

Southern IFCA Survey Report

Solent Bivalve Survey 2025

1. Introduction

The Solent Bivalve Survey runs twice a year to assess the distribution and abundance of key bivalve species in three Bivalve Management Areas (BMA) defined under the Solent Dredge Permit Byelaw, namely Area 4 (Southampton Water), Area 5 (Portsmouth Harbour), and Area 6 (Langstone Harbour). The spring survey provides information on the stock following the closure of the fishing season and the autumn survey on the stock prior to the opening of the fishing season in November.

The survey focuses on the two main bivalve species harvested commercially in these BMAs, the Manila clam (*Ruditapes philippinarum*) and the Common cockle (*Cerastoderma edule*). The results from the survey provide data which can be used as a baseline against which to monitor trends in the stock levels of these species in the Solent, which informs management under the Solent Dredge Permit Fishery.

2. Methodology

In 2025, the Spring survey took place on the 12th, 14th, and 31st of March and the Autumn survey took place from the 8th October to the 10th October, using three local fishing vessels familiar with the BMA within which they were sampling. On each vessel, the same box clam dredge was deployed, which is of the same class as that used in normal fishing practice (Figure 1), with the exception of the sampling undertaken in Portsmouth Harbour in the Autumn survey, as the box dredge was unavailable.

Each management area has defined survey beds which represent areas of different fishing intensity and habitat type. The areas surveyed also span a range of classifications for the shellfish beds as defined by the Food Standards Agency. The identification of survey beds provides a general area in which to sample, with the identification of suitable tow locations for each area made by the skipper during the survey due to the dependence on factors including weather, tide, obstructions to dredging etc. As such, if unforeseen circumstances dictate, tows may sometimes not fully overlap with the survey beds. The tow locations for each surveyed shellfish bed are shown in Figures 2 to 4.

Shellfish sampled were obtained using the following methodology:

- Three dredge tows, timed at two minutes, were conducted within each survey bed of the wider BMA.
- After two minutes the dredge was brought inboard and any bivalves within it were retained.
- The presence of different sediment types and other habitat identifiers including weed and Slipper limpet (*Crepidula fornicata*) were recorded, with abundance scored on a scale of 1 – 5, 5 being most abundant.
- Bivalves were identified to species level and the first 50 individuals of each species were measured along the widest axis (length) to the nearest millimetre.

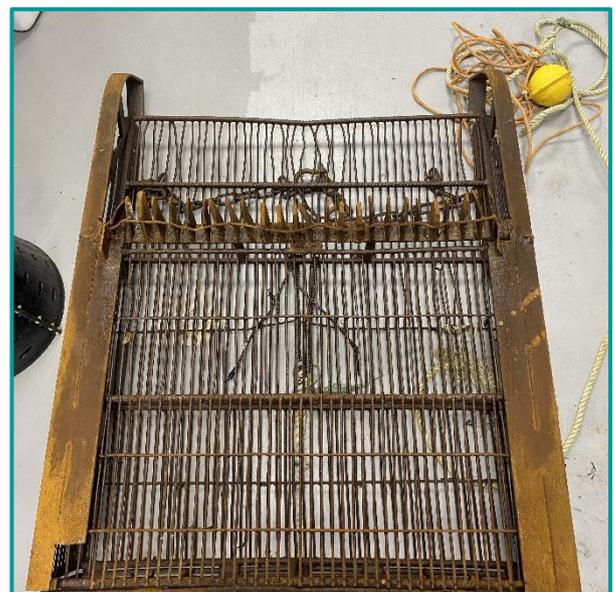


Figure 1: Box dredge used during the Solent Bivalve survey.

- Manila clams and Common cockles were separated into equal to/above or below their Minimum Conservation Reference Size (MCRS), 35mm and 23.8mm respectively, and then weighed.
- All samples were returned to the sea in the same BMA, in areas with the same shellfish classification as that from which they had been taken.

2.1. Statistical Analysis

- The sets of collected weight and length data were analysed first with a Kruskal-Wallis test to determine whether a difference in the averages of groups (e.g., the weight of Manila clam in each BMA) was present.
- If such a difference was found, the data set was then analysed using a Dunn’s post-hoc test, which determines whether the difference in average was greater between the groups than the difference found within the groups.
 - E.g., whether there was a greater difference between the average weight of Manila clam between surveys than there was difference within the average weight of Manila clam sampled at sites within one specific year.
- Statistically significant results from the Dunn’s post-hoc tests indicate changes in weight or length that may be beyond the population’s natural size/growth variation and could be linked to a range of external factors, such as environmental conditions, recruitment success, or population exploitation.
- Significant results are expressed as either $p < 0.05$ or $p < 0.01$, an indication as to the strength of the significant change, with $p < 0.01$ indicating a stronger change.

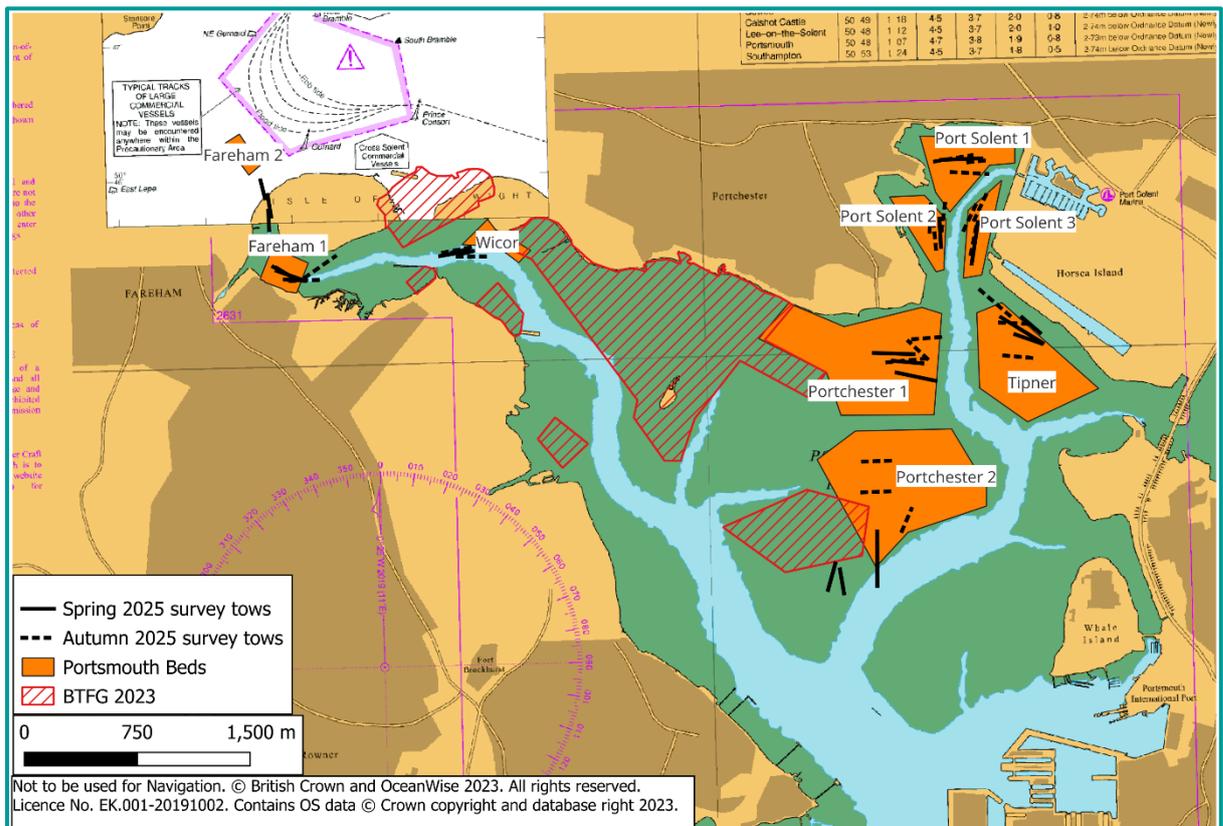


Figure 2: The tow paths undertaken during both the Spring and Autumn 2025 surveys within Portsmouth Harbour.

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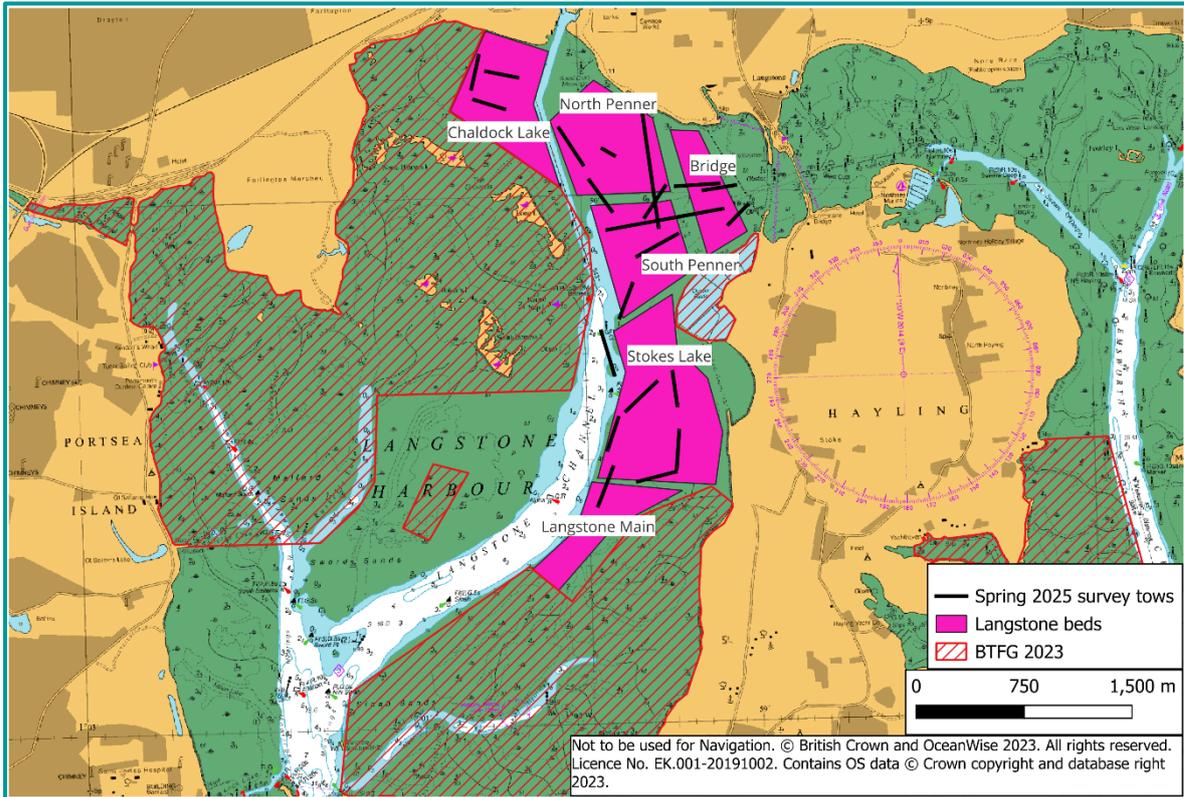


Figure 3: The tow paths undertaken during the Spring 2025 survey within Langstone Harbour.

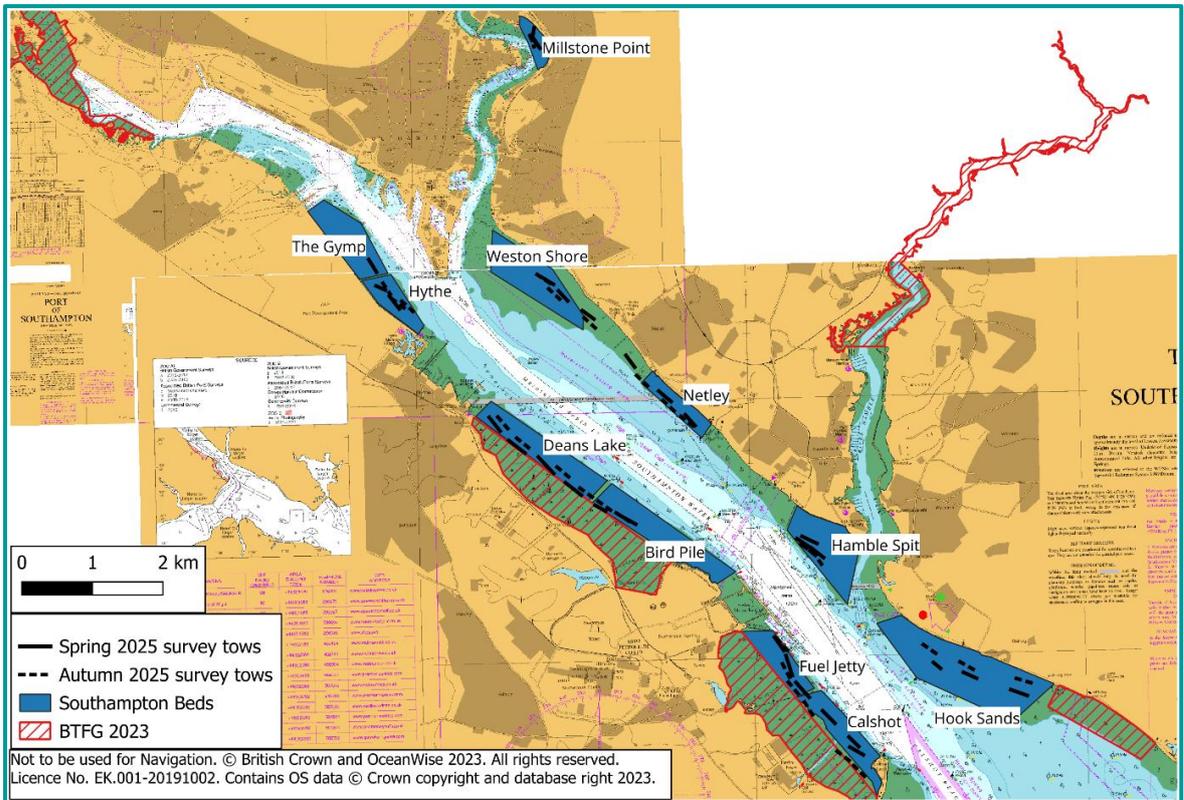


Figure 4: The tow paths undertaken during both the Spring and Autumn 2025 surveys within Southampton Water.

3. Results

The results of the survey focus on the two main commercial species, Manila clam (*Ruditapes philippinarum*) and Common cockle (*Cerastoderma edule*).

Other species found during the survey in smaller quantities included Pacific oyster (*Magallana gigas*), American Hard-Shell clam (*Mercenaria mercenaria*), Spiny cockle (*Acanthocardia aculeata*), and Native oyster (*Ostrea edulis*). The King Scallop (*Pecten maximus*) fishery within the Solent is monitored through its own survey.

Data collected on Catch Per Unit Effort (CPUE) and width is compared across key periods, focusing on results from Autumn 2024, Spring 2025 and Autumn 2025. Sampling was not able to be completed in Langstone Harbour in Autumn 2025 due to unforeseen complications including prolonged adverse weather and changes in fisher availability. On this basis comparisons to autumn 2025 data were not possible for Langstone Harbour. However, it is noted that Langstone Harbour is not a preferred fishing area within the Solent Dredge Permit Fishery, with catch levels having been nil within Langstone Harbour for Manila clam and common cockle for the 2024/25, 2023/24, and 2021/22 fishing seasons. Langstone Harbour will continue to be sampled across both surveys in future years.

3.1. Catch Per Unit Effort

Data on the abundance and distribution of Manila clam and Common cockle is presented as Catch Per Unit Effort (CPUE), defined as kg of shellfish per metre of dredge per hour. CPUE is provided for the species both equal to/above and below MCRS. The use of CPUE consistently between surveys allows for statistical comparisons to identify if there are any significant changes to the stock. CPUE results are provided for four key time periods through the year:

- Pre- and post- the fishing season (Autumn to Spring),
- Pre- and post- the closed season (Spring to Autumn),
- Between the Spring (post-season) surveys in the timeseries, and
- Between the Autumn (pre-season) surveys in the timeseries.

It should be noted that, given that the sampling method is size selective due to the spacing of bars on the box dredge, data for stock below MCRS will not be representative of the full composition of stock in these size classes, however consistency in survey methodology between years allows for comparisons.

Additionally, following unforeseen complications with the SIFCA owned box dredge in October 2025, a fisher owned dredge with differing bar spacing was used to undertake sampling within Portsmouth Harbour in the Autumn 2025 survey. A Kruskal-Wallis test run between data collected in Portsmouth Harbour using the Southern IFCA owned box dredge through the time series and the fisher owned box dredge used within Portsmouth Harbour in Autumn 2025 revealed the presence of a statically significant difference for both the equal to/above and below portions of the population ($p < 0.001$). Comparisons for bivalve species caught within Portsmouth Harbour between Autumn 2025 and other surveys should therefore be treated with caution.

The average CPUE values presented are the median value (the middle value in a range of sequential values), as this is the metric compared within Kruskal-Wallis tests (used when data is non-normally distributed).

3.1.1. Pre- and Post- the 24/25 Fishing Season Comparisons

CPUE data from Autumn 2024 and Spring 2025 surveys has been compared to analyse changes to population levels during the fishery **open season or 'fishing period'**.

Manila Clam (From Autumn 2024 to Spring 2025)

- There was **no significant change** in CPUE for the population equal to/above or below MCRS in **Southampton Water, Portsmouth or Langstone Harbours**.
- In **Southampton Water**, the median CPUE for the population equal to/above MCRS **increased** (9.9 kg/m/hr to 15.2 kg/m/hr) but **decreased** for the population below MCRS (14.9 kg/m/hr to 13.7 kg/m/hr).
- In **Portsmouth Harbour**, the median CPUE **decreased** for the population equal to/above MCRS (9.3 kg/m/hr to 6.4 kg/m/hr) and the population below MCRS (1 kg/m/hr to 0.9 kg/m/hr).
- In **Langstone Harbour** the median CPUE:
 - **decreased** for the population equal to/above MCRS (2.8 kg/m/hr to 2.1 kg/m/hr),
 - and **remained** the same at 0.0 kg/m/hr for the population below MCRS (CPUE values ranged from 0.0 kg/m/hr to 20.6 kg/m/hr in Autumn 2024, while CPUE values ranged from 0.0 kg/m/hr to 30.2 kg/m/hr in Spring 2025).

Common Cockle (From Autumn 2024 to Spring 2025)

- There was **no significant change** in CPUE for the population equal to/above or below MCRS in **Southampton Water, Portsmouth or Langstone Harbours**.
- In **Southampton Water** the median CPUE:
 - for the population equal to/above MCRS **increased** (0.7 kg/m/hr to 0.8 kg/m/hr)
 - and **remained** the same at 0.0 kg/m/hr for the population below MCRS (CPUE values ranged from 0.0 kg/m/hr to 12.0 kg/m/hr in Autumn 2024, while CPUE values ranged from 0.0 kg/m/hr to 3.1 kg/m/hr in Spring 2025).
- In **Portsmouth Harbour** the median CPUE:
 - **decreased** for the population equal to/above MCRS (1.6 kg/m/hr to 0.01 kg/m/hr)
 - and **decreased** for the population below MCRS from 0.3 kg/m/hr to 0.0 kg/m/hr (ranging from 0.0 kg/m/hr to 2.3 kg/m/hr in Spring 2025).
- In **Langstone Harbour** the median CPUE:
 - **remained** the same at 0.0 kg/m/hr for the population equal to/above MCRS (ranging from 0.0 kg/m/hr to 0.3 kg/m/hr in Autumn 2024, while CPUE values ranged from 0.0 kg/m/hr to 0.2 kg/m/hr in Spring 2025),
 - and **remained** the same at 0.0 kg/m/hr for the population below MCRS (no undersized cockles were caught in Langstone Harbour in Autumn 2024, while CPUE values ranged from 0.0 kg/m/hr to 0.6kg/m/hr in Spring 2025).

3.1.2.Pre- and Post- the 2025 Closed Season Comparisons

CPUE data from Spring 2025 and Autumn 2025 was compared to analyse changes to population levels during the fishery **closed season**. A comparison over this period was not possible for Langstone Harbour, as sampling was not completed in Autumn 2025 due to weather complications.

Manila Clam (From Spring 2025 to Autumn 2025)

- There was **no significant change** in CPUE for the population equal to/above or below MCRS in **Southampton Water, or Portsmouth Harbour**.
- In **Southampton Water**, the median CPUE for the population equal to/above MCRS **increased** (15.2 kg/m/hr to 17.5 kg/m/hr) but **decreased** for the population below MCRS (13.7 kg/m/hr to 9.2 kg/m/hr).
- In **Portsmouth Harbour**, the median CPUE **decreased** for the population equal to/above MCRS (6.4 kg/m/hr to 0.9 kg/m/hr) and the population below MCRS (0.9 kg/m/hr to 0.05 kg/m/hr).

Common Cockle (From Spring 2020 to Autumn 2025)

- There was **no significant change** in CPUE for the population equal to/above or below MCRS in **Southampton Water, or Portsmouth Harbour.**
- In **Southampton Water** the median CPUE:
 - **decreased** for the population equal to/above MCRS from 0.8 kg/m/hr to 0.0 kg/m/hr (ranging from 0.0 kg/m/hr to 14.6 kg/m/hr in Autumn 2025),
 - and **remained** the same for the population below MCRS at 0.0 kg/m/hr (ranging from 0.0 kg/m/hr to 3.1 kg/m/hr in Spring 2025, and from 0.0 kg/m/hr to 1.5 kg/m/hr in Autumn 2025).
- In **Portsmouth Harbour** the median CPUE:
 - **decreased** for the population equal to/above MCRS from 0.01 kg/m/hr to 0.0 kg/m/hr (ranging from 0.0 kg/m/hr to 4.6 kg/m/hr in Autumn 2025),
 - and **remained** the same for the population below MCRS at 0.0 kg/m/hr (ranging from 0.0 kg/m/hr to 2.3 kg/m/hr in Spring 2025 and from 0.0 kg/m/hr to 0.2 kg/m/hr in Autumn 2025).

3.1.3. Spring Survey (post-season) Comparisons

CPUE data for surveys carried out in the Spring, representing post-season conditions, has been compared between the survey years in order to monitor and compare the state of the population at the end of each fishing season.

For Manila clam CPUE data is available from 2018 to 2020 and 2022 to 2025, however data from Spring 2018 has been removed as no weight measurements were taken that year. For Common cockle CPUE data is available from 2020 and 2022 to 2025, as weight data was not collected for Common cockle prior to 2020. Please note that there is no survey data available from Spring 2021 due to the Covid-19 pandemic.

Manila Clam (Between Spring Surveys)

- There was **no significant change** in CPUE for the population equal to/above or below MCRS in **Southampton Water, Portsmouth or Langstone Harbours.**

Common Cockle (Between Spring Surveys)

- In **Southampton Water**, there was **no significant change** in CPUE for the population equal to/above or below MCRS.
- In **Portsmouth Harbour**, there were significant ($p < 0.01$) decreases in CPUE:
 - For the population equal to/above MCRS between Spring 2020 (15.6 kg/m/hr) and Spring 2025 (0.01 kg/m/hr), and between Spring 2022 (41.1 kg/m/hr) and Spring 2025 (0.01 kg/m/hr) (Figure 5),
 - For the population below MCRS between Spring 2020 (4.1 kg/m/hr) and Spring 2025 (0.0 kg/m/hr), between Spring 2022 (1.8 kg/m/hr) and Spring 2025 (0.0 kg/m/hr), and between Spring 2023 (4.5 kg/m/hr) and Spring 2025 (0.0 kg/m/hr) (Figure 6).
 - The CPUE for Spring 2025 ranged from 0.0 kg/m/hr to 2.3 kg/m/hr.
- In **Langstone Harbour**, there were significant ($p < 0.01$) decreases in median CPUE between:
 - Spring 2020 (7.7 kg/m/hr) and Spring 2025 (0.0 kg/m/hr) for the population equal to/at MCRS, with CPUE ranging from 0.0 kg/m/hr to 0.2 kg/m/hr in Spring 2025 (Figure 7),
 - and between Spring 2022 (9.0 kg/m/hr) and Spring 2025 (0.0 kg/m/hr) for the population below MCRS, with CPUE ranging from 0.0 kg/m/hr to 0.6 kg/m/hr in Spring 2025 (Figure 8).

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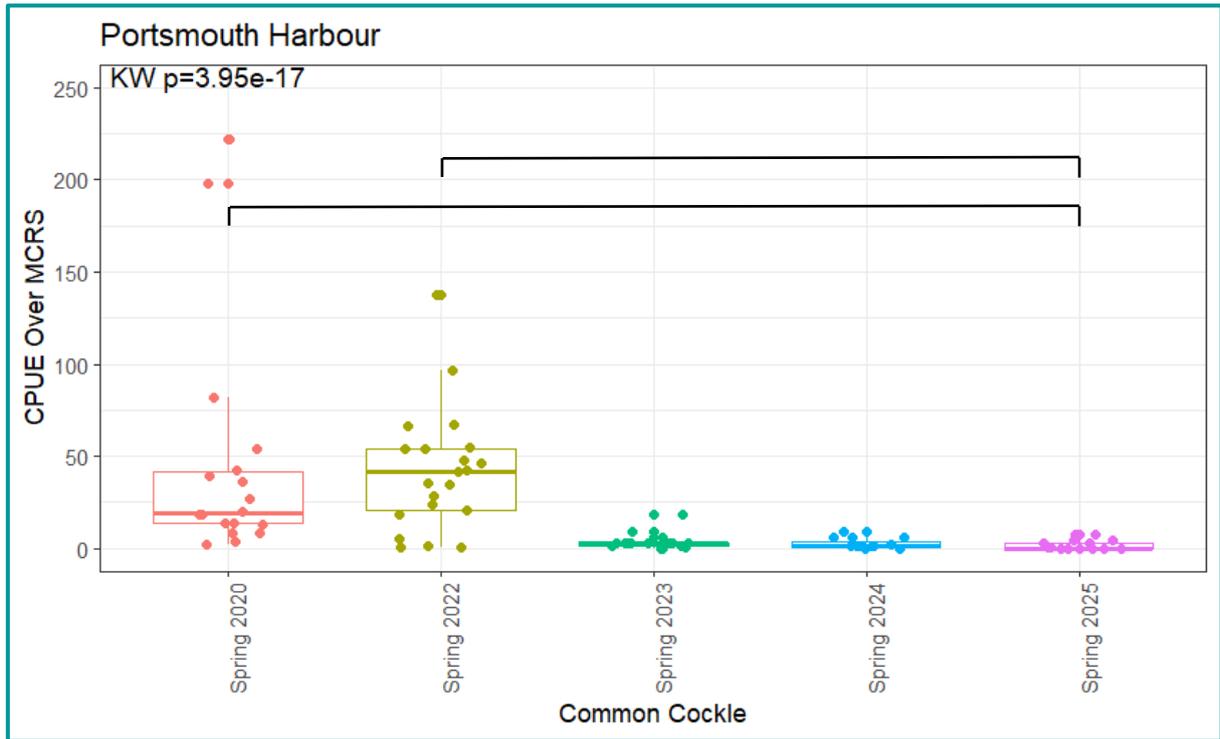


Figure 5: CPUE of the Common Cockle population equal to/above MCRS in Portsmouth Harbour for the spring surveys with available weight data from 2020 to 2025, where a statistically significant decrease was found between 2020 and 2022 to 2025 ($p < 0.01$).

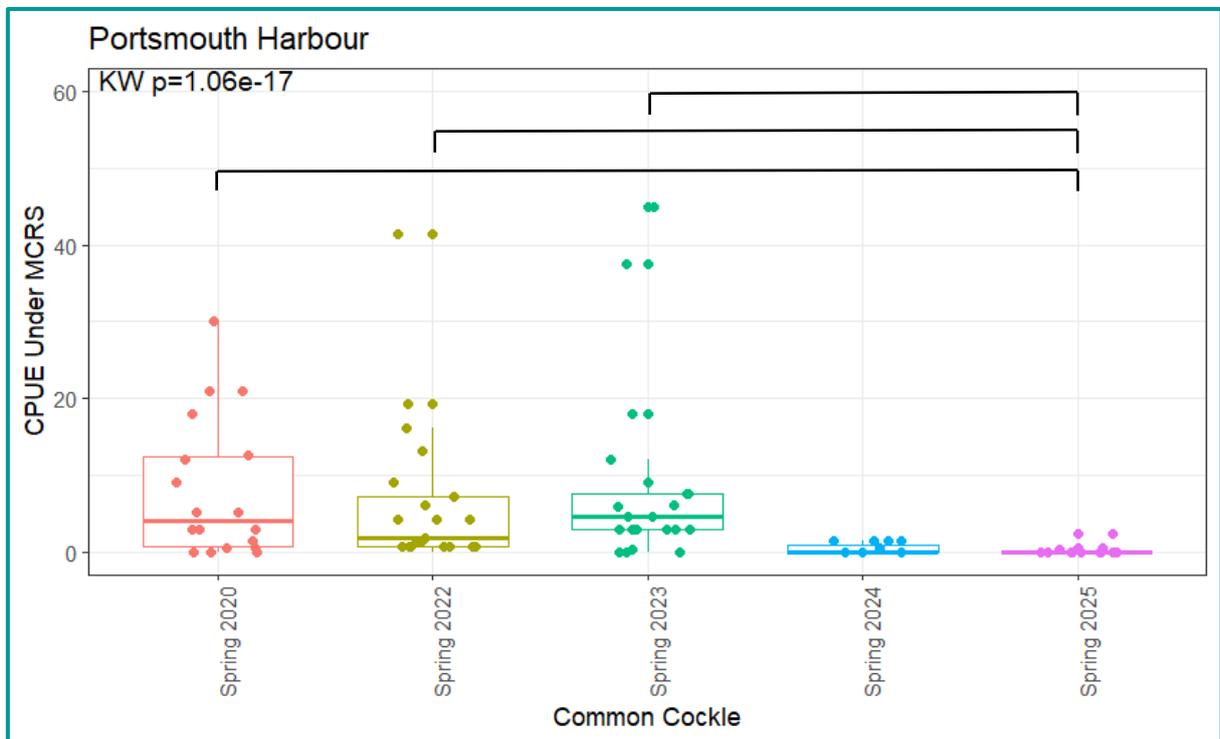


Figure 6: CPUE of the Common Cockle population below MCRS in Portsmouth Harbour for the spring surveys with available weight data from 2020 to 2025, where a statistically significant decrease was found between 2020 and 2022 to 2025 ($p < 0.01$).

Solent Bivalve Survey 2025

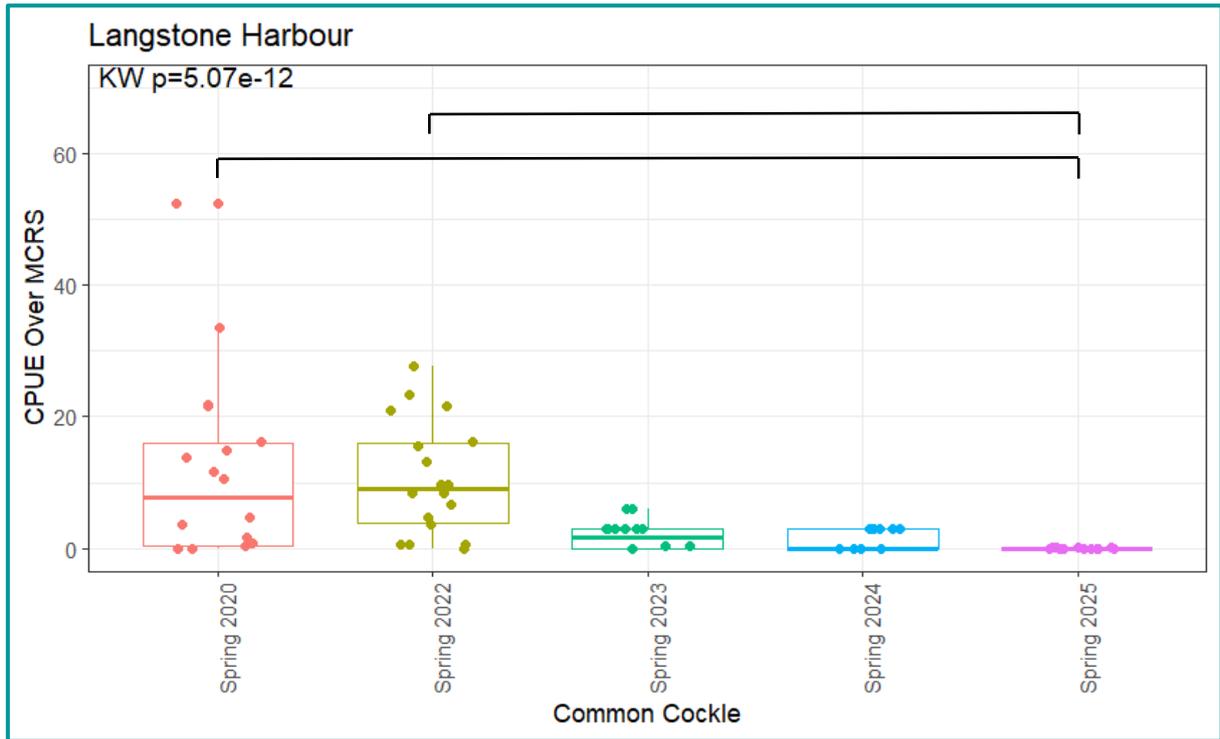


Figure 7: CPUE of the Common Cockle population equal to/above MCRS in Langstone Harbour for the spring surveys with available weight data from 2020 to 2025, where a statistically significant decrease was found from 2020 and 2022 to 2025 ($p < 0.01$).

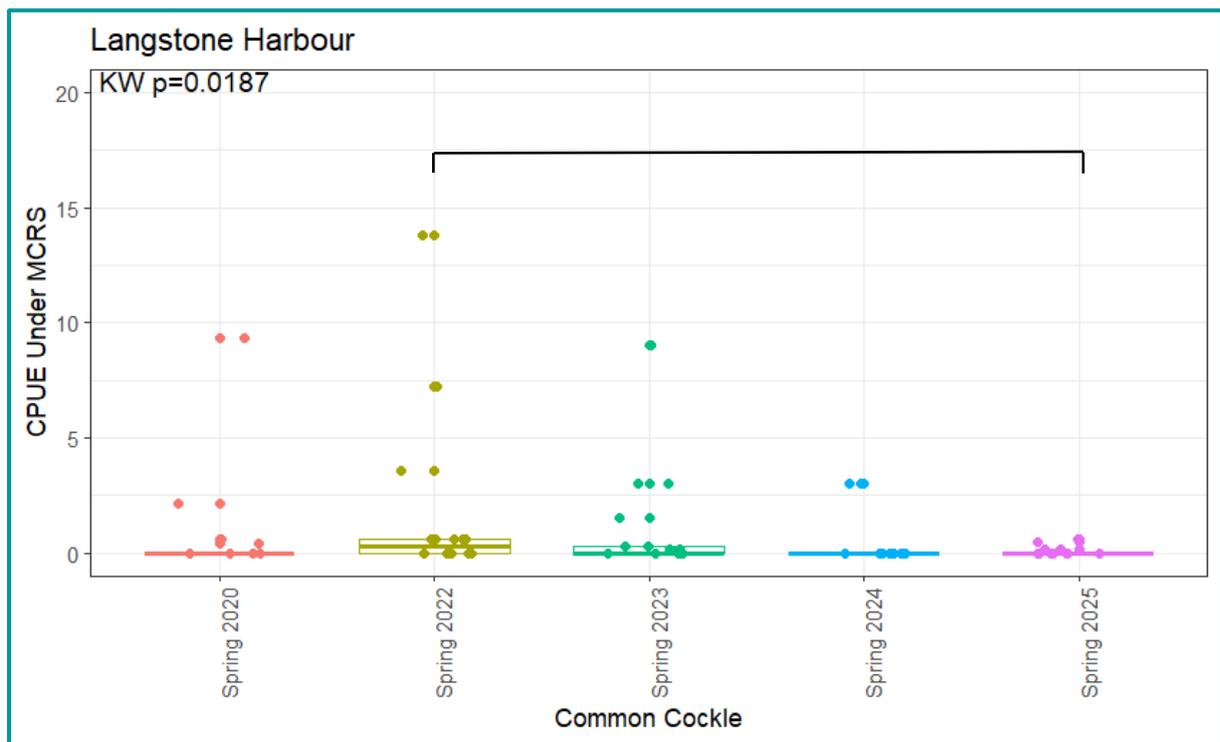


Figure 8: CPUE of the Common Cockle population below MCRS in Langstone Harbour for the spring surveys with available weight data from 2020 to 2025, where a statistically significant decrease was found from 2022 to 2025 ($p < 0.01$).

3.1.4. Autumn Survey (pre-season) Comparisons

CPUE for surveys carried out in the Autumn, representing pre-season conditions, has been compared between the survey years. A comparison over this period was not possible for Langstone Harbour, as sampling was not completed in Autumn 2025 due to weather complications.

For Manila clam CPUE data is available from 2018 to 2019 and 2021 to 2025. For Common cockles CPUE data is available for 2021 to 2025, as weight data was not collected for Common cockle prior to 2020. Please note that there is no survey data available from Autumn 2020 due to the Covid-19 pandemic.

Manila Clam (Between Autumn Surveys)

- There was **no significant change** in CPUE for the population equal to/above or below MCRS between any Autumn surveys and the Autumn 2025 survey in **Southampton Water**.
- In **Portsmouth Harbour**, there were significant decreases in median CPUE between the Autumn 2019 and Autumn 2021 surveys and Autumn 2025 for both the population equal to/above (15.0 kg/m/hr and 31.2 kg/m/hr compared to 0.9 kg/m/hr) and below MCRS (13.3 kg/m/hr and 11.1 kg/m/hr compared to 0.1 kg/m/hr), however it should be noted that a significant difference ($p < 0.001$) was found when comparing CPUE values from Portsmouth Harbour obtained with the SIFCA owned box dredge and the Fisher owned dredge operated in Autumn 2025 (Figure 9 & 10).

Common Cockle (Between Autumn Surveys)

- In **Southampton Water**, there was a significant ($p < 0.01$) decrease in median CPUE for:
 - The population equal to/above MCRS between Autumn 2021 (10.2 kg/m/hr) and Autumn 2025 (0.0 kg/m/hr) (Figure 11), with CPUE ranging from 0.0 kg/m/hr to 14.6 kg/m/hr in Autumn 2025.
 - The population below MCRS between Autumn 2022 (0.3 kg/m/hr) and Autumn 2025 (0.0 kg/m/hr) (Figure 12), with CPUE ranging from 0.0 kg/m/hr to 1.5 kg/m/hr in Autumn 2025.
- In **Portsmouth Harbour**, there was a significant ($p < 0.01$) decrease in median CPUE for the population equal to/above MCRS from Autumn 2021 (22.8 kg/m/hr) to Autumn 2025 (0.0 kg/m/hr) (Figure 13), with CPUE ranging from 0.0 kg/m/hr to 4.6 kg/m/hr in Autumn 2025, however again it should be noted that a significant difference ($p < 0.001$) was found when comparing CPUE values from Portsmouth Harbour obtained with the SIFCA owned box dredge and the Fisher owned dredge operated in Autumn 2025.

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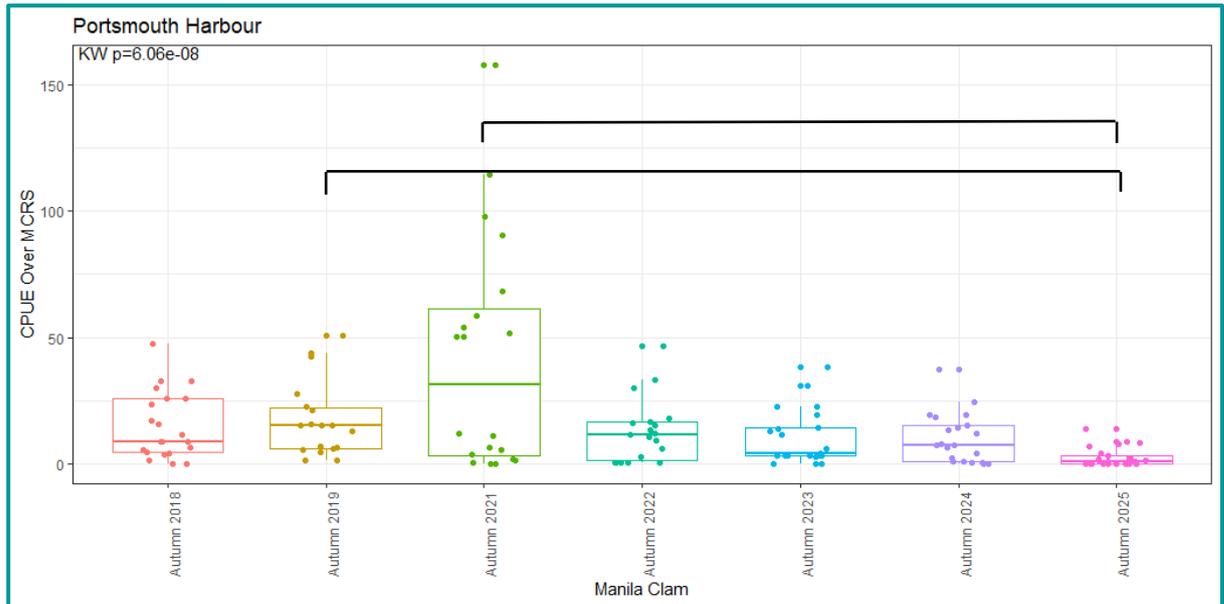


Figure 9: CPUE of the Manila clam population equal to/above MCRS in Portsmouth Harbour for the autumn surveys with available weight data from 2020 to 2025, where a statistically significant decrease was found from 2019 ($p < 0.05$) and 2021 ($p < 0.01$) to 2025.

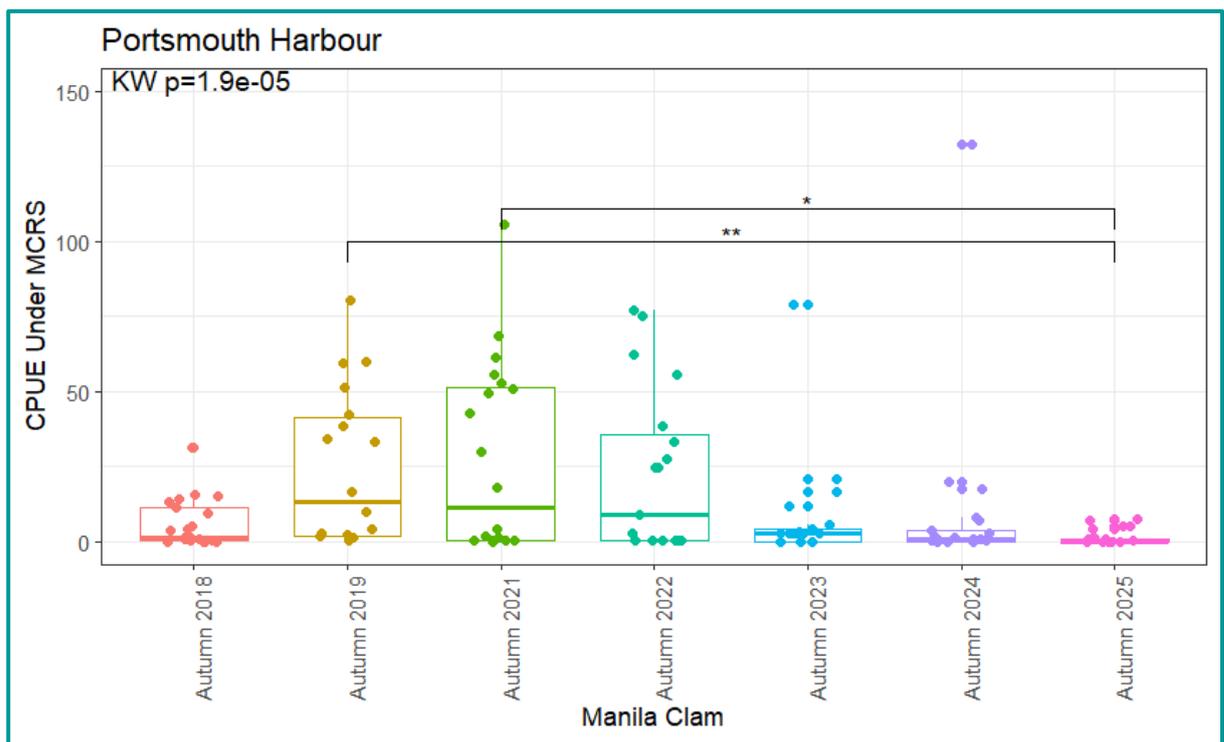


Figure 10: CPUE of the Manila clam population below MCRS in Portsmouth Harbour for the autumn surveys with available weight data from 2020 to 2025, where a statistically significant decrease was found from 2019 ($p < 0.01$) and 2021 ($p < 0.05$) to 2025.

Solent Bivalve Survey 2025

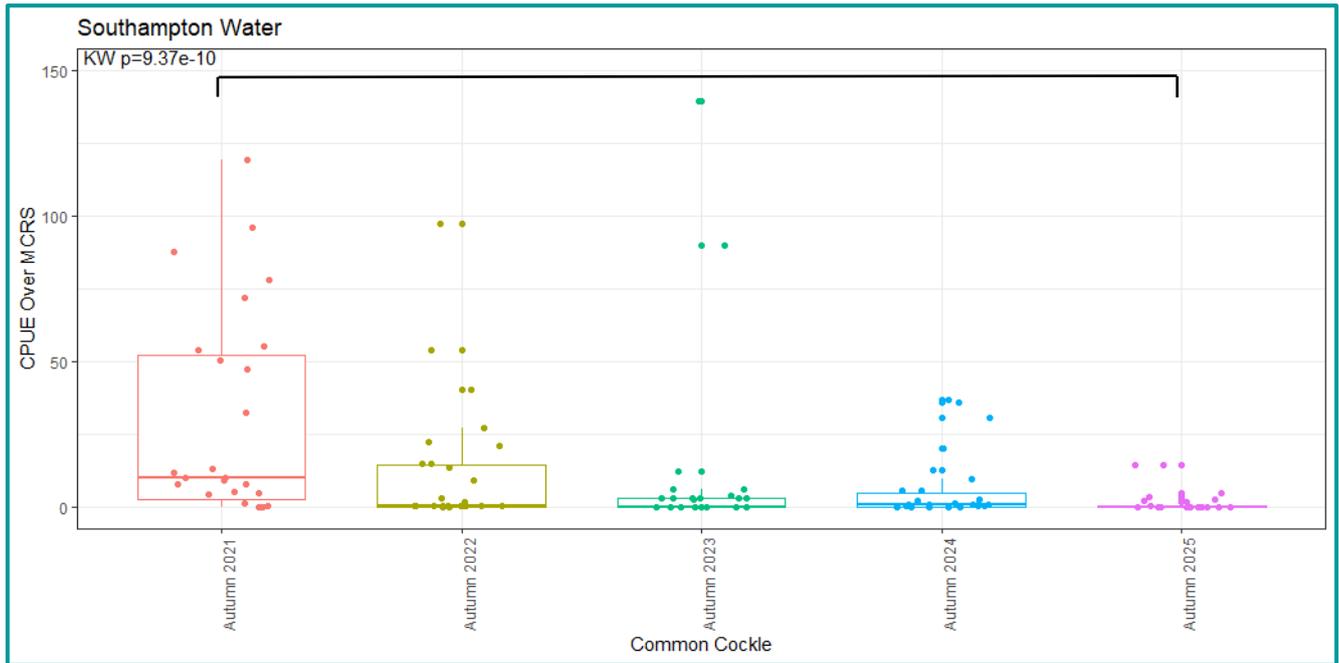


Figure 11: CPUE of the Common cockle population equal to/above MCRS in Southampton Water for the autumn surveys with available weight data from 2021 to 2025, where a statistically significant decrease was found from 2021 to 2025 ($p < 0.01$).

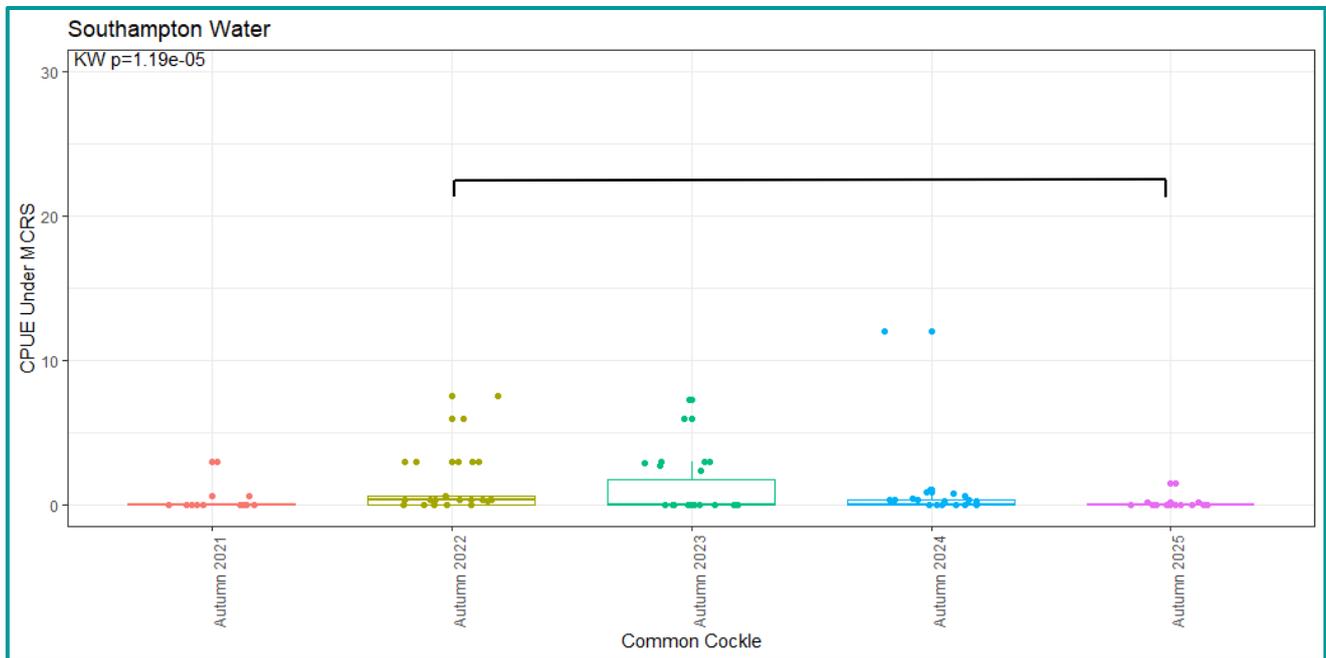


Figure 12: CPUE of the Common cockle population below MCRS in Southampton Water for the autumn surveys with available weight data from 2021 to 2025, where a statistically significant decrease was found from 2022 to 2025 ($p < 0.01$).

Solent Bivalve Survey 2025

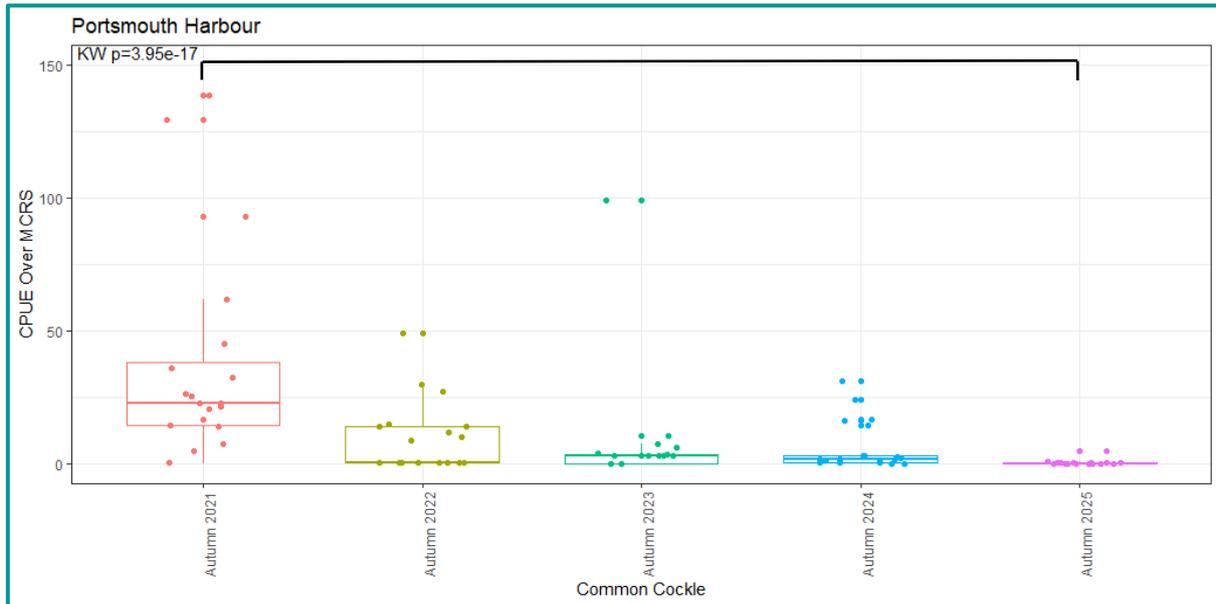


Figure 13: CPUE of the Common cockle population equal to/above MCRS in Portsmouth Harbour for the autumn surveys with available weight data from 2020 to 2025, where a statistically significant decrease was found from 2021 to 2025 ($p < 0.01$).

3.2. Average Length

An analysis of the length trends within the data collected in 2025 and the data collected within the survey timeseries was undertaken. Given the lack of general trend observed within the results of this analysis, the following section presents the occurrence of average length equal to/above or below MCRS within each BMA. The full comparative results for analysis of length data between key time periods within the year are available within Annex 1.

The average length values presented are the median value (the middle value in a range of sequential values), as this is the metric compared within Kruskal-Wallis tests (used when data is non-normally distributed).

Following complications with the SIFCA owned box dredge in October 2025, a fisher owned dredge with differing bar spacing was used to undertake sampling within Portsmouth Harbour in the Autumn 2025 survey. This dredge was found to produce statistically significant differences in median length ($p < 0.05$) when compared to values obtained with the SIFCA owned box dredge sampled in previous Portsmouth Harbour surveys. Additionally, sampling was not undertaken in Langstone Harbour in Autumn 2025 due to unforeseen weather conditions.

Overall, the average lengths of the key bivalve species are as such:

- For Manila clam and common cockle in Southampton Water the average length increased or remained the same over each time period, apart from for Manila clam between Spring 2025 and Autumn 2025 when a decrease was seen.
- For Manila clam in Portsmouth Harbour there is no consistent trend with increases, decreases and no changes seen over differing time periods, while for common cockle decreases in average length were seen for three out of the four of the time periods analysed.
- For Manila clam in Langstone Harbour there is no change seen in average lengths for the analysed time periods, while for common cockle decreases are seen over both time periods due to the low average length value seen for Spring 2025.

3.2.1. Pre- and Post- the 24/25 Fishing Season

Table 1: Average length of all Manila clam and Common cockle sampled the Autumn 2024 and Spring 2025 surveys, representing the period when the fishery was open, as an indication of population structure in relation to the MCRS of each species. Red shading indicates an average length that falls below the species' MCRS, green shading that the average length is above the species' MCRS. An * indicates a significant change in average length between the two surveys ($p < 0.01$).

	BMA		
Manila Clam (MCRS = 35mm)	Southampton Water	Portsmouth Harbour	Langstone Harbour
Autumn 2024	34mm	35mm	37mm
Spring 2025	35mm*	36mm	37mm
Common Cockle (MCRS = 23.8mm)			
Autumn 2024	27mm	27mm	27mm
Spring 2025	29mm*	27mm	21.5mm

3.2.2. Pre- and Post- the 2025 Closed Season Comparisons

Table 2: Average length of all Manila clam and Common cockle sampled during the Spring 2025 and Autumn 2025 surveys, representing the period when the fishery was closed, as an indication of population structure in relation to the MCRS of each species. Red shading indicates an average length that falls below the species' MCRS, green shading that the average length is above the species' MCRS.

	BMA	
Manila Clam (MCRS = 35mm)	Southampton Water	Portsmouth Harbour
Spring 2025	35mm	36mm
Autumn 2025	34mm	35mm
Common Cockle (MCRS = 23.8mm)		
Spring 2025	29mm	27mm
Autumn 2025	28mm	25mm

3.2.3. Spring Survey (post-season) Comparisons

Table 3: Average length of all Manila clam and Common cockle sampled during the Spring 2024 and 2025 surveys as an indication of population structure in relation to the MCRS of each species. Red shading indicates an average length that falls below the species' MCRS, green shading that the average length is above the species' MCRS. An * indicates a significant change in average length between the two surveys ($p < 0.01$).

	BMA		
Manila Clam (MCRS = 35mm)	Southampton Water	Portsmouth Harbour	Langstone Harbour
Spring 2024	33mm	37mm	37mm
Spring 2025	35mm*	36mm*	37mm
Common Cockle (MCRS = 23.8mm)			
Spring 2024	27mm	28mm	26mm
Spring 2025	29mm*	27mm	21.5mm

3.2.4. Autumn Survey (pre-season) Comparisons

Table 4: Average length of all Manila clam and Common cockle sampled during the Autumn 2024 and 2025 surveys as an indication of population structure in relation to the MCRS of each species. Red shading indicates an average length that falls below the species' MCRS, green shading that the average length is above the species' MCRS. An * indicates a significant change in average length between the two surveys ($p < 0.05$).

	BMA	
Manila Clam (MCRS = 35mm)	Southampton Water	Portsmouth Harbour
Autumn 2024	34mm	35mm
Autumn 2025	34mm*	35mm
Common Cockle (MCRS = 23.8mm)		
Autumn 2024	27mm	27mm
Autumn 2025	28mm	25mm

4. Catch Data

The total kg of Manila clam caught across all vessels during the 2024/25 season was 149.2 tonne, an increase from all three previous seasons for which Southern IFCA holds data (Figure 14). The total reported catch for common cockle was 885kg in the 2024/25 season, an increase from 0 the previous year.

The average kg of manila landed per vessel for the 2024/25 season was 2.7 tonne, higher than both the 2021/22 (2.0 tonne) and 2022/23 (1.8 tonne) seasons but lower than the 2023/24 season (5.0 tonne). This was influenced by the presence of 2 to 3 (depending on the season) times more vessels operating within the fishery in the 24/25 season than the previous seasons. However, the average kg of manila clam landed per vessel per hour for the 2024/25 season was 2.78 kg/hour, the lowest for any reported season to date (7.06 kg/hr/vessel 2023/24, 4.57 kg/hr/vessel 2022/23, 3.23 kg/hr/vessel 2021/22). This difference in interannual trend is due to the large increase in hours spent within the fishery in the 2024/25 season in comparison to previous seasons (4,022.5 hours total compared to 1,974 hours in 2023/24) due to the increase in vessels targeting the fishery (Figure 14).

All reported cockle catch was caught in a period of two days in January, out of BMA 4 – Southampton Water.

Solent Bivalve Survey 2025

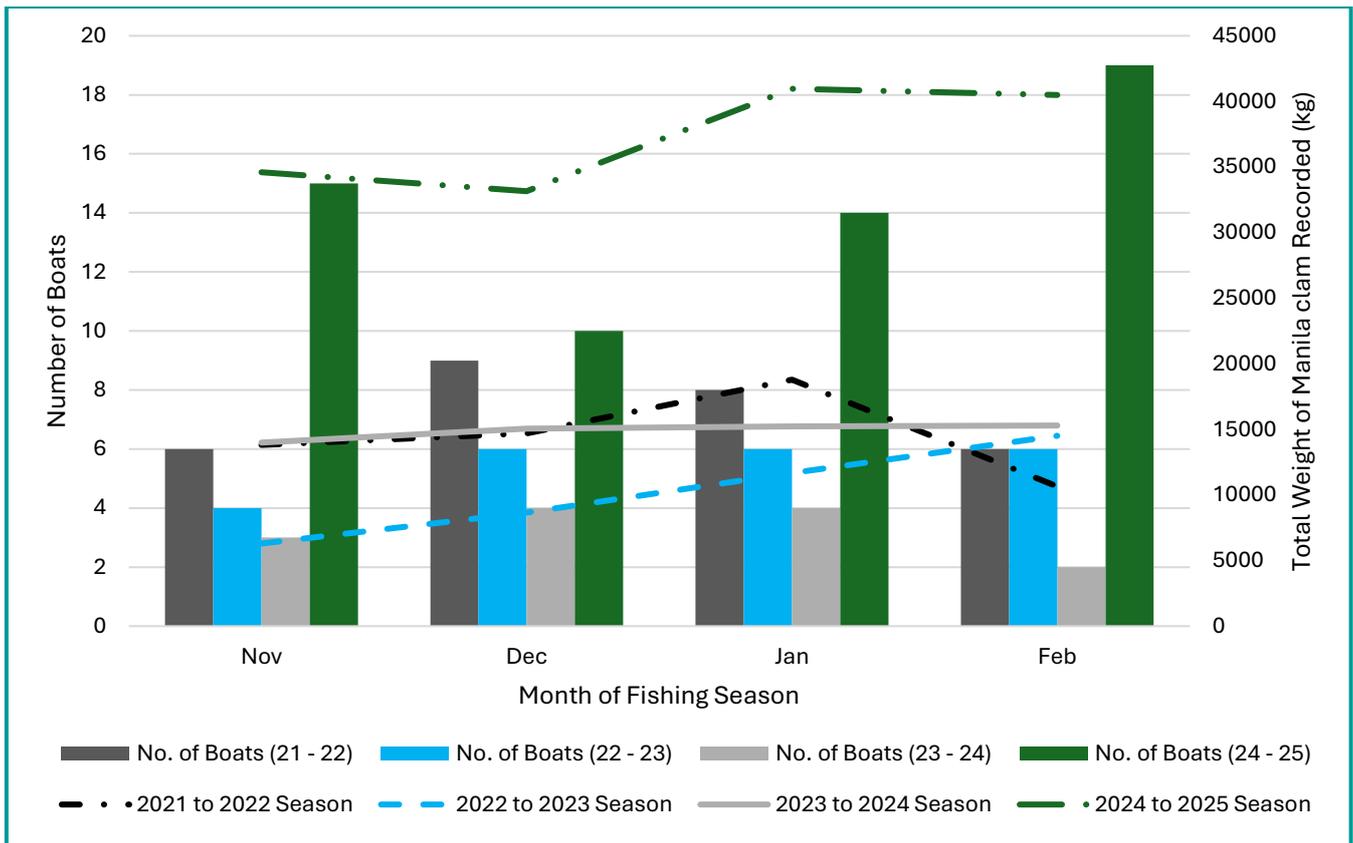


Figure 14: Total kg of Manila clam landed during each month of the last 4 seasons of the Solent Manila clam fishery, and the number of vessels operating in the fishery.

5. Discussion

5.1. CPUE

Between the Autumn 2024 and Spring 2025 surveys, no statistically significant changes in CPUE for Manila clam or common cockle, for any portion of the sampled population, were found. This would suggest that current fishing pressure is not having a significant effect on the populations of Manila clam or common cockle in the three sampled BMAs and that there are other factors which may be influencing changes in the stock levels between years. Catches of Manila clam within the Solent Bivalve fishery increased during the 2024/25 fishing season in comparison to the previous three seasons (Figure 13), however the size of the landings dataset to date (4 years) prevent clear conclusions from being drawn in terms of links between catch data and stock data, and does not preclude that results could instead be a factor of population changes during the year and the influence of environmental variables.

No statistically significant change in average CPUE was found for either Manila clam or common cockle between the Spring 2025 and Autumn 2025 surveys, in any of the sampled BMAs. This continues a trend observed in previous years of no significant change being seen during the Bivalve fishery closed season.

No statistically significant change in average CPUE was found for the Manila clam population in any of the sampled BMAs between the Spring 2025 survey and any previous spring surveys, or for the common cockle population within Southampton Water. In Portsmouth and Langstone Harbours, statistically significant decreases were seen in the equal to/above portion of the common cockle population between Spring 2025 and the spring surveys in 2020 and 2022 (both Harbours), and for the below MCRS portion of the population between

Spring 2025 and the spring surveys in 2020, 2022, and 2023 (Portsmouth Harbour). These decreases in common cockle continue the trend noted in the two previous Bivalve survey reports of decreasing common cockle populations within Portsmouth Harbour between Spring surveys. The observed decrease in common cockle stock occurs alongside no or very low harvesting of common cockle in the seasons since catch recording has been required, with the 2024/25 fishing season the first where any catch of common cockle has been recorded in the fishery. This was limited to two days of fishing. It is therefore possible that the stock variation is due to natural factors or environmental influence, however low levels of stock across all three areas requires close monitoring alongside any changes in fishing practice for this species. It is noted in other populations of common cockle, such as in Poole Harbour, that stocks can be cyclical over periods of 3-4 years, however levels have been noted to remain low in comparison to Manila clam over a longer timeframe than this. For example, over the Autumn surveys from 2022 to 2024, median CPUE values for the common cockle population equal to/above MCRS have ranged from 1.6 kg/m/r to 2.7 kg/m/hr in Southampton Water, 0.3 kg/m/hr to 3.1 kg/m/hr in Portsmouth Harbour, and 0.0 kg/m/hr to 1.4 kg/m/hr in Langstone Harbour. The trends will continue to be monitored through analysis of survey data.

Statistically significant decreases between the Autumn 2025 survey and the Autumn 2021 (equal to/above CMRS) and Autumn 2022 (below MCRS) were found for common cockle within Southampton Water. Statistically significant decreases were also found within both portion of the Manila clam population and the equal to/above portion of the population in Portsmouth Harbour, however these should be considered alongside the significant difference ($p < 0.001$) found when comparing CPUE values from Portsmouth Harbour obtained with the SIFCA owned box dredge and the Fisher owned dredge operated in Autumn 2025.

5.2. Average Length

Between Autumn 2024 and Spring 2025 (the fishery open season) both Manila clam and common cockle populations within Southampton Water saw a statistically significant change in average length, an increase. Given these trends are the opposite to those that would be expected to be seen (a decrease in length during the fishing season), it suggests there are a number of influencing factors outside fishing activity that may be acting on the species size distribution. No other statistically significant changes were found during either the fishery open or closed season.

The significant results found between the Spring surveys of each year and between the Autumn surveys of each year (Table 3 & 4) are mixed and as such difficult to attribute to specific factors.

6. Summary

- No statistically significant change in median CPUE for either the Manila clam or common cockle populations were found during the 2024/25 fishing season, for any of the sampled BMAs.
- In addition, no significant trends were seen for either species in any BMA during the 2025 fishery closed season.
- The results from this CPUE analysis suggest that fishing pressure is not having a significant impact on this fishery, and that trends could be related to the influence of environmental variables.
- A continued trend of statistically significant decreasing common cockle stocks within Portsmouth Harbour when comparing Spring surveys was found for both portions of the population (equal to/above and below MCRS).
- Statistically significant decreases in the common cockle population between Autumn 2025 and Autumn 2021 (equal to/above MCRS) and Autumn 2022 (below MCRS) were found within Southampton Water.
- For common cockle, there is a trend in decreasing stock levels between years for spring and autumn surveys, however, recorded landings for this species under the Solent Dredge Permit Byelaw have been

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zero or very low, suggesting that fishing may not be the primary influencing factor on the stock trend. Trends are potentially due to natural variation or are environmentally driven. Continued monitoring through stock surveys is recommended.

- The median length of Manila clam sampled in the Spring 2025 survey was above the MCRS of 35mm in all three BMAs. The median length in the Autumn 2025 survey was above the MCRS in Portsmouth Harbour but below it in Southampton Water (by 1mm).
- The median length of Common cockle sampled in the Spring 2025 survey was above the MCRS of 23.8mm in Southampton Water and Portsmouth Harbour, but below it in Langstone Harbour (by 2.3 mm). The median length in the Autumn 2025 survey was above the MCRS in Southampton Water and Portsmouth Harbour.
- When comparing average length between subsequent Spring surveys, the general trend for both bivalve species in Southampton Water is an increase, while in Portsmouth Harbour a decrease in average length is seen for both species. Trends within Langstone Harbour are mixed.
- When comparing average length between subsequent Autumn surveys, the general trend for Manila clam is no change for either Southampton Water or Portsmouth Harbour, while trends for common cockle are mixed.
- The total kg of Manila clam caught during the 2024/25 season was higher than for the previous two seasons, but the kg of Manila clam caught per vessel and the kg of Manila clam caught per hour per vessel were lower than the 2023/24 season due to the increased number of vessels working in the fishery. For the first time since landings data was collected under the Solent Dredge Permit Byelaw, landings were recorded for common cockle, 885kg taken in two days in January 2025.

Annex 1

Average Length Analysis

Histograms for both species in each of the BMAs are provided below for all spring surveys and all autumn surveys within the dataset. NB: the Autumn 2025 survey was not completed for Langstone Harbour due to unforeseen circumstances, so Autumn histograms for Langstone Harbour are not presented. The length distribution trends for Manila clam and common cockle in Langstone Harbour up to 2024 are presented within Annex 1 of the ‘Solent Bivalve Survey 2024’ report.

Spring surveys (Post-season) Comparisons

Manila Clam

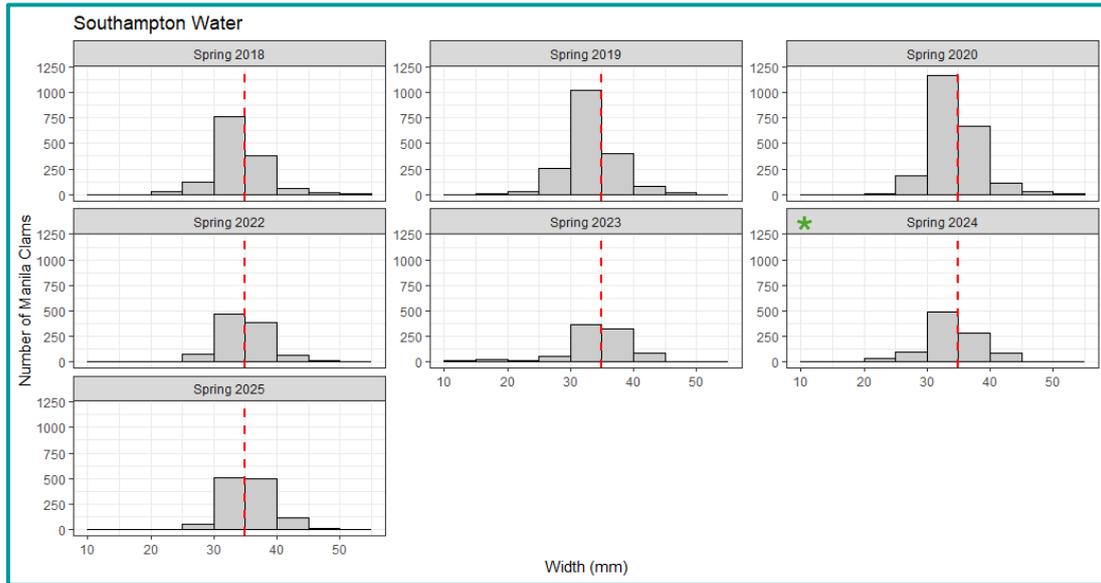


Figure 14: Length histograms for Manila Clam sampled in Southampton Water during the spring surveys within the Solent Bivalve survey timeseries (2018 to 2025). The red dashed line displays the Minimum Conservation Reference Size (35mm). Green symbol (*) indicates a significant increase in median length from Spring 2024 to Spring 2025.

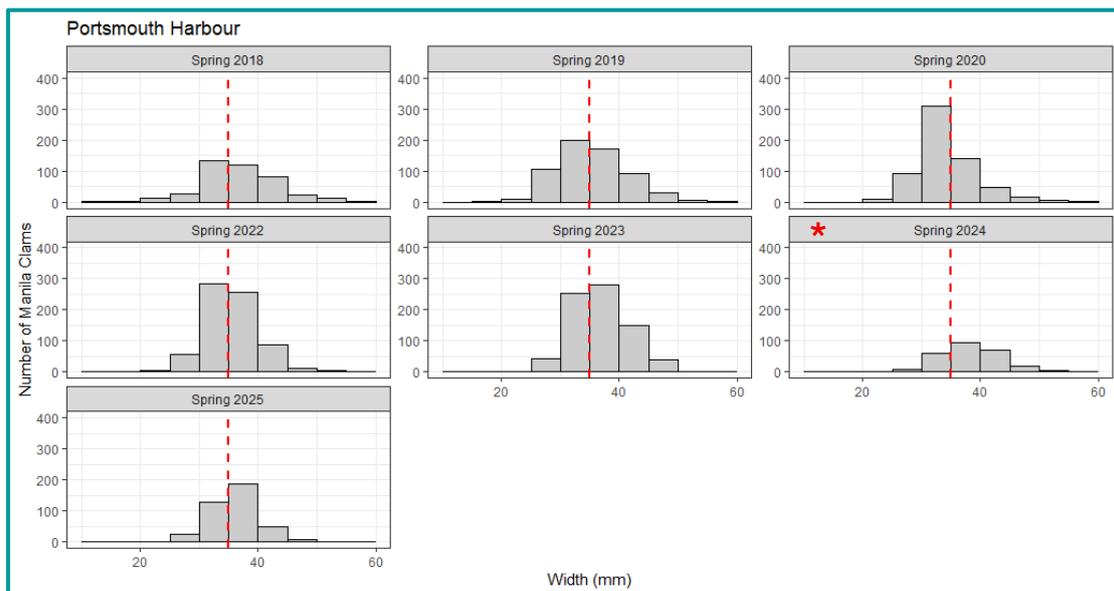


Figure 15: Length histograms for Manila clam sampled in Portsmouth Harbour during the spring surveys within the Solent Bivalve survey timeseries (2018 to 2025). The red dashed line displays the Minimum Conservation Reference Size (35mm). Red symbol (*) indicates a significant decrease in median length from Spring 2024 to Spring 2025.

Solent Bivalve Survey 2025

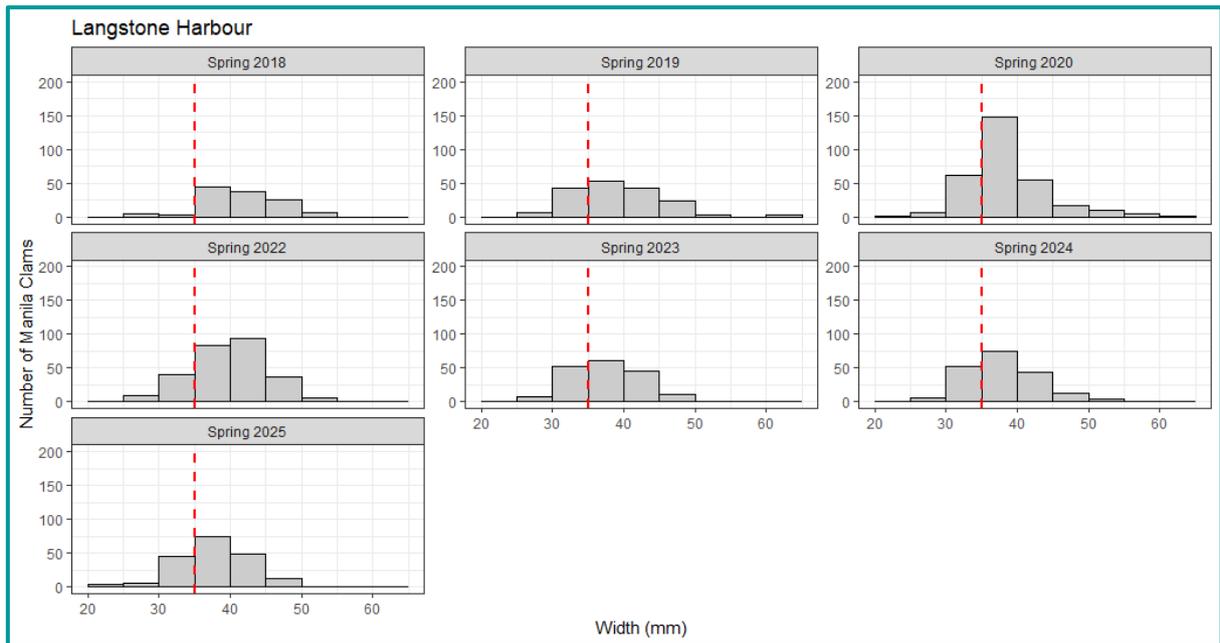


Figure 16: Length histograms for Manila clam sampled in Langstone Harbour during the spring surveys within the Solent Bivalve survey timeseries (2018 to 2025). The red dashed line displays the Minimum Conservation Reference Size (35mm).

Common Cockle

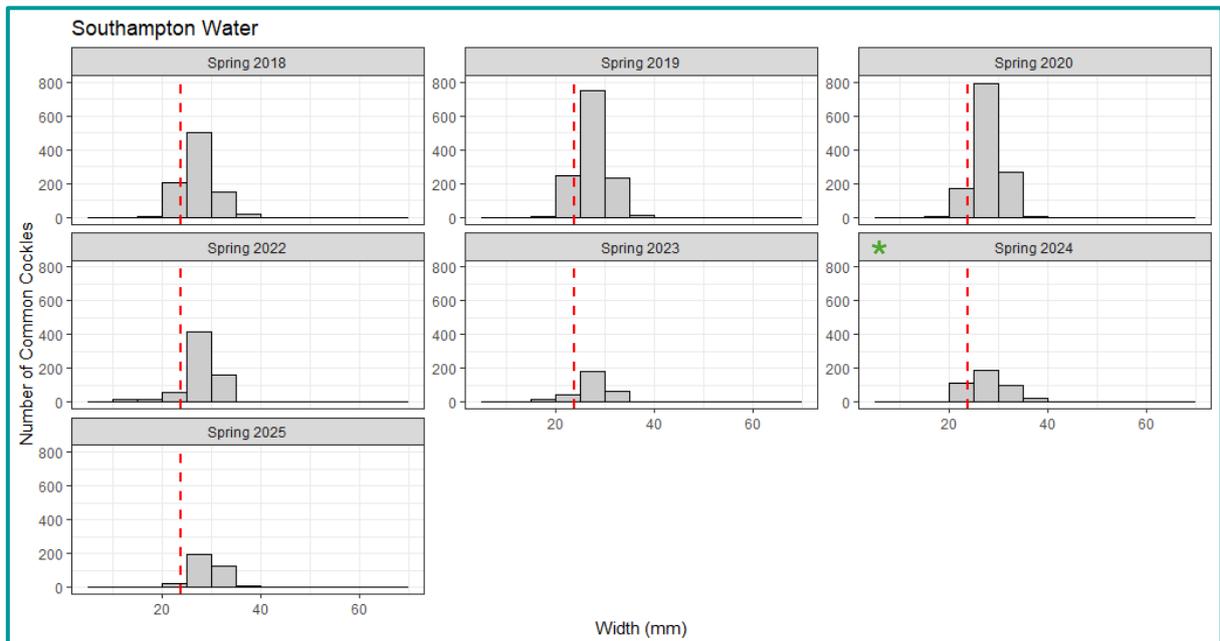


Figure 17: Length histograms for Common cockle sampled in Southampton Water during the spring surveys within the Solent Bivalve survey timeseries (2018 to 2025). The red dashed line displays the Minimum Conservation Reference Size (23.8mm). Green symbol (*) indicates a significant increase in median length from Spring 2024 to Spring 2025.

Solent Bivalve Survey 2025

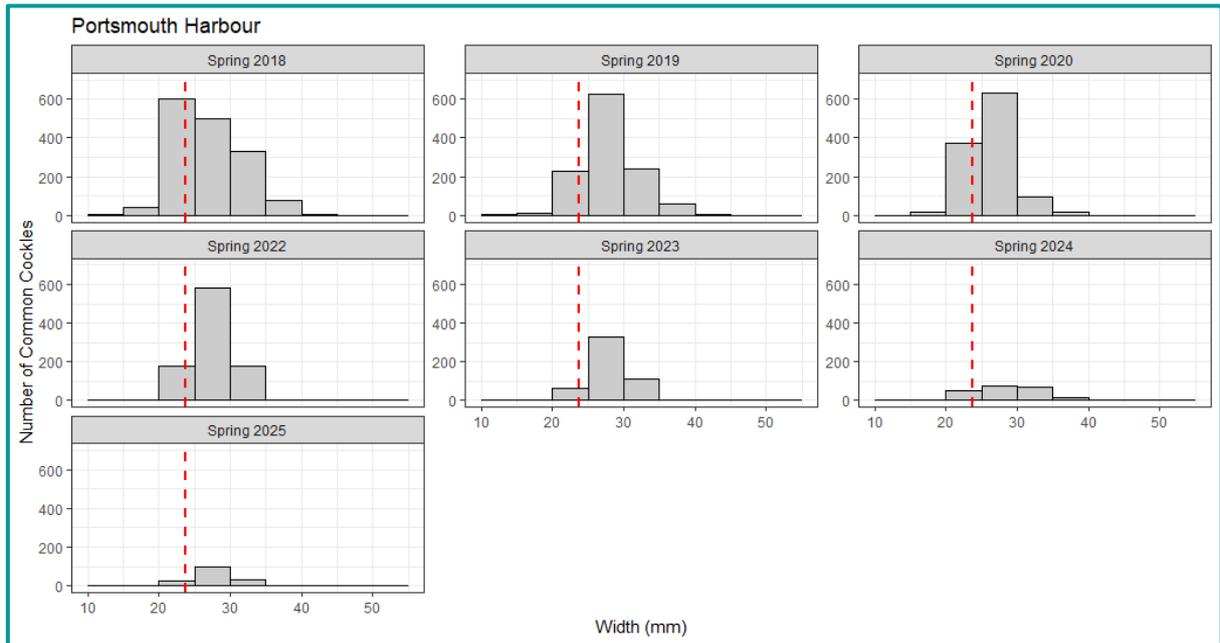


Figure 18: Length histograms for Common cockle sampled in Portsmouth Harbour during the spring surveys within the Solent Bivalve survey timeseries (2018 to 2025). The red dashed line displays the Minimum Conservation Reference Size (23.8mm).

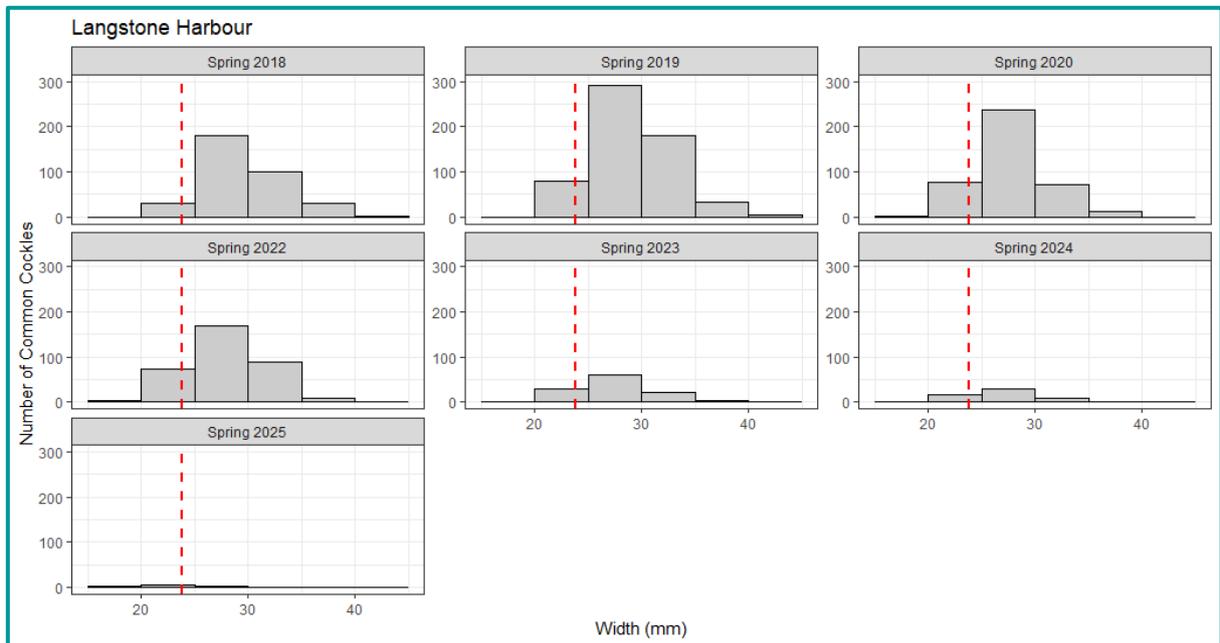


Figure 19: Length histograms for Common Cockle sampled in Langstone Harbour during the spring surveys within the Solent Bivalve survey timeseries (2018 to 2025). The red dashed line displays the Minimum Conservation Reference Size (23.8mm).

**Autumn Survey (pre-season) Comparisons
Manila Clam**

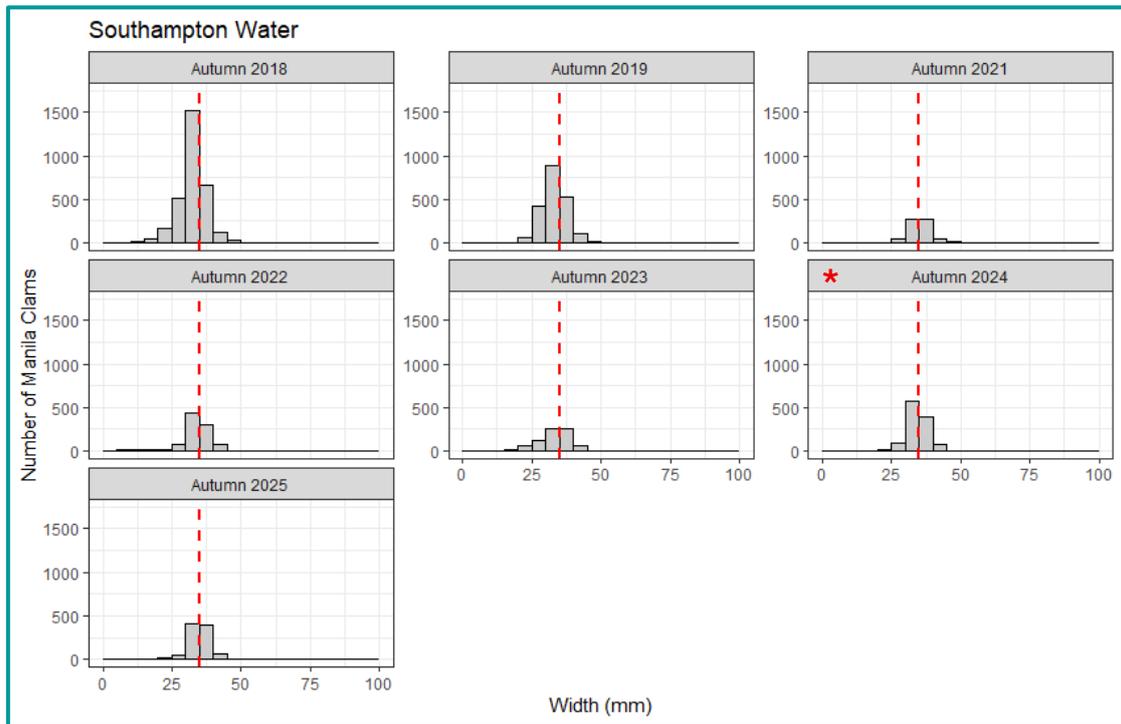


Figure 20: Length histograms for Manila Clam sampled in Southampton Water during the autumn surveys within the Solent Bivalve survey timeseries (2018 to 2025). The red dashed line displays the Minimum Conservation Reference Size (35mm). Red symbol (*) indicates a significant decrease in median length from Autumn 2024 to Autumn 2025.

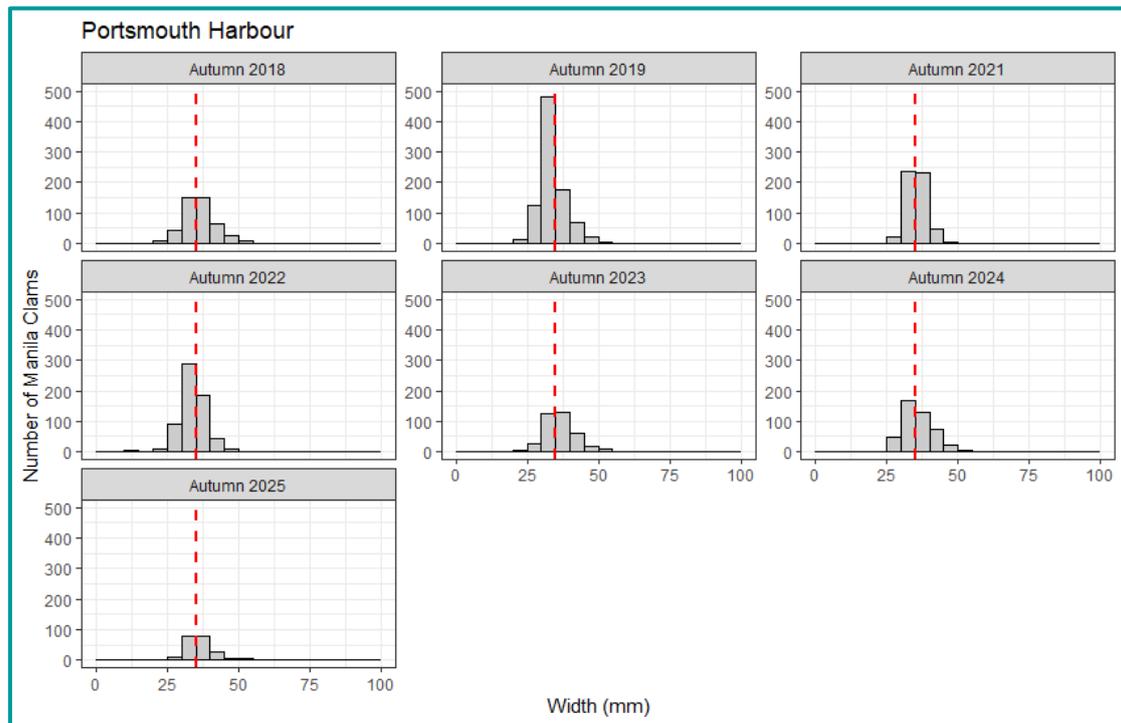


Figure 21: Length histograms for Manila clam sampled in Portsmouth Harbour during the autumn surveys within the Solent Bivalve survey timeseries (2018 to 2025). The red dashed line displays the Minimum Conservation Reference Size (35mm).

Common Cockle

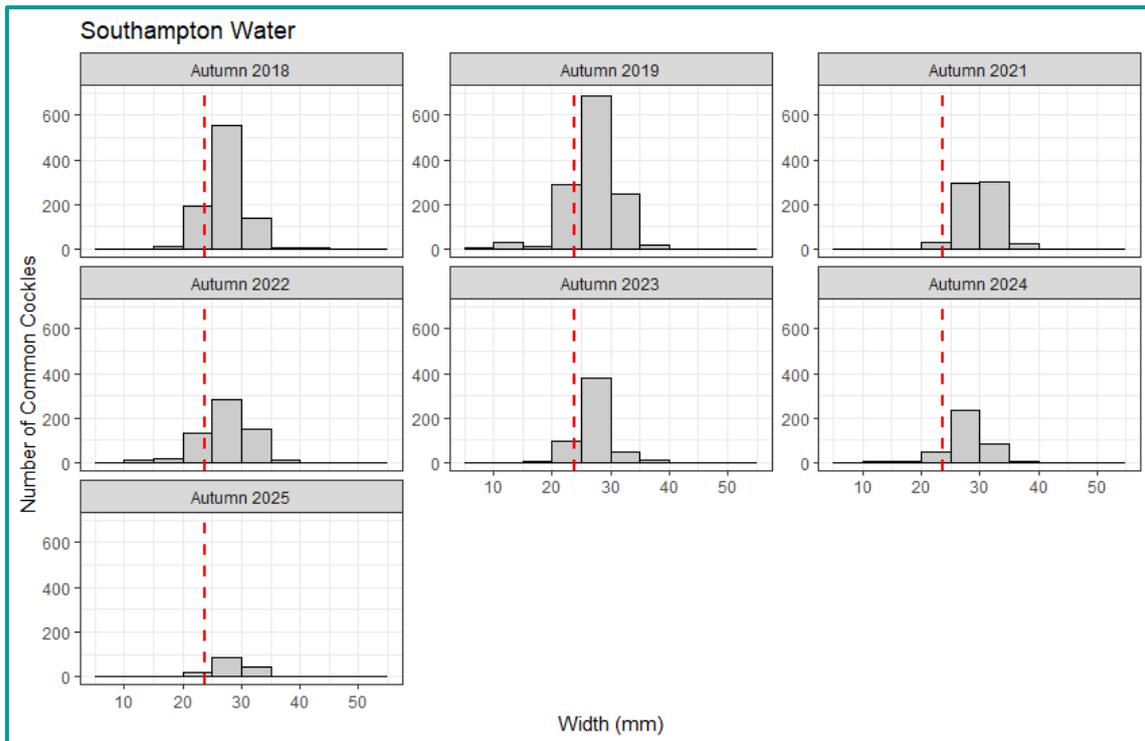


Figure 22: Length histograms for Common cockle sampled in Southampton Water during the autumn surveys within the Solent Bivalve survey timeseries (2018 to 2025). The red dashed line displays the Minimum Conservation Reference Size (23.8mm).

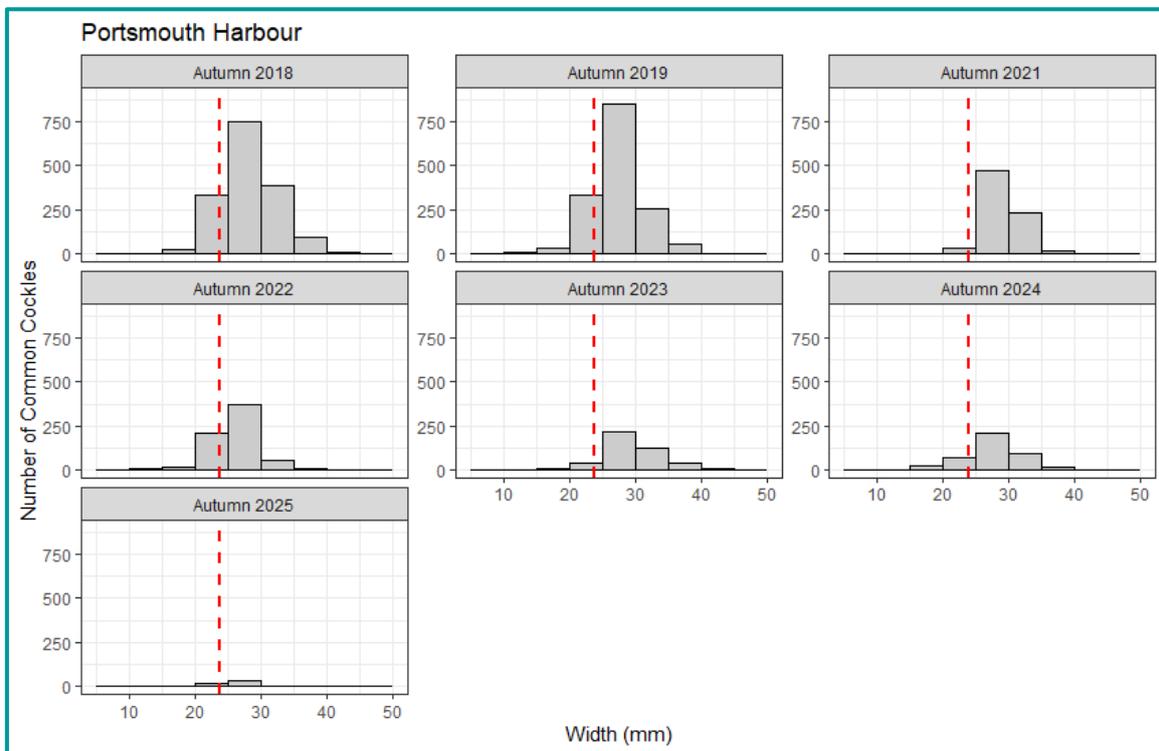


Figure 23: Length histograms for Common cockle sampled in Portsmouth Harbour during the autumn surveys within the Solent Bivalve survey timeseries (2018 to 2025). The red dashed line displays the Minimum Conservation Reference Size (23.8mm).