Fisheries in EMS Habitats Regulations Assessment

NWIFCA-MB-EMS-COCKLE HANDGATHERING FISHERY 2026
September 29th 2026

Site: Morecambe Bay and Duddon Estuary

European Designated Sites:
UK0013027 Morecambe Bay Special Area of Conservation (SAC)
UK9020326 Morecambe Bay and Duddon Estuary SPA
UK11045 Morecambe Bay Ramsar
UK11022 Duddon Estuary Ramsar

European Marine Site: Morecambe Bay and Duddon Estuary

Qualifying Feature(s):

SAC and Ramsar

H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks
H1130. Estuaries

H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats
H1150. Coastal lagoons
H1160. Large shallow inlets and bays
H1170. Reefs
H1220. Perennial vegetation of stony banks; Coastal shingle vegetation outside the reach of waves (NON MARINE)
H1310. *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand; Pioneer saltmarsh
H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae)*
H2110. Embryonic shifting dunes (NON MARINE)
H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram (NON MARINE)
H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland (NON MARINE)
H2150. Atlantic decalcified fixed dunes (*Calluno-Ulicetea*); Coastal dune heathland (NON MARINE)
H2170. Dunes with *Salix repens ssp. argentea* (*Salicion arenariae*); Dunes with creeping willow (NON MARINE)
H2190. Humid dune slacks (NON MARINE)
S1166. *Triturus cristatus*; Great crested newt (NON MARINE)
Natterjack Toad (NON MARINE)

SPA and Ramsar

A026 Egretta garzetta; Little egret (non-breeding)
A038 *Cygnus Cygnus*; Whooper swan (non-breeding)
A040 *Anser brachyrhynchus*; Pink-footed goose (non-breeding)
A048 *Tadorna tadorna*; Common shelduck (non-breeding)
A050 Anas Penelope; Wigeon - (non-breeding – Ramsar only)
A054 *Anas acuta*; Northern pintail (non-breeding)
A063 *Somateria mollissima*; Common eider (non-breeding – Ramsar only)
A067 Bucephala clangula; Goldeneye - (non-breeding – Ramsar only)
A069 Mergus serrator; Red-breasted merganser - (non-breeding – Ramsar only)
A130 *Haematopus ostralegus*; Eurasian oystercatcher (non-breeding)
A137 *Charadrius hiaticula*; Ringed plover (non-breeding)
A140 *Pluvialis apricaria*; European golden plover (non-breeding)
A141 *Pluvialis squatarola*; Grey plover (non-breeding)
A142 *Vanellus vanellus;* Lapwing - (non-breeding – Ramsar only)
A143 *Calidris canutus*; Red knot (non-breeding)
A144 *Calidris alba*; Sanderling (non-breeding)
A149 *Calidris alpina alpina*; Dunlin (non-breeding)
A151 *Calidris pugnax;* Ruff (non-breeding)
A156 *Limosa limosa;* Black-tailed godwit (non-breeding)
A157 *Limosa lapponica*; Bar-tailed godwit (non-breeding)
A160 *Numenius arquata*; Eurasian curlew (non-breeding)
A162 *Tringa totanus*; Common redshank (non-breeding)
A169 *Arenaria interpres*; Ruddy turnstone (non-breeding)
A176 Larus melancephalus; Mediterranean gull (non-breeding)
A183 *Larus fuscus*; Lesser black-backed gull (Breeding, non-breeding)
A184 *Larus argentatus*; Herring gull (Breeding)
A191 *Sterna sandvicensis*; Sandwich tern (Breeding)
A193 *Sterna hirundo*; Common tern (Breeding)
A195 *Sterna albifrons*; Little tern (Breeding)
Phalacrocorax carbo; Cormorant – (non-breeding – Ramsar only)
Podiceps cristatus; Great crested grebe - (non-breeding – Ramsar only)
Seabird assemblage
Waterbird assemblage

Site sub-feature(s)/Notable Communites:

SAC and Ramsar

Sandbanks which are slightly covered by sea water all the time – Subtidal coarse sediment, subtidal mixed sediments, subtidal sand, subtidal mud.

Estuaries - Intertidal mud, intertidal sand and muddy sand, intertidal mixed sediments, intertidal coarse sediment, intertidal rock, intertidal stony reef, intertidal biogenic reef: mussel beds, subtidal coarse sediment, subtidal mixed sediments, subtidal sand, subtidal mud, Salicornia and other annuals colonising mud and sand, Atlantic salt meadows (Glauco-Puccinellietalia maritimae).

Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats – Intertidal mud, intertidal sand and muddy sand, intertidal mixed sediments, intertidal seagrass beds, intertidal coarse sediment.

Coastal lagoons

Large shallow inlets and bays – Intertidal mud, intertidal sand and muddy sand, intertidal mixed sediments, intertidal seagrass beds, intertidal coarse sediment, intertidal rock, intertidal stony reef, intertidal biogenic reef: mussel beds, intertidal biogenic reef: Sabellaria spp., subtidal stony reef, circalittoral rock, subtidal coarse sediment, subtidal mixed sediments, subtidal sand, subtidal mud, Salicornia and other annuals colonising mud and sand, Atlantic salt meadows (Glauco-Puccinellietalia maritimae).

Reefs – Circalittoral rock, intertidal biogenic reef: mussel beds, intertidal biogenic reef: Sabellaria spp., intertidal rock, intertidal stony reef, subtidal stony reef.

Perennial vegetation of stony banks: Coastal shingle vegetation outside the reach of waves

***Salicornia* and other annuals colonising mud and sand: Glasswort and other annuals colonising mud and sand; Pioneer saltmarsh**

Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (referred to as Saltmarsh)

Embryonic shifting dunes

Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram

Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland

Atlantic decalcified fixed dunes (*Calluno-Ulicetea*); Coastal dune heathland

Dunes with *Salix repens spp. Argentea* (*Salicion arenariae*); dunes with creeping willow

Humid dune slacks

Great crested newt (*Triturus cristatus*)

Supporting habitat: Great crested newt (NON MARINE) – coastal sand dunes
Natterjack Toad (NON MARINE)- coastal sand dunes

SPA and Ramsar

Annual vegetation of drift lines, Atlantic salt meadows (Glauco-puccinellietalia maritimae), coastal lagoons, freshwater and coastal grazing marsh, intertidal biogenic reef: mussel beds, intertidal coarse sediment, intertidal mud, intertidal rock, intertidal sand and muddy sand, intertidal seagrass beds, intertidal stony reef, Salicornia and other annuals colonising mud and sand, water column.

Generic sub-feature(s):

Intertidal mud and sand, Intertidal mud, Seagrass, Saltmarsh spp., Brittlestar beds, Subtidal muddy sand, Intertidal boulder and cobble reef, Subtidal boulder and cobble reef, *Sabellaria* spp. reef, Intertidal boulder and cobble reef, Surface feeding birds, Estuarine birds, Intertidal mud and sand, Intertidal boulder and cobble reef, Saltmarsh spp., Coastal lagoons.

High Level Conservation Objectives:

Morecambe Bay SAC

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed above), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

Morecambe Bay and Duddon SPA

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified and the Ramsar Site and the wetland habitats and/or species for which the site has been listed (the 'Qualifying Features' listed above), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive and ensure that the site contributes to achieving the wise use of wetlands across the UK, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

Wyre-Lune Marine Conservation Zone (MCZ)
The site is designated for smelt (*Osmerus eperlanus*) with a recover objective.

Updated conservation advice for Morecambe Bay and Duddon Estuary SPA.
Changes specific to this HRA;-

- Grey plover, dunlin, sanderling and turnstone have a restore target for population due to declines in population exceeding regional and national trends.

Fishing activities assessed:

Gear type(s):

Hand-gathered – Cockle (*Cerastoderma edule*)

1. Introduction

1.1 Need for an HRA assessment

Every year NWIFCA officers undertake extensive surveys of the cockle beds across the NWIFCA District. The purpose of cockle surveying is to establish data regarding the abundance, density and location of cockle stocks to inform fisheries management. There are a number of cockle beds within Morecambe Bay that contain significant stock which could support a hand-gathered fishery.

This year the NWIFCA proposes to authorise a hand-gathered cockle fishery on Leven and Newbiggin cockle beds within the protected site.

The proposed opened fisheries will be by permits issued under NWIFCA Byelaw 3, Permit to Fish Cockles and Mussels flexible conditions.

This proposal is classed as a plan or project and the area lies within a National Site (also commonly referred to as Natura 2000 sites) and therefore has the potential to affect the designated features. National Sites are protected under the Conservation of Habitats and Species Regulations 2017. The proposal site is within the Morecambe Bay SAC, the Morecambe Bay and Duddon Estuary SPA, and the Wyre and Lune MCZ. The site is also designated for two Ramsar's and a Site of Special Scientific Interest (SSSI). Under Habitats Directive, all existing and potential commercial fishing activities must be managed in accordance with Article 6.

As a competent authority under the provisions of the Habitats Regulations, the NWIFCA should have regard for any potential impacts that a plan or project may have. Under the provisions of the Habitats Regulations and in accordance with Regulation 61, NWIFCA has undertaken an Appropriate Assessment of the proposal. Natural England is a statutory consultee on the Appropriate Assessment stage of the Habitats Regulations Assessment process, and their advice is incorporated into this document.

The purpose of this site-specific assessment document is to assess whether or not, in the view of NWIFCA the proposed fishing activity of hand-gathering cockle at the specified cockle beds in Morecambe Bay, is likely to have a significant effect on the designated features of the site. This assessment will determine whether the proposed activities will have an adverse effect on the integrity of this National Site.

1.2 Proposal

The NWIFCA proposes to authorise a hand-gathered cockle fishery on Leven and Newbiggin cockle beds from November 2026 to April 30th 2027. Both beds will be open for one tide per day, 7 days per week. The total area encompassed by the Leven and Newbiggin cockle beds will be subject to a 1867 tonne TAC. The area proposed for opening is detailed in Figure 1 and identified in the blue and red areas. Currently, the hashed area is prohibited under shellfish classification, however, for the purposes of this HRA, a worst case scenario of the full area being opened will be considered.

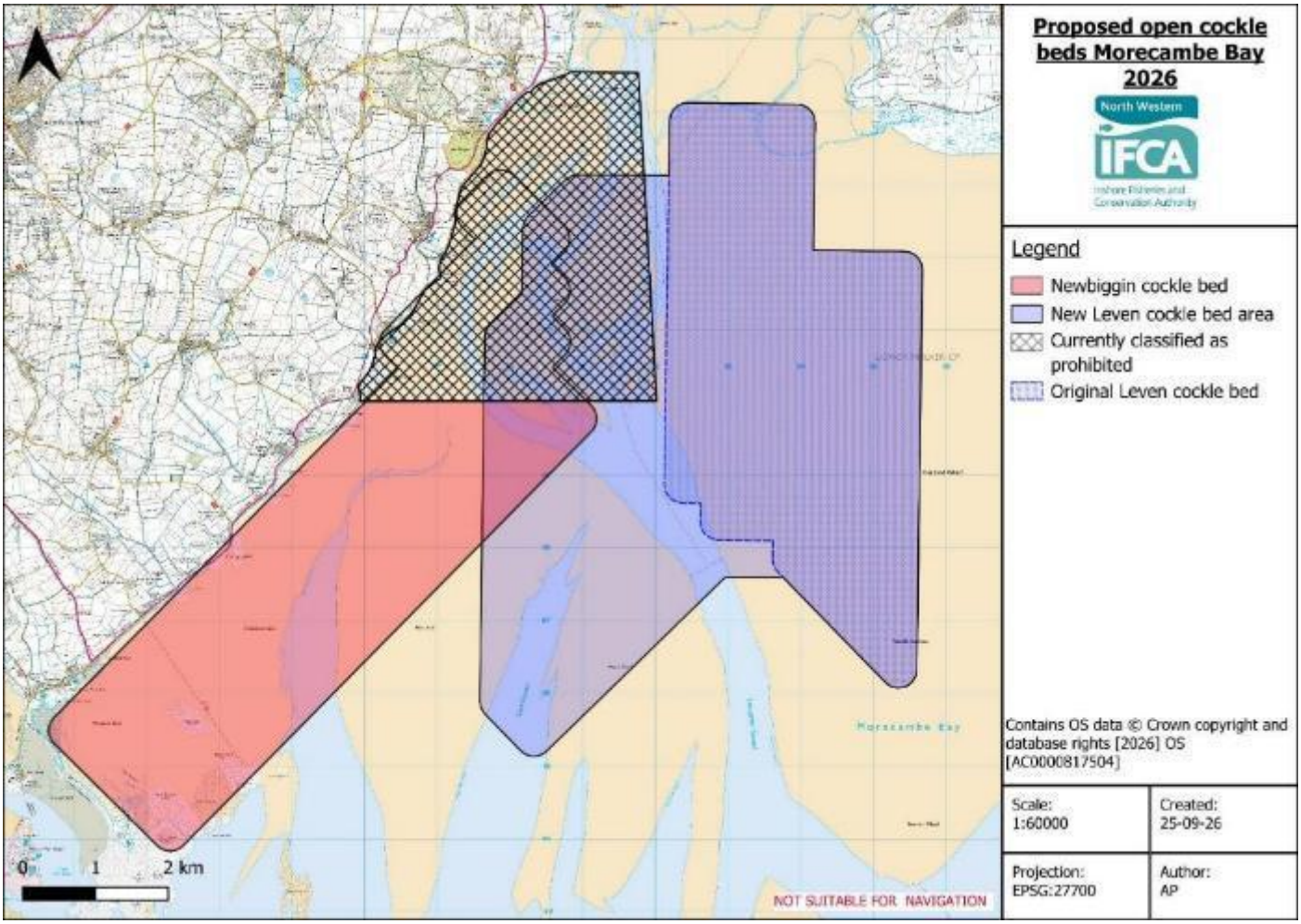


Figure 1. The cockle beds proposed open for the 2026/27 fishing season. The red area is the Newbiggin cockle bed, and hashed grey the Aldingham cockle bed (to remain closed). The blue area demonstrates the Leven cockle bed, with the dotted blue to the right highlighting the original area, and the rest being the new area identified in 2026 September surveys.

2. Information about the National Site

(See cover pages, where details of the designated features and sub-features are listed.)

3. Interest feature(s) of the National Site categorised as 'Red' risk and overview of management measure(s) (if applicable)

The Morecambe Bay and Duddon Estuary European Site interest features of; boulder and cobble reef, *Sabellaria alveolata* reef and Seagrass beds are protected from all bottom towed gears, in addition Seagrass beds are protected from bait collecting or working a fishery by hand or using a hand operated implement through a prohibition under **NWIFCA-Byelaw-6.pdf (nw-ifca.gov.uk)**, introduced in May 2014.

4. Information about the fishing activities within the site

4.1 Background

Hand-gathering of cockles has been a long-standing traditional fishery within the NWIFCA District. Methods have changed very little over the years, with fishers using a jumbo to fluidise the soft sediments in which the buried cockles are found. Once the sediment is fluid, the cockles rise to the

sediment surface where they are then raked into buckets or net bags, put through a hand-held riddle whereby the undersize cockle is returned to the bed, and the size cockle then placed into 20-50kg cockle sacks. Cockles are able to rebury themselves quickly, so any not removed will soon become invisible under the sand once again. There is little to no by-catch associated with this fishery as it is highly selective.

Fishermen access the beds by ATVs or small tractors due to the high risk of getting stuck in soft sediment. Depending on the area to be fished, the time when the bed is uncovered and safe to get on to and return from may be severely restricted by the tides.

The cockle fishery is highly variable in its production and consequently, its prosecution. Records show variability in stock levels and associated fishing activity as a long-standing feature of the fishery. There were extensively high stock levels between 2003–05 and 2007-08 that were preceded by a long period of low fishable stocks in the mid-1990s with effort levels closely corresponding to those fluctuations. In early 2006 the Bay was closed for cockling to protect stocks after two seasons of poor or non-existent recruitment. A widespread spatfall in 2006 with good survival over the winter and excellent on-growth during the spring and summer of 2007 meant the Bay reverted to being fished together with the rest of the district in September 2007. Since 2008 there were no commercial fisheries in the Bay and all beds were closed, until April 2016 when a limited craam fishery was opened on the Leven Sands bed in the north of the Bay. Leven Sands and Pilling cockle beds opened in November 2016 and were fished until the closed season on 30th April 2017. Beds have since been opened intermittently dependent on stock levels. NWIFCA stock data is comparable since 2017, Figure 4.5.2 show the trend in cockle since 2017 and highlights when cockle fisheries were open in Morecambe Bay.

4.2 Regulation of Hand-gathering

NWIFCA regulates cockle hand-gathering fisheries in its District under the NWIFCA Byelaw 3 Cockle and mussel hand-fishing permit (2019) (in force as of Sep 1st 2022).

NWIFCA Byelaw 3 (2019) builds on the original Byelaw 3 introduced in 2012 in that it introduces Flexible Permit Conditions, allowing the Authority to implement adaptive manage of the fishery. The Byelaw retains much of the same powers as was detailed in the original Permit to Fish for Cockles and Mussels introduced in 2012. This Byelaw vastly improved management of the fisheries and encouraged a more professional and responsible group of fishers. Under the current regulations, there is a maximum of 150 permits which can be issued. Without a permit within the NWIFCA district, it is still permissible for recreational fishers to fish ‘non-commercial’ cockle beds for 5kg per person per day outside of the closed season under Byelaw 3.

Every commercial cockle bed is surveyed annually and the results presented at the quarterly Technical, Science and Byelaw meetings. These meetings consist of Authority members made up of MMO representatives, recreational and commercial fishers, representatives from Natural England, Environment Agency and IFCA officers. Based on officer knowledge of the sites and historical survey data, IFCA officers will recommend whether a bed has viable commercial stock levels, and therefore, should be considered for opening to permit holders. Members discuss and subsequently vote on the opening of the fishery subject to HRA approval. As the activity is not considered necessary for the management of the site, and has the potential to affect the protected features, a HRA is conducted, and management implemented if/where required.

4.3 Multi Agency Liaison Group

Due to the location of the fishery, effective control of fishing effort is organised with the assistance of other organisations. Consequently, in administering the fishery, the Authority works closely with other organisations such as the police, local councils, the Maritime and Coastguard Agency (MCA), the Health & Safety Executive (HSE), the Department for Work and Pensions (DWP), Natural England (NE), the Gangmaster and Labour Abuse Authority (GLAA) and the Environment Agency (EA).

4.4 Biosecurity

Morecambe Bay is currently shellfish disease free and the Authority considers it a priority to maintain this status. The non-native species Chinese Mitten Crab (*Eriocheir sinensis*), and American Lobster (*Homarus americanus*) have previously been recorded within the area. In order to implement effective measures to prevent the introduction and / or spread of diseases or non-natives the Authority has developed and published a Biosecurity Plan, detailing controls and conditions that will be applied to all commercial shellfish activities. The Biosecurity Plan seeks to ensure that consignments and/or areas from which they come, are regularly and thoroughly checked for invasive non-native invasive species (INNS).

4.5 2026 Survey Results and Stock Status

In 2026, NWIFCA developed a Cockle Fisheries Management Plan (CFMP), which established minimum biomass thresholds that must be met before the opening of a cockle fishery in Morecambe Bay can be considered. The CFMP requires a minimum total biomass of 10,000 tonnes, of which at least 4,440 tonnes must comprise size cockle.

The June/July 2026 surveys identified sufficient total biomass to meet the 10,000-tonne threshold. However, the estimated biomass of size cockle was 4,327 tonnes, 113 tonnes below the required threshold. On the basis of these survey results, the cockle beds remained closed.

Following this decision, industry representatives highlighted a number of areas around Morecambe Bay where cockle may occur but which fall outside the established survey areas. These generally comprise either small, isolated patches or low-density cockle distributed over large areas.

It is important to distinguish these areas from significant changes in the distribution or extent of established cockle stocks. Small or low-density populations outside the principal survey areas have historically existed within Morecambe Bay but have not formed part of the stock assessment dataset on which the CFMP biomass thresholds were developed. Including these residual areas now, without also accounting for them within the historic baseline, would therefore make the 2026 biomass estimate inconsistent with the dataset used to establish the CFMP thresholds. Examples include residual stocks on Warton Sands in years of low abundance, Duddon Sands, Half Moon Bay and Cockerham Sands.

In contrast, the established survey areas have previously been expanded where significant cockle stocks have developed outside the existing survey grid as a result of changes in the physical characteristics of Morecambe Bay, including movement of channels and changes in suitable settlement habitat. These changes represent a genuine shift or expansion in the distribution of the stock rather than the inclusion of previously unaccounted residual cockle.
Examples within the historic dataset include:

- **Warton Sands:** Since 2017, significant stock has been recorded in 2019, 2020 and 2026. In other years, the cockle bed was absent as a result of movement of the Keer Channel.
- **Flookburgh:** In 2023, 25 additional survey locations were added to incorporate cockle to the north-east of the existing survey area, which had previously been constrained by the Kent Channel. A further nine survey locations were added to the south of the bed in 2025 following changes in the distribution of stock and the extent of sand exposed at low water.
- **Newbiggin:** Fifteen survey locations were added to the west of the bed in 2025 to ensure that the full extent of the cockle stock was represented.
- **Middleton:** In 2018, a large area of dense cockle was identified to the south-east of the existing survey grid. This area was subsequently incorporated fully into the survey grid in 2019.

A comparable change was identified in September 2026 adjacent to the Newbiggin and Leven cockle beds. A significant stock of cockle was found within an area comprising part of the historically surveyed Leven and Aldingham beds together with a newly identified area between them (Figure 4.5.1).

Figure 4.5.1 also demonstrates the dynamic nature of this part of Morecambe Bay. A significant proportion of the historic Aldingham and Newbiggin survey points either contained no cockle in 2026 or had become inaccessible following movement of the Leven Channel. At the same time, suitable habitat and significant cockle stock were identified on the Leven side of the channel, including the re-emergence of some historic survey areas and an additional area of stock.

This is therefore considered a change in the spatial distribution and extent of the cockle stock, rather than the addition of background or residual cockle that has historically fallen outside the stock assessment. The additional area was, therefore, included because it represented a material redistribution/extension of an established stock associated with changes in bed/channel geography, consistent with previous survey practice, rather than because additional biomass was required to meet the threshold.

Previous comparable changes to the extent of cockle beds have been incorporated into the historic biomass dataset without corresponding increases to the CFMP biomass thresholds. On this basis, the area met the established rationale previously used for extending survey boundaries and was therefore surveyed and incorporated into the 2026 stock assessment without amendment to the CFMP thresholds.

The September survey identified sufficient additional size cockle biomass for the opening of a fishery to be considered. However, because this survey was undertaken approximately two months after the main June/July surveys, the September biomass cannot be directly added to the July biomass without accounting for growth and changes in size composition during this period.

The following sections therefore distinguish between biomass identified during the June/July surveys and additional biomass identified during the September survey. The September results have subsequently been adjusted to provide an estimate of the biomass likely to have been present at the time of the main summer surveys, allowing comparison with the CFMP thresholds on a consistent basis.

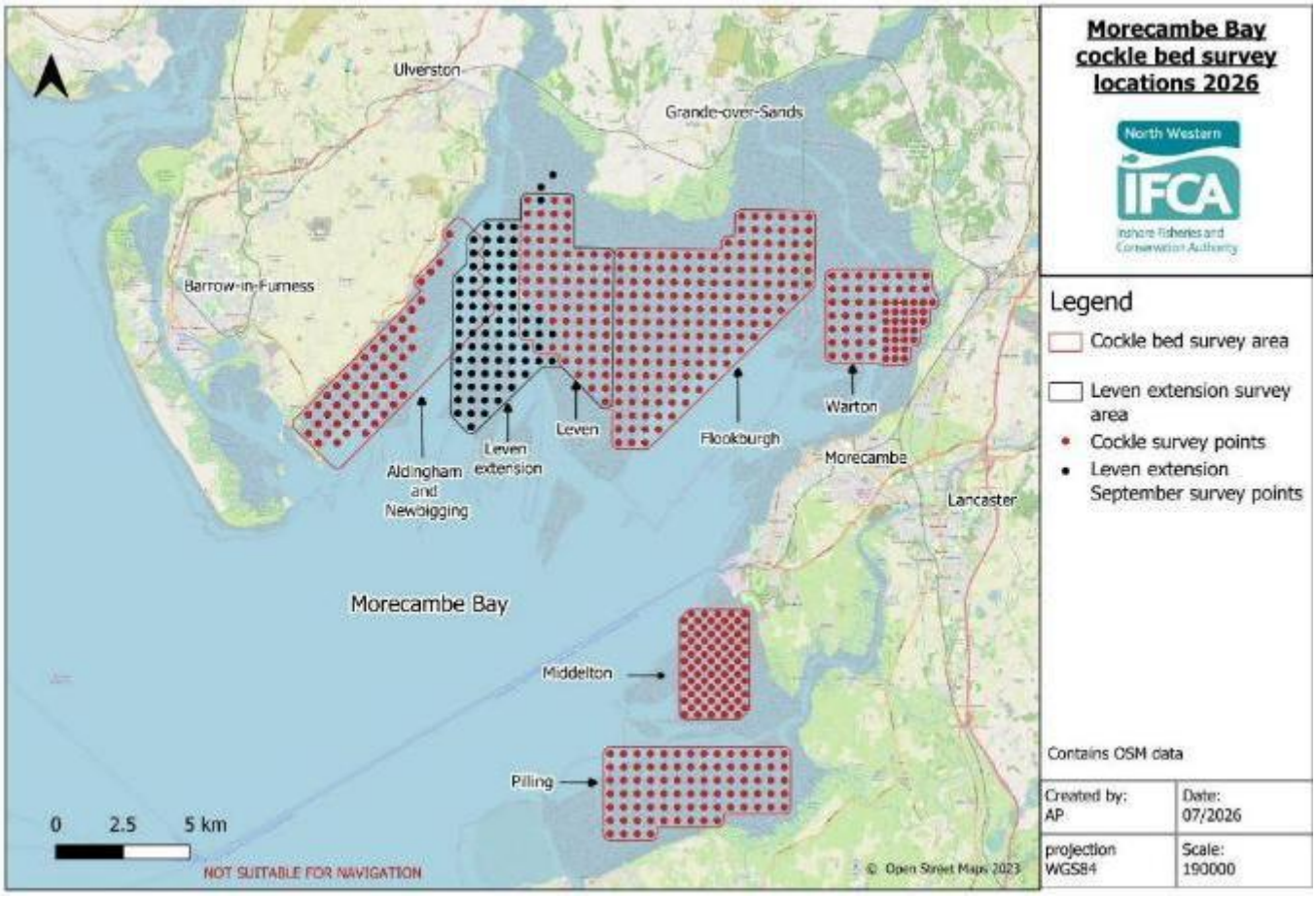


Figure 4.5.1 The location of sample points across Morecambe Bay cockle beds 2026. The red points show points surveyed in July, the black show the additional sample points surveyed in September as an extension to Leven cockle bed.

Morecambe Bay cockle surveys were conducted between June 29th and July 16th, with the additional areas identified on Leven surveyed on September 16th, 2 months later. All survey reports are provided in Annex 1. Results have been standardised and the size of the pie charts corresponds to set values, making them comparable between beds and future surveys.

In June/July, officers collected and analysed 15,118 cockles from 453 sample points across approximately 7,753ha of Morecambe Bay. A further, 4,093 cockles were then sampled from an additional 83 survey locations on the extended portion of Leven cockle bed (see Figure 4.5.1).

A summary of the June/July survey results is provided in table 4.5.1

Table 4.5.1. Biomass calculations of size, undersize and combined biomass of cockles on Morecambe Bay cockle beds June/July 2026. *figures represent the max estimated cockle biomass

Cockle bed	Date surveyed	Area of cockle present (ha)	Size cockle (tonnes)	Undersize cockle (tonnes)	Total cockle biomass (tonnes)
Aldingham and Newbiggin	June 29th 2026	1,050	1,189	883	2,072
Leven	July 9th 2026	1,000	482	692	1,174

Flookburgh	July 8th & 9th 2026	2,600	1,064	2,348	3,412
Warton Sands	July 16th 2026	906	123	1941	2,064
Middleton	June 30th 2026	747	378	897	1,275
Pilling	July 7th 2026	1,450	1,091	621	1,712
TOTAL	n/a	-	**4,327**	**7,382**	**11,709**

The June/July surveys estimated a total size-cockle biomass of 4,327 tonnes across Morecambe Bay, 113 tonnes below the CFMP threshold of 4,440 tonnes.

Results of the September Leven extended area:

The survey area on Leven extension is made up of a mix of the historically surveyed Leven bed, the Aldingham bed, and a new area between the beds. The split in biomass and area is provided in table 4.5.2.

Table 4.5.2. Biomass calculations of the different size classes for the additional survey locations identified on Leven extension cockle bed in September 2026. The figures also distinguish between points originally part of other bed areas, that are now incorporated into the Leven bed. *figures represent the max estimated cockle biomass

NWIFCA Bed	Area (ha)	5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)	Size Cockle (tonnes)[1]	Undersize Cockle (tonnes)[2]
Leven	150	2	6	3	83	9	92	104
Aldingham	400	272	138	65	661	0	632	504
New Area	1300	453	478	930	2878	139	3035	1843
Total	**1850**	**727**	**622**	**998**	**3622**	**148**	**3759**	**2359**

[1]In regards to biomass size cockle defined as cockle which will not pass through a square gauge 20 x 20mm in size.
[2]The biomass of undersize cockle does not include any estimates of cockle less than 5mm due to the high variability of survival of this size class.

In September, the additional cockle surveyed on the extended portion of Leven came to **3759 tonnes of size**, and **2359 tonnes of undersize** (Table 4.5.2). However, these figures need to be adjusted for the two months of summer growth that will have occurred between July and September, to make them comparable with the July survey results.

Adjusting data for the timing of the survey:

The historic biomass data underpinning the CFMP are based predominantly on surveys undertaken during the summer survey period. As the additional Leven survey was undertaken on 16 September, approximately two months after the main 2026 surveys, the observed September biomass cannot be directly compared with the CFMP thresholds without considering changes that may have occurred during the intervening period.

During this period, individual cockles will have increased in size and weight, some will have moved between size classes, and mortality may also have occurred. Consequently, directly adding the September biomass to the June/July estimate would be likely to overstate the biomass that was present at the time of the main surveys.

There are insufficient repeat survey data to model these changes precisely. The most relevant available dataset is from Flookburgh in 2023, when the bed was surveyed in July and again in early October. The observed changes between these surveys are shown in Table 4.5.3.

Table 4.5.3. Biomass of different size classes on Flookburgh cockle bed between July and October survey in 2023.

Size Class	July (tonnes)	October (tonnes)	+/- (tonnes)	+/- (%)
5-15mm	148	734	+586	+396
15-20mm	1644	1323	-321	-20
20-25mm	2131	3623	+1492	+70
25-35mm	778	1784	+1006	+129
>35mm	29	16	-13	-45
Size[1]	746	1821	+1075	+144
Undersize[2]	3984	5659	+1675	+42
Total	4730	7480	+2750	+58

[1]In regards to biomass size cockle defined as cockle which will not pass through a square gauge 20 x 20mm in size.
[2]The biomass of undersize cockle does not include any estimates of cockle less than 5mm due to the high variability of survival of this size class.

Flookburgh provides the best available local evidence for estimating seasonal changes in cockle biomass over a broadly comparable period. However, there are limitations to applying these changes to Leven. Growth, mortality and movement between size classes will vary according to factors including initial size distribution, density and local environmental conditions. The resulting estimates should therefore be treated as an approximation rather than a precise reconstruction of July biomass.

The July–October interval at Flookburgh is also longer than the July–September interval being estimated for Leven. **Using the full July–October change is considered likely to result in a greater downward adjustment than would arise over the shorter July–September period and has therefore been adopted as a precautionary assumption.**

The percentage changes observed for each size class at Flookburgh were subsequently applied to the September Leven results to estimate the biomass that may have been present during the July survey period (Table 4.5.4). Calculations were undertaken by size class rather than using the aggregated size and undersize categories, as this represents the highest resolution available within the dataset.

Method:

July estimate = September biomass ÷ (1 + observed proportional change).

Table 4.5.4 Leven cockle survey data adjusted biomass based on percentage change from the Flookburgh 2023 July and October surveys.

Size Class	September (tonnes)	+/- (%)	+/- (tonnes)	July (tonnes)
5-15mm	727	-80	- 580	147
15-20mm	622	+24	+ 151	773
20-25mm	999	-41	- 412	587

25-35mm	3622	-56	- 2042	1580
>35mm	148	+81	+ 120	268
Total	6118	-45	- 2763	3355

[1]In regards to biomass size cockle defined as cockle which will not pass through a square gauge 20 x 20mm in size.
[2]The biomass of undersize cockle does not include any estimates of cockle less than 5mm due to the high variability of survival of this size class.

It should be noted that the size composition of cockles at Flookburgh differed from that observed on the Leven extension. At Flookburgh, a greater proportion of cockles were close to the boundary between the 20–25 mm and 25–35 mm size classes during both the July and October surveys. In comparison, cockles within the 25–35 mm size class on the Leven extension were generally larger, with many measuring approximately 30 mm. Therefore, it is more likely that the change between cockles in the Flookburgh survey was greater. As a result, applying the change observed at Flookburgh directly to the Leven data is likely to overestimate the reduction in 25–35 mm cockle biomass when back-calculating from September to July. The resulting estimate for this size class is therefore considered precautionary.

The >35 mm size class has been treated separately. Only a low density of cockles within this size class was recorded at Flookburgh, resulting in a calculated increase in biomass when the Flookburgh percentage change was applied to the Leven data. Given the small amount of data underpinning this adjustment, the resulting estimate is considered unreliable. The >35 mm biomass has therefore been excluded from the adjusted size-cockle estimate as a precautionary measure.

Cockles within the 25–35 mm size class are expected to meet the definition of size cockle. Taking account of the best available evidence, the precautionary reduction applied to the 25–35 mm size class, and the exclusion of the >35 mm size class, an adjusted estimate of **1,580 tonnes of size cockle** and **1,507 tonnes of undersize cockle** is considered appropriate for the additional Leven survey area.

For management and HRA purposes, NWIFCA considers that these adjusted figures should be used when considering the stock against the CFMP biomass thresholds and when determining an appropriate TAC for a fishery.

In conclusion, the September area represents the same type of dynamic redistribution/expansion of significant stock that has historically been incorporated into the survey dataset; therefore, its inclusion is consistent with the approach previously applied to comparable changes in stock distribution, while adjusting the later survey results to maintain comparability with the FMP baseline.

Adjusted 2026 Survey Results and Stock Status

The following description of cockle biomass in Morecambe Bay includes the addition of the back-calculated biomass of Leven extension area. Any reference to the biomass of the beds beyond this point includes the additional back calculated biomass, and will be highlighted where possible.

Biomass of size and undersize cockle across Morecambe Bay

Table 4.5.5 and Figure 4.5.2 provides yearly maximum cockle biomass figures from 2017 to 2026. The majority of surveys presented here were undertaken between June/July each year (or adjusted for suitable comparison, as described above) and are therefore comparable.

The adjusted 2026 estimate is 14,796 tonnes of cockle across 9,603 ha of surveyed habitat in Morecambe Bay, comprising 5,907 tonnes of size cockle and 8,889 tonnes of undersize cockle.

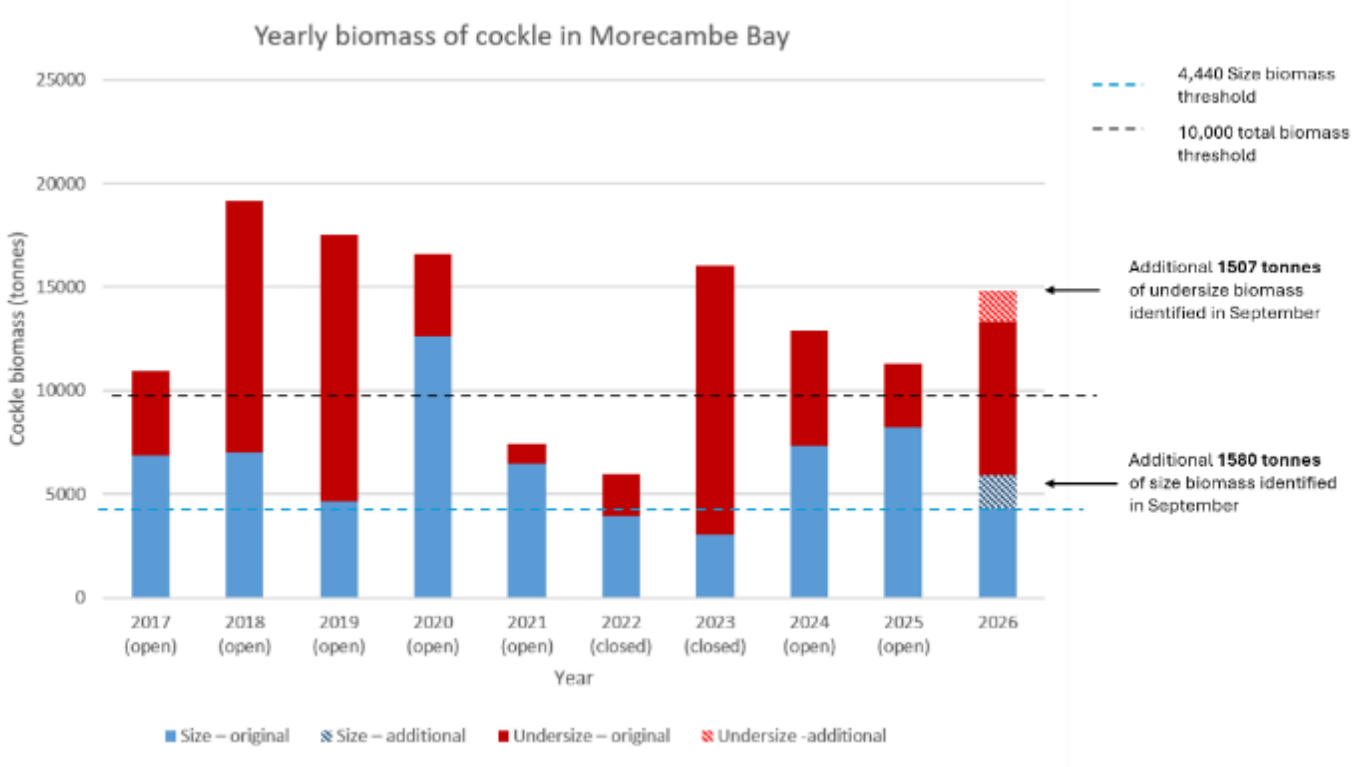


Figure 4.5.2. Stacked bars show size and undersize cockle biomass for Morecambe Bay (which together represent total biomass) from 2017 to 2026. The hashed red and blue shows the additional biomass identified in September (adjusted for growth) for size and undersize respectively.

Table 4.5.5. The yearly biomass of figures for size, undersize and total biomass of cockles on Morecambe Bay cockle beds from 2017 to 2026 (inclusive of 2026 September adjustment). *figures represent the max estimated cockle biomass

Year	All surveyed Morecambe Bay cockle beds				Beds opened
	Area (ha)	Size cockle (tonne)	Undersize cockle (tonne)	Total cockle (tonne)	
2017	5177	6847	4097	10,942	Flookburgh Leven Pilling
2018	6088	7000	12140	19140	Flookburgh Leven Pilling Newbiggin
2019	6705	4635	12900	17535	Flookburgh Leven Pilling Newbiggin
2020	8085	12580	3975	16555	Flookburgh Leven Pilling Newbiggin
2021	7089	6460	955	7415	Pilling
2022	6582	3950	1990	5940	None
2023	7730	3035	12975	16010	None
2024	7247	7308	5586	12894	Flookburgh Leven Pilling
2025	7598	8,243	3,057	11,300	Flookburgh Pilling Newbiggin
2026	9,603	5,907	8,889	14,796	Newbiggin Leven

This year, the total biomass of cockle across Morecambe Bay has increased from 11,300 tonnes in 2025 to 14,796 tonnes.

The total biomass of size cockle has decreased from 8,243 tonnes in July 2025, to 5,907. However, this is 1467 tonnes above the size biomass threshold set out in the NWIFCA CFMP for Morecambe Bay.

Figure 4.5.2 indicates the trend in the biomass of size (blue) and undersize (red) cockle for Morecambe Bay as a whole since 2017. High levels of undersize cockle in 2018 and 2019 preceded an increase in the biomass of size cockle, one to two years later. In 2023, there was a significant increase in the biomass of undersize cockle, which was expected to grow on in 2024 to support an increased biomass of size cockle. Size biomass did increase up to 2025, but this year has declined again, though the overall biomass of cockle in Morecambe Bay remains high.

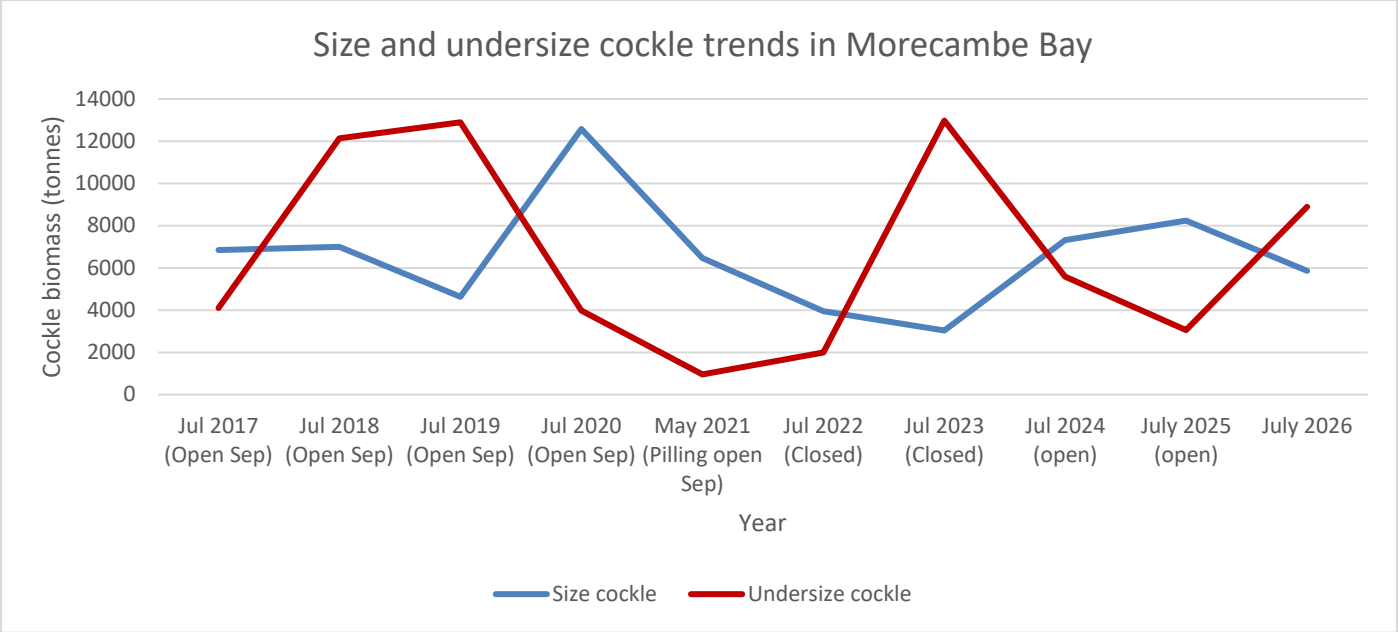


Figure 4.5.2. The lines show size and undersize cockle biomass for Morecambe Bay from 2017 to 2026.

Individual beds

An analysis of survey data for each of the main cockle beds in Morecambe Bay is presented below.

Survey results for each cockle bed are provided in Annex 2. It is also important to consider all information provided when building a recommendation for a fishery, and not any one piece in isolation. For example, understanding the composition of size and undersize on a bed, distribution of cockle, and total overall biomass can help with determining an appropriate recommendation.

Table 4.5.6. Biomass of size cockle for each Morecambe Bay bed from 2017 to 2026 (inclusive of September Leven adjustment).

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Aldingham and Newbiggin		900	820	3200	1900	1050	535	846	1432	1189
Leven	2202	1200	500	3100	700	500	400	573	470	2062
Flookburgh	4074	2700	1700	3300	1000	850	825	3629	2609	1064
Pilling	571	2200	1200	2400	2300	1200	800	1742	3143	1091
Warton	na	na	65	280	110	na	na	na	na	123
Middleton	na	na	350	300	450	350	475	518	589	378
Morecambe Bay all beds	6847	7000	4635	12580	6460	3950	3035	7308	8243	5907

The above is presented in figure 4.5.3.

Biomass of size and undersize cockle for individual beds

Figure 4.5.3 shows the biomass of size cockle for each surveyed Morecambe Bay cockle bed from 2017 to 2026, and which beds were opened for fishing that same year.

1. **Flookburgh**: has seen a >50% decrease in size cockle from 2,609 tonnes to 1,064 tonnes. Total biomass (size + undersize) remains consistent.
2. **Leven**: Overall biomass has increased from 470 tonnes to 2062 tonnes, and the spatial extent of the stock has also increased.
3. **Pilling**: has significantly decreased in both size and undersize. Size cockle has decreased >50% from 3,143 tonnes in 2025 to 1,091 tonnes in 2026.
4. **Newbiggin**: remains relatively stable in comparison to 2025, though some areas have now been incorporated into the biomass of Leven.

5. **Middleton:** remains consistent with previous years though slightly increased.
6. **Warton:** This bed has not seen significant stock since 2020. Recent surveys, however, have identified it has approximately 123 tonnes of size, and 1,941 tonnes of undersize cockle. The high undersize biomass indicates potential for recruitment to the size-cockle stock in subsequent years, subject to survival and future survey results.
7. Biomass of undersize is high this year, with some stock available to grow on for the following years fisheries.

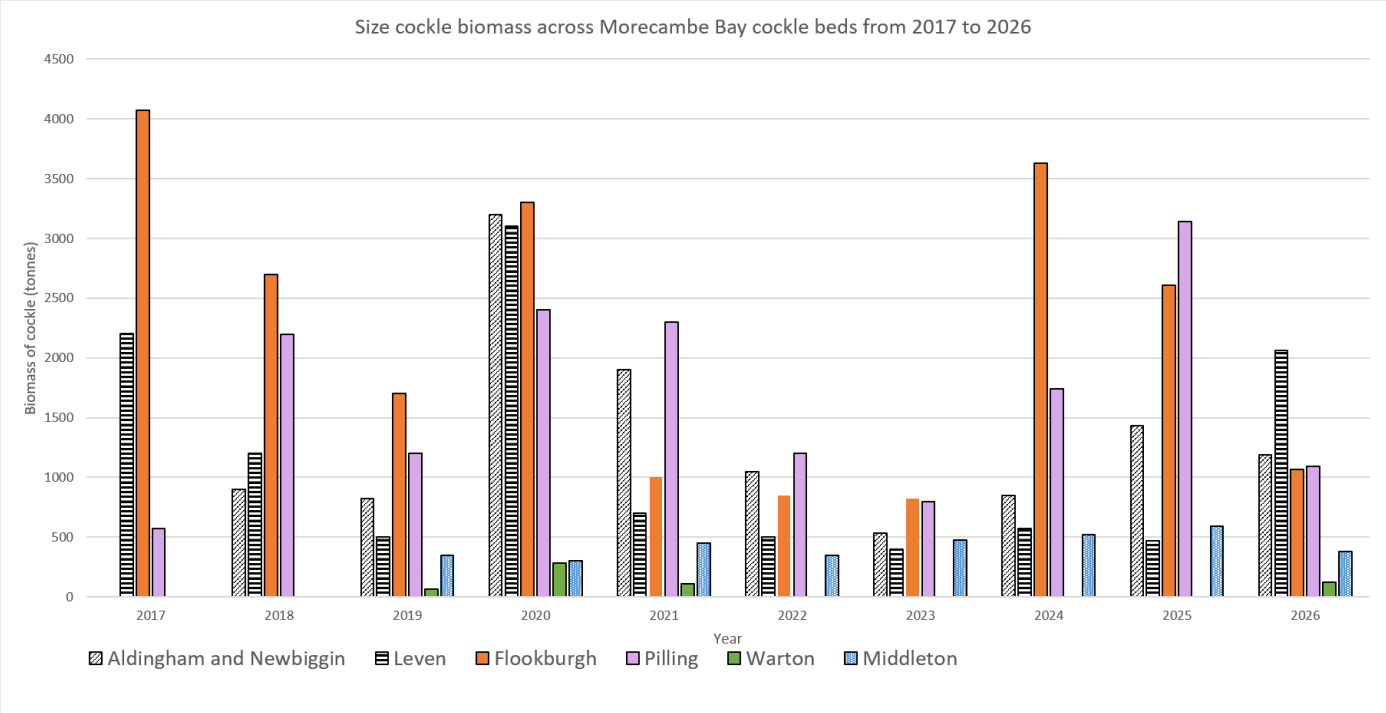


Figure 4.5.3 Biomass of size cockles on the individual Morecambe Bay cockle beds from 2017 to 2026

Biomass of cockle size classes on each bed

Figure 4.5.4 shows the biomass of cockles in each size class (5-15 mm, 15-20mm, 20-25mm 25-35mm and 35+mm) for the main Morecambe Bay cockle beds in July 2026.

For Leven cockle bed, cockle in the 25-35 size class (which are predominantly size cockle) contributes to a significant proportion of the total biomass on the bed. Similarly, Newbiggin cockle bed has high 25-35 mm cockle biomass, comparable with the 2025 dataset when it was opened that year.

All other cockle beds have incurred a noticeable decline in the biomass of size cockle.
The biomass of undersize cockle is relatively high for most beds, indicative of a potential 2027/28 fishery should these grow on over the next year.

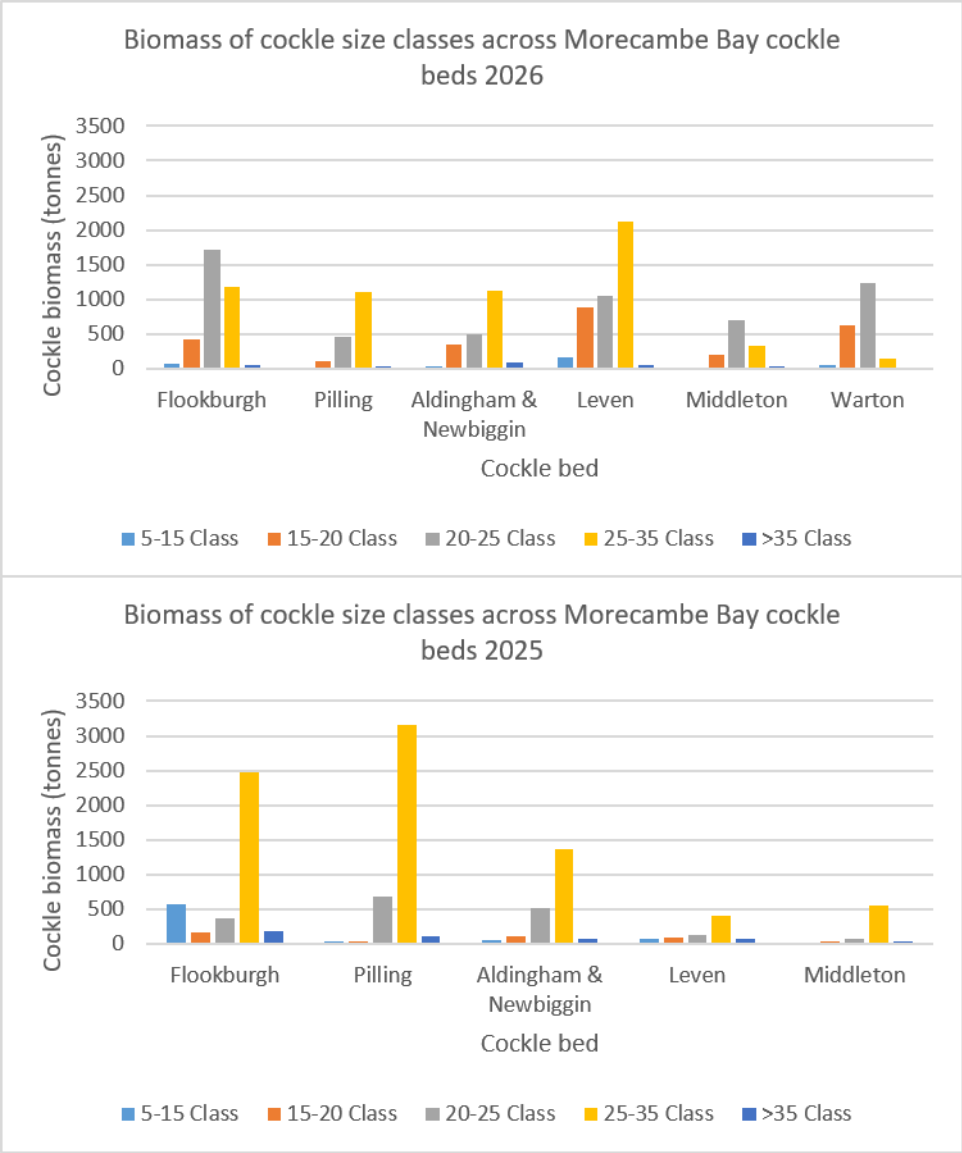


Figure 4.5.4 The biomass of different size classes of cockle for each of the Morecambe Bay cockle beds in 2025 and 2026 respectively (inclusive of the September adjustment).

Composition of size classes on individual beds

The spatial distribution and size composition of stock within individual beds are important considerations when determining whether a bed is suitable to support a fishery. In particular, the degree of mixing between size and undersize cockle influences the potential for undersize cockle to be disturbed during fishing and subsequently returned through riddling.

At Leven and Newbiggin, the 2026 surveys identified some areas of mixed stock (size composition and distribution figures for each bed are provided in Annex 1). However, size cockle is predominantly in the 25+mm category, this cohort is significantly larger than the majority of undersize which is within the 15-20, and 20-25 mm category. This size separation provides greater opportunity for undersize cockle encountered during fishing to be effectively separated through riddling.

Flookburgh, Middleton and Warton have a higher proportion of undersize cockle, which is likely to grow to size for the following year. Middleton cockle bed seems to be remaining consistent each year, with mixed size cohorts and stable biomass. This is likely indicative of a natural cycle of regular settlements growing on to size over the course of several years.

Summary:

Overall, the 2026 survey results indicate that total cockle biomass within Morecambe Bay remains high, although the biomass of size cockle has decreased by approximately 29% compared with 2025. Following incorporation of the precautionarily adjusted estimate for the Leven extension, the estimated Morecambe Bay size-cockle biomass is 5,907 tonnes, exceeding the CFMP minimum threshold of 4,440 tonnes.

The distribution of exploitable stock is not uniform between beds. Leven and Newbiggin support substantial biomass of larger cockle, whereas the remaining beds either contain lower size-cockle biomass or a greater proportion of undersize stock.

On the basis of the 2026 biomass estimates, stock distribution and size composition, Leven and Newbiggin are therefore proposed as the beds suitable for consideration for opening to a cockle fishery. The potential effects of fishing these areas are considered through the following HRA, together with the management measures proposed to control fishing effort and protect the remaining stock.

5. Test for Likely Significant Effect (LSE)

The Habitats Regulations Assessment (HRA) is a step-wise process and is first subject to a coarse test of whether a plan or project will cause a likely significant effect on an National Site[1].

Is the activity/activities directly connected with or necessary to the management of the site for nature conservation? NO

5.1 Table 1: Assessment of LSE

Features: All qualifying features and sub-features that do not interact with the fishing activity have been **screened out.** Features and sub-features identified to interact with the fishing activity have been included table 1 below. The Wyre-Lune MCZ feature smelt (*Osmerus eperlanus*) has been screened out due the fishing activity not being a concern for the recovery of this feature.

Pressures: All pressures from the Advice on Operations table provided in the Morecambe and Duddon Estuary Conservation Advice package (https://designatedsites.naturalengland.org.uk/Marine/FAPMatrix.aspx?SiteCode=UK9020326&SiteName=&SiteNameDisplay=Morecambe+Bay+and+Duddon+Estuary+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=25) have been screened out, other than the pressures in the following table, due to the nature of the fishing activity.

Table 2. Designated features, their sensitivity to fishing activity and the potential for likely significant effect.

Qualifying Feature	Sub-feature	Potential pressure(s)	Sensitivity	Potential for Likely Significant Effect?	Justification and evidence
H1130. Estuaries H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats H1160. Large shallow inlets and bays SPA Supporting Habitats	Intertidal mud	Abrasion/disturbance of the substrate on the surface of the seabed Habitat structure changes – removal of substratum (extraction) Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion Removal of non- target species Removal of target species	Sensitive Sensitive Sensitive Sensitive Sensitive	NO NO NO NO NO	Activity does not occur within the vicinity of intertidal mud.

[1] Managing Natura 2000 sites: http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

	Intertidal sand and muddy sand	Abrasion/disturbance of the substrate on the surface of the seabed	Sensitive	NO	Access to fishery will be over feature, and hand gathering with a rake will interact with the feature, but both are unlikely to have any impact in such a highly dynamic site.
		Habitat structure changes – removal of substratum (extraction)	Sensitive	NO	Access to fishery will be over feature, and hand gathering with a rake will interact with the feature, but both are unlikely to have any impact in such a highly dynamic site,
		Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	Sensitive	NO	Access to fishery will be over feature, and hand gathering with a rake will interact with the feature, but both are unlikely to have any impact in such a highly dynamic site,
		Litter	Sensitive	YES	Feature and pressure taken through to AA.
		Removal of non-target species	Sensitive	YES	Highly selective fishery - no by-catch of non-target species. However, there is possibility of damaging juvenile cockles (considered a non-target)
		Removal of target species	Sensitive	YES	Feature and pressure taken through to AA.
H1310 *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand; Pioneer saltmarsh H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae) (referred to as Saltmarsh)* SPA Supporting Habitats		Abrasion/disturbance of the substrate on the surface of the seabed	Sensitive	YES	Feature and pressure taken through to AA.
		Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	Sensitive	YES	Feature and pressure taken through to AA.
		Litter	Sensitive	YES	Feature and pressure taken through to AA.
A026 Egretta garzetta; Little egret	Supporting Habitats assessed above	Removal of target species (cockles)	Some species sensitive, others screened out	YES	For all shore feeding SPA features that feed on infaunal molluscs, with focus on those which bivalves are the main food source: - Common eider - Eurasian oystercatcher - Red knot
A038 *Cygnus Cygnus*; Whooper swan					
A040 *Anser brachyrhynchus*; Pink-footed goose					
A048 *Tadorna tadorna*; Common shelduck		Removal of non-target species	Sensitive	YES	Highly selective fishery - no by-catch of non-target species. However, there is possibility of damaging juvenile cockles (considered a non-target)
A050 Anas Penelope; Wigeon					
A054 *Anas acuta*; Northern pintail		Visual disturbance	Sensitive	YES	All species taken through to AA
A063 *Somateria mollissima*; Common eider (Breeding)					
A067 Bucephala clangula; Goldeneye					
A069 Mergus serrator; Red-breasted merganser					
A130 *Haematopus ostralegus*; Eurasian oystercatcher					
A137 *Charadrius hiaticula*; Ringed plover					
A140 *Pluvialis apricaria*; European golden plover					
A141 *Pluvialis squatarola*; Grey plover					
A142 *Vanellus vanellus;* Lapwing					

A143 *Calidris canutus*; Red knot					
A144 *Calidris alba*; Sanderling					
A149 *Calidris alpina alpina*; Dunlin					
A151 Calidris pugnax; Ruff					
A156 *Limosa limosa;* Black-tailed godwit					
A157 *Limosa lapponica*; Bar-tailed godwit					
A160 *Numenius arquata*; Eurasian curlew					
A162 *Tringa totanus*; Common redshank					
A169 *Arenaria interpres*; Ruddy turnstone					
A176 Larus melancephalus; Mediterranean gull					
Phalacrocorax carbo; Cormorant					
Podiceps cristatus; Great crested grebe					
A183 *Larus fuscus*; Lesser black-backed gull (Breeding)					
A184 *Larus argentatus*; Herring gull (Breeding)					
A191 *Sterna sandvicensis*; Sandwich tern (Breeding)					
A193 *Sterna hirundo*; Common tern (Breeding)					
A195 *Sterna albifrons*; Little tern (Breeding)					
Seabird assemblage					
Waterbird assemblage					

Is the potential scale or magnitude of any effect likely to be significant?[2]	**Alone** Yes **Comments :**	**OR In-combination[3]** Yes **Comments :** These activities also occur at the site: • Beam Trawl (Shrimp) • Pots and Creels • Drift and Fixed nets (including stake) • Hand working (size mussel) • Hand-working (cockles)
Have NE been consulted on this LSE test? If yes, what was NE's advice?	No - NWIFCA consider AA required	

[2] Yes or uncertain: completion of AA required. If no: LSE required only.
[3] If conclusion of LSE alone an in-combination assessment is not required.

6. Appropriate Assessment

Potential risks to features

6.1 Potential risks to SAC and SPA supporting habitat features from a hand-gathered cockle fishery

Features at risk of interacting with fishing activity:

- Intertidal sand and muddy sand
- Saltmarsh

6.1.1 Pressures and Potential Impacts

The pressures that each Morecambe Bay SAC qualifying feature and sub-feature, and Morecambe Bay and Duddon Estuary SPA supporting habitats are susceptible to are detailed in Natural England's 'Advice on Operations'. The key impacts that the relevant supporting features are vulnerable to are detailed below.

i. Litter – Intertidal sand and muddy sand and saltmarsh

Past fisheries have had a poor reputation for large amounts of litter being deposited on the parking and access areas, and being left on the cockle beds. Items have included food and drink receptacles, cockle net bags and sacks. Potential impacts could include entanglement of fish and birds in the bags and sacks, and swallowing / entanglement of birds and mammals (both marine and terrestrial) of other litter.

ii. Removal of target species - Intertidal sand and muddy sand

Potential to affect the presence and spatial distribution of feature communities, the presence and abundance of typical species and the species composition of component communities.

iii. Removal of non-target species - Intertidal sand and muddy sand

Potential to affect the presence and spatial distribution of feature communities, the presence and abundance of typical species and the species composition of component communities.

iv. Abrasion, penetration and disturbance of the substrate - saltmarsh
There is a potential for vehicles to cause damage to the saltmarsh when accessing the fishery which has the potential to affect the extent, distribution and condition of the feature.

6.1.2 Exposure

i. Litter

Between 2016 – 2025 there have been a number of cockle fisheries that have occurred on Leven Island, Flookburgh, Pilling Sands, Leasowe cockle beds and South Penfold as well as ongoing size mussel fisheries around NWIFCA district. In this time there have only been a few reports of litter being an issue at these fisheries. When these have been highlighted to Byelaw 3 hand-gathers and buyers, they have rectified the issue. There is also a Code of Conduct (Annex 2) which sets out good practices for Intertidal shellfish fisheries, which includes not

leaving litter. When NWIFCA officers are inspecting the fisheries, they will be able to monitor levels of littering.

The NWIFCA is confident that littering will be controlled, and monitoring will be in place to identify quickly if litter is a problem. Therefore, the NWIFCA can conclude that litter will have no risk of adverse effect on the integrity or conservation status of the designated features within the site.

ii. Removal of target species - Intertidal sand and muddy sand

Surveys have been carried out across Morecambe Bay and a summary of results have been provided in section 4.5 of this assessment.

Further to the above information there will also be limited stock of size and undersize cockle on other beds around Morecambe Bay these include Warton Sands, Duddon Sands, Half Moon Bay, and Cockerham Sands.

The proposal is to open Newbiggin and Leven cockle beds (see figure 1), for seven days a week, one tide per day. The beds will be subject to a 1867 tonne TAC. The rest of the beds in Morecambe Bay (Flookburgh, Aldingham, Middleton, Warton, and Pilling) will remain closed . All open cockle beds in the Bay will be closed as of February 28th. The target species is size cockle, which will be removed by the fishery.

When considering the impact of cockle fishing on the removal or target species over intertidal sand and muddy sand protected features, officers consider the following:

1) The total biomass of cockle likely to be removed
2) The area of impact the fishing activity will take place over
3) The duration of the fishery

1-The total biomass to be removed

A TAC of 1867 tonnes will be applied to the Newbiggin and Leven fisheries. The rationale for the implementation of a TAC is provided in the agreed NWIFCA CFMP which sets out minimum biomass thresholds for opening fisheries.

The proposed fisheries would be managed under NWIFCA Byelaw 3 – Permit to Fish for Cockle and Mussels which includes management measures such as a minimum size, fishing methods and the requirement of a permit for commercial fishing. There is a maximum of 150 NWIFCA Byelaw 3 permits.

Table 6.1.2.1 show the biomass of size and undersize cockle which will remain on the closed beds.

Table 6.1.2.1 – Biomass of cockle beds which will remain closed.

Cockle Bed	Bed Area (ha)	Estimated Biomass of Size Cockle (tonnes)	Estimated Biomass of Undersize Cockle (tonnes)
Aldingham	n/a	n/a	n/a

Flookburgh	2600	1064	2348
Middleton	747	378	897
Warton	906	123	1941
Pilling	1450	1091	621
TOTAL	**5703**	**2656**	**5807**

Aldingham and Newbiggin have historically been surveyed together and are therefore reported as a single bed within the survey results. Aldingham will remain closed to fishing, although the precise boundary of the open and closed areas may be subject to change following consideration of shellfish classification requirements. For the purposes of this assessment, NWIFCA has therefore adopted a precautionary approach and assumed that the full surveyed extent of Aldingham and Newbiggin could potentially be accessible to the fishery. In practice, the area available for fishing will be smaller.

In addition to the biomass retained on beds that remain closed, an estimated 4,426 tonnes of cockle will remain on Leven and Newbiggin if the full TAC of 1,867 tonnes is removed. Across Morecambe Bay as a whole, the removal of the full TAC from the estimated total biomass of 14,796 tonnes would leave approximately 12,929 tonnes of cockle. This is 2,929 tonnes above the CFMP minimum total biomass threshold of 10,000 tonnes.

The CFMP also requires a minimum of 4,000 tonnes of size cockle to remain across Morecambe Bay following exploitation. The TAC has been set to ensure that this minimum biomass is retained. In practice, the residual biomass is likely to be higher due to the distribution of the stock and the operational characteristics of the fishery.

The remaining biomass will continue to provide a food resource for qualifying bird features and contribute to future stock recruitment, although some reduction in biomass through natural mortality can also be expected over the winter period.

The removal of the full biomass assumed under this worst-case scenario is considered unlikely for the following reasons:

a) Fishing activity and rates of removal typically decline over the course of the fishing season. This reduction in fishing activity has not been incorporated into the worst-case calculations above.
b) It is considered unlikely that the full TAC will be taken, given the spatial distribution of the stock and restrictions on available fishing time during the winter months. Fishing activity is also expected to be concentrated on the Leven extension, where the greatest biomass of exploitable stock occurs, rather than being distributed evenly across the full area assumed to be available to the fishery.
c) Some undersize cockle will continue to grow during the fishing period and may recruit into the size-cockle stock, potentially increasing the biomass of size cockle available across the site.

d) As described in Section 4, the adjusted estimate of size-cockle biomass incorporates precautionary assumptions, including a conservative adjustment of the September survey results. The actual biomass of size cockle present may therefore be greater than that used within this assessment.

2-The total area impacted by fishing

In addition to considering the total biomass removed, it is important to consider the total area that may be disturbed during the process of fishing, and the impact this may have on the protected feature.

Size cockle on Leven and Newbiggin is concentrated within discrete areas, and fishing activity is expected to be focused on areas supporting the greatest densities of size cockle.

The results for Leven cockle bed are shown in two separate figures. As the areas were surveyed at different times they are not directly comparable. Adjustments for the biomass calculations of each size class are explained in section 4.

On Leven, the eastern portion of the bed surveyed in July (Figure 6.1.1) has low biomass and density, with a larger portion of undersize. Many of the areas surveyed also did not have cockle present, as demonstrated by the blank areas on the map. It is, therefore, expected to be less attractive to fishers because the cockle density is not high enough to make it commercially viable to fish.

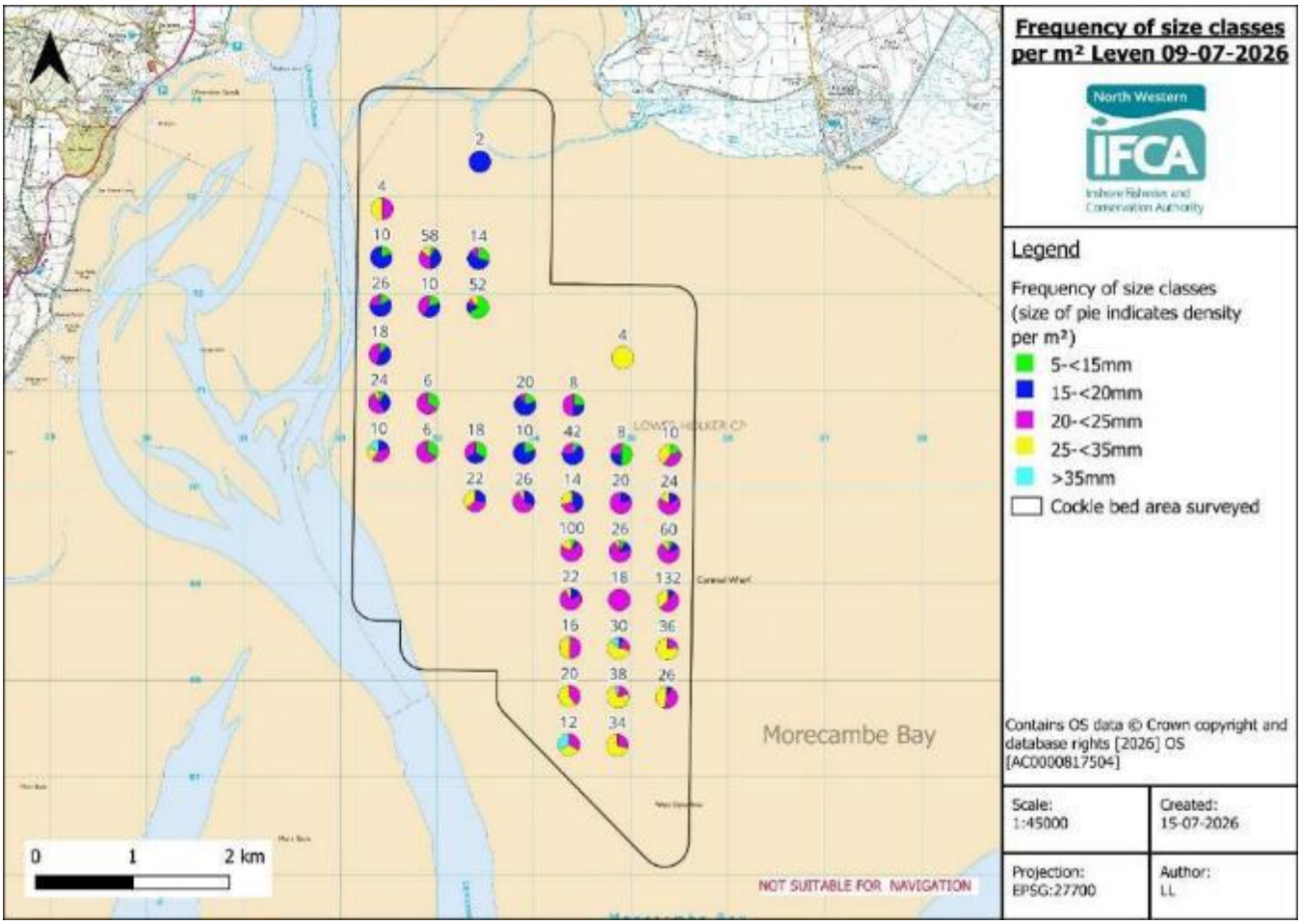


Figure 6.1.1 The Frequency of size classes of cockle per m² Leven July 2026

In comparison, the September survey for Leven extension area to the west (Fig 6.1.2) has a much greater proportion of cockle biomass, and a larger area towards the middle where size stock is present, and the area most likely to be targeted by fishing activity.

In figure 6.1.2 the composition of cockle size classes at each sample location on the bed is detailed in the piecharts. There is a high proportion of cockle in the 25-35mm size class (typically size cockle) in the central, southern part of the Leven bed extension area. Much of this is mixed with 5-15mm, and 15-20mm cockle. The composition of cockles in this area limits the possibility of undersize being removed from the bed due to the following reasons: a) fishers will target denser areas of size cockle and likely not access areas of high density very small cockle, b) such small cockle is more effectively riddled out alongside large cockle and therefore should be returned to the bed.

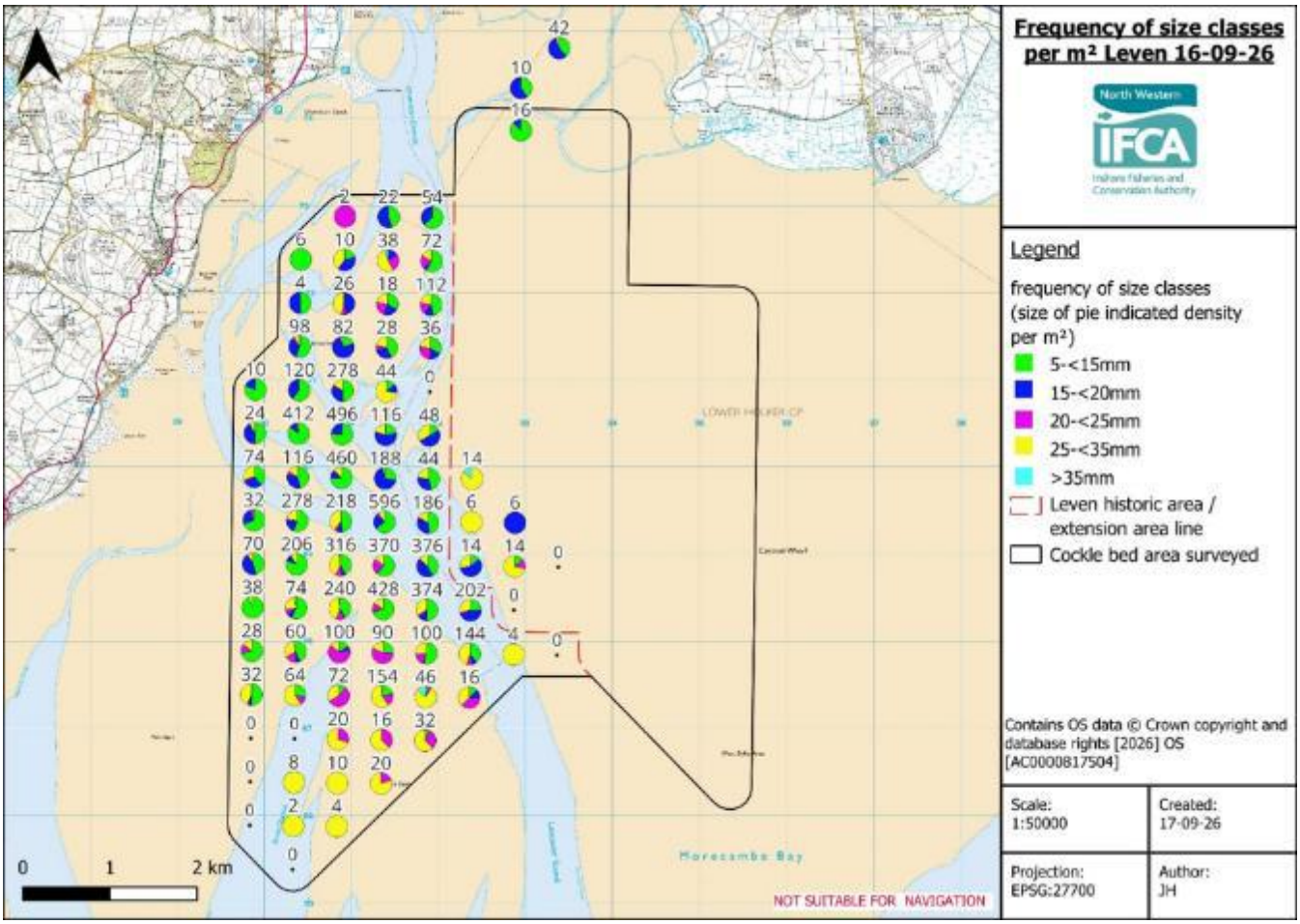


Figure 6.1.2 The Frequency of size classes of cockle per m² Leven extension September 2026

Evidence from previous fisheries support the claim that fishing activity is usually concentrated to specific areas, where biomass is greatest rather than being distributed evenly across the full open area.

In 2024, officers mapped the extent of fishing activity on the Flookburgh cockle bed from September to December. The main fishing area covered less than 200 hectares out of the possible 2675 hectares of cockle bed, equating to less than 10% of the total bed area. Fishers predominantly targeted the same area throughout the duration of the fishery, with only a very small number accessing areas over the other side of the channel. As a precautionary approach, NWIFCA has considered fishing activity to occur over the entirety of the Leven extension area as a worst case scenario, however, in reality it is much more likely fishers will be concentrated to less than half, in the central to lower area, where cockle size and density is more desirable.

Therefore the HRA does not rely upon the prediction that fishing will remain concentrated as all 1,800 hectares are assessed as potentially fished.

On Newbiggin, Figure 6.1.3 demonstrates that size cockle is present in the greatest densities in the lower half of the Newbiggin cockle bed, the points with the highest densities making up approximately a quarter of the bed, similar to 2025. Therefore, as a precautionary estimate, just over a quarter of Newbiggin (500 hectares) will be considered targeted for fishing in this assessment.

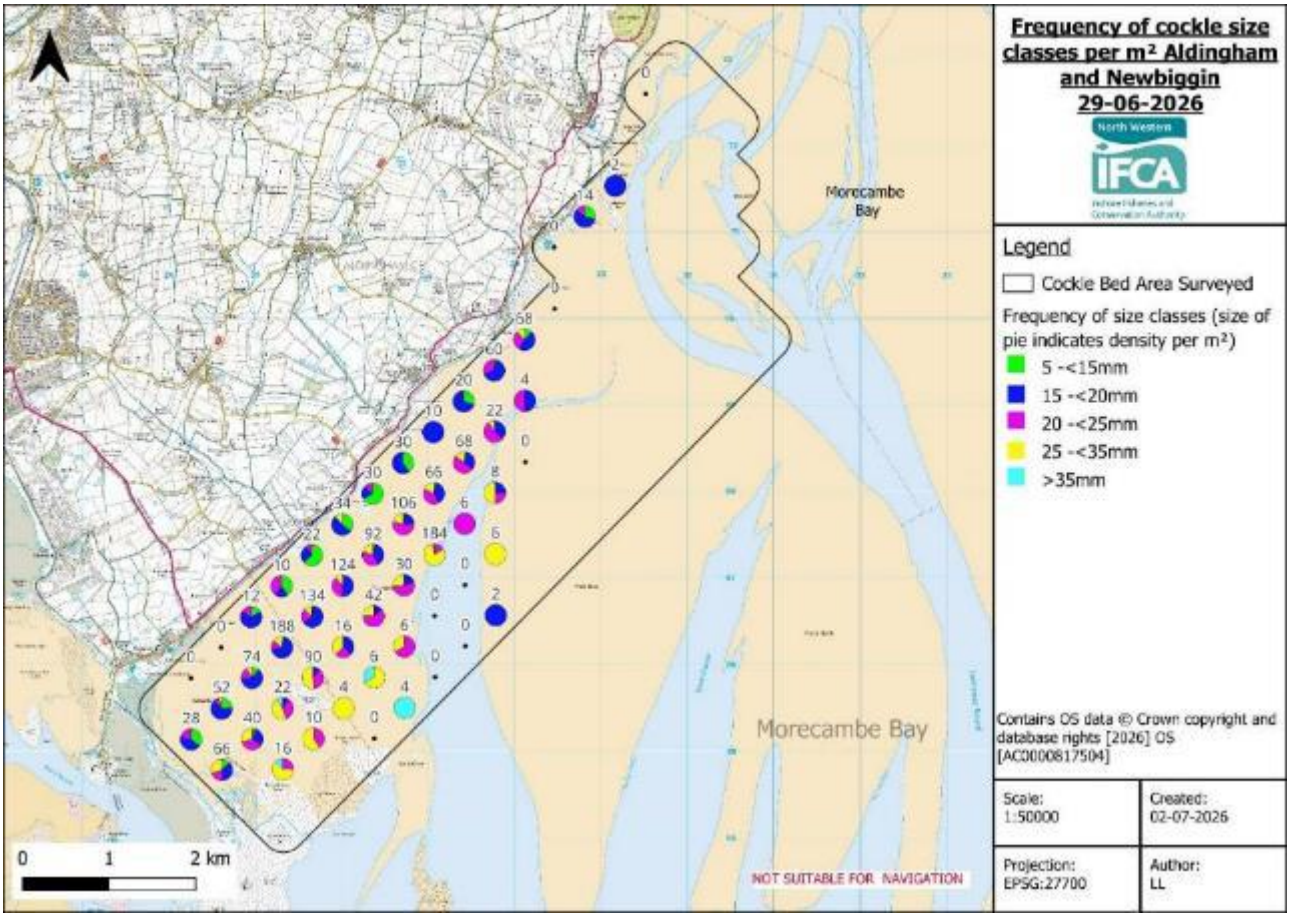


Figure 6.1.3 The Frequency of size classes of cockle per m² Newbiggin 2026

Therefore, considering Morecambe Bay as a whole – the total area likely to be fished under a worst case scenario is 1800 hectares (leven extension) + 500 hectares for Newbiggin = 2300 hectares, out of a total of 9,603 hectares – equating to 24% of the total area cockle was found to be present in the bay. This leaves approximately 7,303 hectares unlikely to be fished (76%).

3-Duration of the fishery

In addition, NWIFCA propose a 7 day a week, one tide a day fishery for all open cockle beds, to ensure fishing activity across the bay is limited to 7 tides a week out of a possible 14. In order to make sure the proposed TACs are adhered to, additional effort limitation is required. Reducing the number of days and tides the fishery is open for, limits the intensity of disturbance, and allows time for officers to receive and review returns data (required once per month) to assess whether the fishing effort will reach the TAC, and provide time for officers to act accordingly by closing the fishery before it is reached.

Therefore, the NWIFCA can conclude that removal of target species will have no risk of adverse effect on the integrity or conservation status of the designated features within the site.

iii. Removal of non-target species - Intertidal sand and muddy sand

The hand-gathered cockle fishery is highly selective and is expected to result in minimal removal of non-target species. However, fishing activity has the potential to disturb or damage juvenile cockle and other bivalves present within the areas being worked. In particular, areas of the Leven extension contain relatively high densities of small cockle (5–15 mm), which may be more susceptible to physical damage due to their smaller and more fragile shells.

NWIFCA has undertaken investigations using a range of fishing treatments to assess the potential effects of jumboing and raking on juvenile cockle. Interpretation of the results was limited by the difficulty of controlling the numerous factors that influence cockle abundance and breakage rates, including spatial variation in cockle density and changing environmental conditions. Consequently, differences in the number of cockles recorded between the control, jumboing, and jumboing-and-raking treatments could not reliably be attributed to damage or loss resulting from fishing activity.

Nevertheless, a number of observations could be made from the investigations. Damaged cockles were not recorded in significant numbers within the samples, and there was no evidence from the observations of substantial mortality of juvenile cockle resulting from the fishing treatments. The results therefore provide no indication that hand-gathering using these methods results in substantial damage to juvenile cockle, although the limitations of the investigations mean that some level of impact cannot be excluded.

The spatial distribution of fishing activity will further limit the extent to which juvenile cockle and other non-target species are exposed to fishing. Size cockle on both Leven and Newbiggin is concentrated within discrete areas, and permit holders are expected to target areas supporting the greatest commercially viable densities of size cockle. On Newbiggin, although size and undersize stock is mixed in some locations, there is not a high proportion of very small cockle, and the greatest densities of larger cockle are concentrated towards the lower part of the bed.

Large areas of both Leven and Newbiggin are therefore expected to remain unfished because densities of size cockle are insufficient to make fishing commercially viable. For the purposes of this assessment, NWIFCA has nevertheless adopted precautionary assumptions regarding the potential fishing footprint. The entire 1,800 ha Leven extension has been assumed to be potentially subject to fishing activity. This is considered highly precautionary because cockle stock is not distributed uniformly across the area, and parts of the extension associated with the former Aldingham area fall within the Prohibited shellfish classification area and will not be available to the fishery.

On Newbiggin, fishing activity is expected to be concentrated within the lower part of the bed, where the greatest densities of size cockle occur. The survey points supporting the highest densities comprise approximately one quarter of the bed. For the purposes of this assessment, a slightly larger area of 500 ha has therefore been assumed to be potentially targeted by fishing activity.

When considering potential impacts on other bivalves and molluscs, observations from NWIFCA surveys indicate that Hydrobia spp. are common within the intertidal area but are generally associated with muddier habitat towards the upper shore and are therefore expected to have

limited spatial overlap with the principal areas targeted by the cockle fishery. The bivalve *Limecola balthica* may occur within areas supporting cockle and could therefore be encountered during fishing. Given its size and morphology, the physical mechanisms through which it could be affected by jumboing and raking are considered comparable to those affecting smaller cockle. On the basis of the observations from the juvenile cockle investigations, substantial damage is not anticipated, although some disturbance or damage to individual animals cannot be excluded. No other non-target mollusc species have been recorded in significant numbers during NWIFCA surveys of the proposed fishing areas.

Therefore the NWIFCA can conclude that removal of non-target species will have no risk of adverse effect on the integrity or conservation status of the designated features within the site

iv. Abrasion, penetration and disturbance of the substrate - saltmarsh only

Leven

The main access to the fishery is via the hard core track off Moor Lane (West Plain). This access route is well established for tractor (shrimping) and quad bike access and has been used in the cockle fisheries for decades. There is very little risk if any of the saltmarsh being damaged. There is a small potential that other access points will be used. As such Moor Lane will be the only access point allowed through the flexible permit conditions of the fishery.

Newbiggin

There are multiple access routes to Newbiggin sands from the Coast Road A5087 that runs parallel to the shore (Figure 6.1.4). Many of these are well established routes used as access points for the Foulney mussel beds, Oyster farms, shrimping, or for public use. None of the access routes traverse saltmarsh, and all enter directly onto the sand.

No auxillary activities such as tonning up and loading onto wagons will be permitted on the shore for any of the cockle beds.

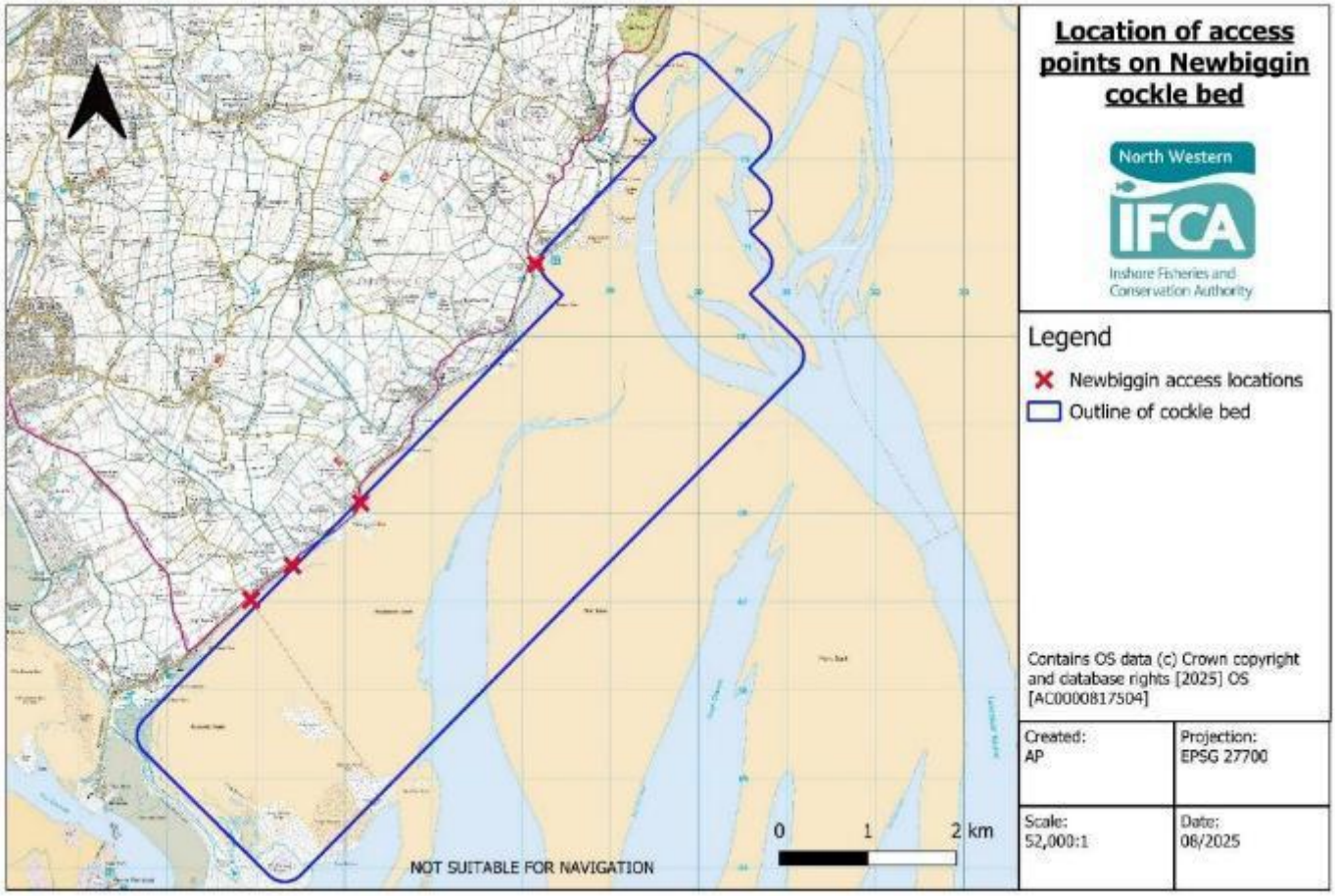


Figure 6.1.4. access routes onto the Newbiggin cockle bed.

The Code of Practice for Intertidal Hand gathering (Annex 2), highlights good practice in regard to avoiding damage to saltmarsh. It has also been stressed to industry the importance of avoiding damage to the saltmarsh and that the NWIFCA would consider closing the fishery if any damage occurs. The access will be monitored by NWIFCA officers.

Through implementation of management, sufficient monitoring, and the powers to close the fishery if damage occurs the NWIFCA is confident that there is no risk of adverse effect on the integrity or conservation status of the site.

6.2 SPA and Ramsar Features

- SPA and Ramsar birds

Due to the specific concerns raised in 2021 by Natural England due to the low WeBS count data for Morecambe Bay, and from review the 5 year WeBS count data, a more detailed assessment specific to the following species has been completed.

- Pink footed goose
- Knot
- Herring Gull
- Bar tailed godwit
- Grey plover
- Oystercatcher

In addition to the above, grey plover, dunlin, sanderling and turnstone have been highlighted as having a restore objective for the population targets.

6.2.1 Potential Impacts

i) Removal of target species (cockles) for all shore feeding SPA features that feed on infaunal molluscs.

Cockles form part of an important prey resource for eiders, oystercatchers and knot as well as forming part of a wide variety of prey items for many of the designated species including grey plover, dunlin, sanderling and turnstone. If bird populations are to be maintained in or restored to healthy condition, sufficient shellfish to meet their demands must remain for them.

The impact of removal of essential prey resource by fishing activity varies at different times of the year. For example, prey resource requirements are far greater during autumn and at the beginning of winter than at other times of the year, as enough resource needs to be present for all the birds to feed through the cold months, when energy requirements are higher. Over-wintering waders require to put on weight and get into best condition in the spring prior to migrations for the summer, or they will not survive long flight distances and suffer high mortalities. Equally the breeding eider population of Morecambe Bay needs to get into prime condition prior to mating in order to reproduce successfully. This applies to both sexes but in particular to females who once on the nest do not feed again until ducklings have fledged, a period of up to three weeks. There have been concerns raised over the Bay's eider population, its sex ratio skew (3:1 males to females) and the lack of success in breeding.

Oystercatchers mainly eat larger-sized cockles, which are the target of the cockle fisheries. Although the birds can eat alternative prey species such as earthworms when shellfish are scarce, these prey often do not enable birds to survive as well, and in such good body condition, as when shellfish are abundant (Atkinson et al 2003; Goss-Custard et al 2004).

Knot eat smaller bivalves, Poot et al. (2014) suggests a modal size class of 9mm for knot when targeting cockles with a range of 4-13 mm

Eiders generally feed on a mixed range of sizes of bivalves, although it is understood they will consume high quantities of small mussels when they are available.

ii) Removal of non-target species - for all shore feeding SPA features that feed on infaunal molluscs.

Infaunal molluscs form part of an important prey resource and form part of a wide variety of prey items for many of the designated species. The impact of removing an essential prey resource by fishing activity varies at different times of the year. For example, prey resource requirements are far greater during autumn and at the beginning of winter than at other times of the year, as enough resource needs to be present for all the birds to feed through the cold months when energy requirements are higher. Over-wintering waders require additional resources to put on weight and get into best condition in the spring prior to migrations for the summer, or they will not survive long flight distances and suffer high mortalities. Equally the breeding eider population of Morecambe Bay needs to get into prime condition prior to mating in order to reproduce successfully. This applies to both sexes but in particular to females who once on the nest do not feed again until ducklings have fledged, a period of up to three weeks.

iii) Visual disturbance - All SPA species within vicinity of fishery, on the saltmarsh around the access routes and over the sandbanks.

Visual disturbance could impact on condition of any of the listed bird species, by causing unnecessary energy expenditure if flushed and taking to flight. For birds feeding on the affected areas it could also reduce feeding times, and increase competition if birds are forced to concentrate into reduced feeding areas. By October, species such as Pink-footed goose will be roosting on the sands close to the salt marsh, and by mid-March Redshank, will be establishing breeding territories on the saltmarsh and actively displaying. Disturbance caused by access to the fishery across the saltmarsh may reduce breeding success of these nationally declining species.

During the 2024 fishery there were reports of disturbance to roosting pink-footed geese, resulting in additional conservation advice being provided by natural England to minimise disturbance from fishers accessing the beds, and for monitoring of disturbance to take place. This advice detailed specific mitigation with regards to pink-footed goose as follows:

'IFCO's to monitor disturbance to pink footed geese and delay access until the birds have naturally dispersed or direct access around the roosting birds where delayed access is not feasible.'

6.2.2 Exposure

i) Removal of target species (cockles) for all shore feeding SPA features that feed on infaunal molluscs.

A summary of the 2026 cockle stock assessment is provided in Section 4.5. Section 6.1(ii) provides further information on the biomass that will remain on closed cockle beds and the extent of cockle habitat expected to remain unfished and therefore undisturbed, including the stock available to contribute to bird food requirements.

There is currently no agreed site-specific minimum cockle biomass requirement for qualifying bird features within Morecambe Bay. A Bird Food Model is being developed by Dr Richard Stillman in conjunction with Natural England to improve understanding of these requirements. In the absence of an agreed site-specific value, NWIFCA currently uses thresholds set out in the agreed CFMP and based on previously established recommended biomass thresholds.

The 2026 stock assessment indicates that the total cockle biomass on Leven is comparable with that recorded in 2020, when a fishery was opened, while the total biomass on Newbiggin is comparable with that recorded in 2025, when the bed was last opened. These comparisons provide useful context but are not relied upon in isolation to determine whether the proposed 2026/27 fishery is appropriate.

Across Morecambe Bay, the biomass of size cockle remains comparatively low relative to some previous years, although the adjusted estimate of 5,907 tonnes exceeds the CFMP opening threshold of 4,440 tonnes. Total cockle biomass is estimated at 14,796 tonnes and therefore also exceeds the CFMP minimum total biomass threshold of 10,000 tonnes.

Given the comparatively low biomass of size cockle, controls on the quantity that may be removed are particularly important. The CFMP provides a framework for applying Total Allowable Catches (TACs) to manage removal from cockle fisheries. The maximum TAC that can be considered is

informed by the minimum residual biomass thresholds established within the CFMP, together with other relevant ecological and management considerations. A TAC may therefore be set below the theoretical maximum where additional conservation or management considerations require a more precautionary approach.

For the proposed Leven and Newbiggin fishery, a maximum TAC of 1,867 tonnes has been set. This is derived from the estimated Morecambe Bay size-cockle biomass of 5,907 tonnes, less the 4,040 tonnes of size cockle required to remain following exploitation under the CFMP (minimum 4000 tonnes + the 10% buffer of the minimum 400 tonne TAC):

5,907 tonnes − 4,040 tonnes = 1,867 tonnes TAC

Removal of the full TAC would therefore leave a minimum estimated 4,040 tonnes of size cockle across Morecambe Bay. In addition, total cockle biomass following removal of the full TAC would be approximately 12,929 tonnes (14,796 − 1,867 tonnes), which remains 2,929 tonnes above the CFMP minimum total biomass threshold of 10,000 tonnes.

The TAC represents a maximum permitted level of removal rather than an assumption that this quantity will necessarily be taken. In determining whether a TAC should be applied, and the appropriate level at which it should be set, NWIFCA considers:

1. the minimum total cockle biomass, comprising size and undersize cockle, required to remain across Morecambe Bay under the CFMP (Figure 6.2.1);
2. the total estimated biomass and size composition of cockle across Morecambe Bay;
3. the biomass and spatial distribution of cockle within the beds proposed for opening;
4. the quantity of cockle expected to be removed under comparable fishing conditions;
5. the biomass remaining on closed or unfished areas and therefore unavailable to the fishery; and
6. any additional ecological or conservation considerations relevant to the proposed fishery.

The application of the 1,867-tonne TAC therefore limits the maximum removal of size cockle while maintaining the residual size-cockle and total-biomass thresholds established through the CFMP. This control operates alongside the spatial and temporal restrictions described elsewhere in this assessment.

Threshold	Morecambe Bay	Leasowe	Ribble Estuary[6]	Solway Firth[7]
1. Minimum total biomass needed to be left on the site (t)	10,000	800	1,500	TBC
2. Minimum biomass of sized cockle to be left on the site (t)	4,000	800	900	TBC
3. Minimum TAC (t)	400	300	300	TBC
4. Minimum buffer (% of TAC)	10%	10%	10%	TBC
5. Minimum biomass of sized cockle required for a fishery to open (t)	4,440	1,130	1,230	TBC

Figure 6.2.1. Minimum biomass thresholds detailed in the NWIFCA CFMP

Under the worst-case scenario assessed, the full **1,867-tonne TAC** could be removed from Leven and Newbiggin combined. The TAC has been applied across the two open beds collectively rather than being allocated separately to each bed. The two areas form a largely continuous fishing area, and accurately attributing landings to individual beds would be difficult to verify through returns and enforcement activity. Managing the two beds under a combined TAC therefore provides a clearer and more practicable mechanism for monitoring total removals from the fishery.

For the purposes of this assessment, NWIFCA has assumed that the full 1,867-tonne TAC could be removed. This ensures that the assessment does not depend upon assumptions regarding fisher behaviour or the likelihood of the TAC being fully taken. In practice, however, actual removal may be lower. Cockle stock is distributed over a large area and is not present at commercially viable densities throughout the proposed open beds. Some areas are also unavailable to fishing because of shellfish classification restrictions. Consequently, fishing is expected to concentrate within areas supporting the greatest densities of size cockle rather than occurring uniformly across the full open area.

The number of active permit holders is also expected to vary over the duration of the fishery. Previous fishery data indicate that participation can initially be high, potentially exceeding 70 fishers, before declining as the season progresses, with approximately 30–40 fishers remaining active for the longer-term duration of the fishery. The 2025 fishery provides evidence of this pattern; however, these figures are considered indicative only and have not been relied upon when defining the maximum removal assessed within this HRA.

The proposed TAC is also consistent with the biomass-based management framework established through the CFMP. The maximum removal permitted does not exceed the quantity available above the minimum residual size-cockle biomass specified within the CFMP. As described above, removal of the full 1,867-tonne TAC from the estimated 5,907 tonnes of size cockle would leave 4,040 tonnes of size cockle across Morecambe Bay. Total cockle biomass would remain approximately 12,929 tonnes, above the CFMP minimum total biomass threshold of 10,000 tonnes.

The survey biomass estimates do not include cockle below 5 mm because estimates for this size class are subject to high variability in abundance and survival. Consequently, some additional cockle biomass will be present which is not represented within the stock assessment. A proportion of these smaller cockles may also fall within, or subsequently grow into, size classes suitable as prey for qualifying bird features, including knot. This unquantified stock has not been relied upon when calculating the TAC or residual biomass and therefore provides an additional potential food resource beyond that represented within the biomass calculations.

Undersize cockle recorded within the stock assessment will also remain largely unavailable for legal removal from the fishery because the minimum size requirements established under NWIFCA Byelaw 3 prohibit their retention. Some growth of undersize cockle during the fishing season can also be expected, with a proportion potentially recruiting into the size-cockle stock. However, this potential recruitment has not been relied upon when calculating the TAC.

In addition to the TAC, NWIFCA proposes to restrict fishing on Leven and Newbiggin to one tide per day, seven days per week. This limits fishing opportunity to seven tides per week compared with a potential 14 tides and therefore provides an additional control on fishing effort and the rate at which cockle can be removed.

Restricting fishing opportunity also provides greater opportunity for NWIFCA to monitor removals against the TAC and, where necessary, take management action before the TAC is exceeded. Catch returns will be monitored alongside available information on fishing activity and rates of removal to assess progress towards the TAC. The fishery can therefore be closed once the TAC is approached, preventing authorised removal beyond the agreed maximum.

Taken together, the TAC, minimum residual biomass requirements, spatial distribution of exploitable stock, minimum landing size, temporal restrictions on fishing activity and ongoing monitoring provide controls on both the quantity and rate of cockle removal from the site.

Alternative prey resources

Alternative prey resources: Abundant cockle stocks are often absent from the Bay suggesting if they are present bivalve eating birds will utilise them but do not necessarily rely on them. Mussel beds in the site are more consistent with the majority of them currently holding an abundant stock of mussel and are likely to play a more constant role when it comes to bird food requirement. Below is a summary of the current condition of the mussel beds in Morecambe Bay.

A summary of the surveys and inspections of mussel in Morecambe Bay from 2026 is provided in Table 6.2.1, showing the biomass (where calculated), coverage, density and size range of mussel.

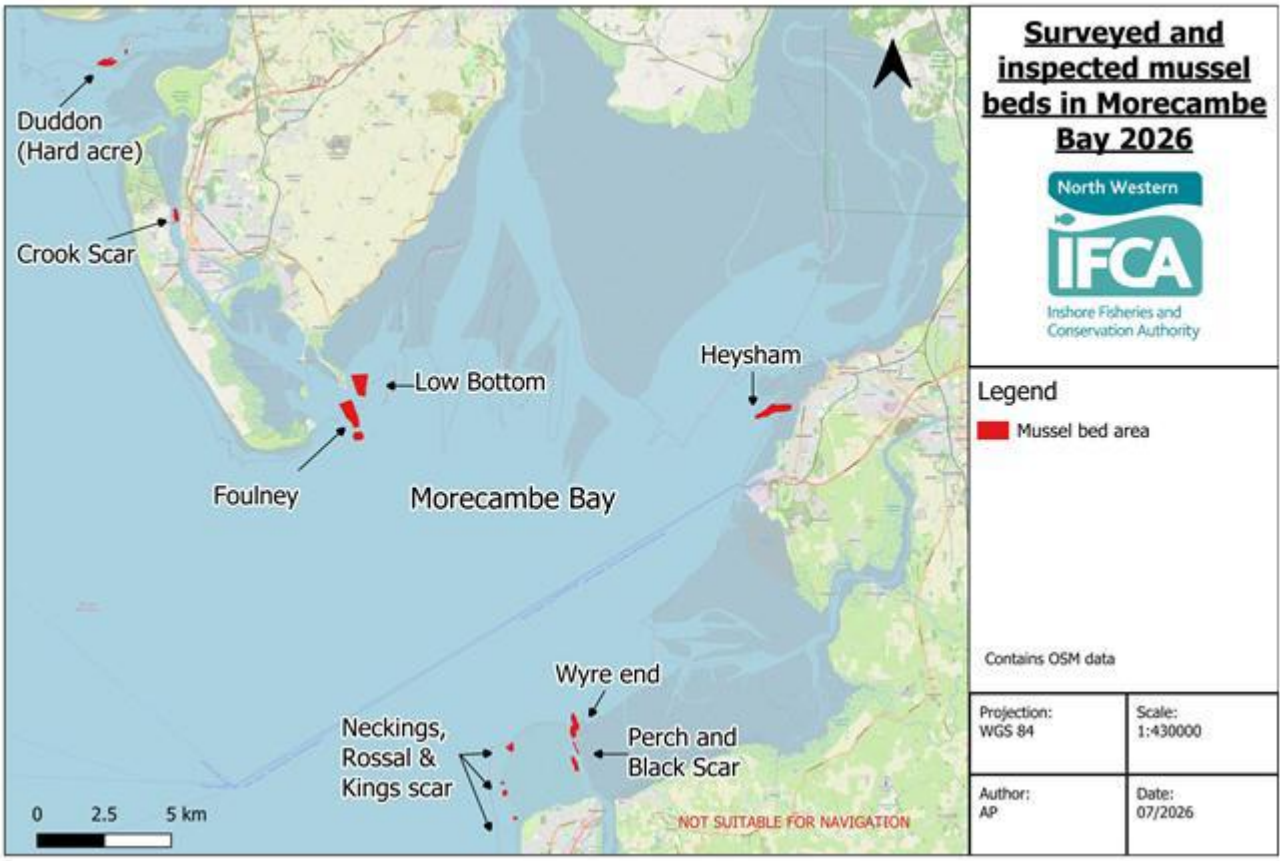


Figure 6.2.2. Location of the mussel beds in Morecambe Bay 2026

Table 6.2.1 – Summary of Dutch Wand surveys, and NWIFCA inspections in Morecambe Bay mussel beds 2026

Month	Name	Survey Method	Area (ha)	Description
Mar 26	Heysham	Inspection	n/a	Very little mussel has persisted from 2024 as is typically on Heysham, what mussel remained was patchy and between 20-45mm in length.
Mar 26	Duddon (Hard Acre)	Inspection	20	Uniform mussel 15-25mm in dense areas, evidence of scour.
Mar 26	South America	Inspection	n/a	No mussel present
Mar 26	Walney Channel	Inspection	n/a	Small strip of mussel along the East, mussel length 50-60mm.
Mar 26	Low Bottom	Dutch Wand	30.5	Undersize Mussel 107 tonnes Size Mussel 1500 tonnes

				Total **1607 tonnes**
Mar/Apr 26	Foulney Skear	Dutch Wand	43	Undersize Mussel 974 tonnes Size Mussel 1601 tonnes Total **2575 tonnes**
Apr 26	Heysham	Inspection	n/a	Mussel coverage was patchy. There were small areas of seed mussel and small areas of mussel between 25-35mm in length.
May 26	Duddon (Hard Acre)	Inspection	7	Uniform mussel 25-35mm in patches. Evidence of scour.
June 26	Heysham	Inspection	n/a	An area of dense 2026 seed mussel was present from conger rock to Dallam Dyke.
May/ June 26	Fleetwood (Rossal, Necking, Kings, Perch and Black Scar)	Inspection	7	Total area of seed on Rossal, Necking and Kingscar is 7 hectares. Perch and Black scar had no 2026 settlement.
Jun 26	Crook Scar	Inspection	>5	Dense coverage of size mussel
Jun 26	Wyre end	Inspection	17	Small patches of size mussel and seed mussel were present
Jun 26	Duddon (Hard Acre)	Inspection	11	Uniform mussel 30-35mm with some 25-40mm.
Jul 26	Duddon (Hard Acre)	Inspection	11	Mussel 20-45mm, majority 30-40mm. Evidence of scour.

The three main mussel skears in north Morecambe Bay (Foulney, Low Bottom and Walney Channel) have been consistently monitored for biomass since 2017. This year, Foulney and Walney Channel have reduced in total mussel biomass since last spring, although Low Bottom seems to have remained relatively stable. There appears to be a gradual decrease in total biomass over the past six years. Large areas of Foulney size mussel have been washed away since the previous survey, leaving bare cobble. Walney Channel has decreased below the threshold deemed accurate to survey. At the time of survey, there was little evidence of a new seed settlement. Officers note that this year, the southern parts of the Bay appear to have received seed settlements early on, which have not occurred in the north.

Table 6.2.2. Biomass (tonnes) of mussel on each mussel bed surveyed via Dutch Wand method from 2017-2026.

	Year									
Location	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Foulney	4611	na	4532	6771	8251	5256	6067	4196	2885	2575
Walney Channel	na	4822	4191	1623	3081	1139	648	725	447	na
Low bottom	na	na	5097	na	na	1903	2158	2458	2054	1607

The data is also shown in a bar graph to highlight the decrease in mussel biomass over the past 6 years.

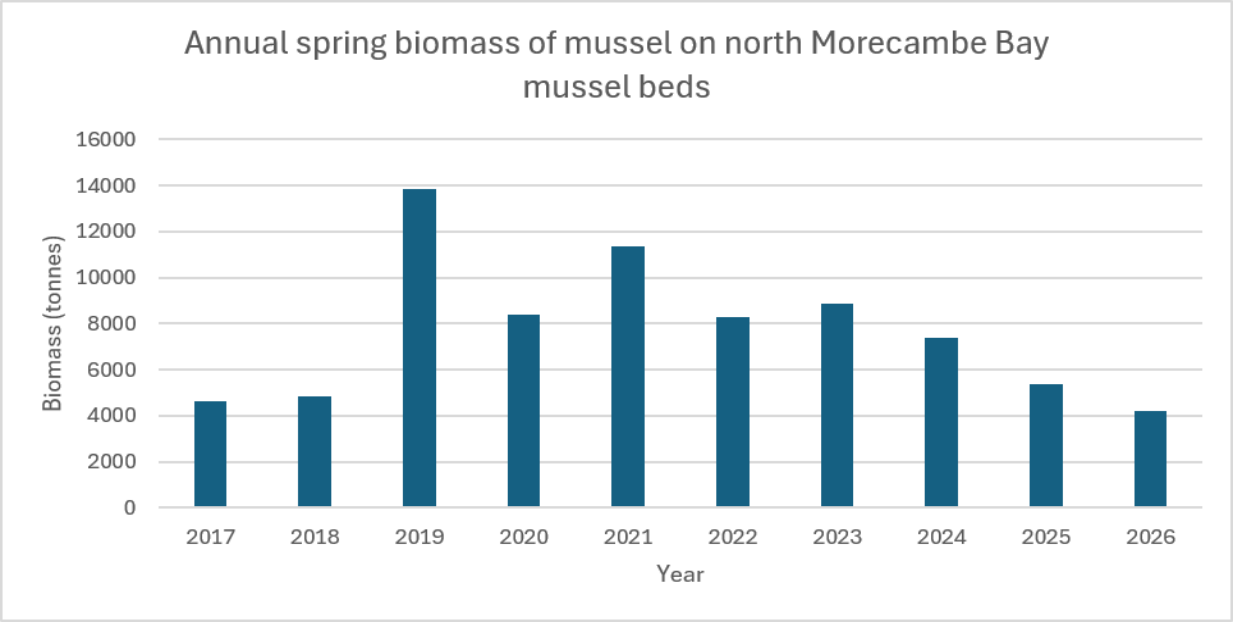


Figure 6.2.3. Annual spring biomass of mussel in tonnes on north Morecambe Bay mussel beds (inclusive of Foulney, Walney Channel, and Low Bottom).

Despite the lower biomass of size mussel surveyed in the north of the bay, wider areas have received seed settlements. The biomass of mussel in 2026, is comparable with that of 2017 and 2018 when cockle fisheries were opened on similar total cockle biomass figures.

A draft report has been produced looking at the bird food requirements from shellfish in Morecambe Bay, the report is still in draft form and has highlighted some data and knowledge gaps which need to be considered before any figure can be used. As such NWIFCA's current cockle and mussel stocks are within the parameters in which previous fisheries have been opened. Both the surveys and the assessment has been completed earlier in the year and therefore it is likely that the total biomass of shellfish will increase through the summer as it grows.

Although no specific figures have been given for the bird food requirements for bivalve eating birds from the summary of the cockle and mussel beds provided, NWIFCA is confident that the bird food requirements are met for the site by the current cockle and mussel stock across the Bay.

NWIFCA is confident that the removal of target species from the intertidal sand and muddy sand supporting habitat will have no risk of adverse effect on the SPA features, which utilise cockle as a prey source and therefore have no risk of adverse effect on integrity or conservation status of the site.

ii) Removal of non-target species - for all shore feeding SPA features that feed on infaunal molluscs

The impact of the removal of non-target species has been assessed above in section 6.1.2 (iii) with no further management required due to the minimum impact of fishing activity on undersize cockle and other infaunal molluscs, which will be available as a prey source. The areas of undersize cockle on Newbiggin and Leven cockle bed are predominantly separate from the main areas of size, meaning fishers will be unlikely to interact with them. Where stock is mixed on Leven, the size class differences mean it is easier for cockle to be riddled and returned during fishing practices. Enforcement of the minimum size of cockle within NWIFCA Byelaw 3 means undersize cockle should remain on the beds.

NWIFCA is confident that the removal of non-target species from the intertidal sand and muddy sand supporting habitats will be minimal (if any) and therefore will have no risk of adverse effect on the SPA features, which utilise cockle as a prey source. There is therefore no risk of adverse effect on integrity or conservation status of the site.

iii) Visual disturbance - All SPA species within vicinity of fishery, on the saltmarsh access route and over the sandbanks

The proposal is to authorise a hand-gathered cockle fishery on Leven and Newbiggin cockle bed from end of October until April 30th 2027. The fishery will be open seven days a week but restricted to one tide per day.

Morecambe Bay supports internationally important populations of overwintering waterbirds, including species such as oystercatcher and knot that feed on intertidal shellfish. Fishing activity, including the movement of gatherers, tractors and quad bikes to and from the beds, therefore has the potential to cause temporary visual disturbance and displacement of feeding birds.

The potential for disturbance to high-tide roosts is substantially reduced by the timing of fishing activity. Access to the beds will occur two hours after high water, with fishing concentrated around low water and fishers leaving the intertidal area before the subsequent high-water period. Fishing activity will therefore principally overlap with birds using exposed intertidal habitat for feeding rather than birds occupying high-tide roosts.

On Leven disturbance to birds utilising the top of the beach and surrounding saltmarshes will be limited by only having one access route on to the beds via West Plain. On Newbiggin, there is no saltmarsh habitat, however birds may still utilise the top of the beach. The access routes at both sites are habitually used by dog walkers, and other members of the public. Birds are therefore likely to be habituated to a certain level of disturbance. For Newbiggin, all access points are regularly used by fishers accessing the mussel beds at Foulney, and the Oyster frames on the lower portion of the bed, transit routes from the coast road onto the main areas of cockle are also short (approximately 1.5km).

Disturbance will be minimised by vehicles only travelling to and from the fishery once each way per tide and via the limited access points specified. The open tide will likely be the one with the most daylight as this is preferable to permit holders. As beds will be closed for at least one tide per day, this leaves 7 tides out of 14 not disturbed by cockle fishers. This will help reduce disturbance by:

1) Limiting disturbance to one tide

2) Limiting effort as fishers will target only one bed over the duration of a tidal cycle

The spatial extent of disturbance is also expected to be considerably smaller than the total extent of intertidal habitat available within Morecambe Bay. Cockle suitable for commercial harvesting is not distributed uniformly across Leven and Newbiggin, and fishing activity is expected to concentrate within areas supporting the greatest densities of size cockle. Large areas of surveyed cockle habitat will either remain closed to fishing, including Pilling, Flookburgh, Warton and Middleton, or are unlikely to be targeted because densities of size cockle are insufficient to support commercially viable gathering. These areas will remain available as alternative feeding habitat without direct disturbance from the proposed cockle fishery.

Previous NWIFCA observations of cockle fisheries indicate that disturbance of feeding birds by hand-gathering activity is generally localised and temporary, with displaced birds observed to resettle and resume feeding following disturbance. Previous fisheries have shown that birds follow the tide out and when ‘put up’ they typically settle again rapidly and continue to feed (pers. observation. Knott. M. NWIFCA during Leasowe cockle fishery. 2010). Birds that are less sensitive to disturbance, such as oystercatchers, that target the larger cockle have been seen to be feeding very close to handgatherers and may benefit from loose cockle on the sand after jumbo-ing (pers. comm. Knott M. 2018).

The number of permit holders attending the fishery is expected to vary throughout the season. Previous fisheries indicate that participation is generally greatest during the initial period of a fishery and subsequently declines in response to factors including stock accessibility, catch rates, market price and the availability of fisheries elsewhere. Recent fisheries have recorded initial participation of approximately 70 permit holders, declining to approximately 30 active fishers as the season progressed.

For the purposes of this assessment, NWIFCA has therefore considered the potential for high initial participation, including more than 70 permit holders as a worst case scenario. Activity is expected to be concentrated principally on Leven because this bed supports the greatest exploitable stock. Fishing activity at Newbiggin is expected to be lower given the comparatively smaller biomass and more restricted distribution of size cockle.

The duration of fishing activity is additionally limited by the 1,867-tonne TAC. If the TAC is approached, the fishery will be closed and fishing activity associated with the authorised cockle fishery will cease. Previous TAC-controlled fisheries demonstrate that the full available TAC is not necessarily removed; last year only 77 tonnes taken out of a possible 300 tonnes on Newbiggin, and 0.3 tonnes of a possible 800 tonnes on Flookburgh was taken.

Newbiggin cockle bed was opened for the first time in 5 years 2025, however, size stock is comparatively low in comparison to the other open beds. Given the greater stock available on Leven, it is very unlikely that activity levels will be more than 20 individuals on any one day. In addition, if the TAC is reached, the fishery will be closed and fishing will cease. Therefore limiting the overall time and disturbance fishers will place on the bed.

It is expected that the main activity and disturbance risk will occur prior to the increase in bird numbers for the over-wintering period, however, low level fishing will continue to take place over the winter months as the live markets become available to fishers and there is the potential for disturbance to overwintering birds.

Further information on the species highlighted within Natural England formal advice in 2021 and have been selected on the last 5 years WeBS by NWIFCA officers has been provided below. Information on bird roosting and feeding has been taken from Natural England conservation advice package for the site (Marine site detail (naturalengland.org.uk)).

Bar-tailed godwit: The Lune Estuary is known to be a key location for bar-tailed godwit on passage as well as the overwintering population with at times the majority of the individual present within Morecambe Bay being within the Lune estuary. Main locations for roosting are noted as Conder Estuary Marsh, Glasson Marsh and Middleton, other important locations include West Plain (access point onto Leven), Potts Corner, Ocean Edge, Plover Scar and locations on Walney Island (close to Newbiggin). Leven access route is through West Plain and therefore there is potential for disturbance. Although West Plain is an important roost site, the fishery will take place two hours either side of low water which will further reduce disturbance.

There is potential for the birds to be present on Newbiggin and Leven while feeding but there is no indication that the species would favour these beds over anywhere else in Morecambe. Bar-tailed godwit are known to feed on molluscs including Macoma tellina, cockle and Hydrobia spp. NWIFCA carry out a number of surveys on the cockle beds and the following observations are concluded: Hydrobia spp. are a common species on the shore line but are often found in the upper reaches of the intertidal area, generally in muddy areas, and therefore away from the majority of the fishing activity; other bivalve species can be mixed in with cockles, but do not favour the same sediment and can be found across the bed. The juvenile cockle can be present across the beds not just where the size cockle is present. Further to this the areas of highest density size cockles are only found in discrete locations and fishing will only occur in areas where the size cockle is at the greatest densities. Although there is size cockle on a large proportion of the beds much of the beds will remain unfished because the cockle density is not high enough to make it commercially viable to fish it. Disturbance will be reduced further from previous fisheries, due to the restriction on tides to one tide a day, seven days a week on all beds proposed open.

Little egret have the potential to be disturbed when feeding. Little egret prefer to feed in shallow water 10cm to 20cm in depth (Kushlan & handcock 2005). There is potential for the birds to be disturbed by hand-gathering when tractors and quad bikes are travelling to and from the fishing areas and fishing. Little egret commonly feeds in solitary or in loose flocks (del hoyo et al. 1992), and therefore any disturbance is likely to affect only a few individuals if near the access point. Any disturbance will be minimal and any displacement temporary and short lived, with the fishery only being opened seven days a week, for one tide per day. Permit holders will only travelling once to and from the fishery, and the activity being concentrated to a small fishing area.

Oystercatcher, ringed plover, sanderling and turnstone all feed on a variety of substrates in the intertidal area. Waders will move in and out with the tide feeding in and on the sediment, each wader will have a preferred prey source and size. Travel by hand-gatherers to and from the fishing area has the potential for disturbance.

Important roosting locations for oystercatcher include East Plain, Hest Bank, West Plain and South Walney. As the Leven access route passes through West Plain, there is potential for temporary disturbance of oystercatchers using this area. However, fishing activity will be concentrated around low water, reducing overlap with birds using high-tide roosts.

Oystercatchers may also occur on Leven and Newbiggin while feeding and are among the species most likely to utilise the shellfish resource within the proposed fishing areas. Temporary displacement of feeding birds may therefore occur.

Visual disturbance to Oystercatcher, ringed plover, grey plover, knot, sanderling and turnstone will be minimal and any displacement temporary and short lived, with the fishery only being opened seven days in any seven day period, for one tide per day. Substantial areas of cockle and mussel habitat elsewhere within Morecambe Bay will remain unfished and available for feeding. Permit holders will only travel once to and from the fishery, and the activity will be concentrated to a small fishing area.

Grey Plover: Main roost site include Walney (close to Newbiggin) and Middleton, Fluke Hall provides a refuge roost on high spring tides when other sites are inundated. Fluke Hall is close to the main access point to the Pilling fishery but this bed will remain closed and therefore disturbance to roosts from the fishery will be avoided. West Plain is not known to be a roost site for Grey Plover. There is potential for the birds to be present on Leven and Newbiggin while feeding but there is no indication that the species would favour these beds over anywhere else in Morecambe Bay. Similarly, much of the beds will remain unfished because the cockle density is not high enough to make it commercially viable to fish it. The area likely to be targeted by permit holders is 500 hectare on Newbiggin, and less than 1800 hectares on Leven. This leaves approximately leaves approximately 7,303 hectares unlikely to be fished (76%).

Disturbance will be reduced further due to the restriction on tides as mentioned above.

Golden plover are only likely to feed in the intertidal areas when weather conditions are harsh and the ground is hard from frost on their normal inland feeding areas. The main activity on the fishery will be in likely be in November, and post winter. In the event of severe weather, NWIFCA will follow the procedures set out in the NWIFCA Intertidal Fisheries Cold Weather Protocol (Annex 3) agreed with Natural England in April 2023 and will be reviewed upon requirement.

Dunlin, black tailed godwit, bar tailed godwits, curlew and redshank mainly target mudflats as their feeding grounds. Lapwing use a variety of habitats (marine and terrestrial), and when present on the intertidal they tend to target mudflats. The fishing activity does not occur on or near to mudflats.

Redshank are found on saltmarsh and are known to nest on saltmarsh and the access route at Leven is through the saltmarsh. However, the West Plain access route is an established access route with a high level of activity from recreational activities and therefore it is unlikely that redshank would choose to nest in this location rather than nearby undisturbed areas.

Shelduck, pintail and wigeon spend a proportion of their time feeding on intertidal mud. The fishing activity does not occur on or near to mudflats meaning disturbance is unlikely.

Red breasted merganser, cormorant and great crested grebe spend the majority of time on the water, so there will be minimal to no disturbance from an intertidal fishery accessed from the shore.

Whooper swans and pink footed geese numbers are greatest during the winter, and therefore overlap with the proposed fishery. The main concentration of pink-footed goose identified within the assessment occurs around the Wyre Estuary and Pilling, where birds may roost around the

fringes of the saltmarsh and upper shore. Pilling cockle bed will remain closed to fishing and the proposed fishery will therefore not introduce direct cockle-fishing disturbance within this area.

There remains potential for both species to occur elsewhere within the wider site. However, the proposed activity will be restricted to Leven and Newbiggin and to one low-water period per day. During periods of severe winter weather, the additional protections provided through the NWIFCA Intertidal Fisheries Cold Weather Protocol will apply.

Herring gull (Breeding): Herring gulls breed within Morecambe bay between May and July at colonies on Walney and Hodbarrow. The fishery is outwith of the breeding season and away for the breeding colonies.

Herring gull (as part of the waterbird assemblage): Herring gulls will be found within the site but there is no evidence they would favour any of the proposed beds, over any of the other cockle beds or intertidal sand flats. Herring gulls are more likely to favour mussel beds within the site.

Knot: The main roosting sites within Morecambe bay include Middleton, East Plain, and the Stone Jetty and Heysham heliport as well as other location in North Morecambe Bay. There are locally important sites including Lane Ends, South End on Walney, West Plain and Sunnyslopes Breakwater. Leven access route is through West Plain and therefore there is potential for disturbance, however, the fishery will take place three hours either side of low water which will make disturbance to roost site unlikely. Knot are known to feed on sand banks, mussel beds on salt marsh. There is potential for the birds to be present on Newbiggin and Leveb while feeding but there will be large areas of these beds, and other closed beds which could be undisturbed by the fishery. Knot are known to feed on molluscs including cockle and mussel as well as Hydrobia spp. Hydrobia spp. are a common species on the shore line but are often found in the upper reaches of the intertidal area, generally in muddy areas, and therefore away from the majority of the fishing activity. The juvenile cockle can be present across the beds not just where the size cockle is present. Further to this the areas of highest density size cockles are only found in discrete locations and fishing will only occur in areas where the size cockle is at the greatest densities. Although there is size cockle on a large proportion of the beds much of the beds will remain unfished because the cockle density is not high enough to make it commercially viable to fish it. Disturbance will be reduced further from previous fishery to, due to the restriction on tides. Looking at BTO WeBS count data for Knott in Morecambe Bay, numbers have increased from concerns since the significant decrease in 2019/20 and are now at similar numbers to 2018/19 count dat.

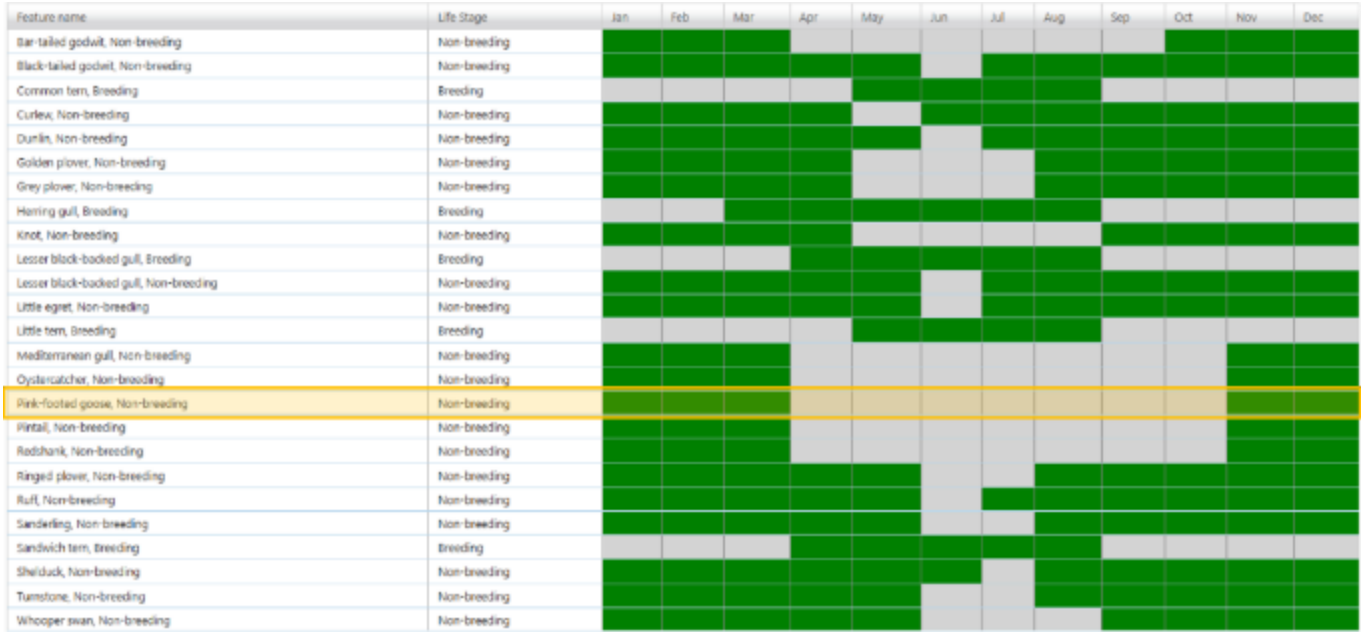


Figure 6.2.2.2: The seasonal presence of protected bird features in Morecambe Bay and Duddon Estuary SPA – Natural England designated sites.

Mediterranean gull and lesser black-backed gull, are present on both the intertidal and open water and therefore there is potential for visual disturbance from access to and from fishing at all open sites. Visual disturbance to gulls will be minimal and any displacement temporary and short lived, with the fishery only being opened for seven days a week, one tide per day, permit holders only travelling once to and from the fishery, and the activity being concentrated to a small fishing area.

Sandwich tern, common tern, and little tern rarely use the intertidal area at low water but will use the shallow areas covered by water. The tern species do nest in coastal areas but none of the known nest areas are access points for the fishery. The known nesting areas for terns in the European Site are Foulney and Hodbarrow which are closest to Newbiggin. However, there is minimal potential for fishing activity to disturb the terns while fishing in shallow water at low tide as terns have large foraging ranges and will not be displaced a large distance by the fishing activity.

Visual disturbance associated with the proposed fishery cannot be entirely excluded, and temporary displacement of individual birds from feeding areas or access routes may occur. However, the disturbance will be limited in duration, frequency and spatial extent.

Fishing will be restricted to one low-water period per day and to defined access routes, while fishing activity itself is expected to be concentrated within discrete areas supporting commercially viable densities of size cockle. Large areas of intertidal habitat and shellfish resource within Morecambe Bay will remain unaffected by direct fishing activity and available as alternative feeding habitat. The fishery will also be subject to a TAC, after which authorised fishing activity will cease.

There is therefore no reason to suggest that disturbance to birds would be damaging unless weather was exceptionally severe. In the event of severe weather, NWIFCA will follow the procedures set out in the NWIFCA Intertidal Fisheries Cold Weather Protocol (Annex 3) agreed with Natural England in April 2023 and will be reviewed upon requirement. Agreed weather

stations for taking measurements are detailed in the shared internal cold weather protocol and will be reviewed at the time of use.

Taking account of the timing, frequency, duration and spatial extent of the proposed activity, the availability of alternative feeding and roosting habitat, and the management measures described above, ***NWIFCA is confident that the risk of visual disturbance is low and that the fishery will have no risk of adverse effect on the SPA features, which utilise cockle as a prey source and therefore have no risk of adverse effect on integrity or conservation status of the site.***

7. Summary of Enforcement and Monitoring of the Cockle Fisheries to ensure No Adverse Effect on the Integrity of the European Site:

a) Rigorous enforcement of the conditions set out in the permit conditions;

b) Monitored landings through:

   i. Regular IFCO reporting of numbers fishing and estimates of quantities removed;

   ii. Landings returns from Byelaw 3 permit holders (required under the byelaws);

c) Monitoring and inspection to inspect catch and ensure that there are no litter issues;
d) The prescribed the access route is used to prevent any encroachment on the saltmarsh
e) The fishery will be opened for only one tide a day, for seven days.
f) NWIFCA enforcement officers will use intelligence and contacts with fellow enforcement agencies to pursue any suspicions of non-permitted or illegal gathering activity;
g) A NWIFCA officer will be present on the beds and at the check point and can enforce a closure at any point.

NWIFCA in 2018 made the decision to close the Morecambe Bay fishery due to non-compliance with management, and in 2024 to close Pilling due to too much undersize being in the catch. Indications are that industry are now much more aware of the firm stance of the Authority to any activity that could pose a risk of non-compliance with the HRA, and that they will act to do the same again should further risk be detected. The level of NWIFCA Enforcement devoted to these fisheries means non-compliance would be detected swiftly and reported back to the Authority immediately. This will deter non-compliance in the future.

Table 2: Summary of Impacts

Feature/Sub feature(s)	Conservation Objective	Potential pressure (such as abrasion, disturbance) exerted by gear type(s)	Potential ecological impacts of pressure exerted by the activity/activities on the feature *(reference to conservation objectives)*	Level of exposure of feature to pressure	Mitigation measures
Intertidal sand and muddy sand (Estuaries, Mudflats and sandflats not covered by seawater at low tide, Large shallow inlets and bays, SPA supporting habitats)	Maintain or restore the extent, distribution structure or function of the feature.	Litter	Littering impacts could include entanglement of fish and birds in the bags and sacks, and swallowing / entanglement of birds and mammals (both marine and terrestrial) of other litter.	Littering levels will be monitored, and fishers encouraged to act responsibly through Code Of Conduct for Intertidal Shellfisheries. NWIFCA will liaise closely with local authority and NE, for early detection of any problems.	None - current management measures sufficient with monitoring of the fishery
		Removal of target species	Removal of target species could change the invertebrate community composition of the sandbanks.	A number of beds remain closed which have significant cockle stock on them. All the beds have undersize cockle which will remain on the bed. Cockle fishers will be spread across a number of beds and only in discrete small areas on the beds where significant size cockle is present.	None - current management measures sufficient with monitoring of the fishery
		Removal of non-target species	Removal of target species could change the invertebrate community composition of the sandbanks.	Observation from NWIFCA study on breakage rates, only a small area that is likely to be fished, size cockle areas being geographically different from the area of the highest density of undersize cockle and other common species in different areas to cockle or morphologically similar to undersize cockle.	None - current management measures sufficient with monitoring of the fishery **With current management and monitoring, littering and removal of target species is unlikely to have an adverse effect on the integrity of the European Site.**
Saltmarsh	Maintain or restore the extent, distribution structure or function of the feature.	Litter	Littering impacts could include entanglement of fish and birds in the bags and sacks, and swallowing / entanglement of birds and mammals (both marine and terrestrial) of other litter.	Littering levels will be monitored, and fishers encouraged to act responsibly through Code Of Conduct for Intertidal Shellfisheries. NWIFCA will liaise closely with local authority and NE, for early detection of any problems. The	None - current management measures sufficient with monitoring of the fishery

				fishery will be closed if littering is a problem.	
		Abrasion/disturbance of the substrate on the surface of the seabed Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	Potential to effect the:- - Extent and distribution - Presence and spatial distribution of saltmarsh communities - Presence and abundance of typical species - Species composition of component communities - Sediment composition and distribution	Prescribed access route through the flexible permitting conditions. Access and saltmarsh will be monitored and fishers encouraged to act responsibly through Code Of Conduct for Intertidal Shellfisheries. NWIFCA will liaise closely with local authority and NE, for early detection of any problems.	Prescribed access route through the flexible permitting conditions. **With current management and monitoring, littering and removal of target species is unlikely to have an adverse effect on the integrity of the European Site.**
- *Somateria mollissima*; Common eider - *Haematopus ostralegus*: Eurasian oystercatcher - *Calidris canutus*; Red knot - shore feeding SPA features that feed on infaunal molluscs	Maintain or restore the population of each of the qualifying features, and, the distribution of the qualifying features within the site	Removal of target species (cockles)	Potential to effect the:- - Food availability - Condition and survival of SPA species Abundance of SPA species	A number of beds remain closed which have significant cockle stock on them. All the beds have undersize cockle which will remain on the bed. Cockle fishers will be spread across a number of beds and only in discrete small areas on the beds where significant size cockle is present.	None - current management measures sufficient with monitoring of the fishery
		Removal of non-target species	Potential to effect the:- - Food availability - Condition and survival of SPA species Abundance of SPA species	Observation from NWIFCA study on breakage rates, only a small area that is likely to be fished, size cockle areas being geographically different from the area of the highest density of undersize cockle and other common species in different areas to cockle or morphologically similar to undersize cockle.	None - current management measures sufficient with monitoring of the fishery **With additional management as described as well as current management, removal of target species is unlikely to have an adverse effect on the integrity of the European Site.**
- *Egretta garzetta;* Little egret - *Cygnus Cygnus*; Whooper swan	Maintain or restore the population of each of the qualifying features, and, the distribution of the qualifying features within the site	Visual disturbance	Potential to effect the:- - Condition and survival of SPA species - Abundance of SPA species - Extent and distribution of supporting habitat available whilst a fishing activity is occurring	Disturbance to high tide roosting birds is very unlikely due to the timing of the fishery.	None - current management measures sufficient with monitoring of the fishery

• *Anser brachyrhynchus*; Pink-footed goose • *Tadorna tadorna*; Common shelduck • Anas Penelope; Wigeon • *Anas acuta*; Northern pintail • *Somateria mollissima*; Common eider • Bucephala clangula; Goldeneye • Mergus serrator; Red-breasted Merganser • *Haematopus ostralegus*; Eurasian oystercatcher • *Charadrius hiaticula*; Ringed plover • *Pluvialis apricaria*; European golden plover • *Pluvialis squatarola*; Grey plover • *Vanellus vanellus;* Lapwing • *Calidris canutus*; Red knot • *Calidris alba*; Sanderling • *Calidris alpina alpina*; Dunlin • *Calidris pugnax;* Ruff • *Limosa limosa;* Black-tailed godwit • L*imosa lapponica*; Bar-tailed godwit • *Numenius arquata*; Eurasian curlew • *Tringa totanus*; Common redshank • *Arenaria interpres*; Ruddy turnstone • L*arus melancephalus;* Mediterranean gull • *Phalacrocorax carbo;* Cormorant • *Podiceps cristatus;* Great crested grebe				Disturbance will be minimised by vehicles only travelling to and from the fishery once each way per tide and via a prescribed access point (West Plain at Flookburgh, and established access points at Newbiggin). Minimal interaction between permit holders and pink-footed geese as Pilling cockle bed will be closed. Birds may benefit from loose cockle on the sand after jumbo-ing. Cold weather closure in place	**With current management as described, visual disturbance is unlikely to have an adverse effect on the integrity of the European Site.**

• Seabird assemblage • Waterbird assemblage • *Larus fuscus*; Lesser black-backed gull • *Larus argentatus*; Herring gull • *Sterna sandvicensis*; Sandwich tern • *Sterna hirundo*; Common tern • *Sterna albifrons*; Little tern					

7. Conclusion

The authorisation, management and mitigation measures applied to this fishery, and the use of an effective enforcement team of NWIFCA Officers with multi-agency support, allows the NWIFCA to conclude that the cockle hand-gathered fishery on the Pilling, cockle bed in the Morecambe Bay will not have an adverse effect on the integrity of the European Site.

8. In-combination assessment

8.1 Other ongoing and Authorised Fisheries to be Included in the In-combination assessment:

Key information for the in-combination assessment has been collated below for the assessment; a full copy of the HRAs reference below can be located on NWIFCA website, link below.
https://www.nw-ifca.gov.uk/marine-protected-areas/hra/

NWIFCA-MB-EMS-002 – Otter Trawling

- The is no indication that this activity still occurs within the site.

NWIFCA-MB-EMS-003 – Shrimp Trawling

- Size vessels and nine intertidal tractor shrimpers. This number has decreased since the HRA was completed.

NWIFCA-MB-EMS-009 - Fishing with pots and creels

- Minimal activity within the site, HRA did not proceed past Test of Likely Significant Effect.

NWIFCA-MB-EMS-010 – Static and Drift Nets

- 30 vessels which mainly drift netted, 13 shore netter. Since the completion of the HRA, very little drift netting and there has been a significant reduction in the number of vessels, partly due to a reduction of vessel and the change in national bass regulations.

NWIFCA-MB-EMS-011 – Longlines

- Since completion of HRA there are a minimal number of set lines used and are all considered to be recreational.

NWIFCA-MB-EMS-013 – Shrimp Push Netting

- Minimal activity within the site, HRA did not proceed past Test of Likely Significant Effect. Nearly all activity likely to be recreational.

Size mussel fishery at Foulney

- Although there can be an increased activity when there are larger orders, fishery is typically prosecuted by 5-15 permit holders on larger spring tides.

8.1.2 Other ongoing or proposed plans and projects to be included in the in-combination assessment

There are currently no ongoing or proposed plans or projects within or in the vicinity of the proposed trial and designated sites, therefore, an in-combination risk assessment does not need to take place at this time for other plans and projects. Current and completed marine applications in England can be found here (Explore marine plans).

8.1.3 In-Combination Assessment

It is unlikely there will be any in-combination effect with boat based fisheries, due to the scale of the fishery, target species and seasonality.

Pressures and features assessed within the in combination assessment:

Size mussel fishery – removal of target species (cockle) for all shore feeding SPA features that feed on infaunal molluscs

The size mussel fishery is open throughout the District all year round for Byelaw 3 permit holders. Each fishery is rigorously monitored and enforced by warranted IFCOs. In reality each fishery is only prosecuted by low numbers and modest amounts of mussel removed. For example in the months of January 1st to May 15th 2023 landings reports for the north Morecambe Bay mussel beds, which include Low Bottom, Foulney Ditch, Walney Channel, Foulney and Foulney Island, came to 224 tonnes. Biomass estimates have been provided in 6.2.2.1. The amount of stock which is removed is relatively small compared to the total biomass of the bed. As it is the same permit holders, mussel is likely to reduce due to cockle beds open, and if mussel does take place it is likely to reduce the effort on the cockle beds.

Intertidal fisheries:

Intertidal netting occurs year-round and therefore has the potential to cross over with the cockle fishery. There is potential for in-combination effects with the intertidal shrimping using a tractor. Due to the following reasons the NWIFCA considers the in-combination effects of visual disturbance will have no risk of adverse effect on the integrity or conservation status of the site.

- Some of those who prosecute the shrimp and net fishery will be Byelaw 3 permit holders and therefore if fishing cockle will reduce the activity in the other fisheries.
- The fishery only being open one tide a day, for seven a week. The intertidal netting and shrimp fishing will not occur on all days and all tides whilst the cockle fishery is open.
- The majority of fishing will occur in daylight with the majority of the shrimp fishing occurring in the daylight.
- All fishing will only occur for three hours either side of low water.
- Access to and from the cockle and shrimp fishery will only be once per tide.

9. Summary of consultation with Natural England

Natural England were involved in decision process around the proposed early opening of the fishery when discussed at TSB.

10. Integrity test

The NWIFCA concludes no adverse effect on the integrity of the European Site providing the management and mitigation measures provided in table 6 are implemented and upheld.

Annex 1 – Survey Report for Morecambe Bay 2026

Aldingham and Newbiggin Cockle Survey 29-06-2026

Officers present: AP, LL, ID, MT
Tides: 29-06-2026 LW 18:14 2.4m (Liverpool Tides)

Survey method - Jumbo and 0.5m^2 quadrat

53 stations were sampled from a 500m grid. In the July 2025 surveys the survey grid was changed to include additional points closest to the shore at Aldingham and to remove some points to the east of the Aldingham bed that are no longer accessible due to the position of the river channel. Additional sample stations were also added to the west of the bed to ensure the full extent of the cockle bed was captured.

There was a wide range of cockle sizes across the bed from <5mm to >35mm. The density of size cockle is relatively low across the bed. There is evidence of a 2026 settlement with spat seen in some areas across the bed.

Means

Means were calculated from all stations with zero counts removed. Less than 5mm cockle was not used in the undersize figures due to the high variable survivability of cockle at this small size but has been included as a separate figure.

Mean number of size cockle	12 per m^2	(min 0, max 152)
Mean number of undersize cockle	32 per m^2	(min 0, max 162)
Mean number of 0-5mm cockle	0 per m^2	(min 0, max 0)
Mean weight of size cockle kg/m^2	0.113 kg/m^2	(min 0, max 1.773)
Mean weight of undersize cockle kg/m^2	0.084 kg/m^2	(min 0, max 0.361)

Maps

Maps were created showing the overall survey area, density of size cockle, density of undersize cockle (excluding cockles in the 0-5mm size range), the frequency of size classes (size of pie chart indicating the total density of cockles present), and the weight of undersize and size cockle.

Biomass

	Area of cockle present (ha)	Size Cockle (tonnes)[1]	Undersize Cockle (tonnes)[2]
Aldingham and Newbiggin	**1050**	**1189**	**883**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
27	**339**	**497**	**1122**	**87**

[1]In regards to biomass size cockle defined as cockle which will not pass through a square gauge 20 x 20mm in size

[2]The biomass of undersize cockle does not include any estimates of cockle less than 5mm due to the high variability of survival of this size class.

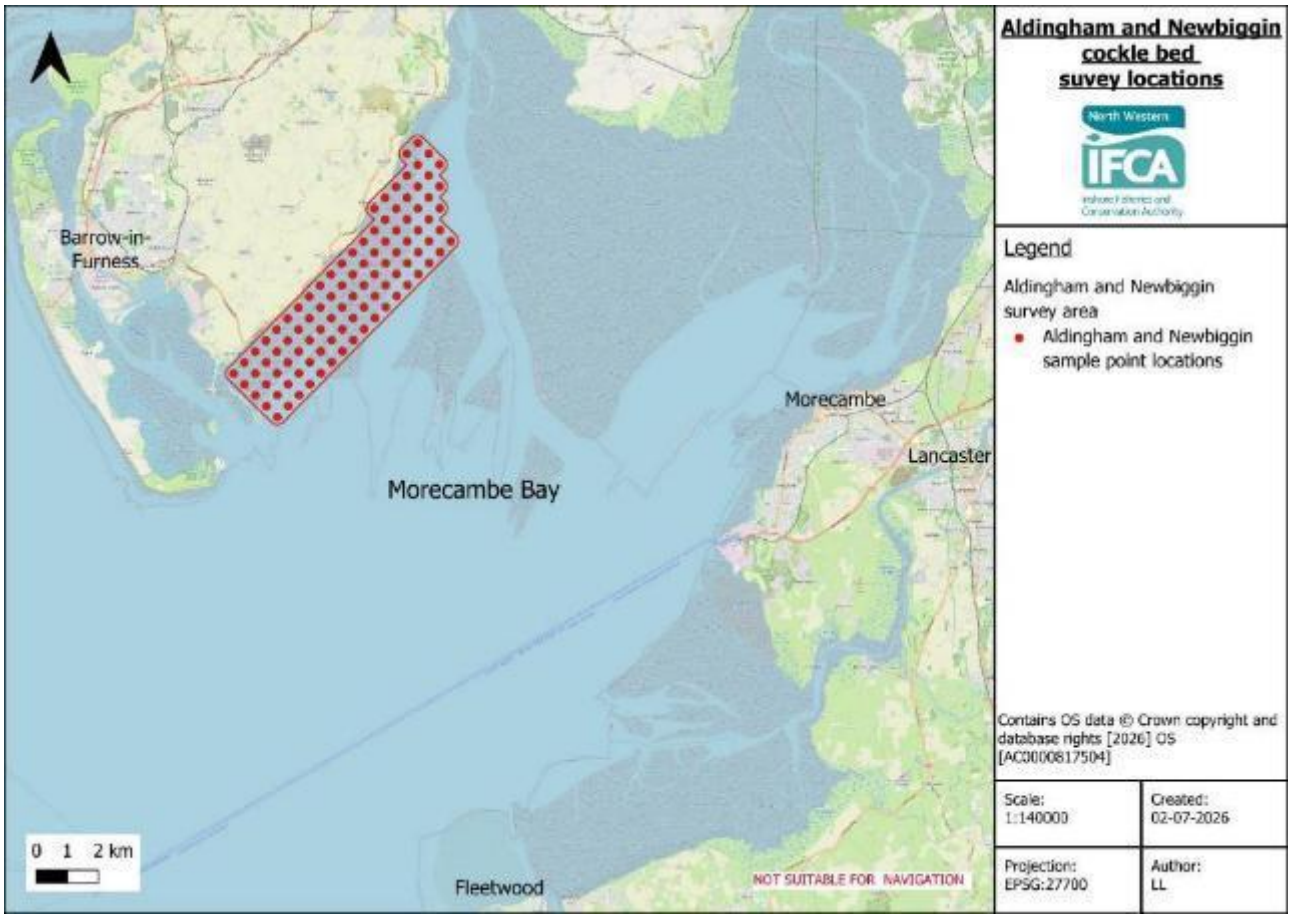


Figure 1. Illustration of position of Aldingham and Newbiggin survey area.

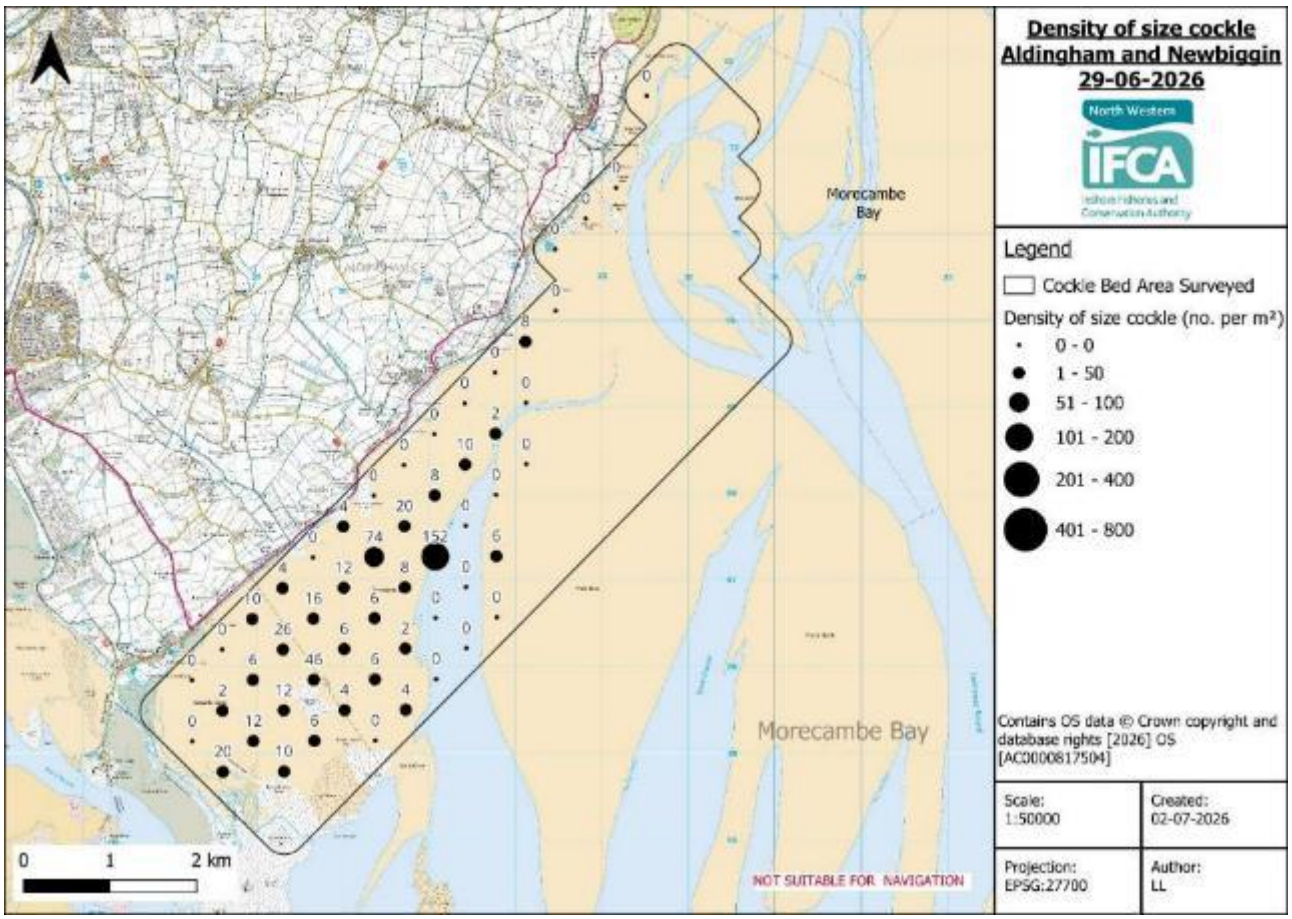


Figure 2. Density of size cockle per m² at Aldingham and Newbiggin June 2026.

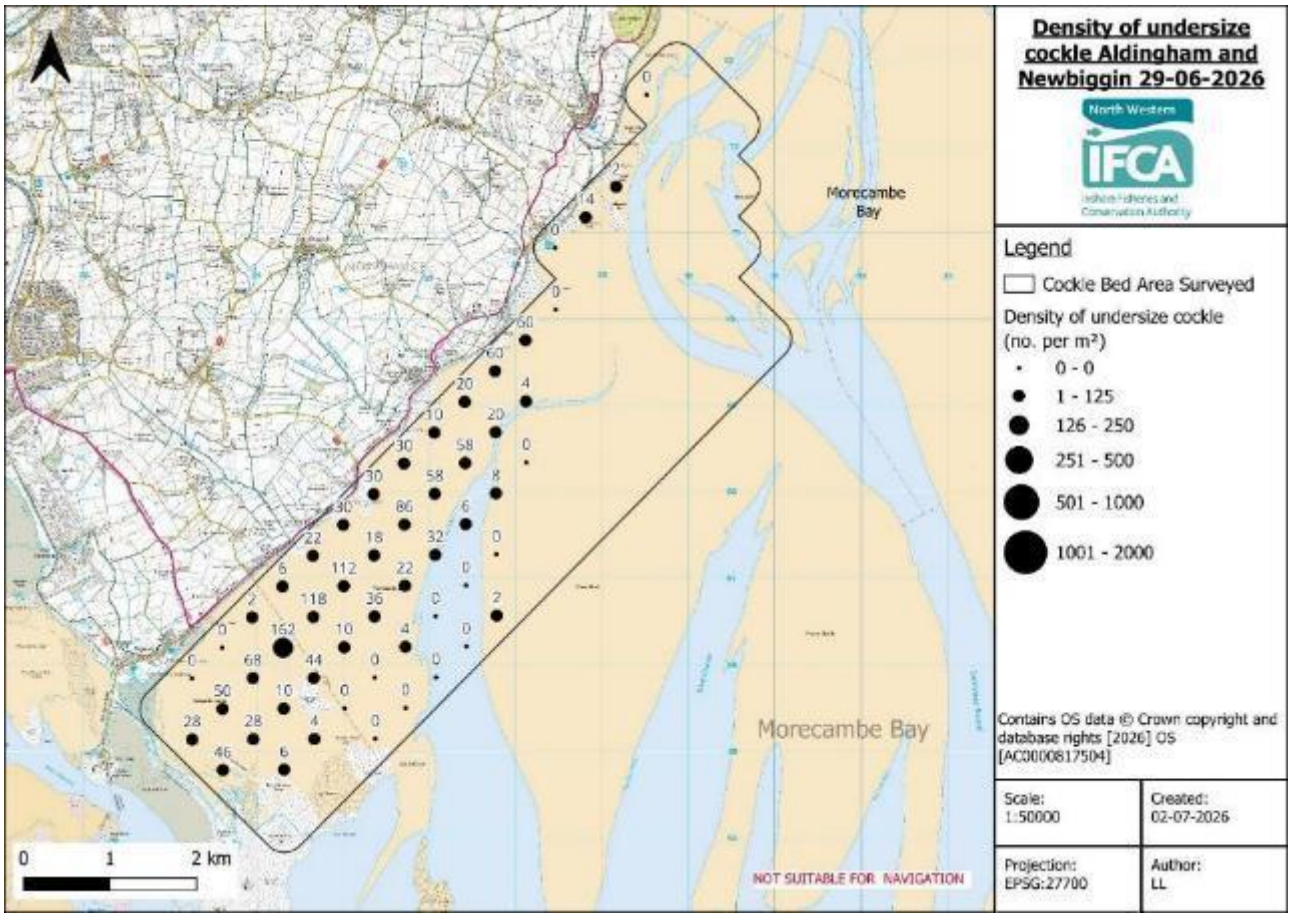


Figure 3. Density of undersize cockle per m² at Aldingham and Newbiggin June 2026

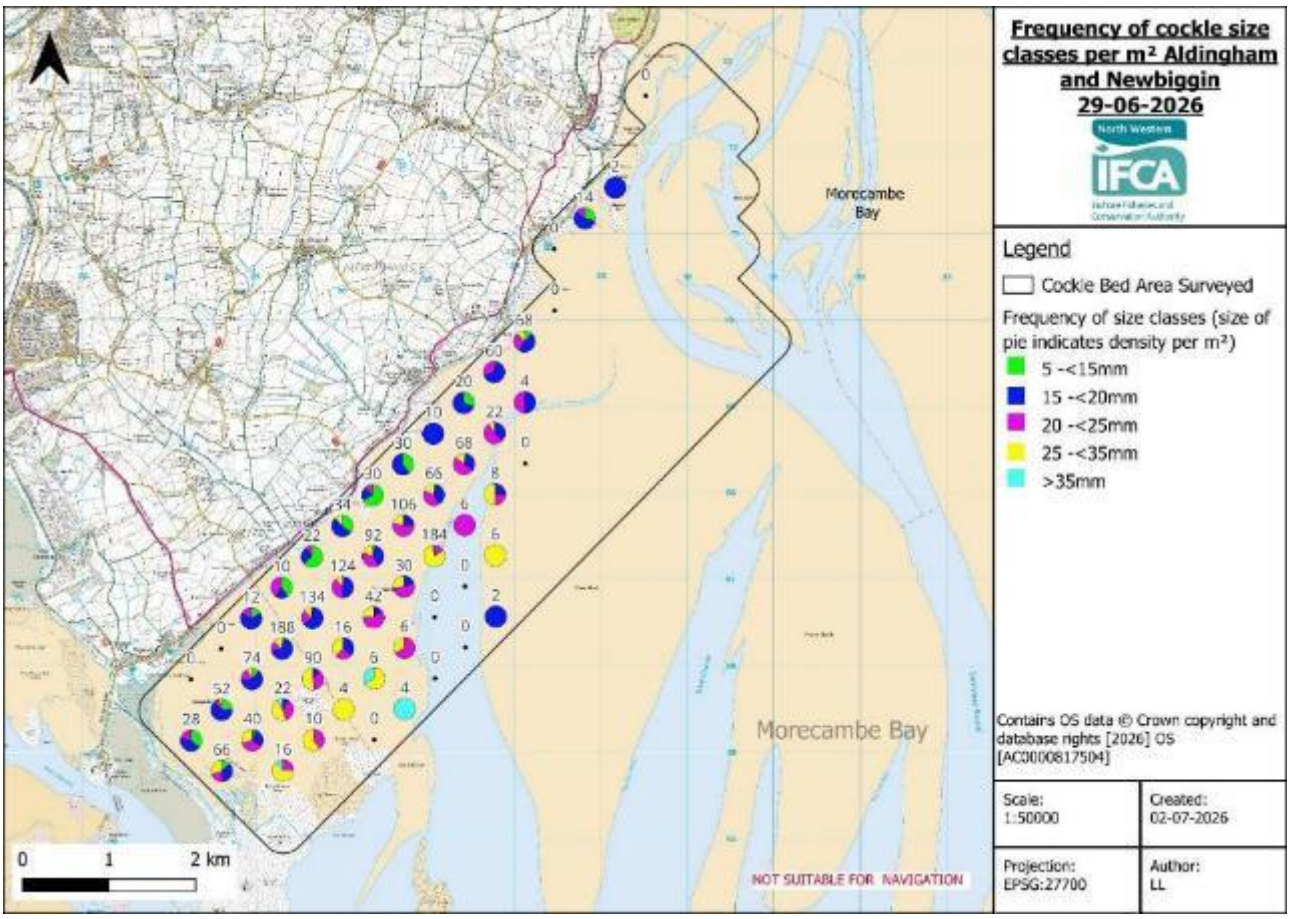


Figure 4. Frequency of size classes of cockle per m² at Aldingham and Newbiggin June 2026.

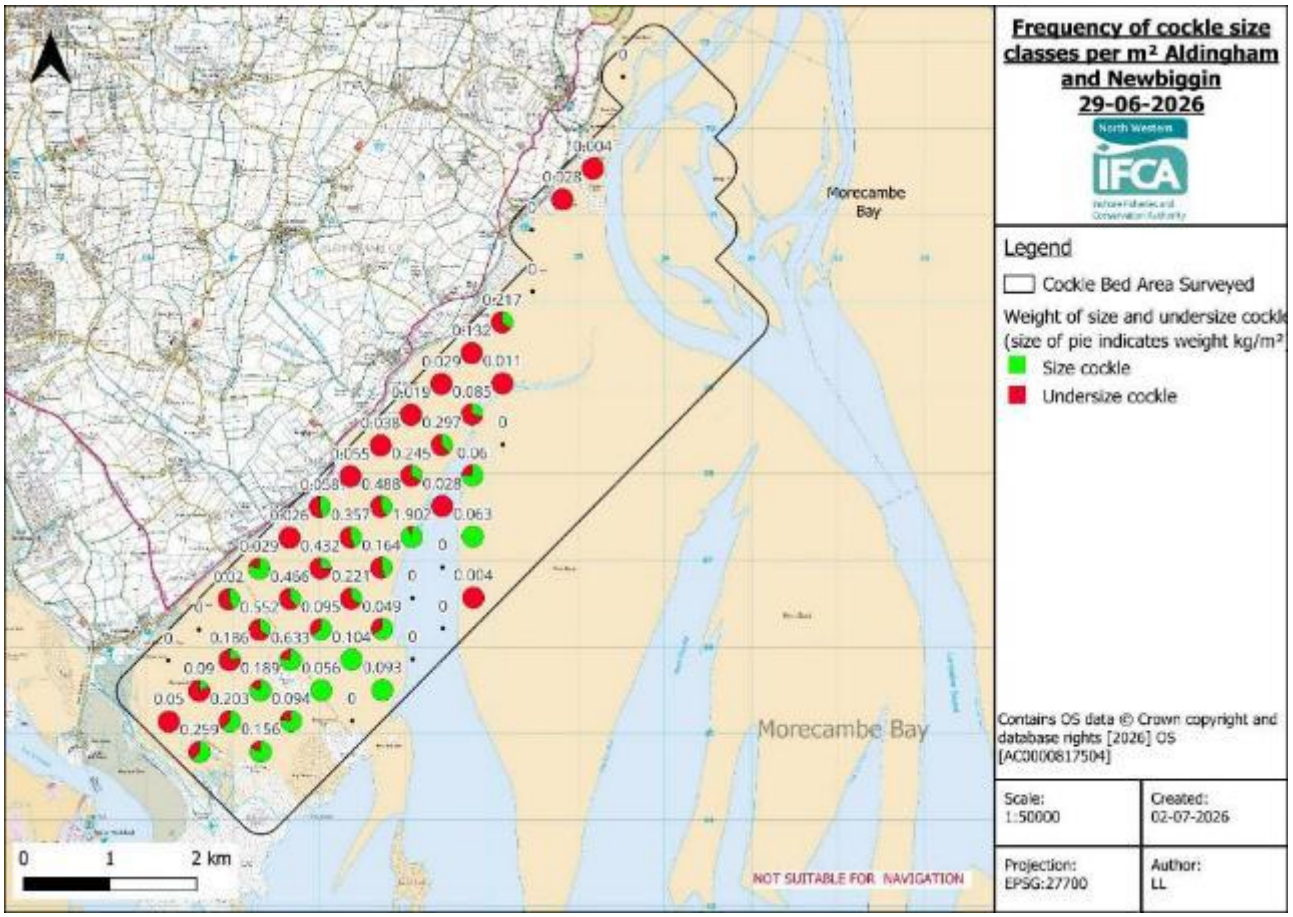


Figure 5. Weight of size and undersize cockle kg/m² at Aldingham and Newbiggin June 2026.

Leven Cockle Survey 09-07-26

Officers present: ID, CT, LL, JH

Tides: LW 12:58 2.6m (Liverpool Tides)

Survey method - Jumbo and 0.5m^2 quadrat

58 stations were sampled from a 500m grid. There was an area to the Southwest of the survey grid that could not be surveyed due to a deep channel. There was a range of cockle sizes across the bed from < 5mm to 25 - 35mm. Size cockle is relatively low in density across the bed. There is an increase in the 20-25mm and 25-35mm size classes of cockle. There is also an increase in the biomass of undersize cockle. There was a low number of spat found at 4 survey locations.

Means

Means were calculated from all stations with zero counts removed. Less than 5mm cockle was not used in the undersize figures due to the high variable survivability of cockle at this small size.

Mean number of size cockle	5 per m²	(min 0, max 24)
Mean number of undersize cockle	21 per m²	(min 0, max 112)
Mean number of 0-5mm cockle	5 per m²	(min 0, max 100)
Mean weight of size cockle kg/m²	0.048 kg/m²	(min 0, max 0.254)
Mean weight of undersize cockle kg/m²	0.069 kg/m²	(min 0, max 0.477)

Maps

Maps were created showing the overall survey area, density of size cockle, density of undersize cockle (excluding cockles in the 0-5mm size range), the frequency of size classes, the size of the pie chart indicates the total density of cockles present, and the weight of undersize and size cockle.

Biomass

	Area of cockle present (ha)	Size Cockle (tonnes)[1]	Undersize Cockle (tonnes)[2]
Leven	**1000**	**482**	**692**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
14	**103**	**466**	**533**	**59**

[1]In regards to biomass size cockle defined as cockle which will not pass through a square gauge 20 x 20mm in size.

[2]The biomass of undersize cockle does not include any estimates of cockle less than 5mm due to the high variability of survival of this size class.

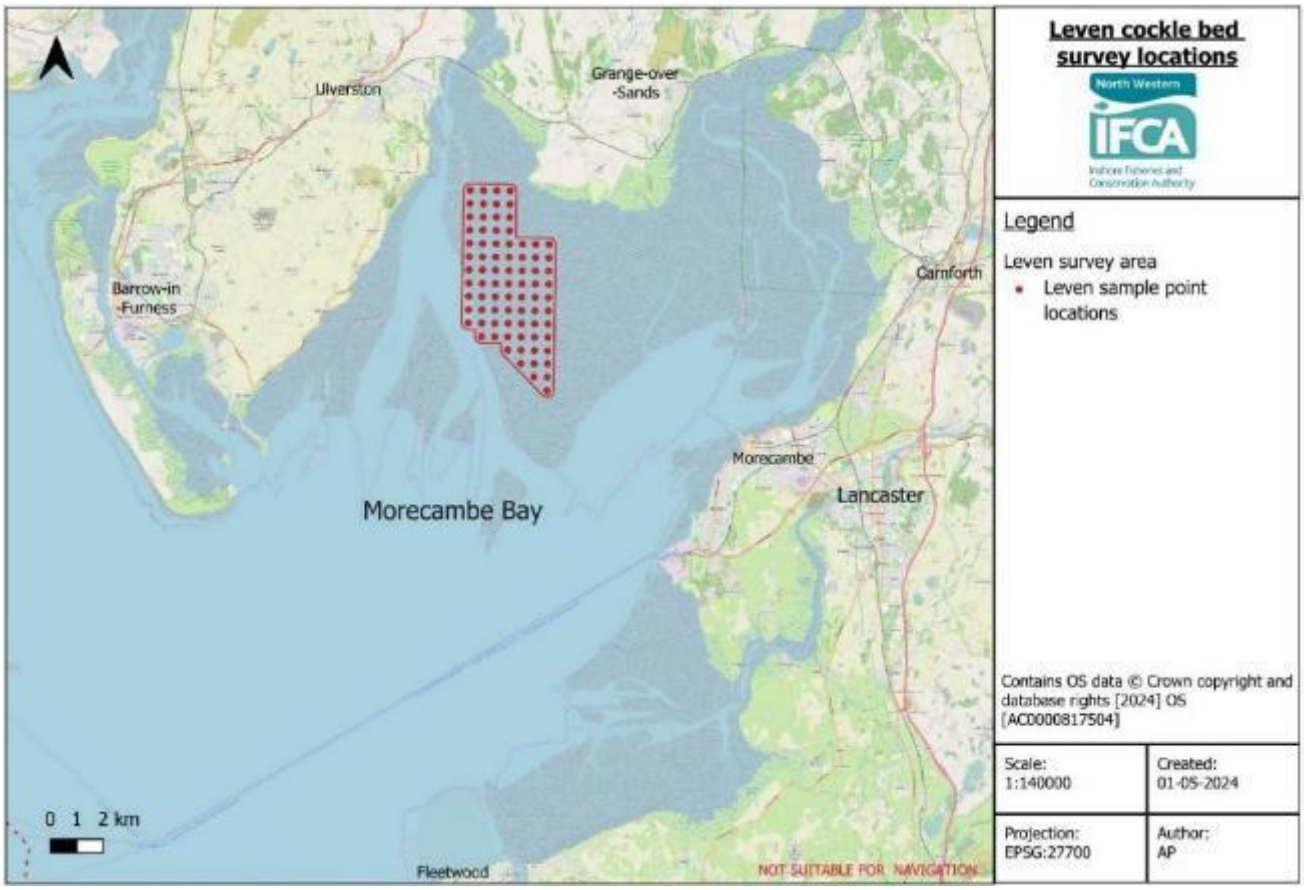


Figure 1. Illustration of position of Leven Survey Area

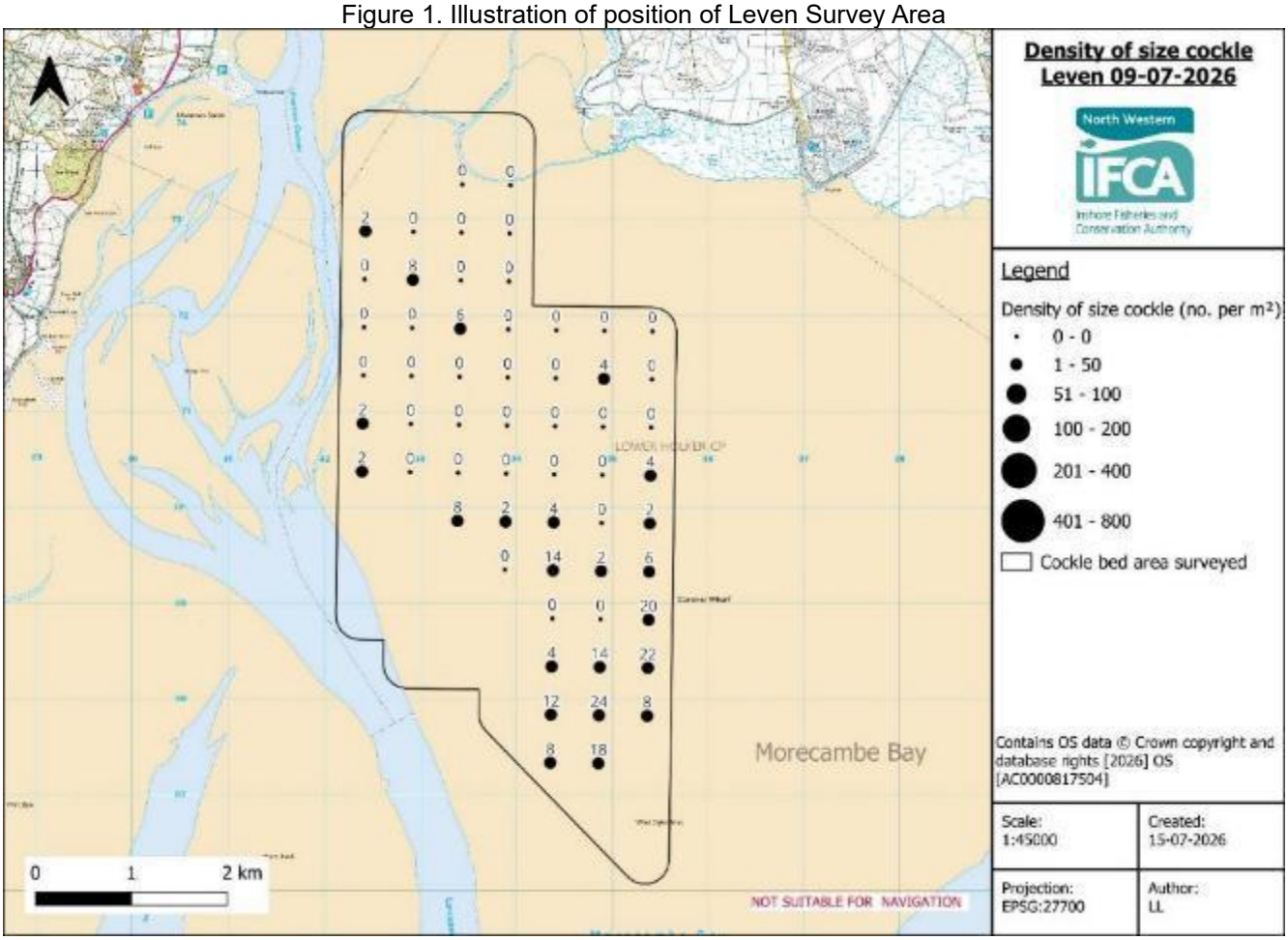


Figure 2. Density of size cockle per m² Leven July 2026

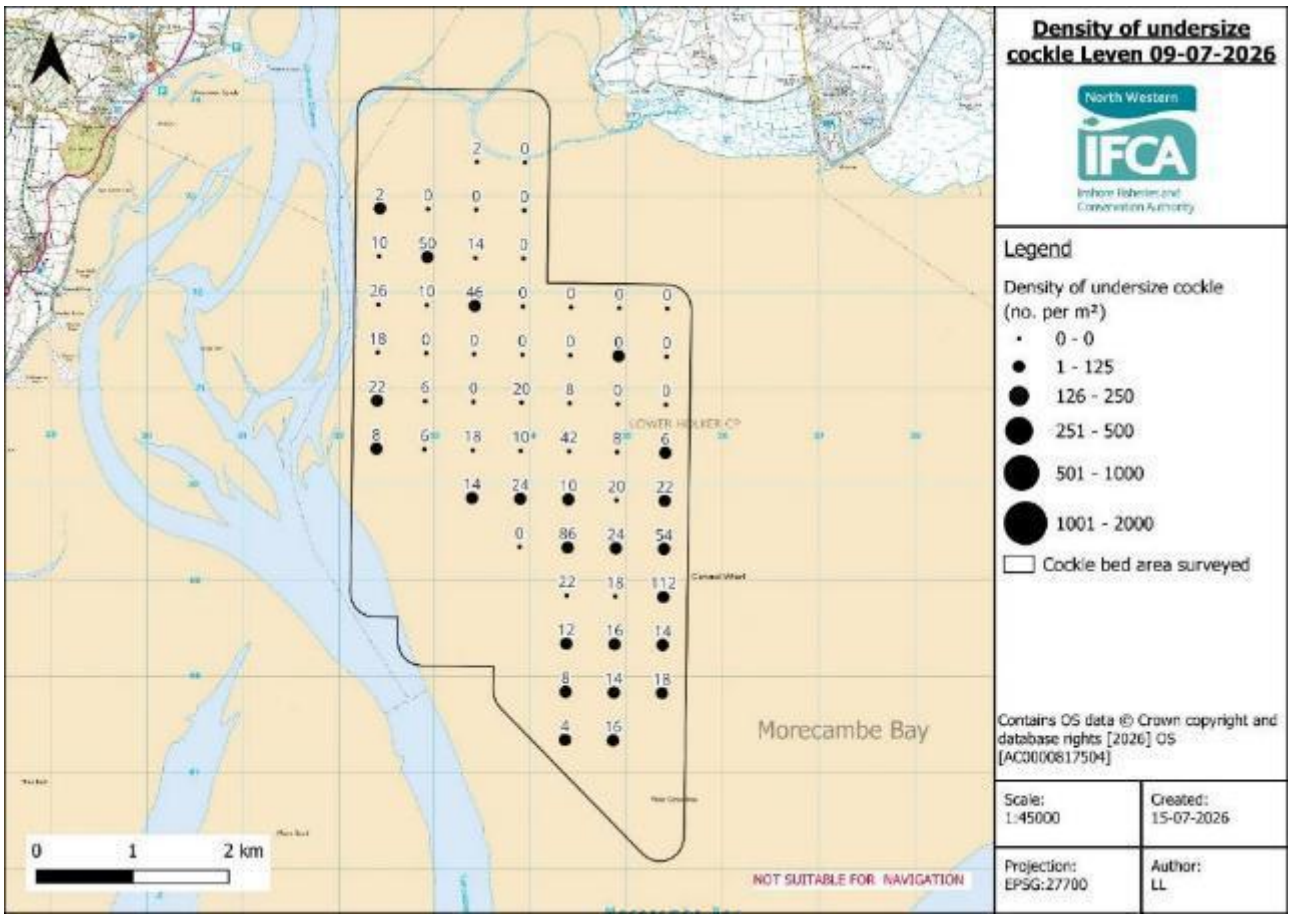


Figure 3. Density of undersize cockle per m² Leven July 2026

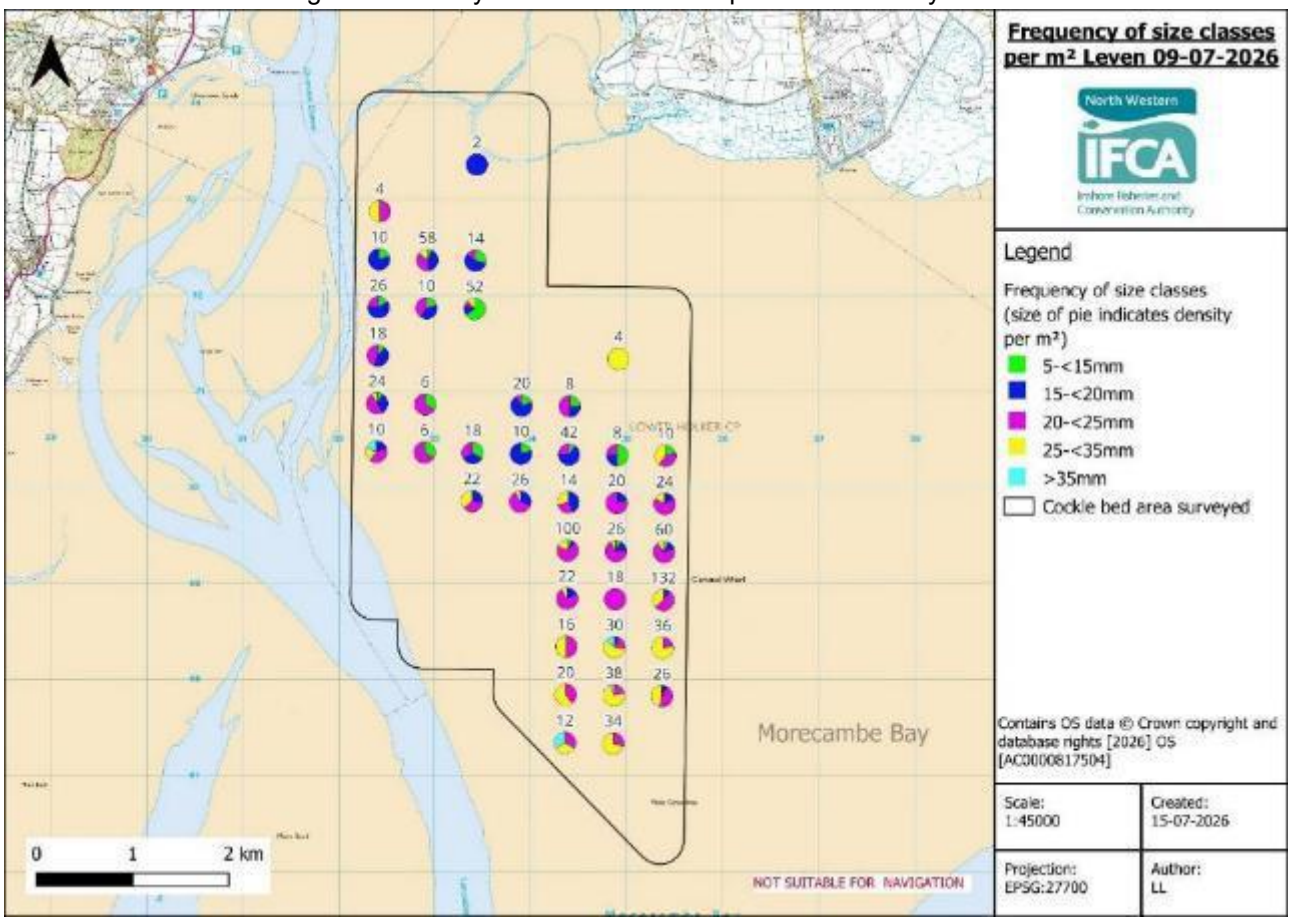


Figure 4. Frequency of size classes of cockle per m² Leven July 2026

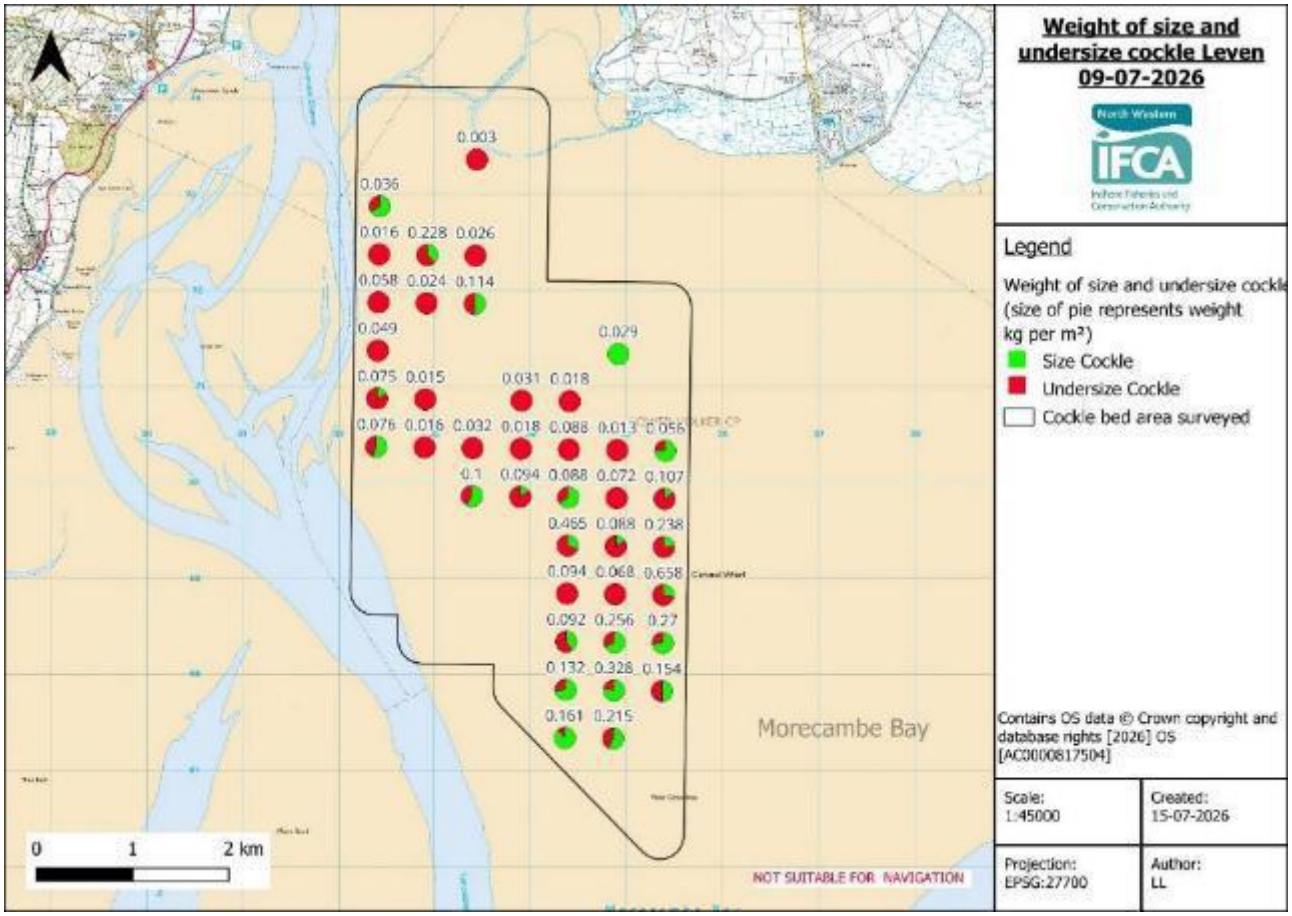


Figure 5. Weight of size and undersize cockle kg/m² at Leven July 2026

Flookburgh Cockle Survey 08-07-26

Officers present: ID, CT, AP, JH, LL, RL
Tides: LW 11:57 2.5m (Liverpool Tides)

Survey method - Jumbo and 0.5m^2 quadrat

140 stations were sampled from a 500m grid which included the recent extensions to the survey grid. There is a number of channels cutting through the bed meaning some survey stations could not be accessed. The bed area has decreased in size due to the number of survey stations with no cockle present and a number of station being in the channel which splits the cockle bed. The cockle is mixed across the bed and ranged in size from 5mm to 35mm. There is evidence of a 2026 settlement with spat seen in some areas across the bed.

Means

Means were calculated from all stations with zero counts removed. Less than 5mm cockle was not used in the undersize figures due to the high variable survivability of cockle at this small size.

Mean number of size cockle	5 per m²	(min 0, max 58)
Mean number of undersize cockle	31 per m²	(min 0, max 184)
Mean number of 0-5mm cockle	107 per m²	(min 0, max 6400)

``

Mean weight of size cockle kg/m²	0.041 kg/m²	(min 0, max 0.465)
Mean number of undersize cockle kg/m²	0.090 kg/m²	(min 0, max 0.654)

Maps

Maps were created showing the overall survey area, density of size cockle, density of undersize cockle (excluding cockles in the 0-5mm size range), the frequency of size classes, the size of the pie chart indicates the total density of cockles present, and the weight of undersize and size cockle.

Biomass

	Area (ha)	Size Cockle (tonnes)[1]	Undersize Cockle (tonnes)[2]
Flookburgh	**2600**	**1064**	**2348**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
63	**417**	**1714**	**1172**	**46**

[1]In regards to biomass size cockle defined as cockle which will not pass through a square gauge 20 x 20mm in size.
[2]The biomass of undersize cockle does not include any estimates of cockle less than 5mm due to the high variability of survival of this size class.

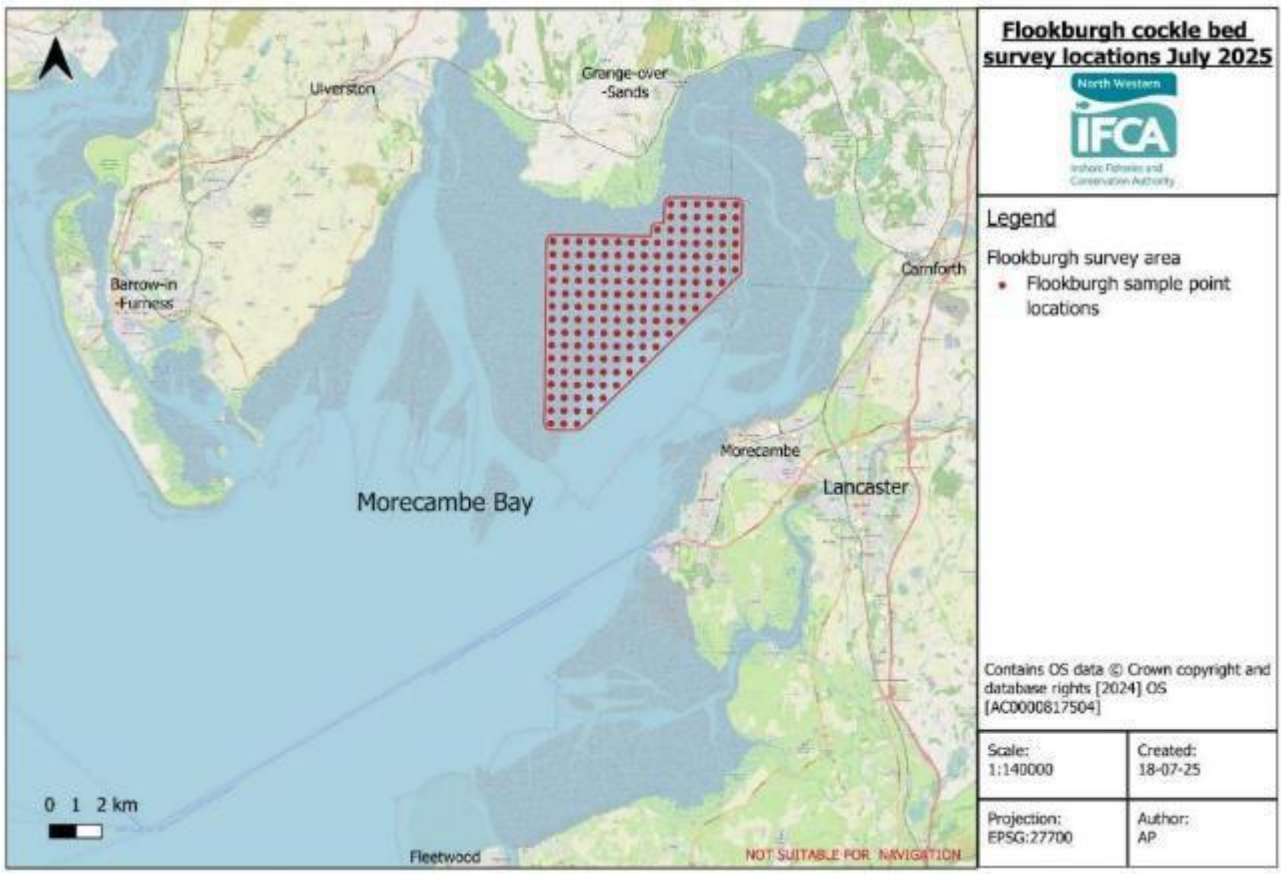


Figure 1. Illustration of position of Flookburgh Survey Area.

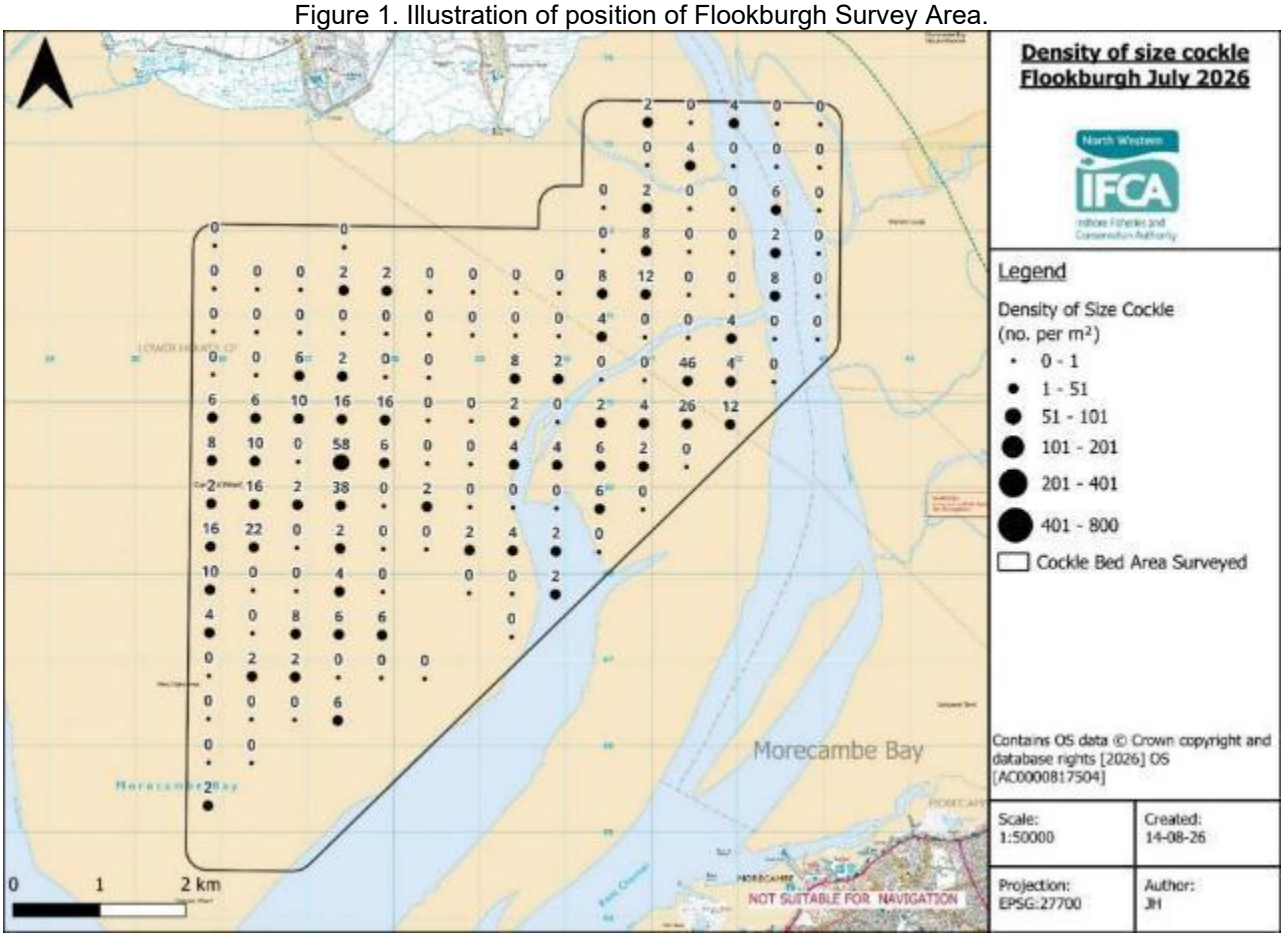


Figure 2. Density of size cockle per m² Flookburgh July 2026.

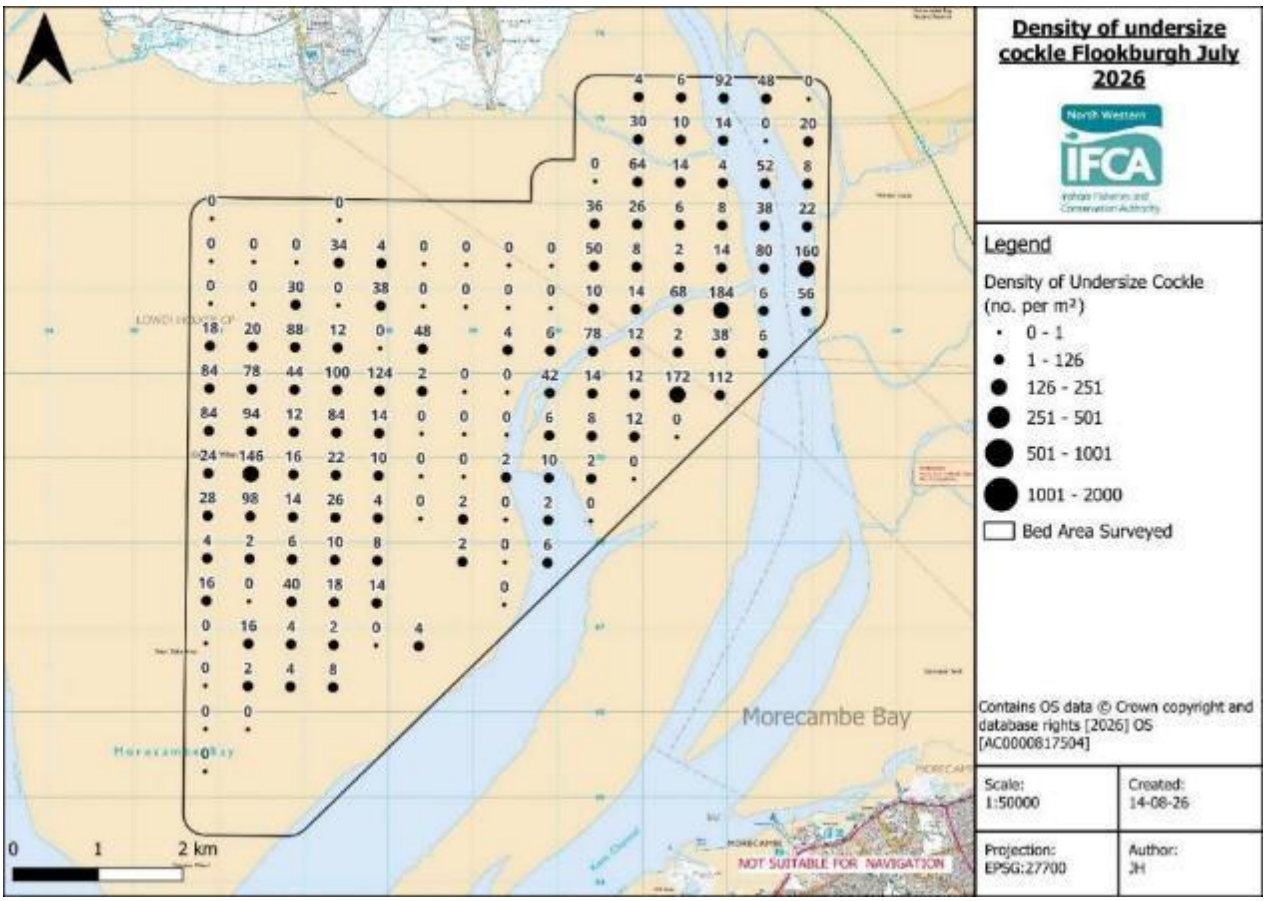


Figure 3. Density of undersize cockle per m² Flookburgh July 2026.

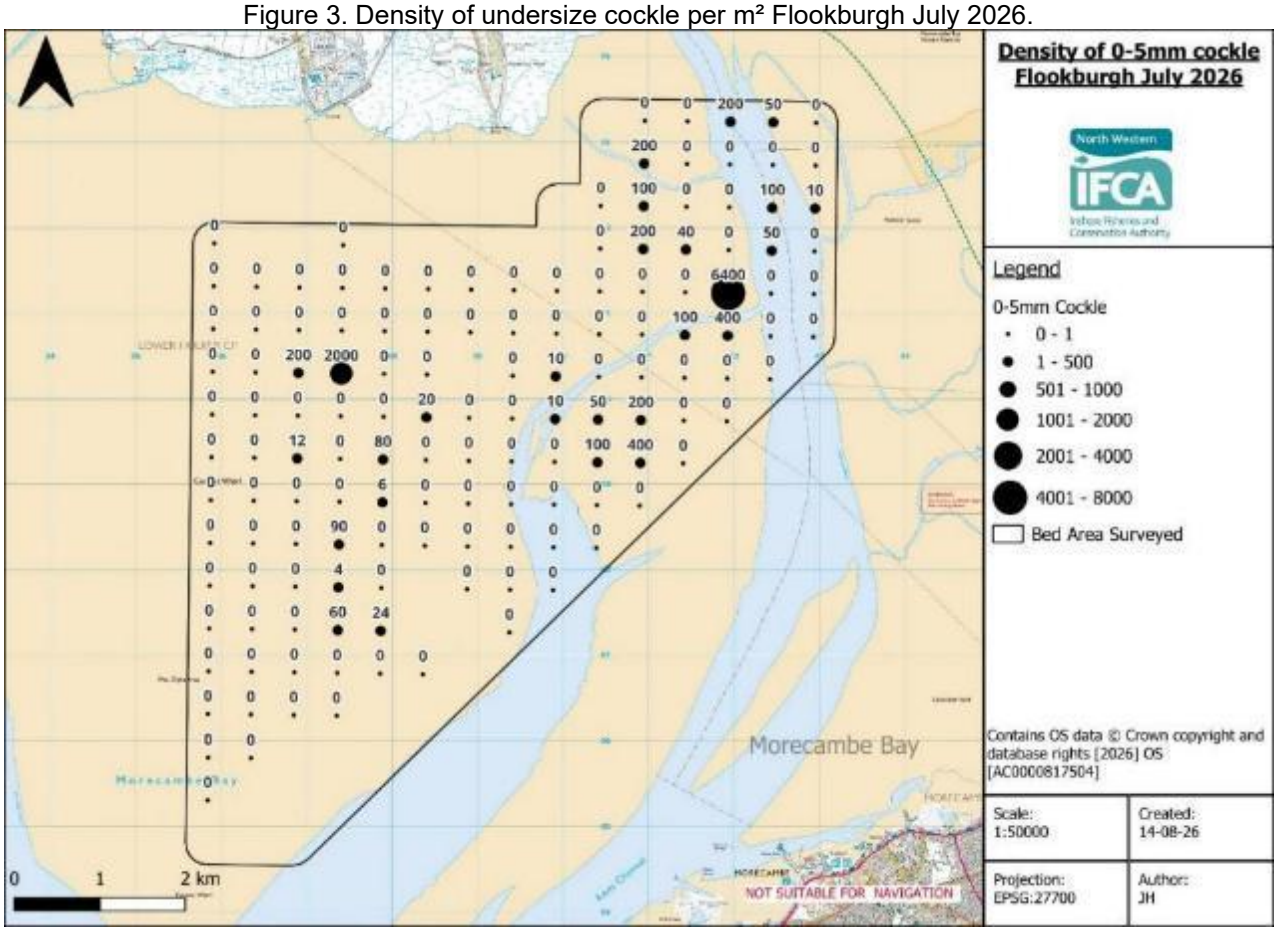


Figure 4. Density of 0-5mm cockle per m² Flookburgh July 2026.

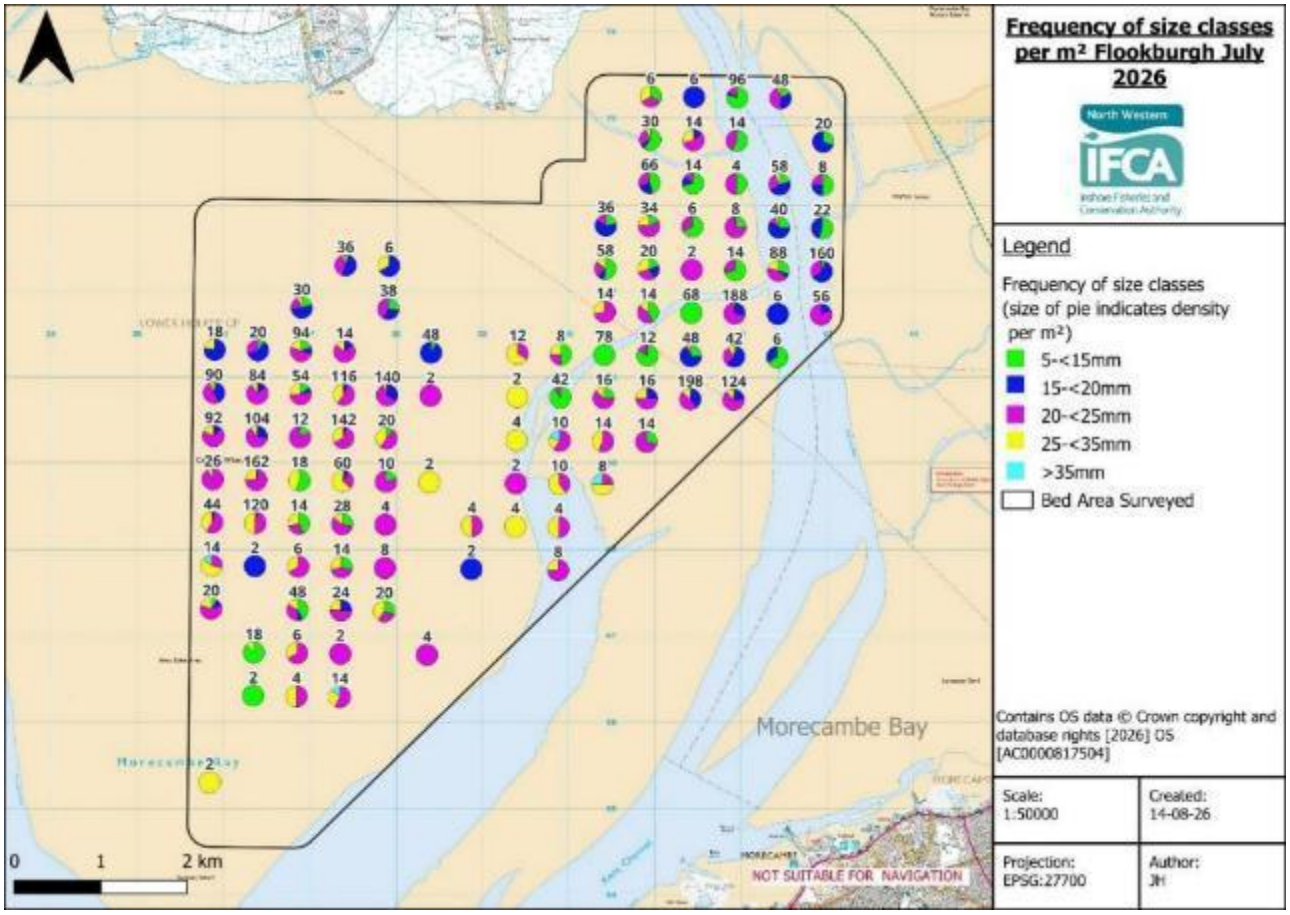


Figure 4 Frequency of size classes of cockle per m² Flookburgh July 2026.

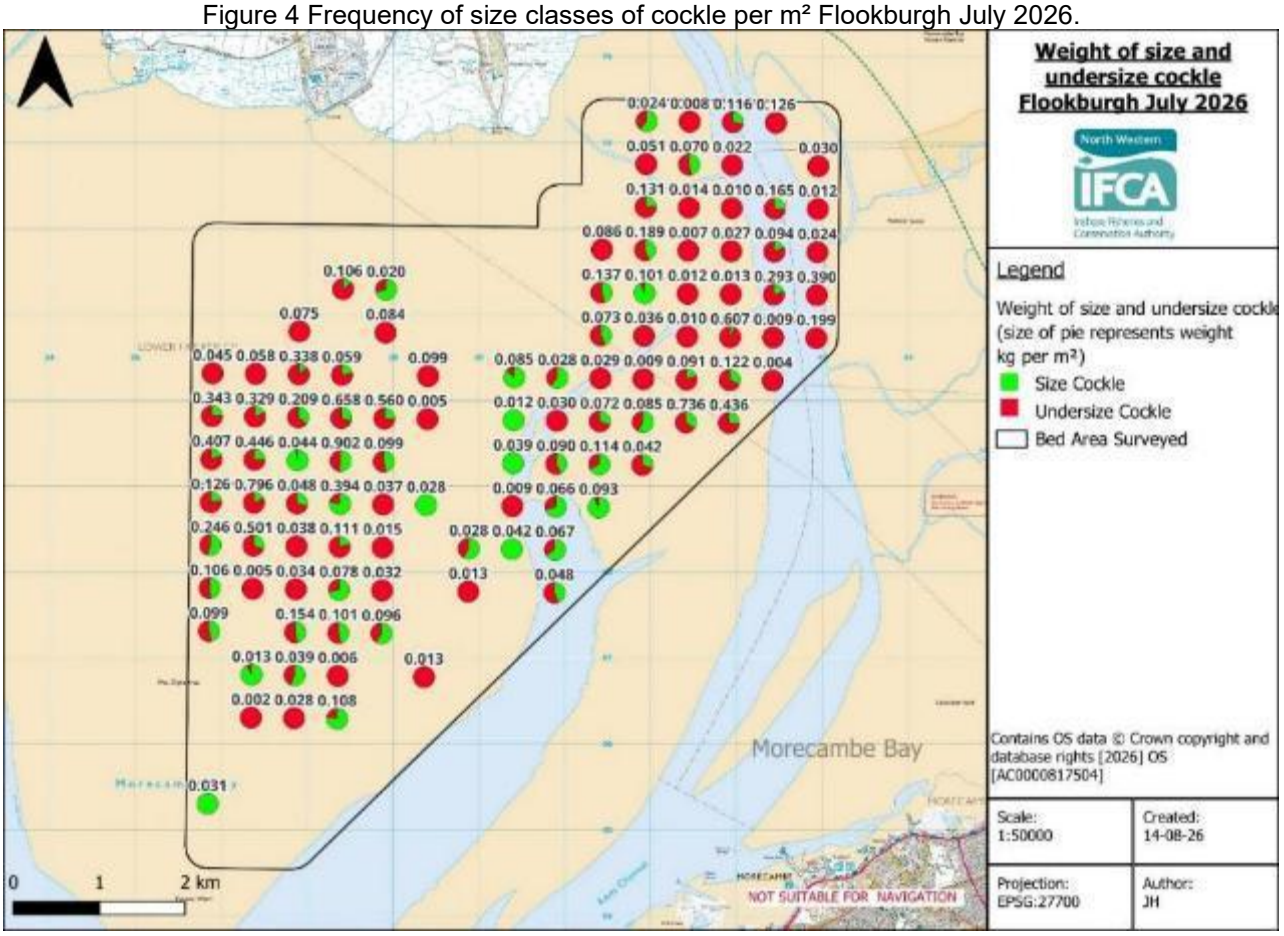


Figure 5 Weight of size and undersize cockle kg/m² at Flookburgh July 2026.

Pilling Cockle Survey 07-07-2026

Officers present: AP, JH, GG, LL
Tides: LW 11:09 2.3m (Liverpool Tides)

Survey method - Jumbo and 0.5m^2 quadrat

77 stations were sampled from a 500m grid. There was a wide range of cockle sizes across the bed from <5mm to >35mm. Size cockle has decreased in density from last July with a max of 40 cockles per m², and an average of 7 per m² across the bed. There is evidence of a 2026 settlement with spat seen in some areas across the bed.

Means

Means were calculated from all stations with zero counts removed. Less than 5mm cockle was not used in the undersize figures due to the high variable survivability of cockle at this small size but has been included as a separate figure.

Mean number of size cockle	7 per m²	(min 0, max 40)
Mean number of undersize cockle	12 per m²	(min 0, max 58)
Mean number of 0-5mm cockle	32 per m²	(min 0, max 480)

Mean weight of size cockle kg/m²	0.075 kg/m²	(min 0, max 0.312)
Mean weight of undersize cockle kg/m²	0.043 kg/m²	(min 0, max 0.228)

Maps

Maps were created showing the overall survey area, density of size cockle, density of undersize cockle (excluding cockles in the 0-5mm size range), the frequency of size classes (size of pie chart indicating the total density of cockles present), and the weight of undersize and size cockle.

Biomass

	Area of cockle present (ha)	Size Cockle (tonnes)[1]	Undersize Cockle (tonnes)[2]
Pilling	**1450**	**1091**	**621**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
10	**107**	**460**	**1097**	**38**

[1]In regards to biomass size cockle defined as cockle which will not pass through a square gauge 20 x 20mm in size.
[2]The biomass of undersize cockle does not include any estimates of cockle less than 5mm due to the high variability of survival of this size class.

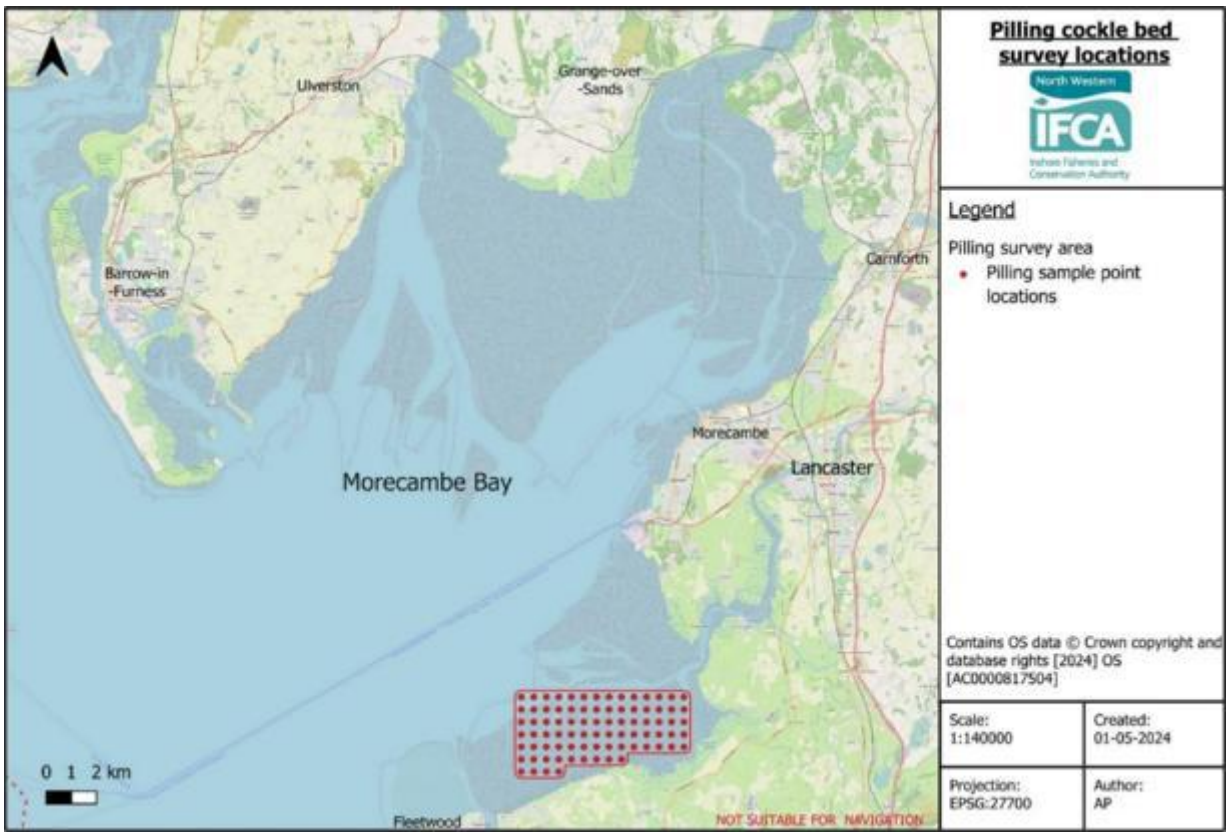


Figure 1. Illustration of position of Pilling Survey Area.

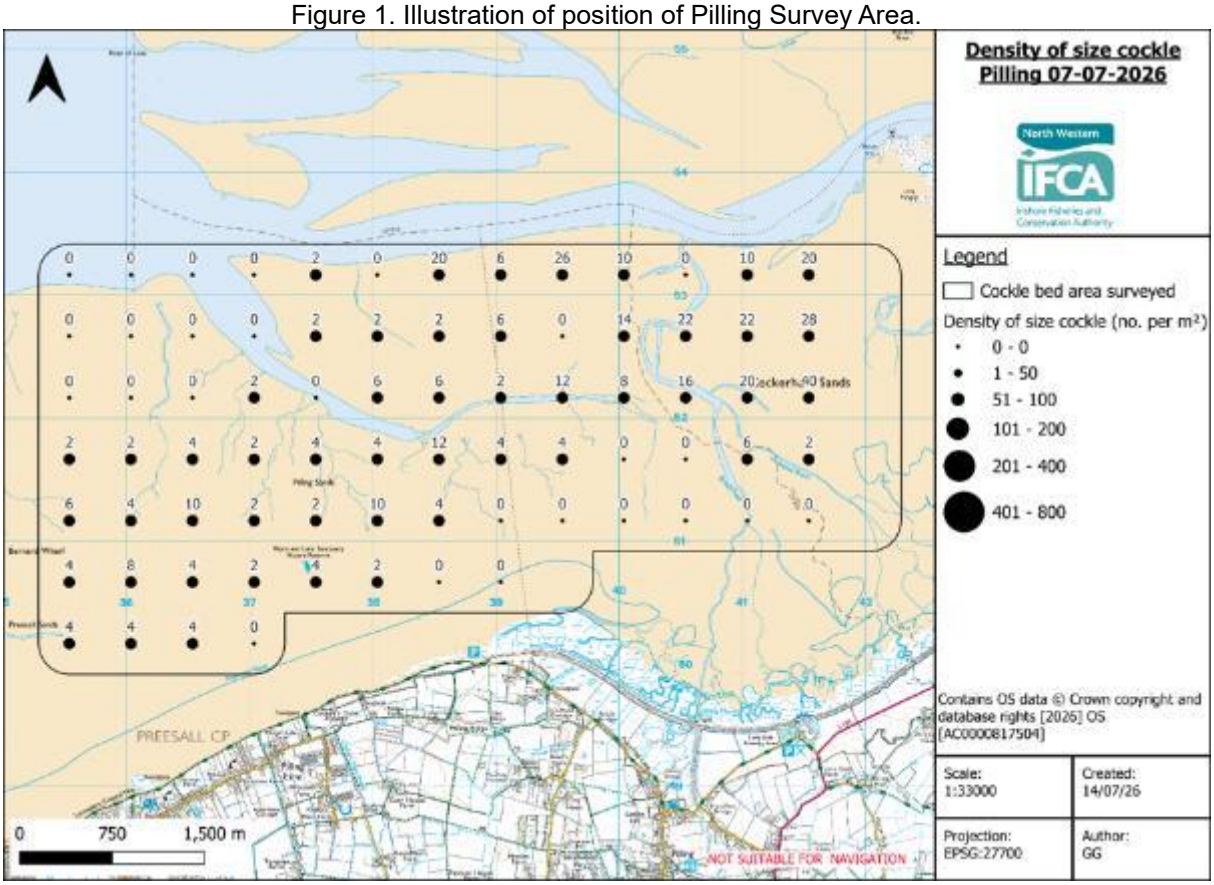


Figure 2. Density of size cockle per m² at Pilling July 2026.

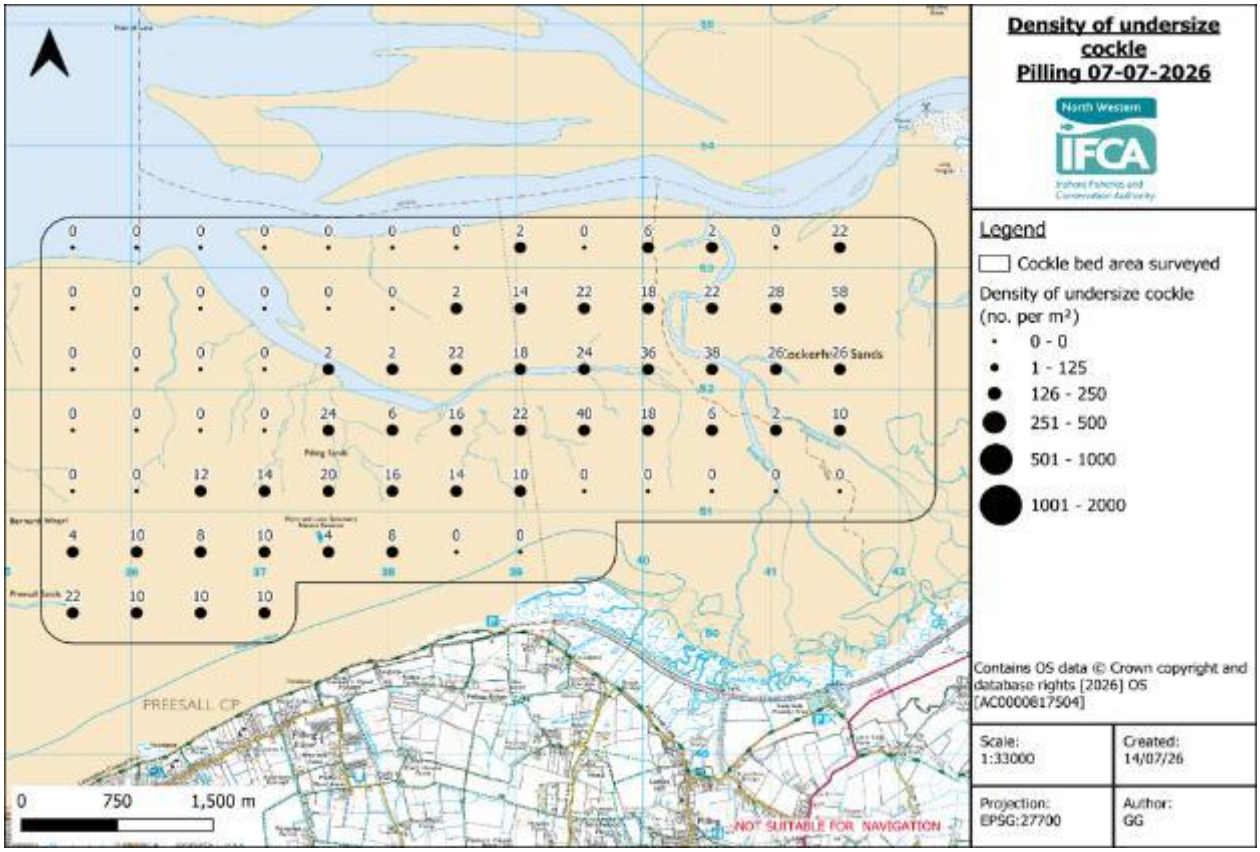


Figure 3. Density of undersize cockle per m² at Pilling July 2026.

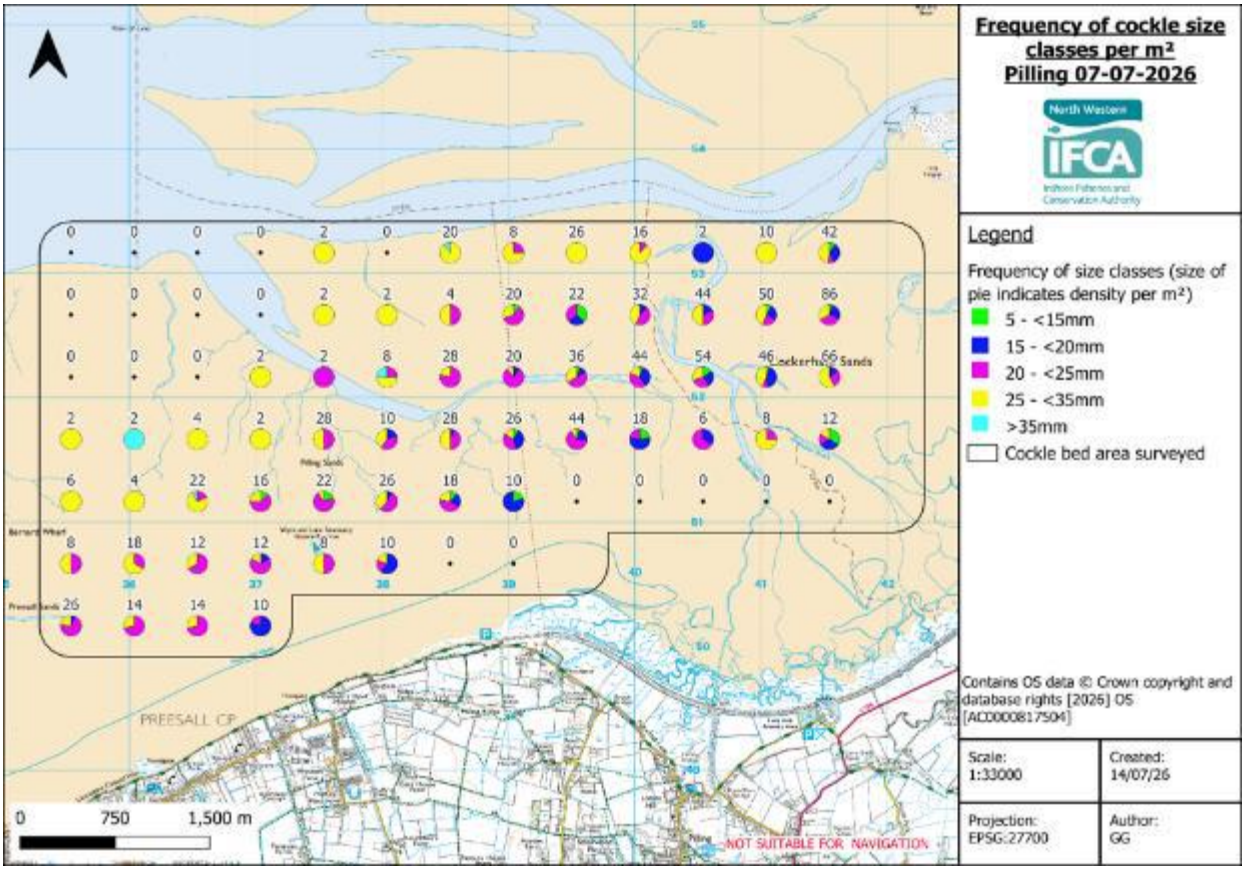


Figure 4. Frequency of size classes of cockle per m² at Pilling July 2026.

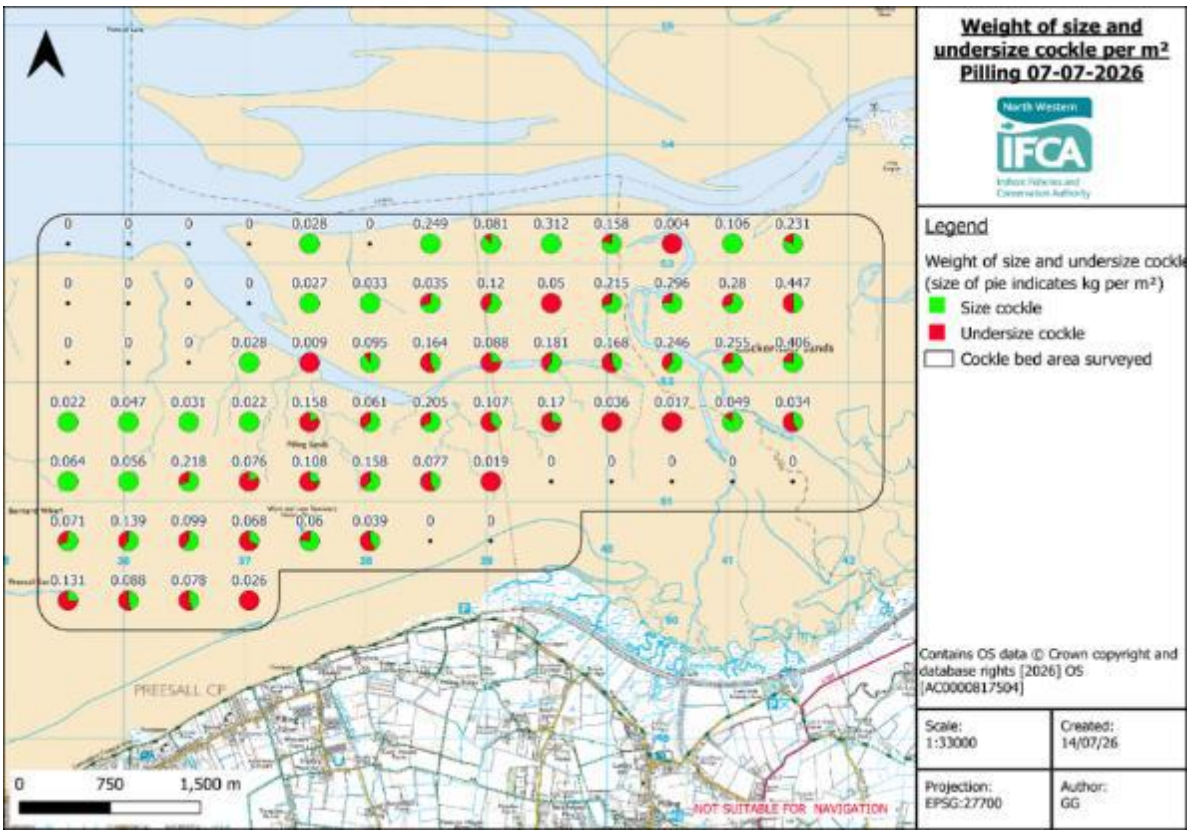


Figure 5. Weight of size and undersize cockle kg/m² at Pilling July 2026.

Middleton Cockle Survey 30-06-26

Officers present: AG, RL, JH, LL
Tides: LW 17:50 2.3m (Liverpool tides)

Survey method - Jumbo and 0.5m^2 quadrat

61 stations were sampled from a 350 m grid. Cockle biomass was estimated at 378 tonnes of size cockles and 897 tonnes of undersize cockles. Compared with the previous survey, size cockle biomass decreased by approximately from 589 to 378 tonnes, while undersize biomass increased from 115 to 897 tonnes. The population is now dominated by the 20–25 mm size class.

Means

Means were calculated from all stations with zero counts removed. Less than 5mm cockle was not used in the undersize figures due to the high variable survivability of cockle at this small size but has been included as a separate figure.

Mean number of size cockle	5 per m²	(min 0, max 60)
Mean number of undersize cockle	37 per m²	(min 0, max 464)
Mean number of 0-5mm cockle	0 per m²	(min 0, max 0)
Mean weight of size cockle kg/m²	0.051 kg/m²	(min 0, max 0.83)
Mean number of undersize cockle kg/m²	0.012 kg/m²	(min 0, max 1.71)

Maps

Maps were created showing the overall survey area, density of size cockle, density of undersize cockle (excluding cockles in the 0-5mm size range), the frequency of size classes, the size of the pie chart indicates the total density of cockles present, and the weight of undersize and size cockle.

Biomass

	Area (ha)	Size Cockle (tonnes)[1]	Undersize Cockle (tonnes)[2]
Middleton Sands	**747**	**378**	**897**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
9	**198**	**704**	**327**	**37**

[1]In regards to biomass size cockle defined as cockle which will not pass through a square gauge 20 x 20mm in size.
[2]The biomass of undersize cockle does not include any estimates of cockle less than 5mm due to the high variability of survival of this size class.

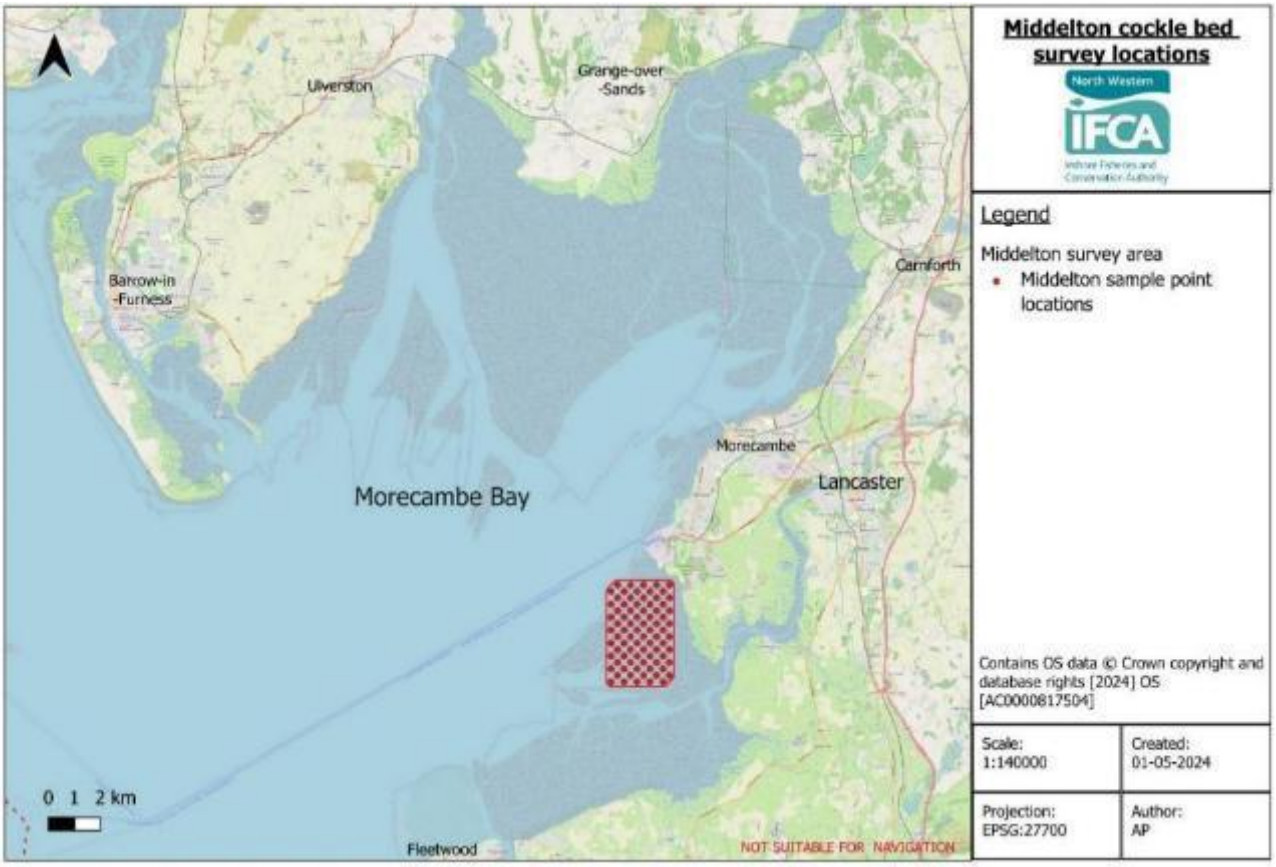


Figure 1. Illustration of position of Middleton Survey Area.

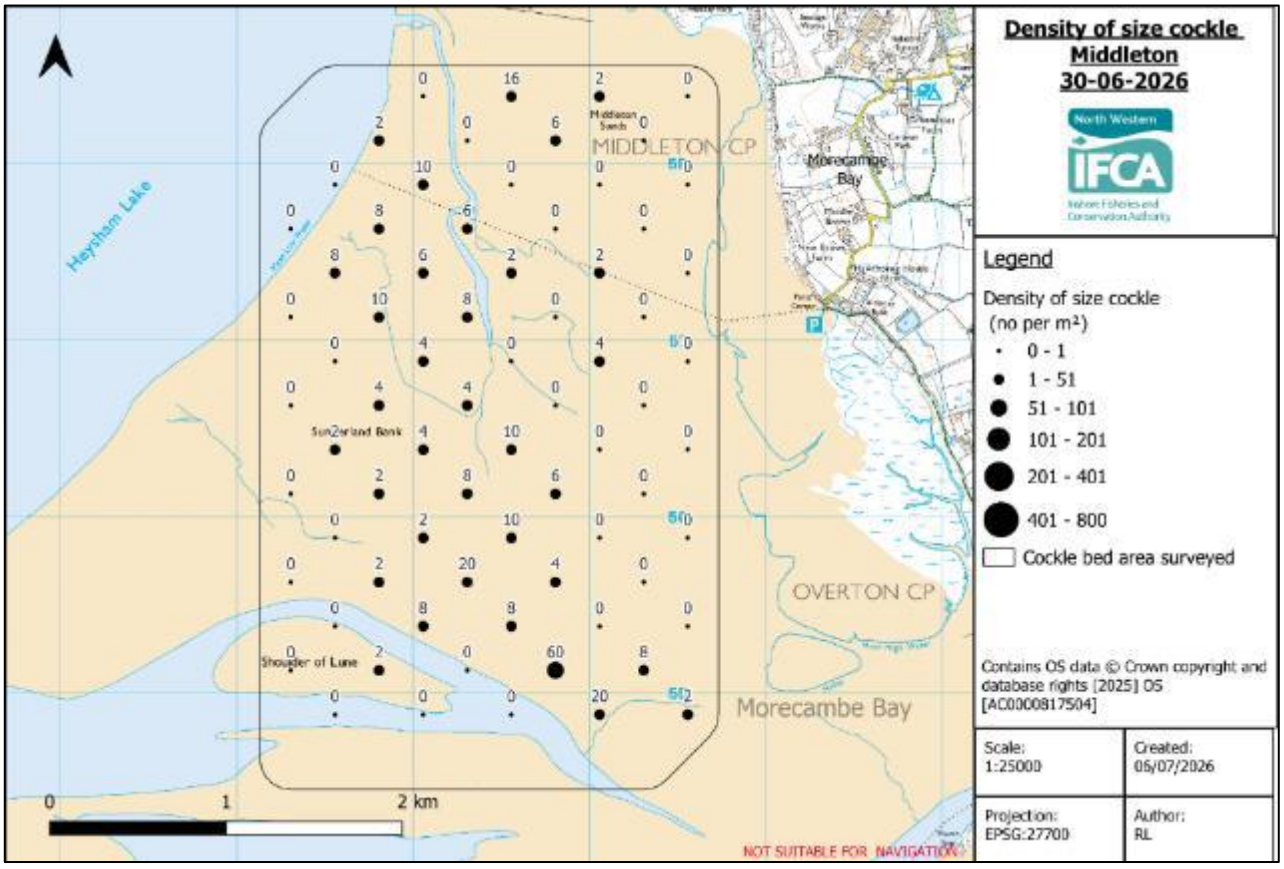


Figure 2. Density of size cockle per m² at Middleton June 2026.

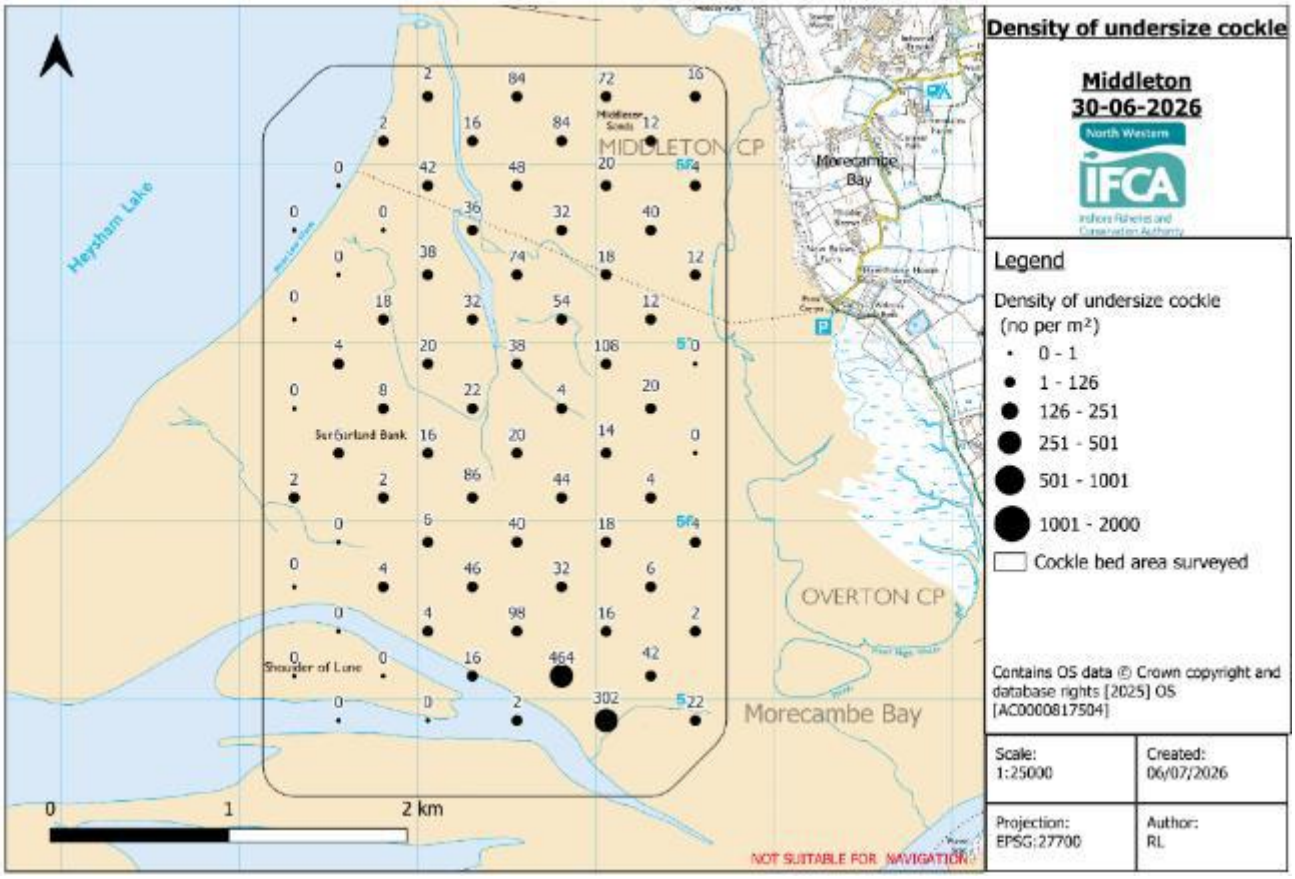


Figure 3. Density of undersize cockle per m² at Middleton June 2026.

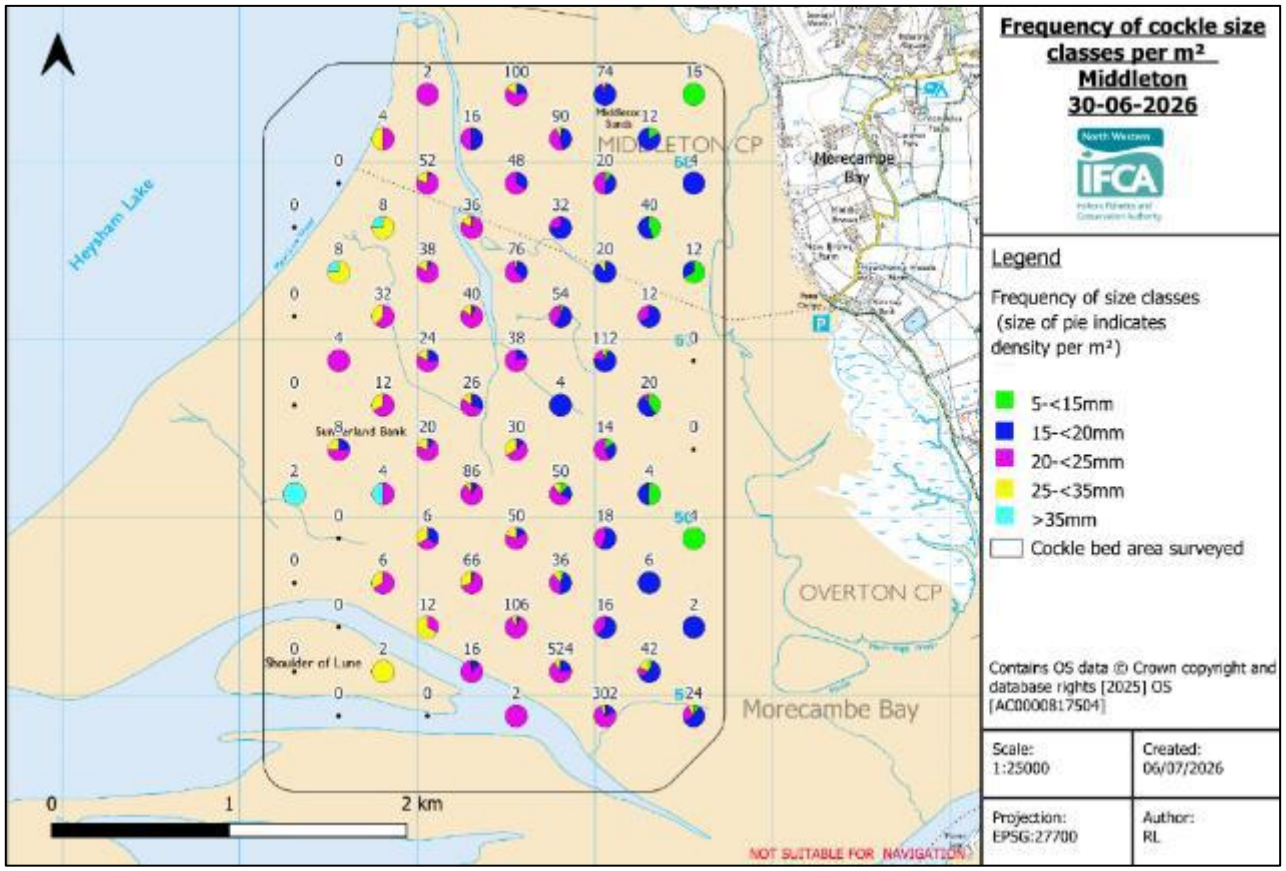


Figure 4. Frequency of size classes of cockle per m² at Middleton June 2026.

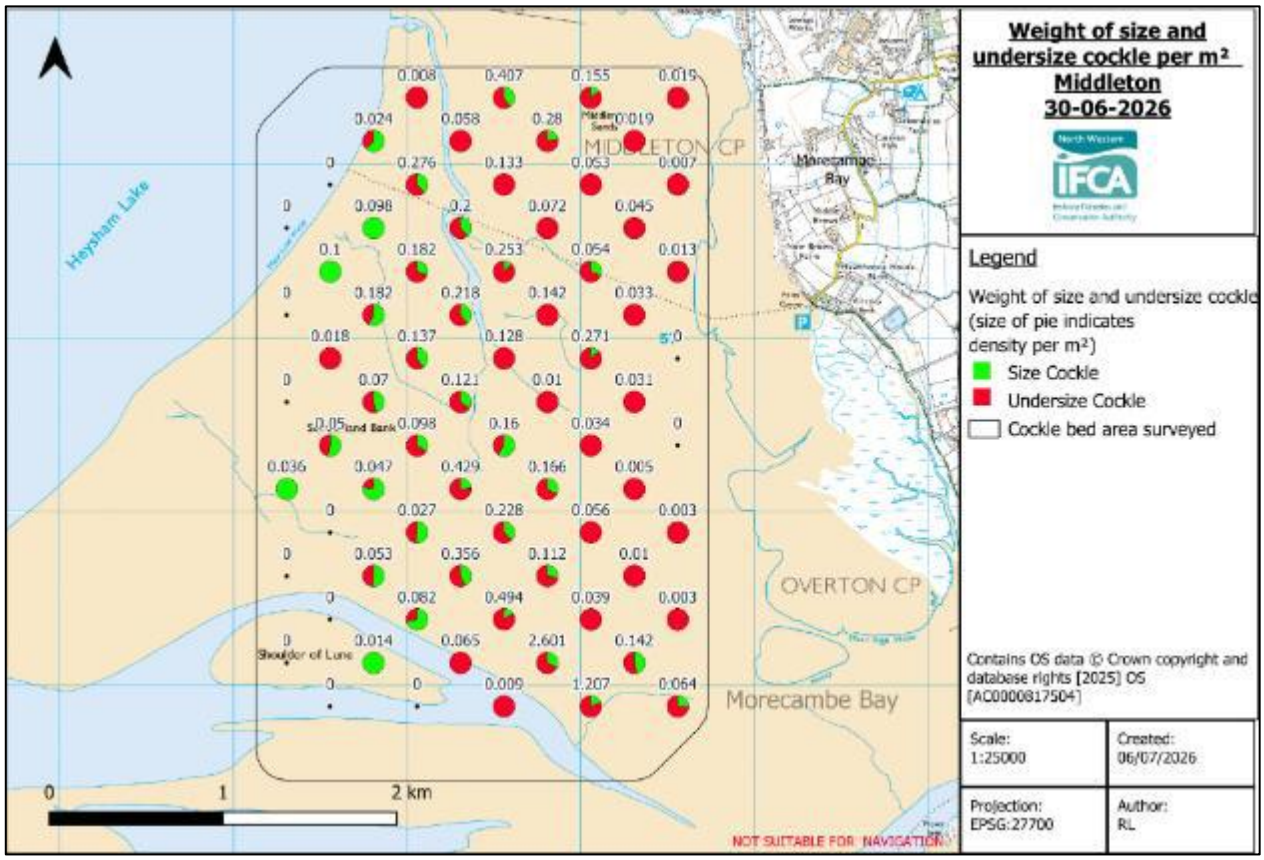


Figure 5. Weight of size and undersize cockle kg/m² at Middleton June 2026.

Warton Cockle Survey 16-07-26

Officers present: ID, JH, AP, LL, AG, GE

Tides: LW 08:03 0.8m (Liverpool Tides)

Survey method - Jumbo and 0.5m^2 quadrat

A total of 52 stations were sampled, 25 were sampled from a 350m grid and 27 from a 500m grid due to the full extent of the bed being unknown prior to the survey. The 350m grid covered an area known to have cockle present due to a previous inspection. The 500m grid was used to extend the area surveyed to ensure that edges of the bed were located. The Northwest of the survey grid could not be accessed due to a deep channel. There was a range of cockle sizes across the bed from < 5mm to 25 - 35mm. Size cockle is very low in density across the bed. The main size classes present were 15-20mm and 20-25mm. There were large number of spat found in at some survey locations on the East of the grid.

Means

Means were calculated from all stations with zero counts removed. Less than 5mm cockle was not used in the undersize figures due to the high variable survivability of cockle at this small size.

Mean number of size cockle	2 per m²	(min 0, max 8)
Mean number of undersize cockle	93 per m²	(min 0, max 562)
Mean number of 0-5mm cockle	229 per m²	(min 0, max 4000)
Mean weight of size cockle kg/m²	0.014 kg/m²	(min 0, max 0.079)
Mean weight of undersize cockle kg/m²	0.250 kg/m²	(min 0, max1.555)

Maps

Maps were created showing the overall survey area, density of size cockle, density of undersize cockle (excluding cockles in the 0-5mm size range), the frequency of size classes, the size of the pie chart indicates the total density of cockles present, and the weight of undersize and size cockle.

Biomass

	Area of cockle present (ha)	Size Cockle (tonnes)[1]	Undersize Cockle (tonnes)[2]
Warton	**906**	**123**	**1941**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
47	**631**	**1232**	**145**	**0**

[1]In regards to biomass size cockle defined as cockle which will not pass through a square gauge 20 x 20mm in size.

[2]The biomass of undersize cockle does not include any estimates of cockle less than 5mm due to the high variability of survival of this size class.

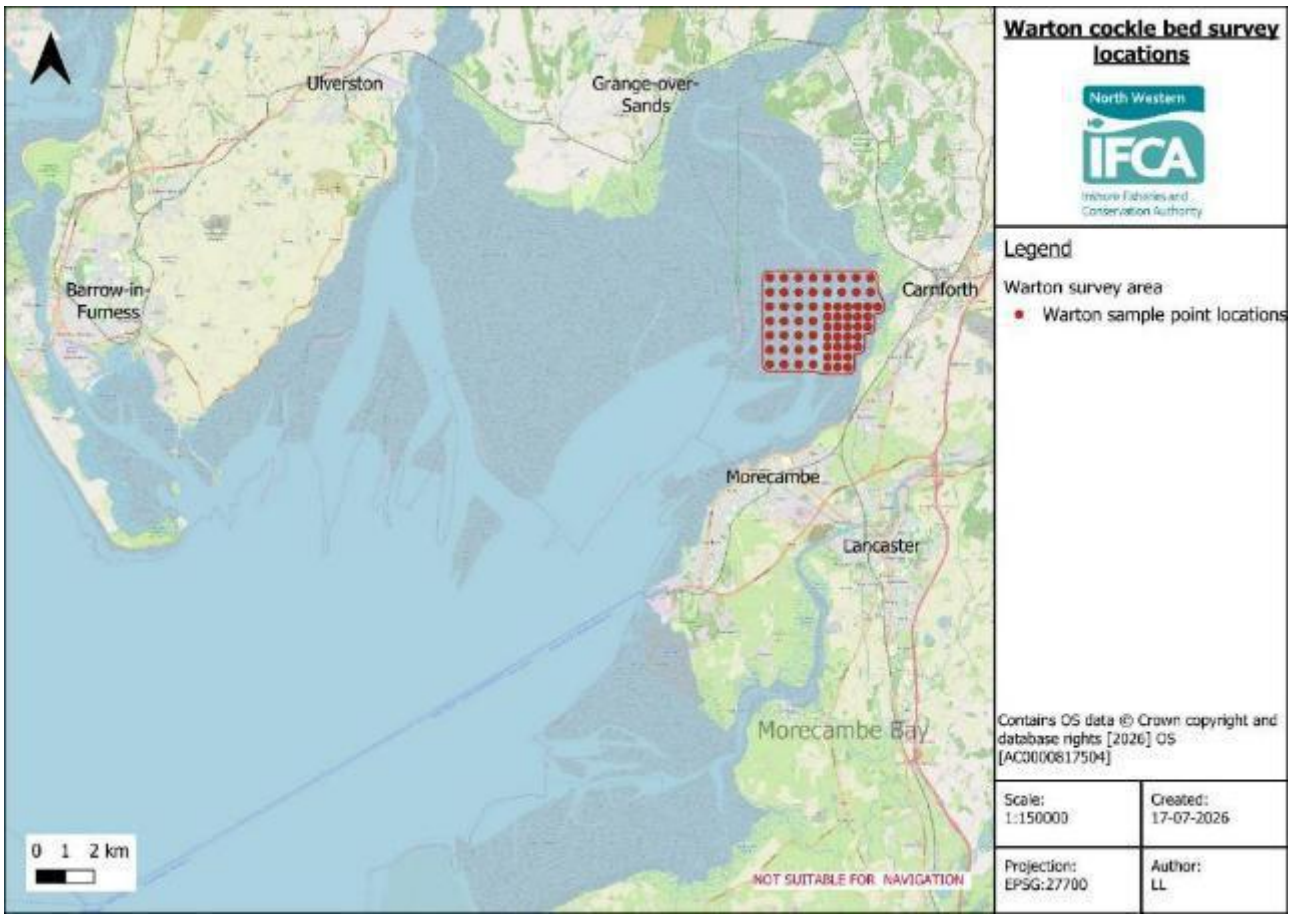


Figure 1. Illustration of position of Leven Survey Area

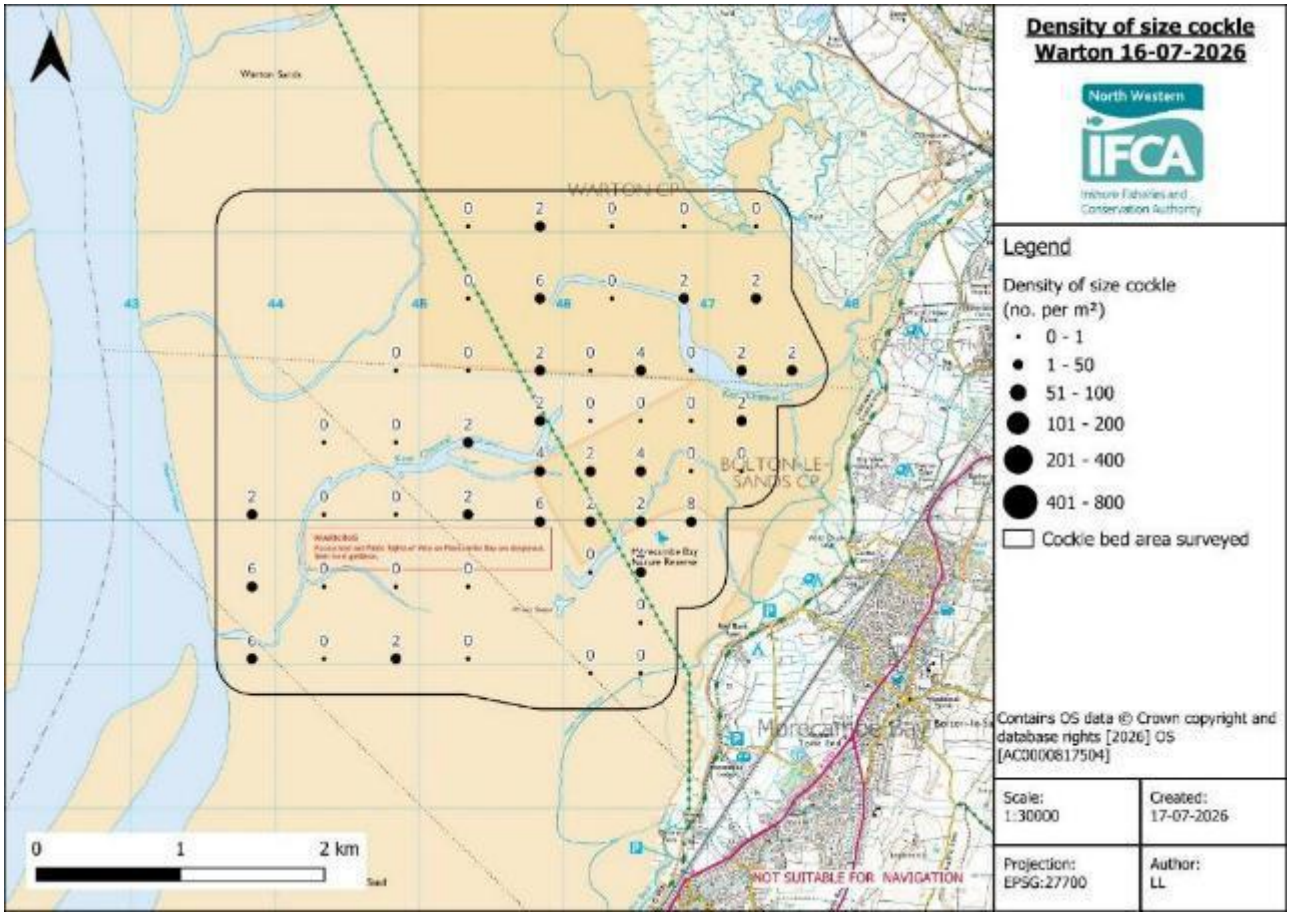


Figure 2. Density of size cockle per m² Warton July 2026

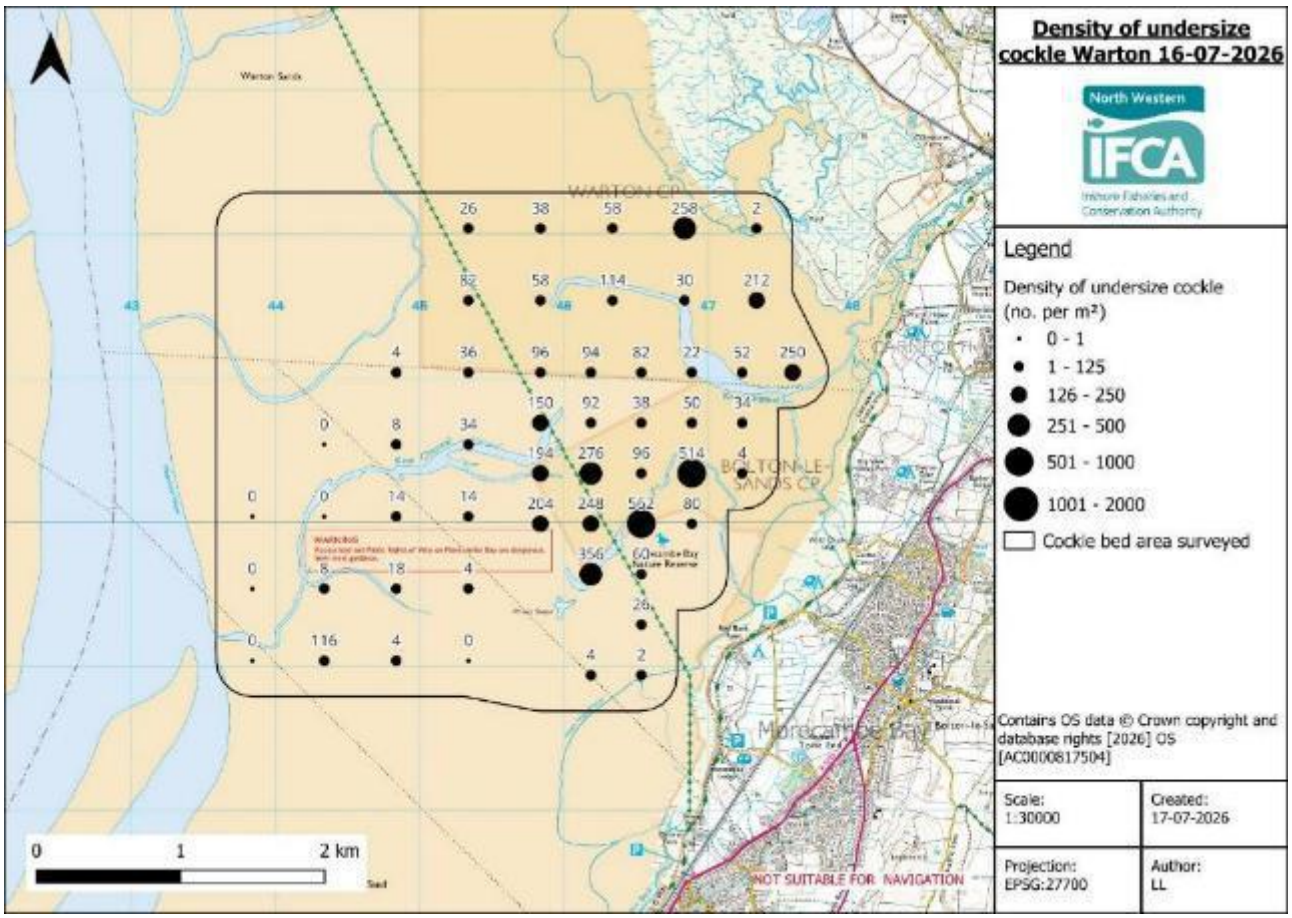


Figure 3. Density of undersize cockle per m² Warton July 2026

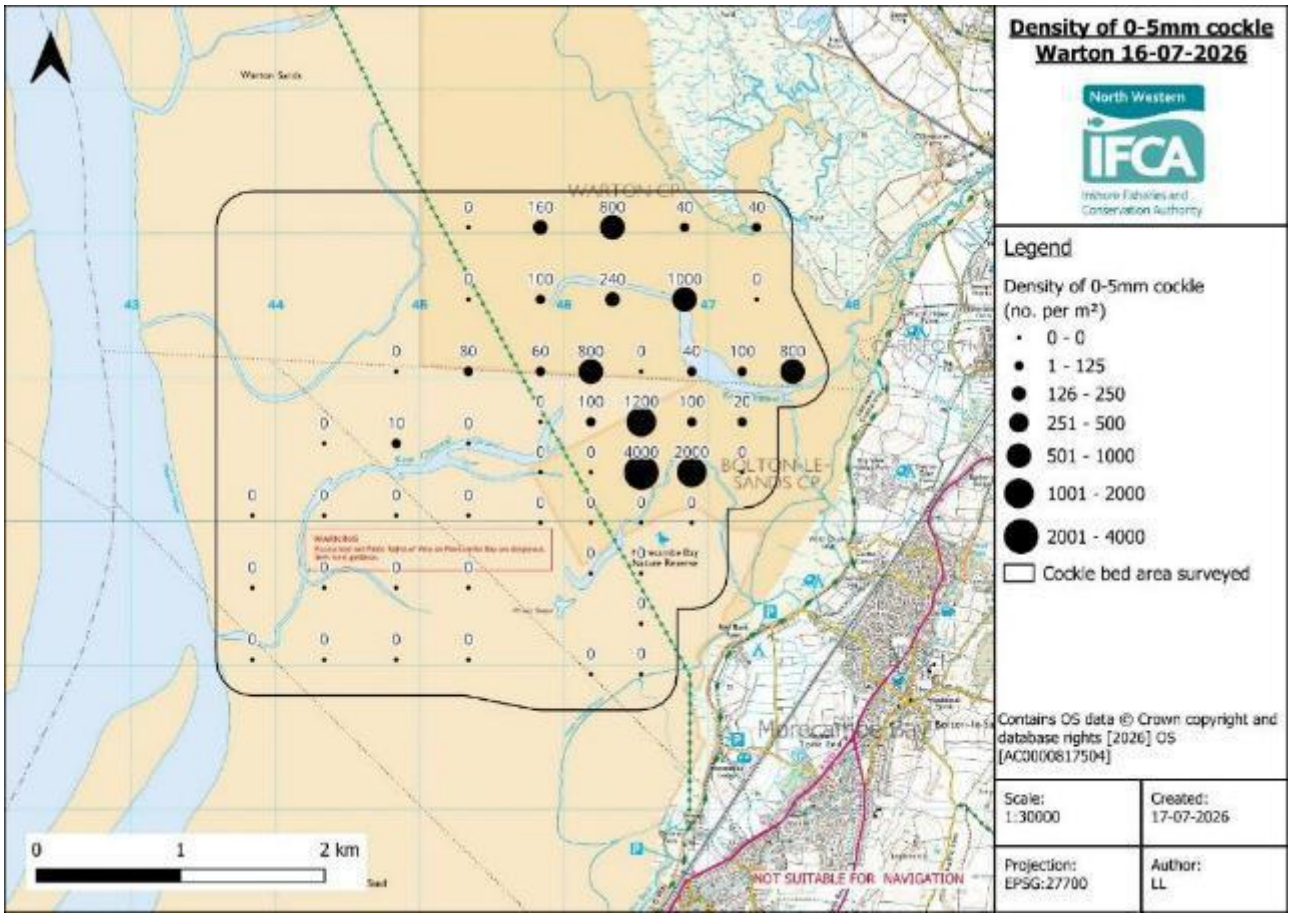


Figure 4. Density of 0-5mm cockle per m² Warton July 2026

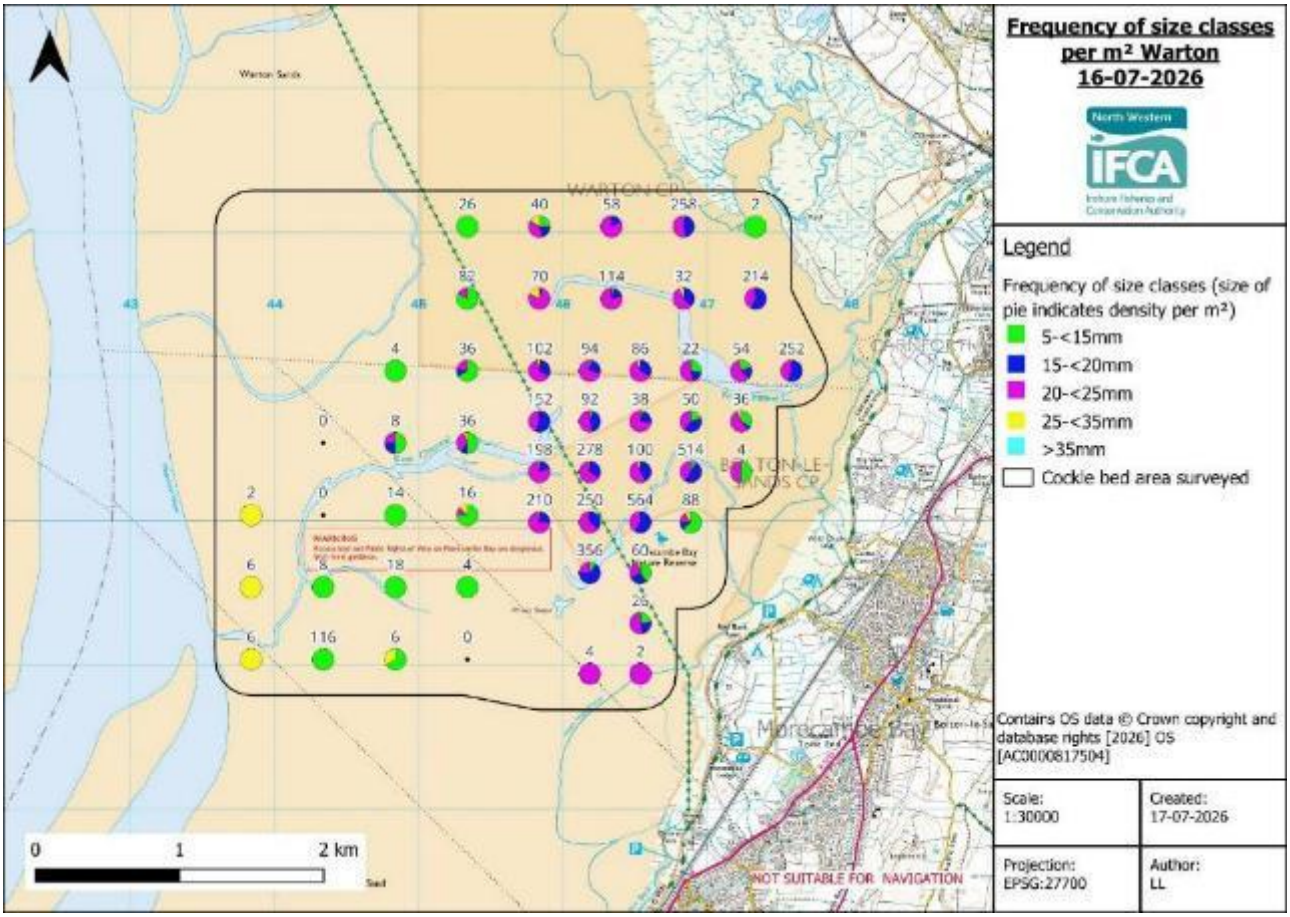


Figure 4. Frequency of size classes of cockle per m² Warton July 2026

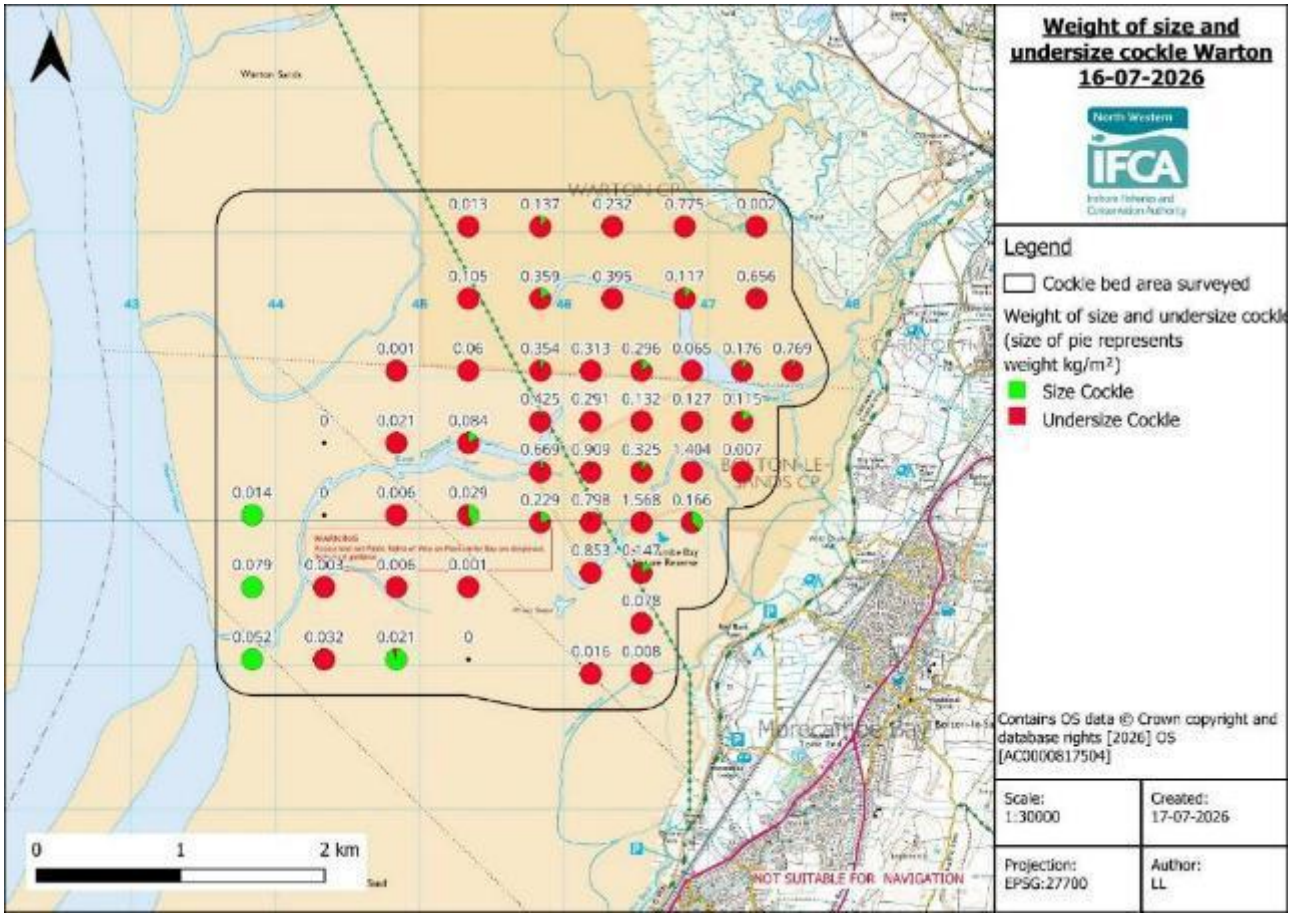


Figure 5. Weight of size and undersize cockle kg/m² Warton July 2026

Leven Cockle Survey 16-09-26

Officers present: ID, JH, GG, LL

Tides: LW 09:24 2.1m (Liverpool Tides)

Survey method Jumbo and 0.5m^2 quadrat

Officers investigated information provided by industry of a video showing wash up of cockle and of size cockle being present in the upper reaches of the Leven estuary off Sandgate. Whilst completing this check officer discovered access could be gained to the some of Aldingham cockle bed which has in recent years been cut off by the river Leven, and a large area of cockle that extends South beyond any area previously surveyed. An inspection was completed to find the edges of the bed, a 500m survey grid was placed over the area. Officers continued to survey until either access was not possible by the channels or the density were zero or low. The extension grid was based on a continuation of the Leven survey stations rather than Aldingham to ensure continuity of calculation of biomass. 83 stations were sampled from a 500m grid, 8 from the south of the Leven cockle grid, and 75 from the new grid. One additional survey station was added to ensure coverage of the survey.

Means

Means were calculated from all stations with zero counts removed. Less than 5mm cockle was not used in the undersize figures due to the high variable survivability of cockle at this small size.

Mean number of size cockle	21 per m²	(min 0, max 124)
Mean number of undersize cockle	90 per m²	(min 0, max 540)
Mean number of 0-5mm cockle	5 per m²	(min 0, max 200)
Mean weight of size cockle kg/m²	0.203 kg/m²	(min 0, max 1.184)
Mean weight of undersize cockle kg/m²	0.127 kg/m²	(min 0, max 0.562)

Maps

Maps were created showing the overall survey area, density of size cockle, density of undersize cockle (excluding cockles in the 0-5mm size range), the frequency of size classes, the size of the pie chart indicates the total density of cockles present, and the weight of undersize and size cockle.

Biomass

	Area of cockle present (ha)	Size Cockle (tonnes)[1]	Undersize Cockle (tonnes)[2]
Leven	**1850**	**3759**	**2359**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
727	**622**	**999**	**3622**	**148**

[1]In regards to biomass size cockle defined as cockle which will not pass through a square gauge 20 x 20mm in size.
[2]The biomass of undersize cockle does not include any estimates of cockle less than 5mm due to the high variability of survival of this size class.

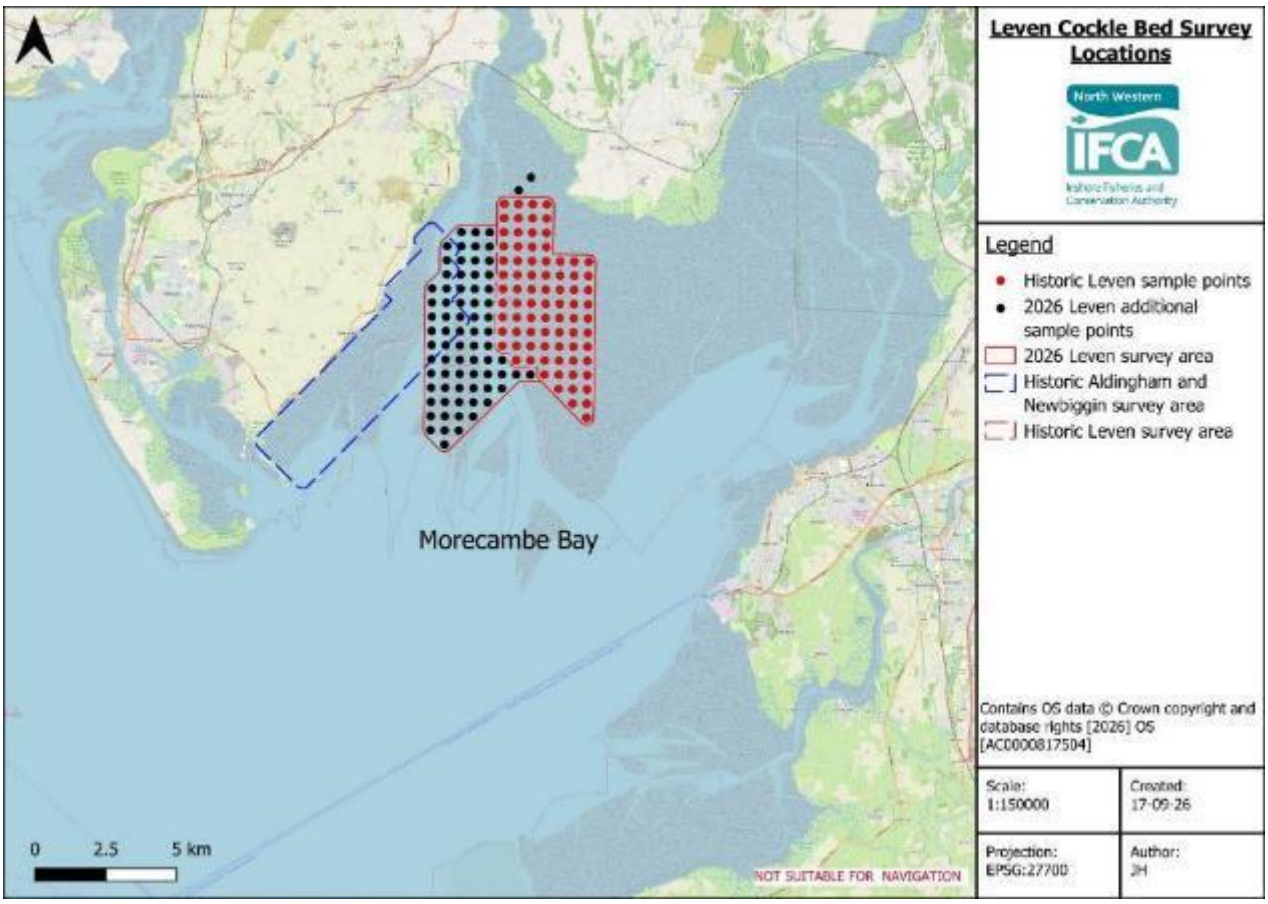


Figure 1. Illustration of position of Leven Survey Area

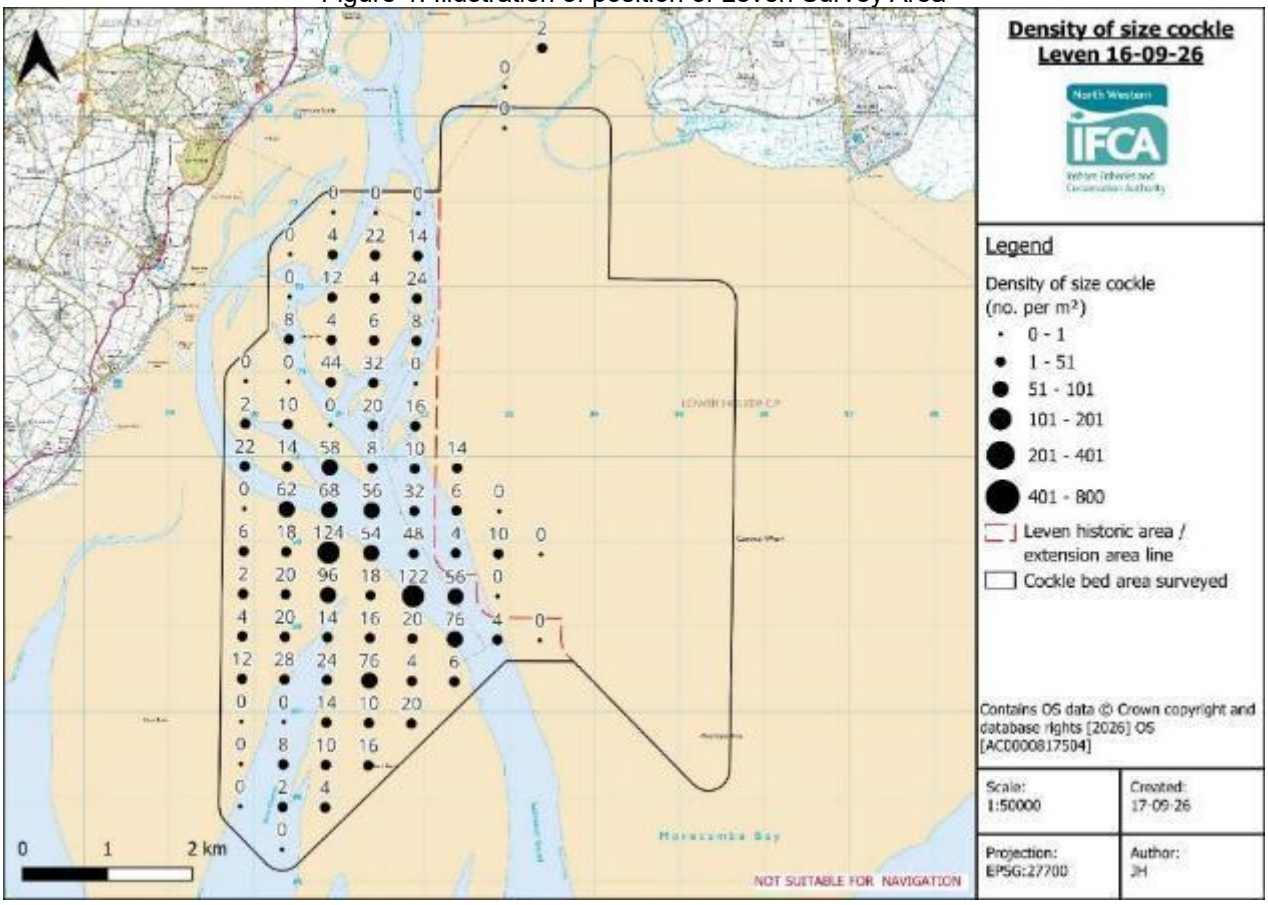


Figure 2. Density of size cockle per m² Leven September 2026

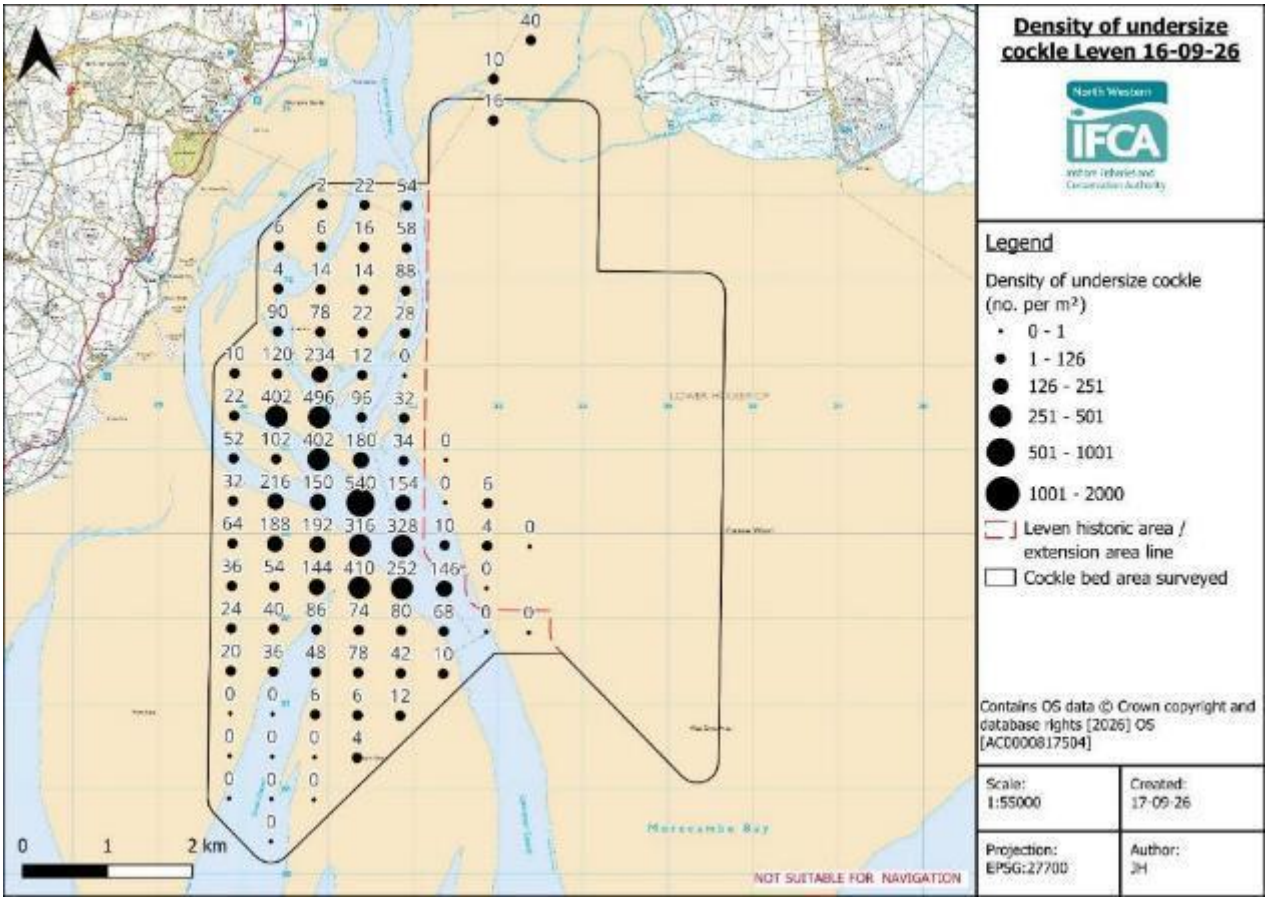


Figure 3. Density of undersize cockle per m² Leven September 2026

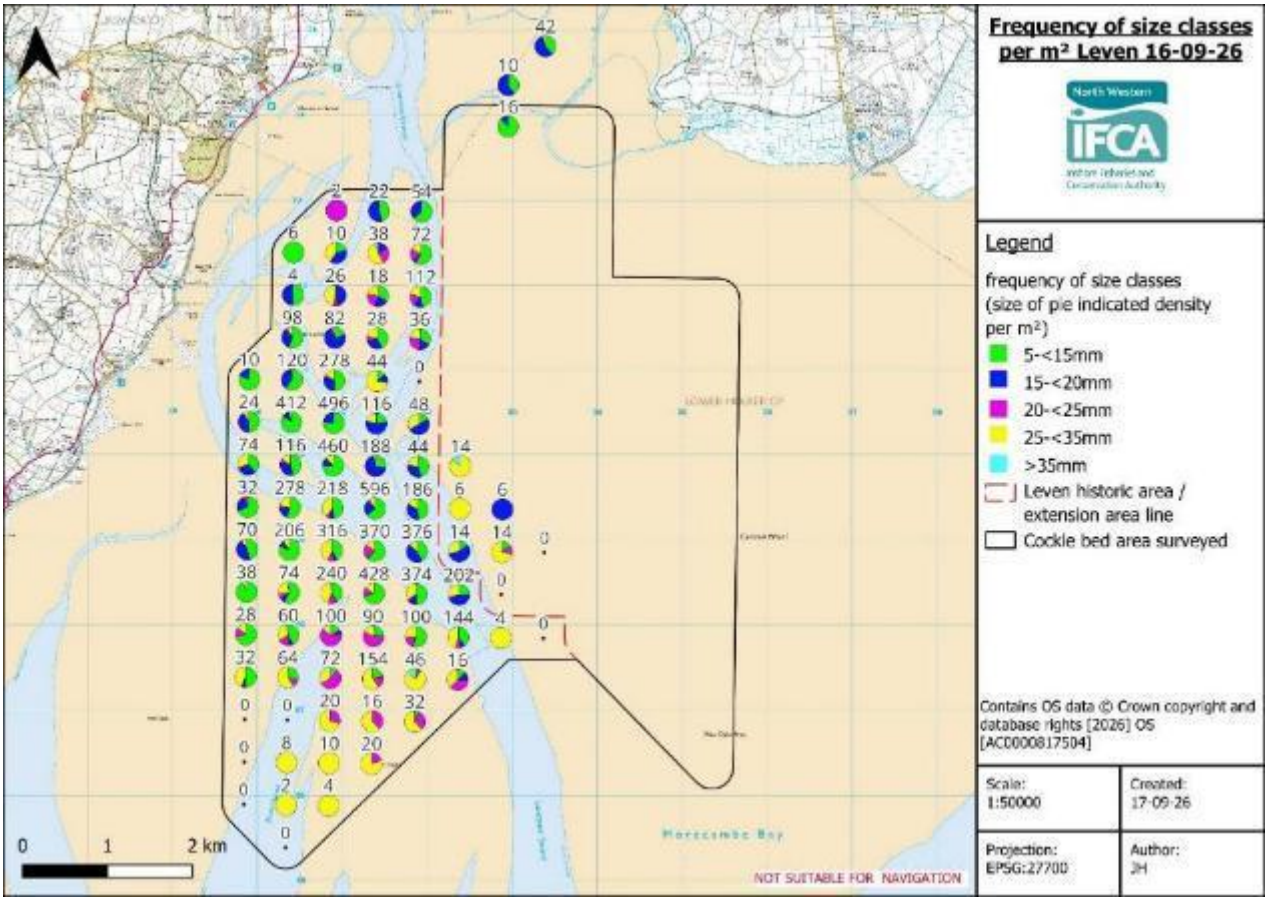
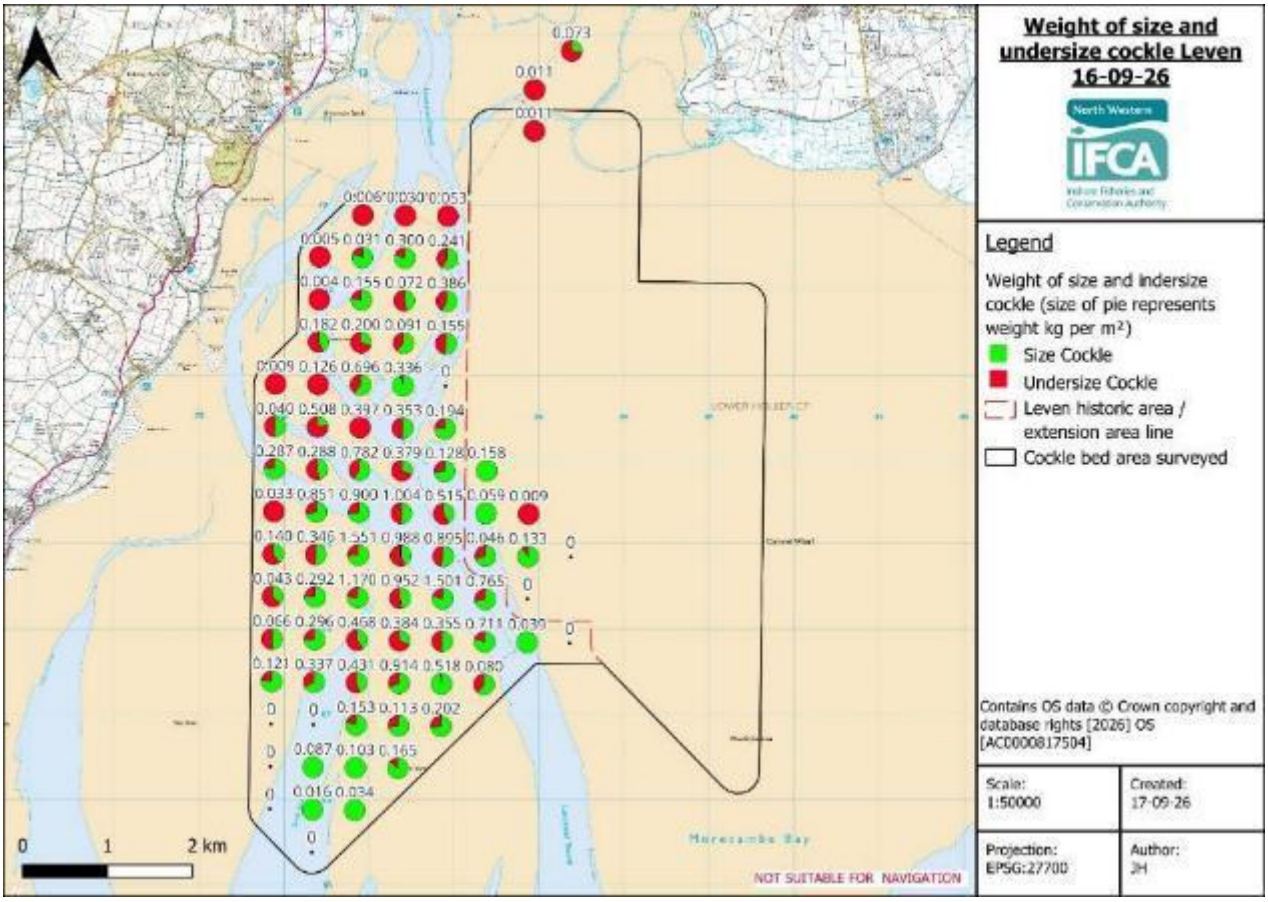


Figure 4. Frequency of size classes of cockle per m² Leven September 2026



Weight of size and undersize cockle Leven 16-09-26

North Western IFCA
Inshore Fisheries and Conservation Authority

Legend

Weight of size and undersize cockle (size of pie represents weight kg per m²)

- Size Cockle
- Undersize Cockle
- Leven historic area / extension area line
- Cockle bed area surveyed

Contains OS data © Crown copyright and database rights [2026] OS [AC0000817504]

Scale: 1:50000	Created: 17-09-26
Projection: EPSG:27700	Author: JH

Annex 2 – Code of Conduct for Intertidal Shellfisheries

North Western Inshore Fisheries and Conservation Authority

Code of Conduct for Intertidal Shellfisheries

Fishing for cockles and mussels on the shore is a long-established activity. In recent years the level of activity has increased, and there has been increasing public concern about it.

By observing this simple code of conduct you can help to reduce complaints and protect your own long-term interests.

1. Treat the foreshore with respect

Much of the foreshore is privately owned. Many landowners tolerate access to and from shellfisheries. This does not include the storage of fishing equipment or catches on private land. To protect your own interests:

- Don't damage gates, fences or signposts;
- Don't block access routes; and
- Get the landowner's agreement before storing any fishing equipment, vehicles or catches on private land.

2. Use vehicles on the shore carefully

Many landowners and coastal residents are concerned about the use of tractors, ATVs / Quad Bikes, and other vehicles on the shore. Try to minimise complaints by:

- Ensuring all vehicles are in good repair and have exhaust silencers;
- Keep noise to a minimum - especially early in the morning and at weekends;
- Avoid churning up mud at the top of the shore;
- Don't abandon vehicles on the shore.

3. Leave the shore as you find it

Frequent complaints are made about litter being left by fishermen. This includes food wrappers, cups, sacks used to transport shellfish, and shellfish dropped or discarded on the shore.

- Clear up any litter left at the end of the day;
- Don't leave unwanted shellfish or sacks lying around; and
- If storing gear or shellfish on the shore, make sure it doesn't impede access.

4. Have regard for wildlife

Much of the seashore is protected by wildlife designations. It is a criminal offence to harm protected wildlife. To avoid possible prosecution:

- Don't disturb bird nests or eggs;
- Avoid nature reserves;
- Don't take vehicles across areas of saltmarsh or seagrass; and
- Contact the NWIFCA office for advice if in any doubt.

5. Fish sustainably

IFCA byelaws protect the long-term future of shellfish stocks, and must be complied with at all times. Complying with byelaws protects your own future livelihood. You can help further by:

- Scattering riddled shellfish evenly back on the bed they were removed from - don't leave them in a heap;
- Avoid harming or gathering juvenile shellfish - they are the future of the fishery; and
- Ensure that vehicles used on the shore don't harm the shellfish beds.

6. Observe other guidance & advice

Other authorities may provide guidance relating to your activities. You should ensure that you are aware of:

- Guidance issued by local authorities and landowners concerning access and other issues;
- Guidance issued by the Health & Safety Executive and the Coastguard.

For further information, contact the NWIFCA at our Carnforth offices or visit www.nw-ifca.gov.uk

Annex 3 – NWIFCA Intertidal Fisheries Cold Weather Protocol

NORTH WESTERN IFCA INTERTIDAL FISHERIES COLD WEATHER PROTOCOL

April 2023

1. Purpose of this protocol

During periods of severe cold weather (as defined in section 2), the NWIFCA must assess whether fishing activities taking place within a Special Protection Area (SPA) pose a risk to the designated bird species. This requirement arises from the legal obligation upon the NWIFCA to carry out a Habitats Regulation Assessment (HRA) for activities it regulates and to implement any mitigation measures identified as necessary. The purpose of this protocol is to set out the criteria that must be met, the risks that must be considered, and the steps that NWIFCA will follow when such an event occurs. This protocol has been reviewed and agreed with Natural England.

1.1 Background

Intertidal fisheries in the NWIFCA District that operate within a European Marine Site (EMS) must undergo a HRA in accordance with Article 6 of the Habitats Directive. The purpose of this assessment is to ensure the proposed fishing activities do not hinder the conservation objectives of the protected features. The sensitivity of designated features to fishing activity is detailed in Natural England's Conservation Advice Packages: https://designatedsites.naturalengland.org.uk/.

Certain bird species are vulnerable to pressures from disturbance and removal of food resources from fishing activities. A HRA of a fishery may determine that during periods of severe cold, when birds require additional energy to maintain condition, there is the risk that fishery related pressures could result in an adverse effect on bird populations. The NWIFCA must therefore have a protocol to ensure these impacts are mitigated for and that there is no adverse effect on the integrity of the site.

1.2 Legal framework

The following legislation underpins NWIFCA's duty to protect designated features within the Northwest District under both UK (relevant to Marine Conservation Zones) and retained EU (relevant to European Marine Sites) law.

The Conservation of Habitats and Species Regulations (2017)

> ***24 Control of potentially damaging operations – Assessment of implications for European sites***
>
> *(1) Where it appears to the appropriate nature conservation body that a notice of a proposal under section 28E(1)(a) of the WCA 1981 relates to an operation which is or forms part of a plan or project which—*
>
> > *(a) is likely to have a significant effect on a European site (either alone or in combination with other plans or projects), and*
> >
> > *(b) is not directly connected with or necessary to the management of that site,*
>
> *it must make an appropriate assessment of the implications for that site in view of that site's conservation objectives.*
>
> *(2) In the light of the conclusions of the assessment, it may give consent for the operation only after having ascertained that the plan or project will not adversely affect the integrity of the site.*

Further information regarding the UK Government's guidance to carrying out a HRA can be found here: https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site

2. Protocol

A suspension of fishing within an SPA should be triggered during severe cold conditions, defined as:

A period during which temperatures are ***<u>at or below 0 degrees Celsius for 60 hours total out of 120 consecutive hours (5 days).</u>***

Temperatures will be monitored from agreed weather stations for each shellfishery within a SPA. Temperatures will be monitored in real-time.

Once the 60 hour trigger is reached, fishing will be suspended for five consecutive days (inclusive of weekends). Temperatures will continue to be monitored while fishing is suspended. The suspension will be lifted once a period of sustained warming (over 60 hours total within a 120 hour period, from the start of the suspension) is reached.

Predictive or forecasted temperatures will not be used to initiate a closure, however, they can be used to notify industry of the potential for a closure (see section 3.2 and 3.3).

2.1 Temperature stations

The weather stations from which to monitor temperature readings for the respective fisheries have been agreed with Natural England as of April 2023. Stations will be reviewed yearly. Stations will be reviewed for any fishery at the time when this protocol is applied, agreed with Natural England and detailed in the HRA.

2.2 Additional considerations

In addition to the temperature, NWIFCA will review other factors which may influence the level of impact on birds during severe cold. These will include (but will not be limited to):

- The intensity of fishing (frequency, number of operators, timings etc.)
- The potential for displacement of fishers into other fisheries

3. Communication procedure

3.1 Communication with Natural England

NWIFCA will notify Natural England when there is a risk of severe temperatures and provide regular updates during cold weather.

NWIFCA will consult with Natural England regarding the relative conditions of the relevant SPA and the potential for a suspension.

3.2 Communication with Industry members

If a forecast has indicated severe cold weather, NWIFCA will notify industry members via the website and by text message of the potential for a cold weather suspension as soon as possible.

NWIFCA will notify industry members via text and website updates as soon as temperature monitoring has begun.

If it looks likely that the minimum requirements of 60 hours will be reached, NWIFCA will notify fishers via text and website updates of this possibility.

Once 60 hours of severe cold is reached NWIFCA will notify fishers that the fishery will be closed within 24 hours.

3.3 Communication with Authority members

If a forecast has indicated severe cold weather, NWIFCA will notify members of the Technical Science and Byelaw Subcommittee (TSB) via email of the potential for a cold weather suspension as soon as possible.

NWIFCA will notify TSB members via email as soon as temperature monitoring has begun and notify members of suspension of the fishing, should the cold weather conditions (specified in 2. Protocol) be met.

Date of next review	**Completed by**	**NE Sign off**
October 2023		

Annex 4 – Natural Englands Formal Advice

Date: 16 October 2026
Our ref: 560599
Your ref: Proposed hand-gathered cockle fishery HRA. Newbiggin and Leven

NATURAL ENGLAND

NWIFCA
1 Preston Street
Carnforth
Lancashire
LA5 9BY

Hornbeam House
Crewe Business
Park Electra Way
Crewe
Cheshire CW1
6GJ

VIA WEBSITE ONLY

Dear Annabel Plumeridge

North Western IFCA - Morecambe Bay 2026/27 proposed hand-gathered cockle fishery HRA. Newbiggin and Leven

Thank you for your consultation dated 01 October 2026. The following constitutes Natural England's formal statutory response.

The Conservation of Habitats and Species Regulations 2017 (as amended) and The Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended)

We can confirm that the proposed works are located within Morecambe Bay SAC, Morecambe Bay and Duddon Estuary SPA and Morecambe Bay Ramsar. The proposed works are also adjacent to Liverpool Bay SPA and Duddon Estuary Ramsar (around 9km and 6km respectively).

Assessment of likely significant effect
Natural England's advice is that this proposed plan or project is likely to have a significant effect on a site and requires an appropriate assessment in accordance with the Conservation of Habitats & Species Regulations 2017 (as amended).

Appropriate assessment
We note that your authority, as competent authority under the provisions of the Habitats Regulations, has undertaken an Appropriate Assessment of the proposal in accordance with Regulation 63 of the Regulations. Natural England is a statutory consultee on the Appropriate Assessment stage of the Habitats Regulations Assessment process.

Your appropriate assessment concludes that your authority is able to ascertain that the proposal will not result in adverse effects on the integrity of any of the sites in question. Having considered the assessment, and the measures proposed to mitigate for all identified adverse effects that could potentially occur as a result of the proposal, Natural England advises that we concur with the assessment conclusions, providing that all mitigation measures are appropriately secured in any permission given.

Marine and Coastal Access Act 2009

The proposed works, as set out in the information provided, are sited near a Marine Conservation Zone (MCZ) (around 8km away). Wyre-Lune has been designated due to the presence of:

• European smelt (*Osmerus eperlanus*)
Having reviewed the evidence relating to the site we believe that the works will not hinder the conservation objectives of this site; so long as they are undertaken in strict accordance with the information provided by the applicant.

Wildlife and Countryside Act 1981 (as amended)

We can confirm that the proposed works are located within Morecambe Bay SSSI. The works are also adjacent to South Walney and Piel Channel Flats SSSI. Natural England advises that the proposal, if undertaken in strict accordance with the details submitted, is not likely to damage the interest features for which the site has been notified.

Other Relevant Matters

Natural England agrees with your authorities conclusion of no Adverse Effect on Integrity (AEoI). However Natural England advises that as there is intertidal mud around Newbiggin and Leven cockle beds, this feature should have been carried through to the Appropriate Assessment stage where no AEoI is concluded.

For any queries relating to the content of this letter please contact me using the details provided below.

Yours sincerely

Laurence Browning
Cumbria Marine Team
E-mail: Laurence.browning@naturalengland.org.uk