-	-
		Area 27.7.e.I		
2019	1921	13972	13.7	24.2
2020	1246	11048	11.3	24.2
2021	1727	11527	15.0	24.2
2022	1611	11622	13.9	24.2
2023	2126	11728	18.1	24.2
2024*	*1946*	10334	*18.8*	24.2
2025	-	10435	-	-
		Area 27.7.e.O		
2019	1371	-	-	-
2020	2582	-	-	-
2021	4408	20457	21.5	26.5
2022	5496	17036	32.3	26.5
2023	3495	12758	27.4	26.5
2024*	*3154*	9520	*33.1*	26.5
2025	-	976	-	-
		Area 27.7.f.I		
2019	443	1476	30.0	23.4
2020	287	1880	15.2	23.4
2021	112	-	-	-
2022	62	2276	2.7	23.4
2023	97	-	-	-
2024*	*27*	1265	*2.2*	23.4
2025	-	1123	-	-

* Only landings from England and Wales were available in 2024, therefore landings and harvest rates are provisional (*italics*), pending publication of international landing data

4. Harvestable Biomass Revision

As mentioned in Section 1.2, the estimated for harvestable biomass and harvest rates were re-estimated (Figures ES1-2 and Table 4). The results of that revision for harvestable biomass are shown, in comparison to the previous estimates, below (Figure 6).

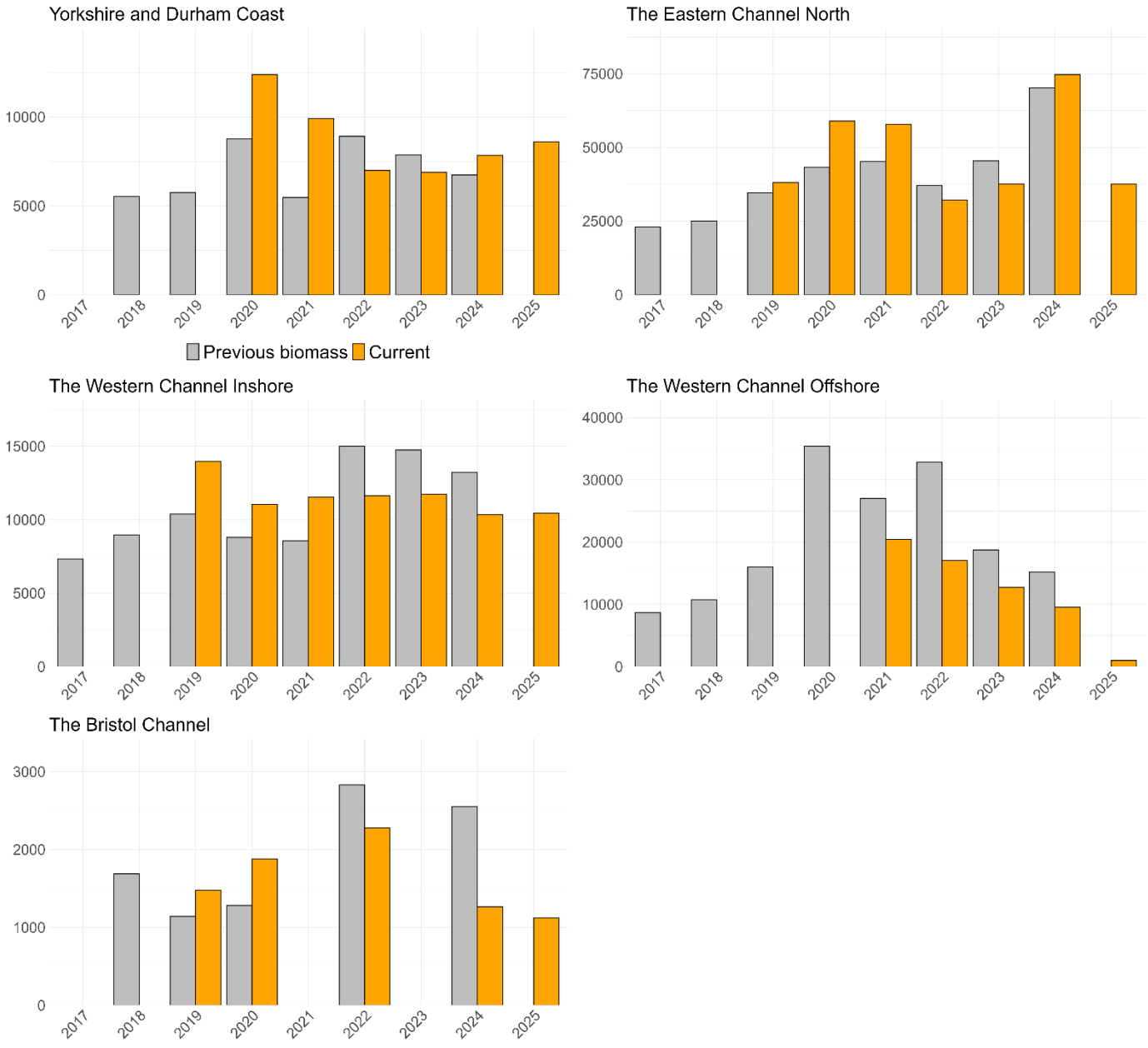

Figure 6. A comparison of the harvestable biomass, in tonnes per stock assessment area, before (grey) and after (orange) the 2025 revision.

5. Conclusion

5.1. Harvestable biomass and harvest rate conclusions

This latest assessment presents biomass estimates derived from the 2019-2025 surveys which includes an updated series 2019-2024, and harvest rates from 2019-2024 (12-month period post-surveys). The harvest rates were constructed using international landings from 2019-2023 and English and Welsh landings reported through the iFish database in 2024.

Over the course of the assessment time series, trends in harvestable biomasses (as calculated using the dredged portion of each area) can be summarised as:

- Some fluctuation of harvestable biomass with no trends in the Western Channel Inshore (7.e.I) and the Bristol Channel (7.f.I)
- Large decline in Western Channel Offshore (7.e.O) and slight decline in the Yorkshire and Durham Coast (4.b.S)
- No trend in harvestable biomass in the Eastern Channel North (7.d.N), but an unusually high biomass in 2024.

Similarly, trends in harvest rates can be summarised as:

- Below MSY proxy for the Yorkshire and Durham Coast (4.b.S), the Western Channel Inshore (7.e.I) and the Bristol Channel (7.f.I) (part from 2019).
- Around the MSY proxy values for the Eastern Channel North (7.d.N), and the Western Channel Offshore (7.e.O).
- Harvest rates of Lyme Bay (7.e.L) could not be estimated due to significant landings of the assessment area originating from outside the surveyed bed.

5.2. Assessment caveats and assumptions

- Landings data for the 12-month period post survey are required to provide a realised harvest rate. At the time of finalising this report (May 2026), international landings (UK and non-UK) were only available until the end of 2024. Therefore, the harvest rates for survey year 2024 were estimated based on landings reported through the iFish database (English and Welsh landings). Harvest rates will be updated in future reports as data become available.

- Landings data are received from all rectangles within an assessment area. Dredge surveys only cover the portions of stock found on the main fished grounds. Harvest rate estimates from dredge surveys only apply to the fished portion of the stock.

- The gear-efficiency factor used to convert dredge survey data to total harvestable biomass used unpublished Cefas data. These data came from depletion experiments which are broadly in line with similar studies.

- Studies of larval drift between beds indicate incomplete connectivity, whereby the main dredged areas appear to have a degree of larval retention (i.e., they are self-perpetuating). Restricting the biomass estimate to the dredged beds assumes no interchange between areas.

- Basic biological parameters that are used for reference points (MSY proxy) – such as growth rates, size at maturity, and natural mortality - are derived from unpublished studies that were conducted more than 20 years ago. Natural mortality is difficult to determine, especially for a species that is heavily commercially exploited. Cefas does not determine maturity stages anymore as part of the sampling programme.

5.3. Future Developments

This report summarises the results of an ongoing series of assessments of king scallop stocks around the English coast. The methodology employed is expected to evolve over the coming years as more data become available and data quality improves. Key areas for development as resources permit include:

- A review of current method of analysing the UVS survey counts and their contribution to the assessment.
- A review of the most appropriate assessment method and survey design for future king scallop stock assessments in English waters, including potential data sources such as the Industry Self-Sampling Scheme and the use of landings data.
- An analysis of the king scallops below MCRS, including the data from the modified dredges from the sample side of the vessel, to ascertain the data's usefulness in age cohort tracking.
- Continue to improve understanding of the spawning and larval connectivity and incorporate this information into stock assessments and management advice.
- A review of the biological parameters used within the assessment such as growth rates, size at maturity, with an aim to include them in future assessments or reference point updates.

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6. References

Fincham, J. I. (2026). *Stock Annex for king scallop in selected waters around the English Coast*. Lowestoft: Cefas, .GOV.UK.

Supplementary information.

Dredge Survey: All Ground Types

Annual ground types recorded on the dredge survey are presented in Table SI1 below.

Table SI1. Number and proportion of tows by ground type in each bed for the 2019-2025 surveys. Ground type as recorded from skipper observation.

Bed	Year	Ground Type: Clean, Some Stones	Ground Type: Flint or Cobbles	Total	Tows with Flint Cobbles (%)
4.b.1	**2019**	19	3	22	14
	2020	22	0	22	0
	2021	17	0	17	0
	2022	17	2	19	11
	2023	17	2	19	11
	2024	12	7	19	37
	2025	15	5	20	25
4.b.2	**2019**	1	0	1	0
	2020	2	0	2	0
	2021	2	0	2	0
	2022	1	0	1	0
	2023	1	0	1	0
	2024	1	1	2	50
	2025	0	2	2	100
7.d.1	**2019**	50	17	67	25
	2020	49	2	51	4
	2021	35	12	47	26
	2022	58	6	64	9
	2023	54	20	74	27
	2024	35	30	65	46
	2025	32	42	74	57
7.d.2	**2019**	-	-	-	-
	2020	-	-	-	-
	2021	-	-	-	-
	2022	3	1	4	25
	2023	3	1	4	25
	2024	1	3	4	75
	2025	1	3	4	75
7.e.1	**2019**	20	0	20	0
	2020	19	0	19	0
	2021	23	0	23	0
	2022	32	0	32	0
	2023	29	1	30	3
	2024	27	5	32	16
	2025	31	1	32	3
7.e.2	**2019**	32	0	32	0
	2020	33	0	33	0
	2021	33	0	33	0

Bed	Year	Ground Type: Clean, Some Stones	Ground Type: Flint or Cobbles	Total	Tows with Flint Cobbles (%)
	2022	31	0	31	0
	2023	25	0	25	0
	2024	25	13	38	34
	2025	17	15	32	47
7.e.4	**2019**	29	0	29	0
	2020	31	0	31	0
	2021	31	0	31	0
	2022	24	0	24	0
	2023	20	0	20	0
	2024	22	2	24	8
	2025	23	1	24	4
7.e.5	**2019**	18	0	18	0
	2020	20	0	20	0
	2021	16	0	16	0
	2022	18	0	18	0
	2023	19	0	19	0
	2024	9	10	19	53
	2025	11	3	14	21
7.e.7	**2019**	4	0	4	0
	2020	4	0	4	0
	2021	7	0	7	0
	2022	2	2	4	50
	2023	3	3	6	50
	2024	6	0	6	0
	2025	2	5	7	71
7.e.8	**2019**	5	3	8	38
	2020	8	0	8	0
	2021	20	1	21	5
	2022	18	2	20	10
	2023	18	2	20	10
	2024	5	15	20	75
	2025	5	15	20	75
7.f.1	**2019**	12	0	12	0
	2020	13	0	13	0
	2021	-	-	-	-
	2022	13	0	13	0
	2023	-	-	-	-
	2024	7	6	13	46
	2025	8	7	15	47