

1 Introduction

The 2025 Poole Harbour Bivalve Survey is an annual assessment conducted by the Southern Inshore Fisheries and Conservation Authority (Southern IFCA) to monitor the health and sustainability of commercially viable shellfish beds within Poole Harbour, UK. Initiated in 2015, this survey provides data on key bivalve species, including the common cockle (*Cerastoderma edule*) and Manila clam (*Ruditapes philippinarum*), to inform fisheries management and conservation efforts.

The survey encompasses 27 shellfish beds across 11 catch zones within Poole Harbour. Utilising a pump-scoop dredge, the survey collects length frequency and Catch per Unit Effort (CPUE) data, with a focus on the primary commercially harvested species. While the dredge is inherently size-selective, the consistent methodology allows for year-on-year comparisons, aiding in the assessment of stock trends and sustainability.

The Poole Harbour clam and cockle fishery operates under the Poole Harbour Dredge Permit Byelaw, which permits the use of pump-scoop dredges (Figure 1) with specific design and operational restrictions to manage the fishery sustainably and to avoid an adverse effect on Marine Protected Areas within Poole Harbour. The fishing season runs from 25th May to 23rd December annually with 45 permits issued each year. The byelaw regulates a number of elements of the fishing operation including gear type/construction, spatial and temporal restrictions, catch restrictions and catch reporting. Fishers must submit a monthly catch return indicating, for each day fished, the hours fished, the quantities of species caught and the buyer(s). Fishers must also indicate which of 11 catch zones the catch has come from to allow for catch data to be related to the annual stock survey.

In 2018, the fishery achieved dual certification under the Marine Stewardship Council's Sustainability Standard and the Seafish Responsible Fishing Scheme, with re-certification under MSC in 2023, the survey data also contributes to an annual audit for this certification.

Monitoring and Control Plan

A Monitoring and Control Plan (M&CP)¹ has been developed as part of a 2024 Southern IFCA Poole Harbour Dredge Permit Review, to support management of the Poole Harbour dredge fishery for Manila clam under the Poole Harbour Dredge Permit Byelaw and associated permits. The M&CP aims to provide a comprehensive framework for monitoring and feedback within the fishery. Management of the permitted fishery for Manila clam was informed by the M&CP for the first time ahead of the 2025 season, this included data from the 2025 Poole Harbour Bivalve Survey and catch data from the 2024 fishing season, which informed whether any trigger levels had been reached under the On-Site Monitoring Programme.

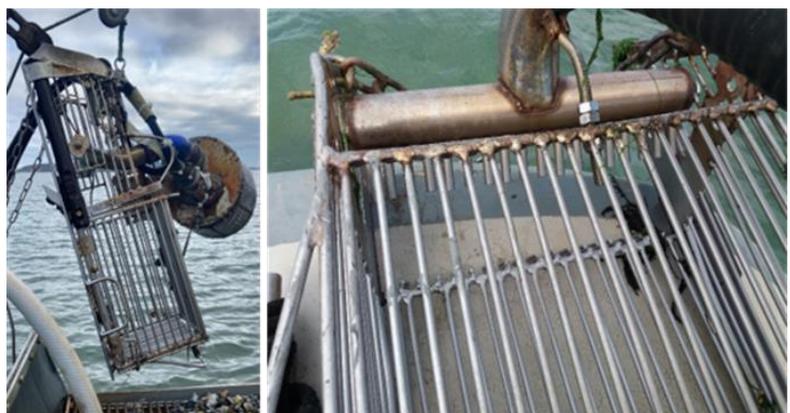


Figure 1: An example of the pump-scoop dredge used within the Poole Harbour Dredge Permit fishery.

2 Method

The 2025 survey took place between 26th to 27th April 2025, and used local fishing vessel, “*David’s Dream*”. The survey was carried out two weeks later than previous years in response to stakeholder concerns that previous surveys may have missed potential spring mortalities.

A pump-scoop dredge was used in line with normal fishing practice and according to relevant management measures. For the 2025 survey sampling was not able to be carried out in Catch Zone 2 due to tidal constraints.

The pump-scoop dredge is inherently size selective as fishers want to reduce the amount of post-capture measuring required to ensure compliance with Minimum Conservation Reference Size (MCRS). It is recognised therefore that the survey methodology will not fully sample the population below MCRS, although every effort is made to capture all shellfish from the dredge. However, sampling is carried out the same way each year therefore whilst the samples are not fully representative of the below MCRS population, there is the ability to make comparisons between years for under MCRS CPUE and length frequency due to the consistency in methodology.

The following methodology was followed:

1. Three dredge tows were conducted within approximately 20m of a predetermined central point of each site. This central point is consistent across all survey years.
2. After 2 minutes the dredge was brought inboard, and all bivalves retained and labelled to the corresponding site number and dredge tow.
3. Each species was identified, and the first 50 individuals of each species were measured across their widest axis to the nearest millimetre.
4. Manila clams and common cockles were separated into above and below their relative MCRS (35mm and 23.8mm respectively) and weighed.
5. Following measurement, all samples were returned to shellfish production areas of the same classification.

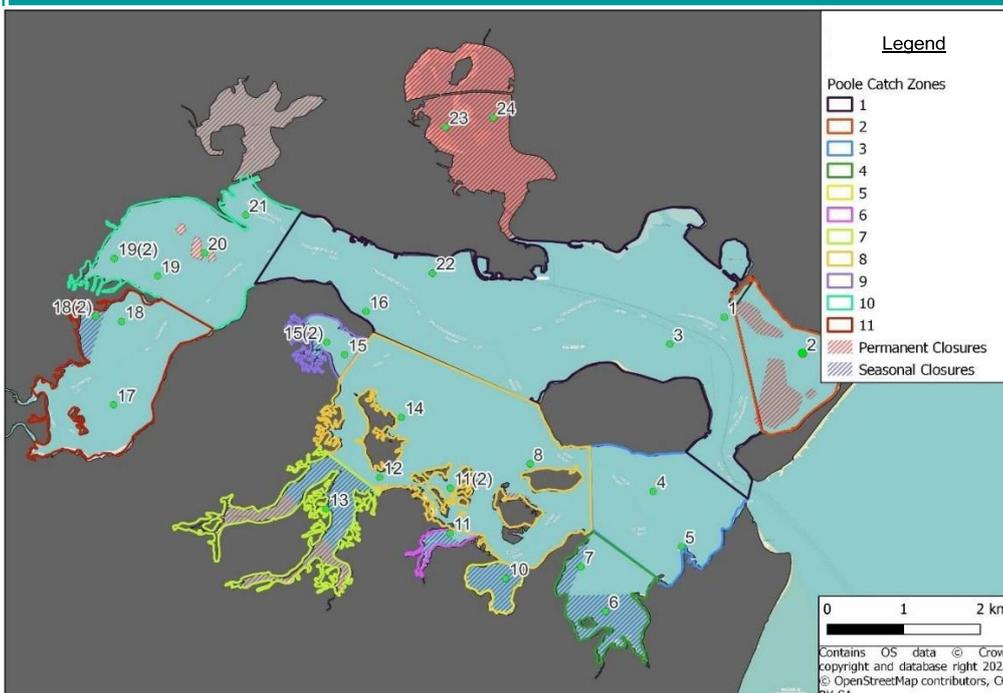


Figure 2: Map of dredge survey sites included in the Poole Harbour Bivalve Survey 2025, spanning 11 designated shellfish catch zones. Locations of individual dredge sites are marked, with areas subject to seasonal closures shaded in blue and permanent closures shaded in red, as defined under the Poole Harbour Dredge Permit Byelaw and Bottom Towed Fishing Gear Byelaw 2016. No sampling was conducted in Catch Zone 2 in 2025 due to tidal constraints.

3 Results

Results focus on the predominant commercial species within the Harbour, Manila clam and common cockle. Other species found during the survey and harvested at a smaller scale include American Hard-Shell clam (*Mercenaria mercenaria*), the Native clam (*Ruditapes decussatus*), the native oyster (*Ostrea edulis*), the Pacific oyster (*Magallana gigas*), the spiny cockle (*Acanthocardia aculeata*) and the blue mussel (*Mytilus edulis*).

Length frequency data was analysed by site, whereas Catch Per Unit Effort (CPUE) data was calculated as kilograms per meter dredge per hour (kg/m/hr) for each of the 11 shellfish catch reporting zones and Holes Bay under the Poole Harbour Dredge Permit Byelaw. Catch per unit effort is separated into: CPUE_{total}: total catch per unit effort, CPUE_{over}: catch per unit effort for individuals over MCRS and CPUE_{under}: catch per unit effort for individuals under MCRS

Data was analysed using a combination of Excel and Rstudio.

3.1 Length Frequency Distribution Data

Statistical analysis of length data within the 2025 dataset and comparisons of length data for the last three years showed statistical differences ($p < 0.01$ for both Manila clam and cockle), however this was expected due to the range of sizes observed across the 81 dredges within the 27 sites of the Harbour in each survey.

3.1.1 Manilla Clam

- The average size of Manila clam in 2025 varied from 39.4mm at site 7 (n=84) to 35.7mm at site 5 and 6 (n= 72 and n=132) (**Figure 3**).
- All sites had an average length above the MCRS (35mm).

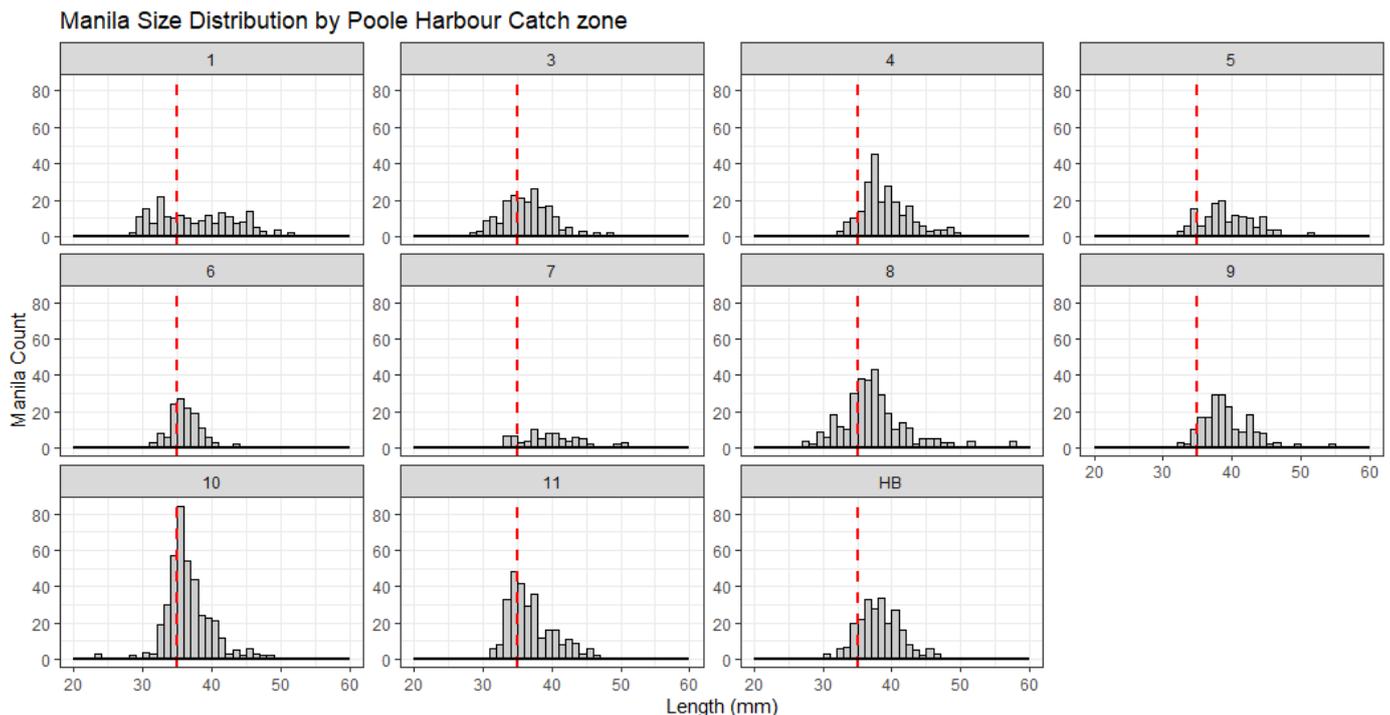


Figure 3: Average length distribution of Manila clams across Catch Zones in the Poole Harbour Bivalve Survey 2025. Lengths are grouped into 1 mm bins. The Minimum Conservation Reference Size (MCRS) of 35 mm is indicated by a red line. No samples were taken from Catch Zone 2 in 2025.

- The average size of Manila clam across the Harbour as a whole has stayed consistently above MCRS for the last 3 years of surveys at 37.27 mm (2025, n=2494) 37.34mm (2024; n=2436) and 38.17mm (2023; n=2601) (**Figure 4**).

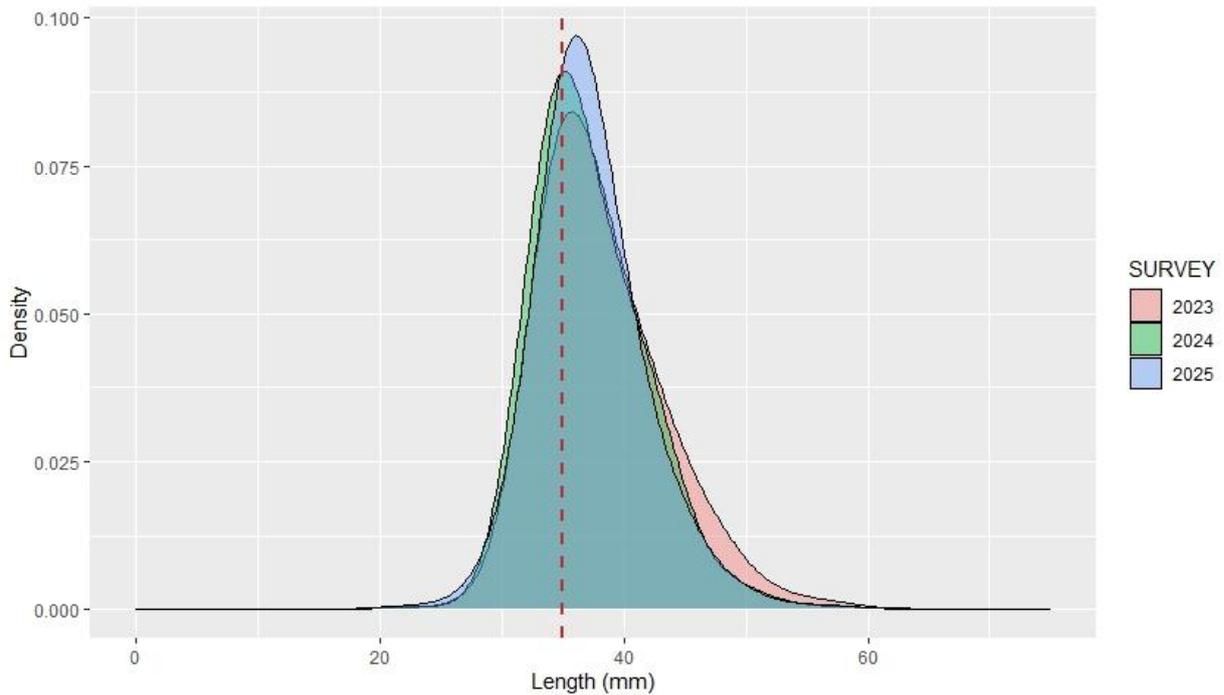


Figure 4: The length distribution of the Manila clam sample populations from 2023 (peach), 2024 (green), and 2025 (blue) is shown for comparison. The Minimum Conservation Reference Size (MCRS) of 35 mm is indicated by a red dashed line.

3.1.2 Common cockle

- In 2025, the average size of cockle varied from 32.4mm at zone 1 (n=395) to 25.5mm at zone 11 (n=51). The average size across the Harbour as a whole for the 2025 survey was 29.8mm (n=2128).
- All sites had an average length above the MCRS length (23.8mm) (**Figure 5**).
- The average size of common cockle across the Harbour as a whole has remained consistently above MCRS for the last three years of surveys at 29.8mm (2025), 29.8mm (2024) and 29.3mm (2023) (**Figure 6**).

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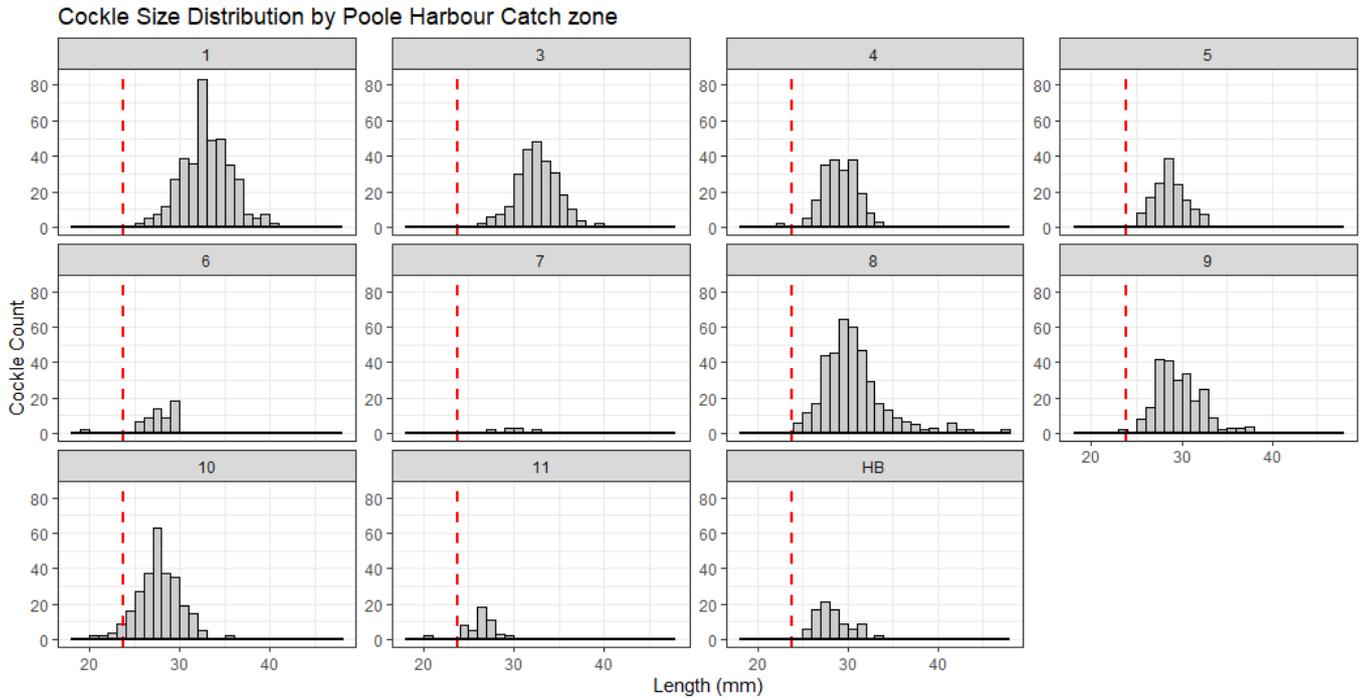


Figure 5: Average length distribution of common cockle across catch zones in the Poole Harbour Bivalve Survey 2025. Lengths are grouped into 1 mm bins. The Minimum Conservation Reference Size (MCRS) of 23.8 mm is indicated by a red line. No samples were taken from Catch Zone 2 in 2025.

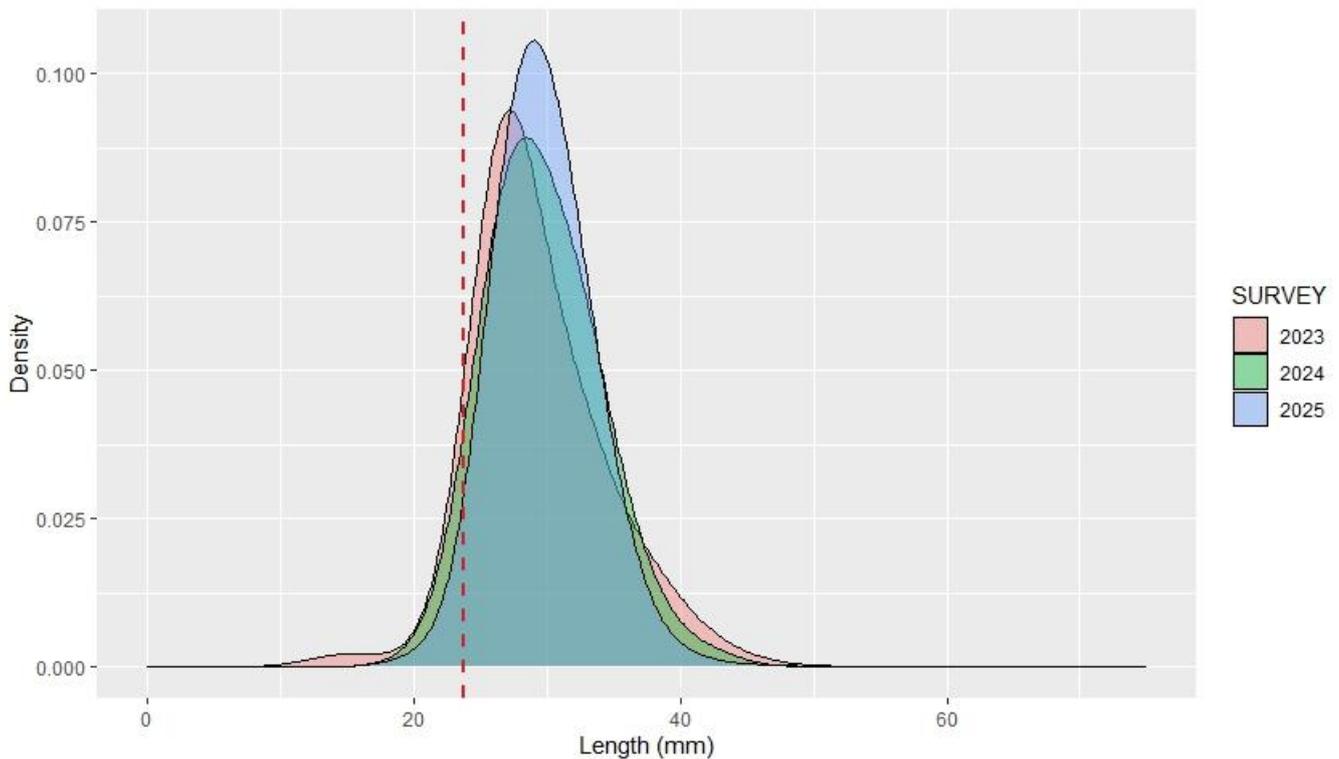


Figure 6: The length distribution of the common cockle sample population from 2023 (peach), 2024 (green) and 2025 (blue). The Minimum Conservation Reference Size (MCRS) of 23.8mm is indicated by a red dashed line.

3.2 Catch Per Unit Effort (CPUE)

The 2025 dataset has been analysed for any statistical differences between sites, and with the previous two survey years, 2023 and 2024. Statistical analyses were performed using a non-parametric Kruskal-Wallis test with subsequent Dunn's test.

3.2.1 Manila Clam

- For the survey as a whole, the average $CPUE_{over}$ was 38.92 kg/m/hr, the average $CPUE_{under}$ was 7.68 kg/m/hr and the average $CPUE_{total}$ was 46.82 kg/m/hr.
- Catch Zones 5 and Holes Bay showed the highest average $CPUE_{total}$ in the 2025 survey (96kg/m/hr and 86.7kg/m/hr, respectively) (**Figure 7**).
- Likewise, Zone 5 and Holes Bay showed the highest $CPUE_{over}$ Manila clam (86kg/m/hr and 79kg/m/hr). All zones showed a greater $CPUE_{over}$ Manila clam in comparison to $CPUE_{under}$. Zone 6 showed the greatest $CPUE_{under}$ of 16.8kg/m/hr, followed closely by zones 10 and 11 of 13.8 and 13.5kg/m/hr, respectively.

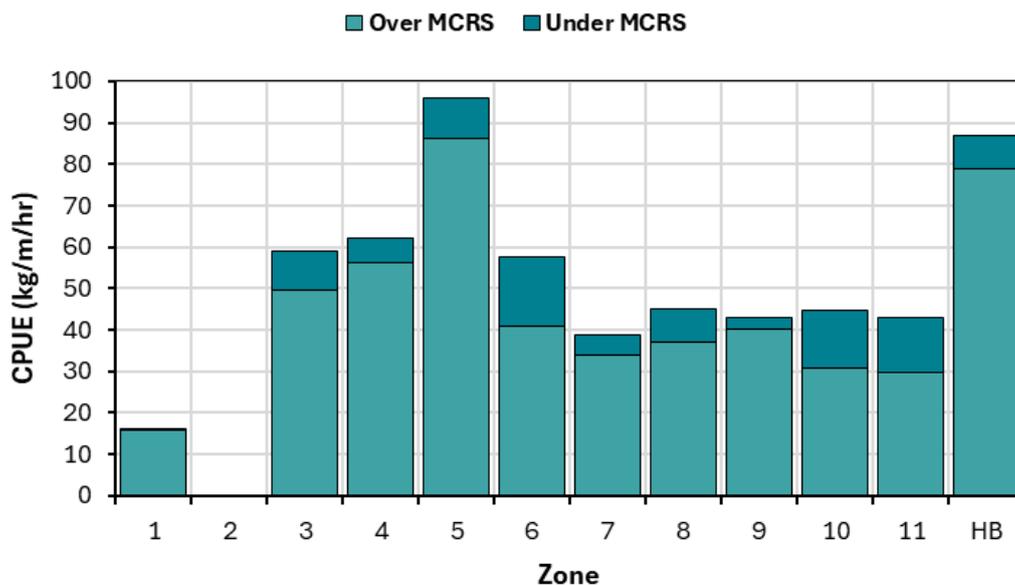


Figure 7: Average Catch Per Unit Effort (CPUE) for Manila clam in each zone surveyed during the Poole Harbour Bivalve Survey 2025. Bars represent the average $CPUE_{total}$ per zone, divided into $CPUE_{over}$ and $CPUE_{under}$ MCRS, shown in dark blue and light blue, respectively. No samples were taken from Catch Zone 2 in 2025

- Statistical analysis showed no significant differences between catch zones for $CPUE_{total}$, $CPUE_{over}$ and $CPUE_{under}$, within the 2025 dataset ($p > 0.05$).
- $CPUE_{total}$ data was statistically similar between 2024 and 2025 datasets.
- Zone 5 and 10 both displayed significantly less $CPUE_{total}$ and $CPUE_{over}$ in 2025 compared to 2023 however Zone 3 showed significantly higher $CPUE_{over}$ in 2025 compared to 2023 ($p < 0.05$) (**Figure 8**)
- Comparing $CPUE_{under}$, all zones were statistically similar in 2025 when compared to the previous two surveys ($p > 0.05$).

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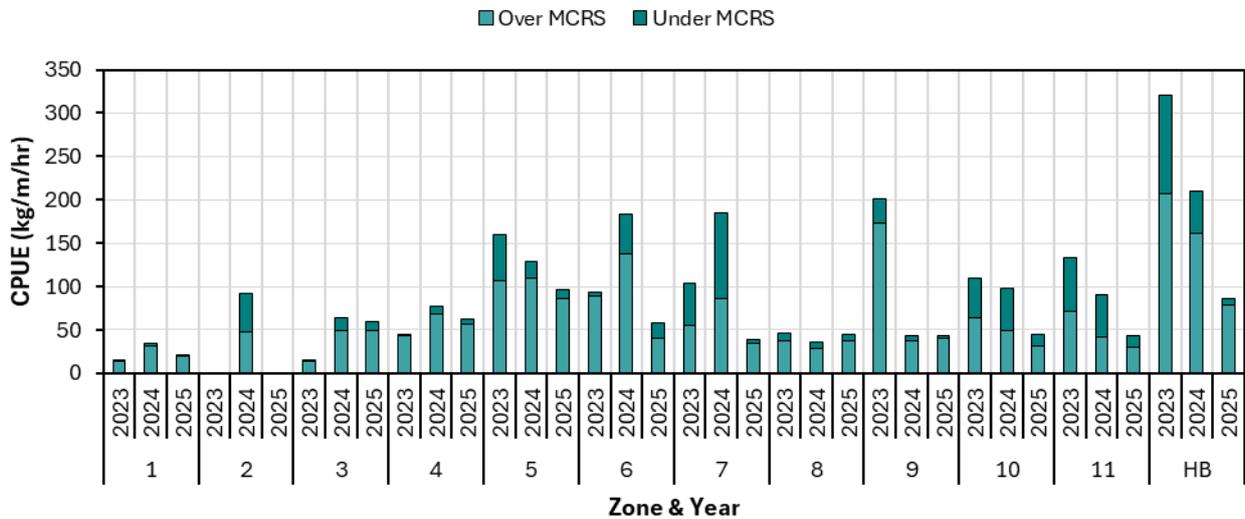


Figure 8: Average total catch per unit effort (CPUE) of Manila clams, expressed in kilograms of shellfish per metre of dredge per hour, across catch zones 1-11 and Holes Bay (HB) from the 2023 to 2025 Poole Harbour Bivalve Surveys. Dark blue bars represent CPUE_{under} the minimum conservation reference size (MCRS) of 35mm, and light blue bars represent CPUE_{over} the MCRS.

3.2.2 Common cockle

- The average CPUE_{over} was 91.7 kg/m/hr, the average CPUE_{under} was 0.86 kg/m/hr. The average CPUE_{total} of common cockle was 93.18 kg/m/hr.
- Within the 2025 dataset, Catch Zone 3 showed the highest average CPUE_{total}, followed by Zone 1 (399kg/m/hr and 252kg/m/hr, respectively). Zone 3 also showed the highest CPUE_{over} (398kg/m/hr) (Figure 9).
- All zones had a greater average CPUE_{over} compared to CPUE_{under}, except for zone 11 which had 5.4kg/m/hr CPUE_{under} vs 4.8kg/m/hr CPUE_{over}.

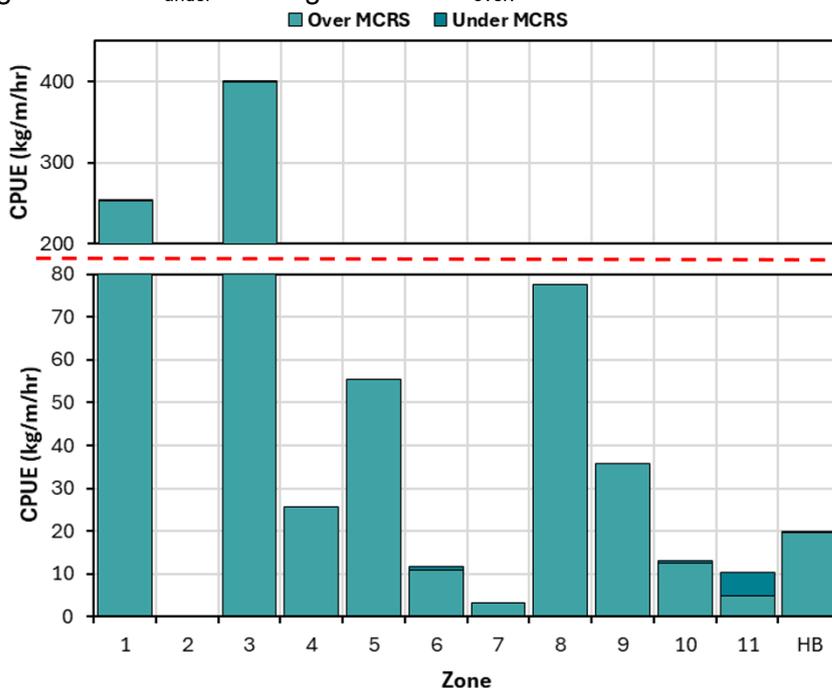


Figure 9: Average Catch Per Unit Effort (CPUE) for common cockle in each zone surveyed during the Poole Harbour Bivalve Survey 2025. Bars represent the average CPUE_{total} per zone, divided into CPUE_{over} and CPUE_{under} the Minimum Conservation Reference Size (MCRS), shown in dark blue and light blue, respectively. The red dashed line indicates a break in the y-axis due to large quantities recorded for two Catch Zones.

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- There were no statistically significant differences in CPUE_{total}, CPUE_{over} and CPUE_{under} between zones for 2025 (all p values >0.05).
- CPUE_{total} zonal data was statistically similar between the 2024 and 2025 datasets (all p values >0.05).
- Looking more in depth at zonal data (**Figure 10**), Zone 1 had significantly higher CPUE_{total} in 2025 compared to 2023 (p<0.01). The same conclusions can be drawn for Zone 3 (p<0.05). Zone 10 showed a significantly lower CPUE_{total} of common cockle in 2025 compared to 2023 (**Figure 10**).
- This pattern was also seen in Zones 1,3 and 10 when statistically analysing CPUE_{over} data (all p values <0.05). Zone 5 also showed a significantly higher CPUE_{over} in 2025 compared to 2023 (p<0.01).
- Zone 3 showed significantly less CPUE_{under} in 2025 compared to 2024 (p<0.05).

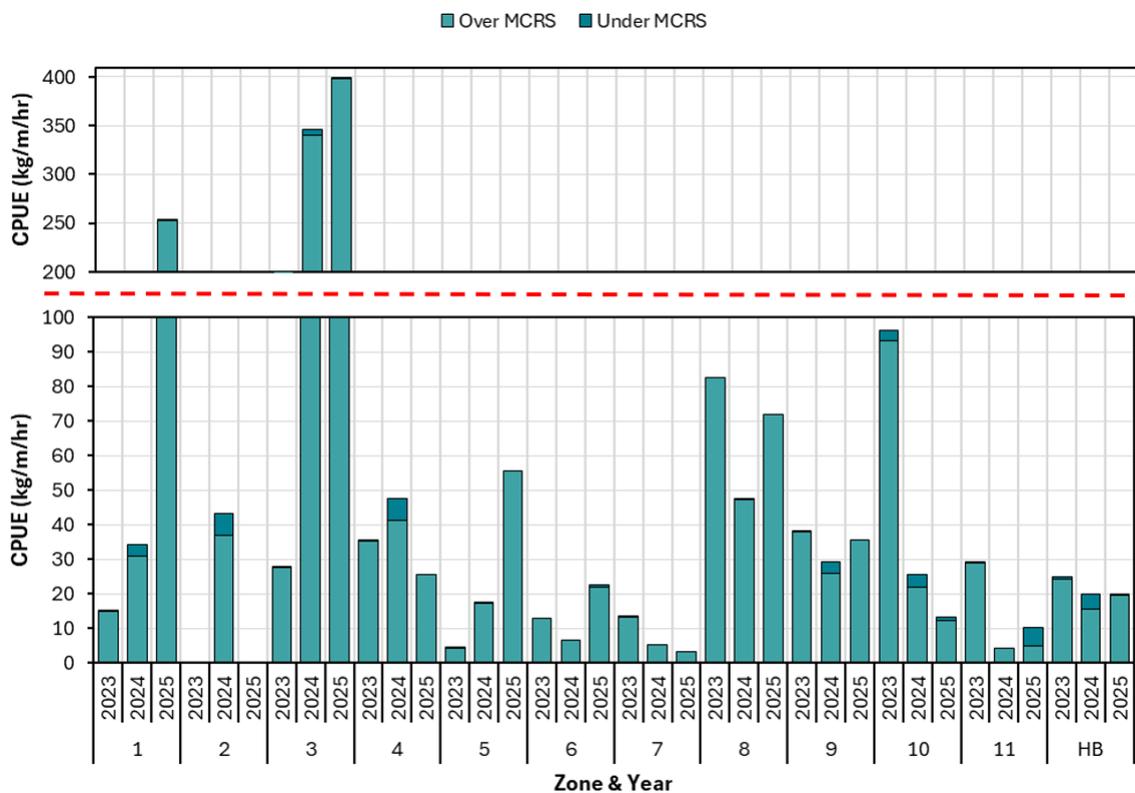


Figure 10: Average total catch per unit effort (CPUE) of common cockles, expressed in kilograms of shellfish per metre of dredge per hour, across catch zones 1-11 and Holes Bay (HB) from the 2023 to 2025 Poole Harbour Bivalve Surveys. Dark blue bars represent CPUE_{under} the minimum conservation reference size (MCRS) of 35mm, and light blue bars represent CPUE_{over} over the MCRS. The red dashed line indicates a break in the y-axis due to large quantities recorded for three Catch Zones.

3.3 Seasonal Catch Data

- Quantities of Manila clam and common cockle caught each month by the fishery for the 2022, 2023 and 2024 fishing seasons are shown in **Figure 11** and **Figure 12**, respectively. The fishing season runs from 25th May to 23rd December each year, therefore it should be noted that catch weight (kg) for May represents only a 5-day fishing period and December a 23-day fishing period.

3.3.1 Manila Clam

- Total landings of Manila clam within the 2022 season was 337.3 tonnes. There was a slight increase in the 2023 season, to 474.7 tonnes. In the 2024 season, the total landings of Manila clam was 240.4 tonnes.
- Statistical analysis revealed no significant difference in the total landings of Manila clam between the 2022, 2023 and 2024 seasons ($p > 0.05$).
- Seasonal trends followed previous years', which showed an increase in landings in the mid-summer months followed by a slow decline towards the end of the fishing season in December.
- In the 2024 season, Manila clam landings peaked in June, at 46.2 tonnes.
- Statistical testing revealed no significant differences in the monthly landings of Manila clam between 2022 and 2024 ($p > 0.05$).

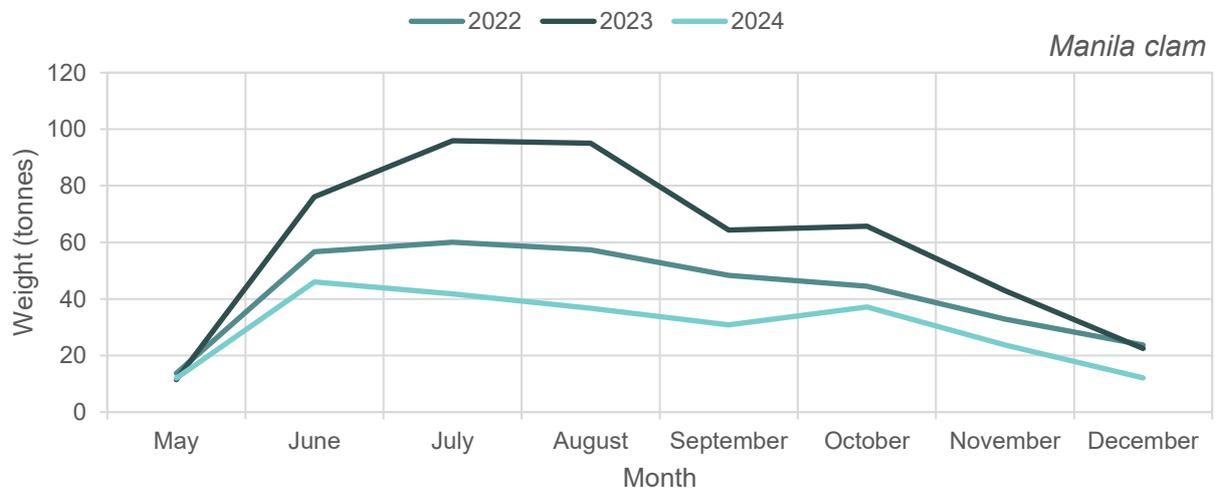


Figure 11: The monthly total catch (tonnes) of Manila clam submitted in catch returns from permit holders in the Poole Harbour Dredge Fishery for the 2021, 2022 and 2023 seasons.

3.3.2 Common cockle

- The total weight of common cockle was higher in 2024 than the previous two seasons; 91.04 tonnes in 2024, compared to 44.6 tonnes in 2023 and 34.2 tonnes in 2022.
- Statistical analysis showed that there was no significant difference in the total landings of common cockle between 2022-24 ($p > 0.05$).
- Seasonal trends followed previous years' trends of increased landings in the mid-summer months. However, a clear spike in landings occurred in the final two months of the 2024/25 season. Landings in November 2024 spiked at 14.3 tonnes followed by a further increase to 27.6 tonnes in December 2024, however there were no statistical differences in catches between months in the 2024 season or between 2022-24 (all p values > 0.05).

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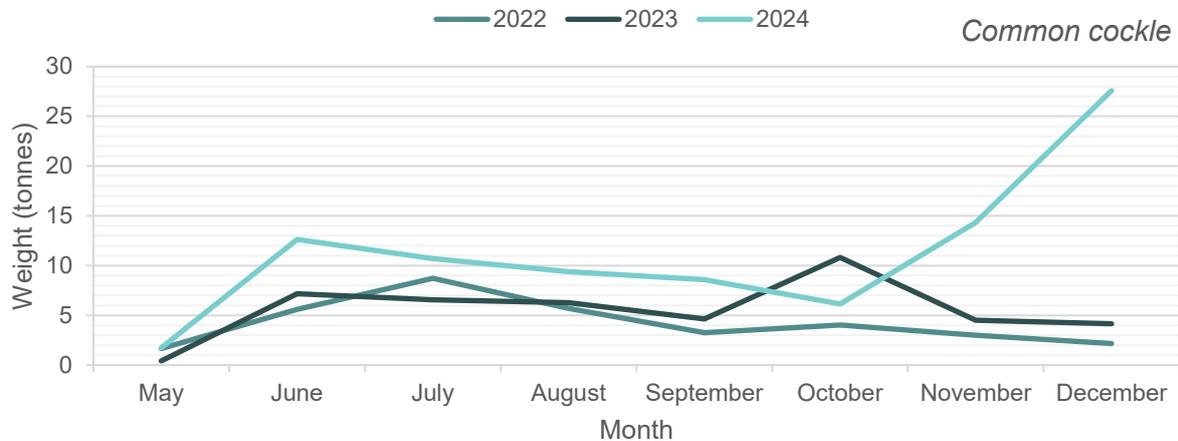


Figure 12: The monthly total catch (tonnes) of common cockle submitted in catch returns from permit holders of the Poole Harbour Dredge Fishery for the 2022, 2023 and 2024 seasons.

3.4 Zonal Catch Data

- Since 2019, fishers have been required to report which fishing zones have been fished each day. This provides zonal application to catch data that can then be related to the catch zone analysis of the survey CPUE data where required. Note that there is no catch data for the Holes Bay as this is a prohibited area year-round for the dredge fishery.

3.4.1 Manila clam

- Zones 8,10 and 11 have consistently been favourable fishing grounds for Manila clam in previous years. In the 2024 fishing season, Zones 1, 8 and 10 had significantly more catch, compared to other zones, at 15.2t, 112t and 75.4t (all p values $p < 0.01$). However, Zone 1 had significantly less landings in 2024 than in 2023 although significantly higher landings than 2022 (p values < 0.05). Zone 10 had significantly less catch in 2024 than 2023 ($p < 0.05$) (Figure 13).

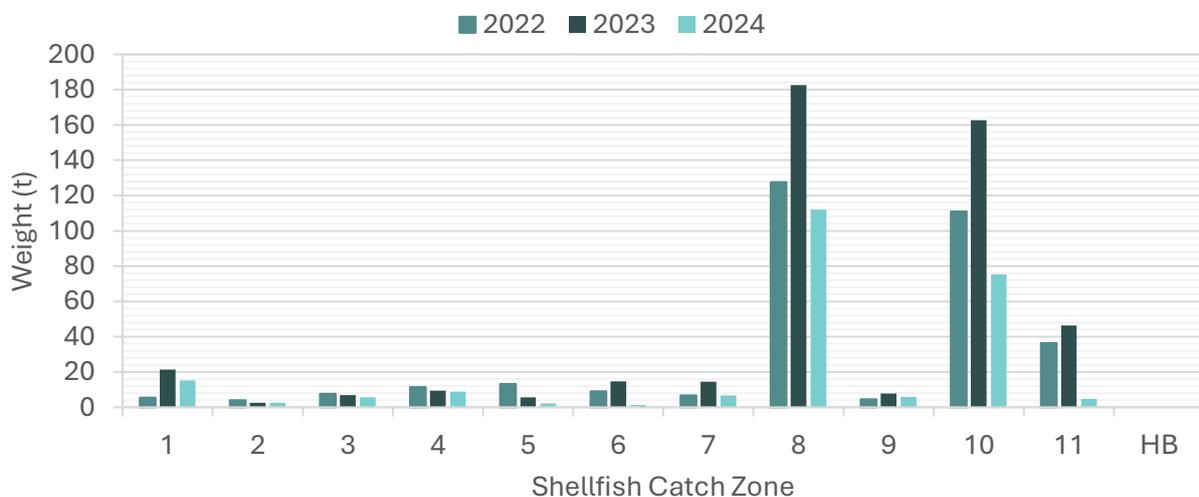


Figure 13: Landings of Manila clam between 2022-2024. Information was gathered by submitted catch returns from permit holders of the Poole Harbour Dredge Permit Fishery. Zonal distribution of catch has been categorised by year.

3.4.2 Common cockle

- Zones 1, 3 and 8 were the favourable fishing grounds for common cockle within the 2024 fishing season (34.1t, 18.1t and 26.0t, respectively) (**Figure 14**).
- Statistical analysis showed there was significantly more catch in these zones compared to others, and Zone 1 had significantly greater catch than all other Zones in the 2024 season. Similarly, in 2024, Zone 1 had significantly more landings than in 2022 and 2023 ($p < 0.05$).

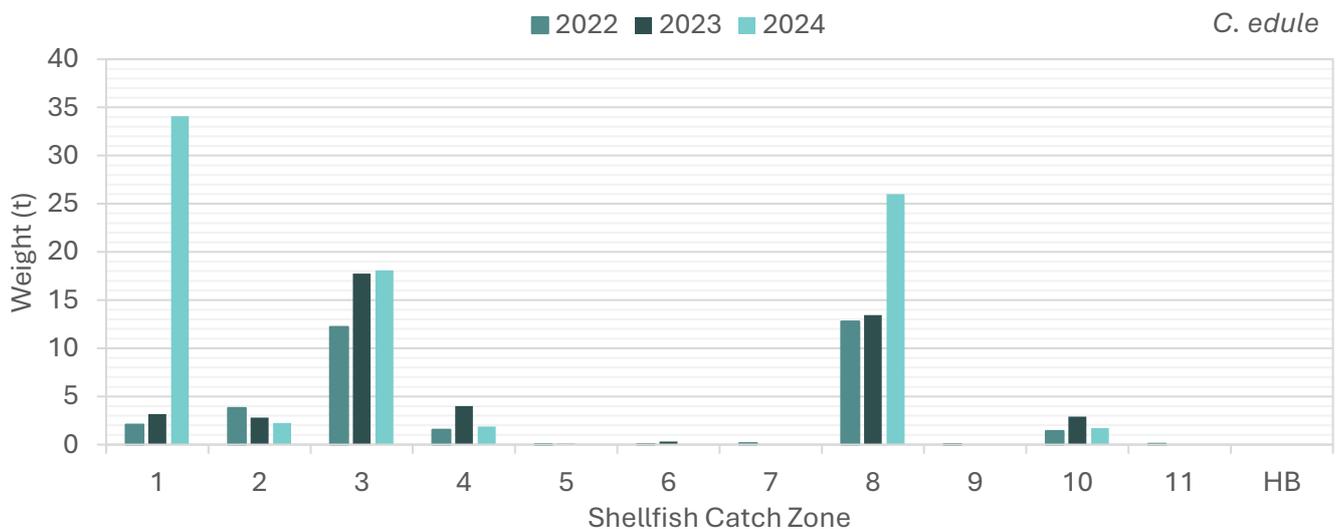


Figure 14: Landings of common cockle between 2022-2024. Information was gathered by submitted catch returns from permit holders in the Poole Harbour Dredge Permit Fishery. Zonal distribution of catch has been categorised by year.

3.5 Monitoring and Control Plan

- The Monitoring and Control Plan (M&CP) On-Site Monitoring Programme is linked to Control Mechanisms activated by Threshold Trigger levels (TTLs) for two Monitoring Variables: Poole Harbour Bivalve Survey Data (CPUE TTL) and Landings Data (LPUE TTL) from monthly catch returns submitted by Permit Holders. The M&CP is linked to Manila clam data only at this time.
- Analysis of catch data from the 2024 fishing season and data from the 2025 Poole Harbour Bivalve Survey were used to inform a decision by the Authority as to whether any additional management was required to support a sustainable fishery for the 2025/26 season.

3.5.1 Monitoring Variable: Poole Harbour Bivalve Survey

- The annual average Manila clam CPUE value for the 2025 survey was 43.48 kg/m of dredge/hr (excluding unfishable zones, Holes Bay), which is above the CPUE TTL of 34.60 kg/m of dredge/hr (by 8.9 kg/m of dredge/hr) (**Figure 15**), **the CPUE TTL was not reached**.
- The annual average CPUE value across the Harbour as a whole for the 2025 survey is below the current lowest rolling 5-year average by 9.6 kg/m of dredge/hr. Reviewing the data there was no

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statistical difference ($p > 0.05$) between the survey data for the Harbour as a whole for the 2025 year and any other year surveyed across the full timeseries dataset (2016-2025) (**Figure 16**).

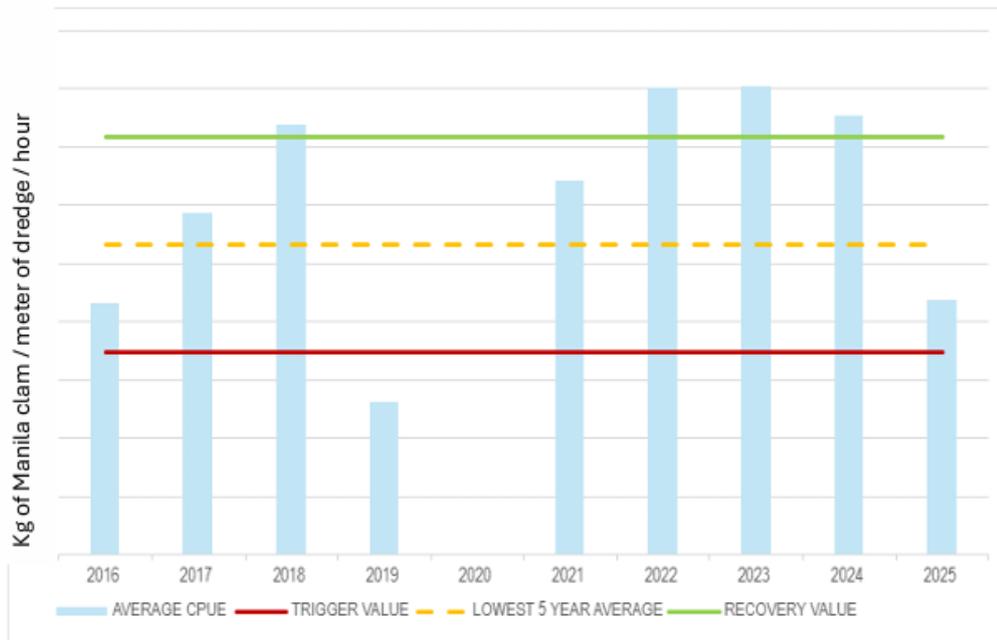


Figure 15: Graph shows the average CPUE (kg/m of dredge/hr) ($n=27$ survey sites) for Manila Clam species from 2016-2025 surveys (blue bars), the CPUE TTL (red line), the CPUE RT (green line) and the lowest five-year rolling average used to calculate the TTL and RT values (orange dashed line). Note there is no survey data for 2020 due to the Covid-19 Pandemic.

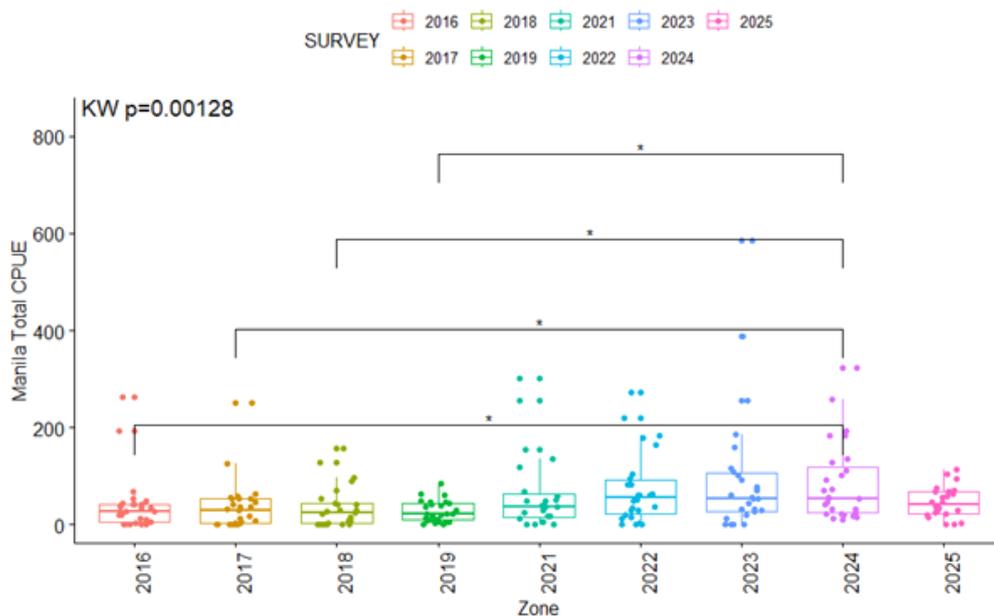


Figure 16: Box and whisker plots of the Poole Harbour Bivalve Survey data for the years 2016 to 2025, statistical differences ($P < 0.05$) between years are shown by the brackets above using a Dunn's Test with a 'holm' adjustment. Note there is no survey data for 2020 due to the Covid-19 Pandemic.

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3.4.2 Monitoring Variable: Catch (Landings) Data

- The annual average Landings Per Unit Effort (LPUE) value for the 2024/25 season was 72.41kg/day, below the LPUE TTL of 78.25kg/day (**Figure 18**), **the LPUE TTL was reached** and the Control Mechanism activated.
- Reviewing the data, the pattern of monthly catch return data showed that average catch rates for kg/hour were lower than the period 2020-2023 but were consistent with catch rates from the 2016-2019 period (**Figure 19**). Only September during the 2024/25 season showed CPUE values lower than the same month in all previous years although this was by a small margin of only 0.02-0.1 kg/hour.

3.4.3 M&CP Outcomes: 2025 Fishing Season

- The Authority considered the outcomes of the On-Site Monitoring Programme under the M&CP at the May meeting of the Technical Advisory Sub-Committee. The Authority resolved that, based on analysis of the data for the LPUE TTL and CPUE TTL, no additional management was required to support a sustainable fishery for the 2025/26 season.
- It is recognised that CPUE data from the 2025 survey is lower than in the previous four years. The M&CP allows Southern IFCA to take a proactive approach to in-season monitoring as well as annual monitoring to aid understanding of how catch rates may be varying and how data across both variables compares to previous seasons.

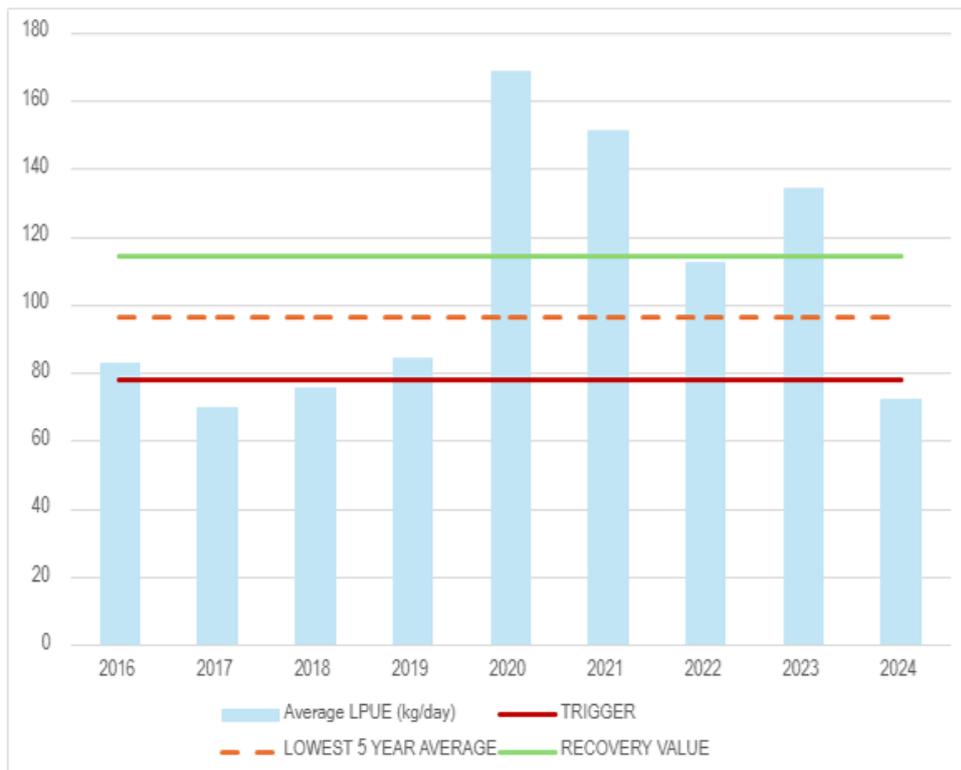


Figure 18: Graph shows the average LPUE (kg/day) from the 2016 to 2024 fishing seasons (blue bars), the LPUE TTL (red line), the LPUE RT (green line) and the lowest five-year rolling average used to calculate the TTL and RT values (orange dashed line).

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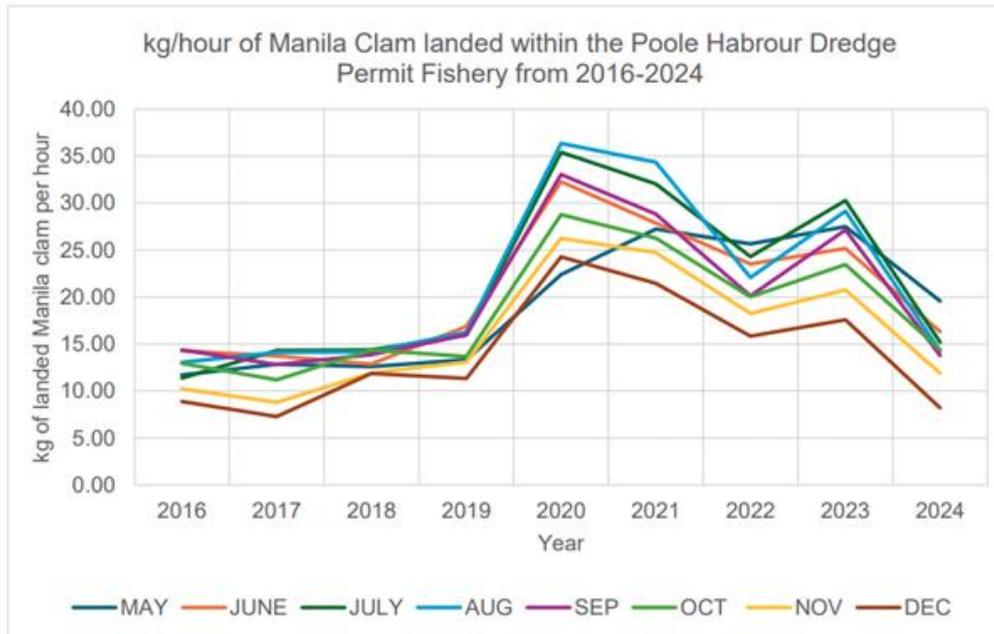


Figure 19: average kg of Manila clam per hour for the months of May, June, July, August and September for 2016-2024 based on data supplied by Permit Holders in the PHDP fishery through monthly catch return submissions.

4 Discussion

CPUE

- The distribution of CPUE data appears to reflect environmental stimuli driving habitation for both species. Higher CPUE of Manila clam are seen in muddy and fine-grounded sedimental areas of the Harbour, whereas higher CPUE of cockles is found in sandy and coarse sediments. The preferred locations for dredging within the fishery usually reflect those areas which show higher CPUE outputs.

Manila Clam

- While CPUE_{total} of Manila clams decreased compared to the last three years, the average CPUE (including over and under MCRS) has been statistically similar in Poole Harbour over the last three years, indicating, at present that there is not a trend in stock changes being observed and that differences may be due to natural fluctuations in the population.
- Typically, the site with the highest landings, such as Zone 8, also records some of the lowest CPUE (Catch Per Unit Effort) levels. This year, however, other Zones where there is more abundance of preferred habitat type for Manila clam including 6, 7, 9, 10 and 11 also showed similarly low CPUE levels, comparable to Zone 8.
- Sites 23 and 24 in Holes Bay display a high total CPUE of Manila clams. The combination of a permanent fishing closure within Holes Bay since 2015, alongside preferred conditions for Manila clam growth, may be causing the results seen.
- The cause of the lower CPUE values observed for Manila clam in the 2025 survey are unknown. The survey was carried out later in April than in previous years to increase the chance that if any spring mortality event were to occur, this would be captured in the survey. There were no

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indications through observations of Manila clam during the 2025 survey that a spring mortality had occurred. When lower landings levels for Manila clam were identified from catch data during the 2024 fishing season, it was postulated that a spring mortality may have occurred, or that increased levels of rainfall and associated freshwater inputs to the Harbour may have impacted the Manila clam population. This could not be evidenced, however if conditions in 2024 affected the Manila clam population, it is likely that these effects in terms of lower CPUE may be seen in subsequent years. During spring 2025, conditions for Manila clam growth and the onset of reproduction were more favourable, with warmer weather and lower levels of rainfall, however it may take time for population impacts in a specific year to return to previously identified levels. In addition, bivalve populations are known to exhibit cyclical patterns in abundance, current levels in catch data are in line with those seen in the fishery between 2016-2019, therefore the current lower CPUE may be reflective of a cyclical period of lower population abundance within the population. Continuing to develop a timeseries dataset from annual survey data and catch data will provide further data to inform any long-term trends in the population.

Common Cockle

- Statistical analysis of cockle landing data showed no significant changes in landings over the last three fishing seasons. However, cockle landings have increased from 11 tonnes in 2020 to 91 tonnes in 2024 suggesting the cockle population remains in a positive state and interest in the harvested species has increased.
- Landings from Zone 3 have steadily increased over the past three years, making it the most heavily fished area during the 2023 season. This can also be seen in CPUE data, with Zone 3 having the highest total CPUE in both 2024 and 2025.
- A year-on-year analysis reveals a notable increase in activity in Zone 1 alongside increased CPUE suggesting cockle populations remain in a positive state in this area.
- The average $CPUE_{total}$ for cockles across the Harbour as a whole in the 2025 survey was the highest on record, reaching 93.18 kg/m/hr. The next highest $CPUE_{total}$ was recorded in 2022 at 92.6 kg/m/hr. In contrast, the $CPUE_{total}$ levels in 2023 and 2024 were approximately 50% lower than those observed in these two peak years.
- The $CPUE_{total}$ in the 2025 survey is heavily influenced by the strong performance of Zones 1 and 3, which recorded the highest $CPUE_{total}$ for common cockles (252.5 kg/m/hr and 398.7 kg/m/hr, respectively). This is largely due to their optimal sediment and environmental conditions. Both zones are characterized by coarser-grained sediments (sand fractions) that create stable, lagoon-like habitats ideal for cockle burrowing and feeding. The combination of this and sheltered conditions in Zones 1 and 3 appears to be a key factor supporting the high productivity of cockles in Poole Harbour.
- $CPUE_{under}$ remained consistently low, following similar levels to previous years at 0.86 kg/m/hr. Despite significantly lower levels for $CPUE_{under}$ being recorded in 2025 for two Catch Zones compared to 2024 data, this was not consistently observed across the Harbour. It is likely that the size selective nature of the fishing gear allows cockles under MCRS to pass through the dredge bars, given the general size and shape this is more likely to occur for cockles than Manila clam, therefore $CPUE_{under}$ will be lower on this basis. However, the repeated methodology allows for comparisons to be made. Monitoring of Catch Zones where significant differences were observed will be continued through future surveys to identify any patterns in CPUE.
- The unfished Holes Bay control zone showed similar levels of $CPUE_{total}$ to previous years. There

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was no statistical difference was identified ($p > 0.05$), however, $CPUE_{total}$ was slightly increased compared to 2024 at 55.6kg/m/hr compared to 53kg/m/hr.

Length Frequency

- The size distribution of Manila clams in the 2025 survey showed greater variability than that of cockles, which were mostly above the Minimum Conservation Reference Size (MCRS). Previous studies and zonal observations indicate that Manila clam growth patterns vary depending on their location within the harbour. Some individuals grow along their widest axis but remain thin, while others grow in depth but stay narrow in length. As a result, thicker Manila clams may be retained by the dredge even if their length falls below the MCRS.
- In contrast, cockles tend to grow more uniformly across all dimensions, reducing the likelihood of undersized individuals being unintentionally caught. This structural difference, combined with potentially differing fishing pressures between the two species, may influence their respective size distributions. Consequently, a higher proportion of undersized Manila clams is often reflected in CPUE data compared to cockles.

Manila Clam

- The average size of Manila clam across the Harbour as a whole has stayed consistently above MCRS for the last 3 years of surveys, although similar to CPUE and landings statistical testing, there was no significant difference observed in Manila clam length frequency between the last three survey years.

Common Cockle

- The length frequency of cockles in the 2025 survey showed a shift towards a larger average size when compared to the previous four years. As for Manila clam, the dominance of cockle over MCRS will influence the size frequency results.
- The shift in size is inconsistent between catch zones and for some sites is more varied between years. It is not possible to attribute the pattern seen to fishing influences, however, as for Manila clam and longer-term trends in average size is a factor that can continue to be monitored through the annual surveys.

5 Summary

The 2025 Poole Harbour Bivalve Survey indicates lower total CPUE levels for Manila clam than in the previous two years, however changes are not consistently statistically significant. Populations of common cockle continue to be stable, any potential emerging trends in the data need consideration against future survey results to determine if any longer-term trends are being seen.

Manila Clams (*Ruditapes philippinarum*):

- **CPUE Trends:** A decrease in CPUE was observed compared to the previous two years. However, no statistically significant difference was found between the last three years of survey data when comparing CPUE over and under MCRS across the Harbour as a whole. There was also no significant difference found for catch zones between 2024 to 2025, and statistical differences between 2023 and 2025 were not consistent across all catch zones, therefore

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variation may be due to natural fluctuations in the population. The cause of the lower CPUE values observed for Manila clam in the 2025 survey are unknown but may be related to a suggested impact to the population in 2024 which could have resulted from environmental factors such as cooler temperatures and increased freshwater inputs.

- **Size Distribution:** The average size of Manila clams has stayed consistently above MCRS over the last three survey years. There has been a shift towards a smaller average size, however this is not consistent across all catch zones, and further monitoring is needed to any longer-term trends or possible related factors.
- **Landings Data:** Total landings showed a decrease within the 2024/25 PHDP fishing seasons, although statistical analysis showed no significant differences when compared to previous fishing seasons. Zones 1, 8 and 10 were favoured for Manila clam harvesting. While landings in Zones 1 and 10 were significantly lower in 2024 than the 2023 fishing season, 2024 zonal data results were comparable to, and in some instances exceed, landings from the 2022 season, suggesting 2023 was an exceptionally productive fishing season.

Cockles (*Cerastoderma edule*):

- **CPUE Trends:** The 2025 survey recorded the highest CPUE for cockles at 93.18 kg/m/hr compared to any previous survey, however results were not significantly different to the previous two survey years across the Harbour as a whole. CPUE trends for individual catch zones were mixed with some significant increases and some decreases noted but no consistent trend.
- **Size Distribution:** The average size of cockles has increased from 2023 to 2025. However, the shift in size is not consistent across all catch zones, and further monitoring is needed to any longer-term trends or possible related factors.
- **Landings Data:** Annual cockle landings rose by 166.2% over the last 3-year period, from 32.4t in 2023 to 91t in 2024. Zones 1, 3 and 8 were the most favoured for cockle harvesting areas in 2024, each recording their highest catches within the past three years.

Fishery Management:

- **Monitoring and Control:** The Southern IFCA monitored the sustainability of Manila clam stocks through the M&CP for the first time ahead of the 2025 season with analysis under the On-Site Monitoring Programme on landings data from the 2024 fishing season and data from the 2025 Poole Harbour Bivalve Survey. The M&CP will continue to be implemented for Manila clam within the fishery with both annual and in-season monitoring of stock levels.
- **Management Recommendations:** For the 2025 fishing season the Authority resolved that no additional management intervention was required to support a sustainable fishery.

In summary, while Manila clam populations show a slight decline in CPUE, cockle stocks appear robust, and the fishery continues to operate sustainably for both species under current management.