Fisheries in EMS Habitats Regulations Assessment

NWIFCA-MB-EMS-COCKLE HANDGATHERING FISHERY 2025
August 13th 2025

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.

The NWIFCA proposes to authorise a hand-gathered cockle fishery on Pilling, Flookburgh, 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. Pilling cockle bed was opened in July under the HRA submitted May 29th 2025. This HRA incorporates the Flookburgh and Newbiggin fishery recommendations alongside the early opened Pilling.

This proposal is classed as a plan or project and the area lies within a European designated site (also commonly referred to as Natura 2000 sites) and therefore has the potential to affect the designated features. European 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 European Site.

1.2 Proposal

The NWIFCA proposes to authorise a hand-gathered cockle fishery on Pilling, Flokoburgh and Newbiggin cockle beds from the 1st of July 2025 until the 28th of February 2026. All beds will be open for five days in a seven day period (Mon-Fri), for one tide per day. Flookburgh will be subject to an 800 tonne TAC, and Newbiggin will be subject to a 300 tonne TAC.

In August 2023 NWIFCA was asked to consider the possibility of opening cockles beds early (potentially 1st of July) in the current cockle close season (1st May to 31st August) to allow fishers to target stock when meat yields are at their highest. A list of reports documenting the decision-making process up to present is provided in Table 1.2.1.

Table 1.2.1 – List of reports documentation the dicision making process on opening cockle beds early within the NWIFCA district.

Report	**Summary**
November 2023 TSB (Agenda-Item-11-Cockle-Fishery-Open-Season-November-2023.pdf)	Overview of the considerations and feasibility of changing the cockle open season from the 1st of September to the 1st of July.
February 2024 TSB (Agenda-Item-8-Cockle-Fishery-Open-Season-TSB-February-2024.pdf)	A strategy for a potential change to the cockle open season from the 1st of September to the 1st of July.
March 2024 TSB (PowerPoint Presentation)	Industry consultation on changing the start of the cockle open season. Authority approves a trial open season of July 1st subject to sufficient cockle biomass
May 2024 TSB (NWIFCA - TSB)	Survey report and decision to not change to the cockle open season from the 1st September to the 1st of July due to the stock being undersize.
August 2024 TSB (NWIFCA - TSB)	Survey report with the recommendation to open Flookburgh and Leven on the 1st of September and Pilling and Leasowe on the 1st of October.
May 2025 TSB (NWIFCA - TSB)	Survey report with the recommendation that Pilling cockle bed open 1st of July, with all other beds remaining closed and reviewed in August.
=-August 2025 TSB (Technical, Science and Byelaws Sub-Committee Meeting - IFCA North West	Survey report with the recommendation that Flookburgh cockle bed open with an 800 tonne TAC, and a resolution by the Authority for Newbiggin to open with a 300 tonne TAC., with all other beds remaining closed for the duration of the season.

2. Information about the EMS

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

3. Interest feature(s) of the EMS 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 the 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.NWIFCA stock data is comparable since 2017, Figure 4.1.1 show the trend in cockle since 2017 and highlights when cockle fisheries were open in Morecambe Bay.

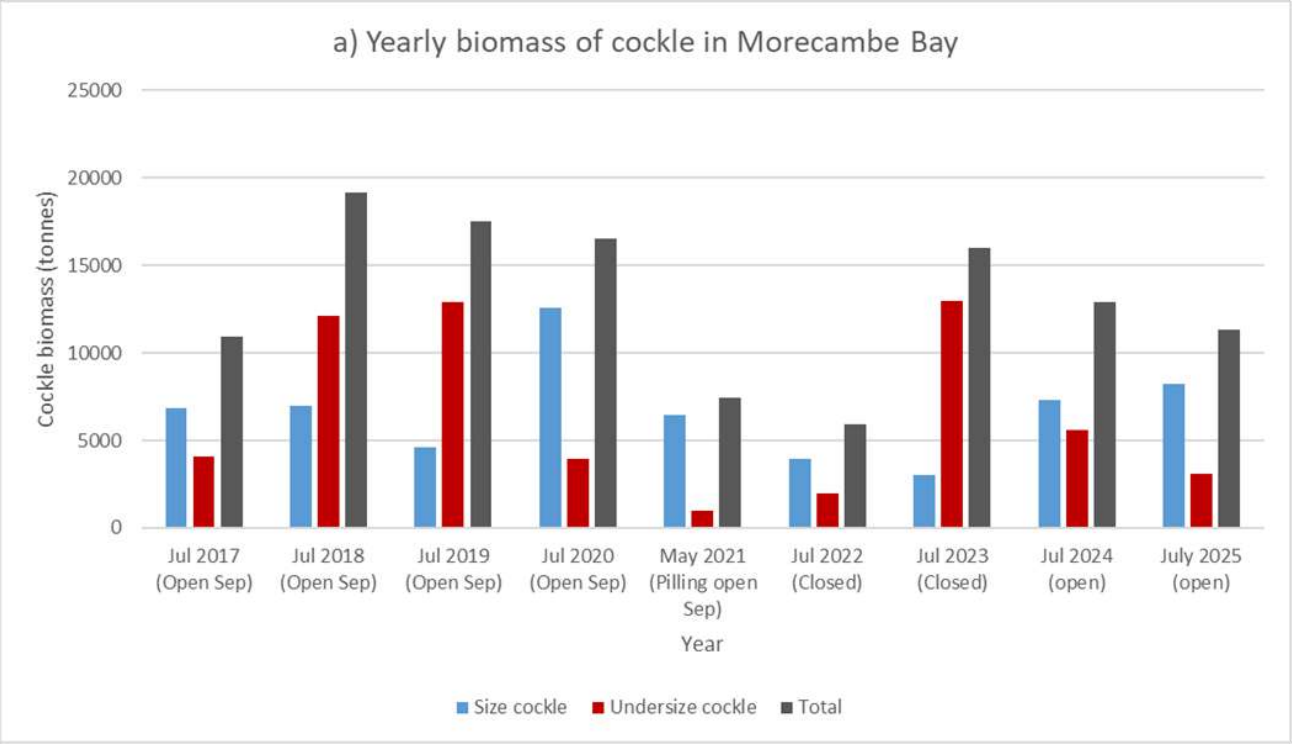


Figure 4.1.1. show the year biomass of size and undersize cockle for Morecambe Bay since 2017 and if cockle fisheries were opened.

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 Current Status of Stock

Morecambe Bay cockle surveys were conducted for a second time between the June 24th and July 22nd. Survey reports are provided in Annex 1 of this report. Results have been standardised and the size of the pie charts corresponds to set values, making them comparable between beds and future surveys.

Officers collected and analysed 9,808 cockles from 500 sample points across approximately 7,700 ha of Morecambe Bay. Figure 4.5.1 shows the location and extent of sample points for the respective beds. This year additional points were added to Flookburgh to incorporate areas identified by industry in the 2024/25 fishing season. Additional points were added to the west of Newbiggin to capture the full extent of the bed beyond the oyster frames

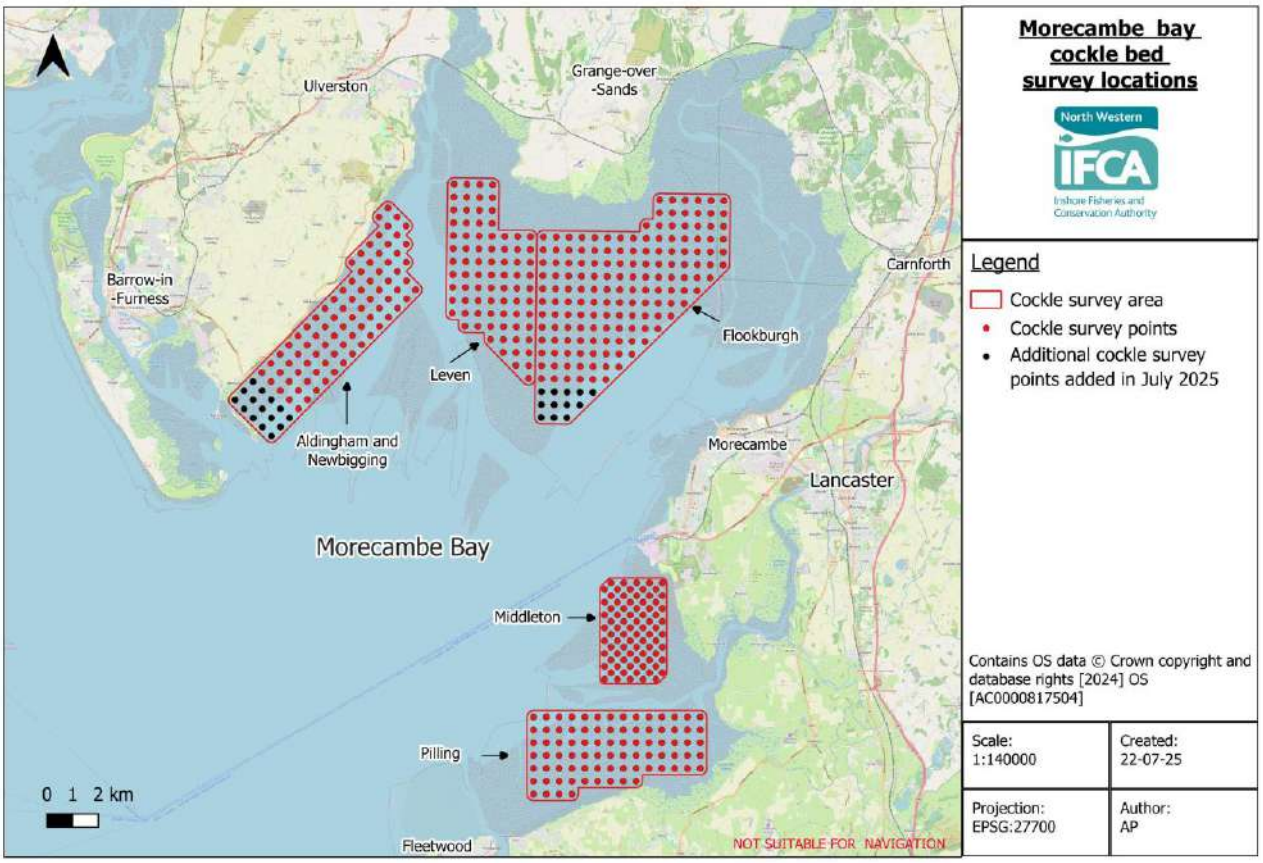


Figure 4.5.1 The location of sample points across Morecambe Bay cockle beds 2025

A summary of the April 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 July 2025. *figures represent the max cockle biomass

Cockle bed	Date surveyed	Area of cockle present (ha)	Size cockle (tonnes)	Undersize cockle (tonnes)	Total cockle biomass (tonnes)
Aldingham and Newbiggin	July 2nd and 22nd 2025	1275	1432	670	2102
Leven	July 9th 2025	1050	470	287	757
Flookburgh	July 14s & 17th 2025	3050	2609	1147	3756
Warton Sands	na	na	na	na	Na
Middleton	July 8th 2025	698	589	115	704
Pilling	June 24th 2025	1525	3143	838	3981

Biomass of size and undersize cockle across Morecambe Bay

Table 4.5.1 provides yearly maximum cockle biomass figures from 2017 to 2025. All surveys presented here were undertaken between June/July each year and are therefore comparable.

In July this year, there is an estimated and 11,300 tonnes of cockle across 7,598 hectares surveyed in Morecambe Bay. Of this, 8,243 tonnes is size cockle, and 3,057 is undersize cockle. .

Table 4.5.2. The yearly biomass of figures for size, undersize and total biomass of cockles on Morecambe Bay cockle beds from 2017 to 2025. *figures represent the max cockle biomass

Year	All surveyed Morecambe Bay cockle beds				Beds opened
	Area (ha)	**Size cockle (tonne)**	**Undersize cockle (tonne)**	**Total cockle (tonne)**	
2017	5177	6487	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	6450	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

Figure 4.5.2 shows the data from table 4.5.2 in graphical form to demonstrate the trends in cockle biomass across Morecambe Bay since 2017.

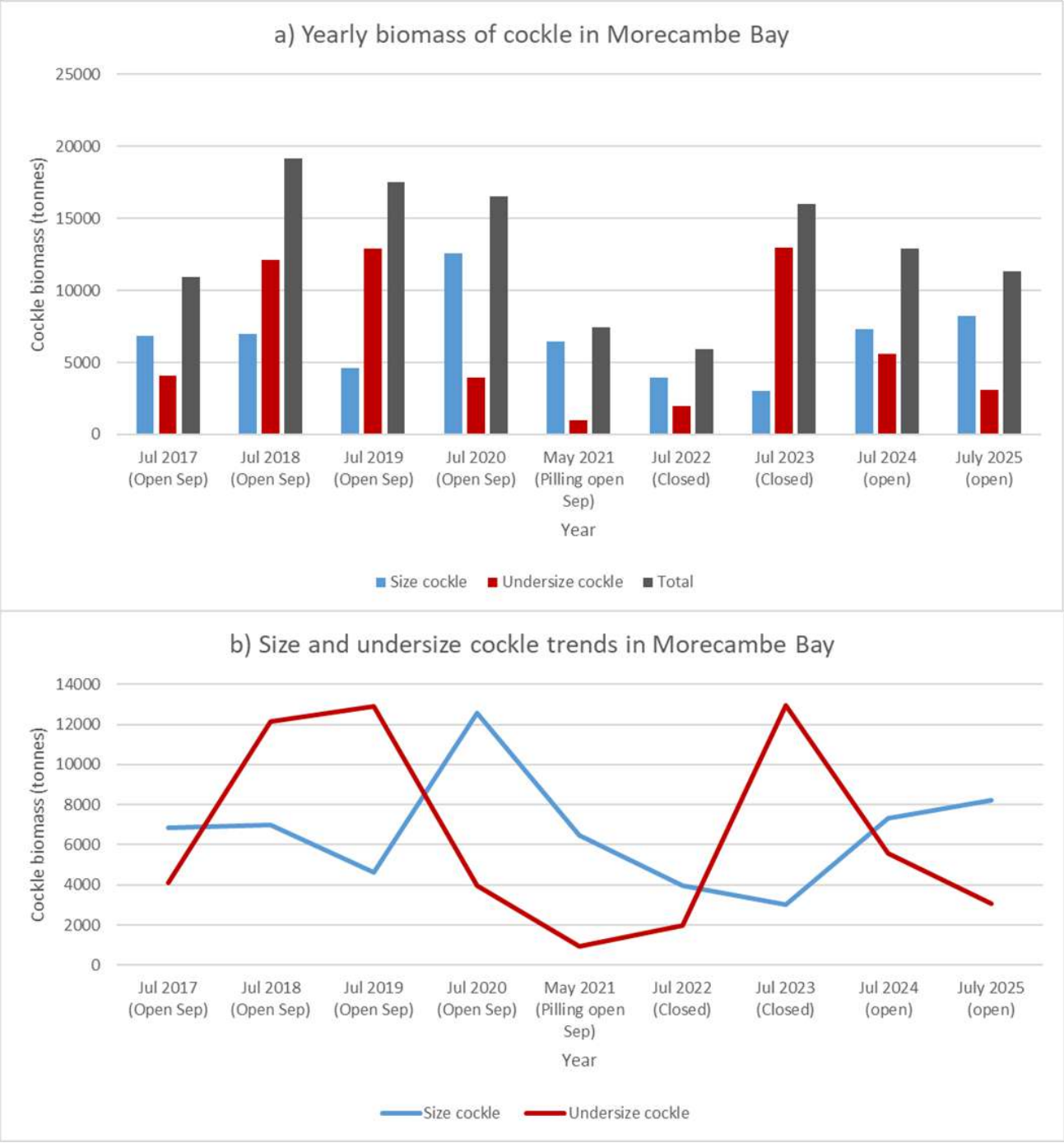


Figure 4.5.2. Summary of Morecambe Bay cockle survey results from 2017-2025. a) shows the yearly biomass of size, undersize and total cockle in Morecambe Bay from 2017 to 2025, and b) the relational trend in size and undersize cockle from 2017 to 2025.

As of July 2025, the total biomass of cockle has decreased slightly across Morecambe Bay from approximately 12,895 tonnes in July 2024, to 11,300 tonnes (Figure 2.1.2 a).

The total biomass of size cockle has increased from 7308 tonnes in July 2024, to 8,243 tonnes in July 2025 (Figure 2.1.2.a). This is above the minimum threshold a fishery in Morecambe Bay has previously been recommended open, and the second highest biomass since 2017.

Figure 2.1.2.b indicates the trend in the biomass of size (blue) and undersize (orange) 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 would be expected to grow on in 2024 to support an increased biomass of size cockle. An increase in size biomass has occurred again this year, likely the result of the previous year's undersize growing to size over the summer months.

There has also been a decrease in the proportion of undersize cockle across the Bay, possibly due to the 2024 cohort growing on to size this summer, and also natural mortality. This year, there was also a spat settlement observed during July surveys which had grown quickly to between 5-15mm in size.

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 July 2025, and which beds were opened for fishing that same year.

This year:

1. Flookburgh has seen a decrease in the biomass of size cockle from 3,629 tonnes in July 2024, to 2,609 tonnes in July 2025.
2. Pilling has increased in the biomass of size cockle from 1,742 tonnes in July 2024, to 3,143 tonnes in June 2025. This is the highest biomass of size cockle seen on Pilling since 2017.
3. Newbiggin has increased in biomass of size cockle from 846 tonnes in July 2024 to 1,432 tonnes, however total biomass remains relatively low as there is limited undersize cockle present.
4. Leven and Middleton have remained consistently low, with only marginal changes.
5. Biomass of undersize is low across all beds, with limited stocks available to grow on for the following years fisheries.

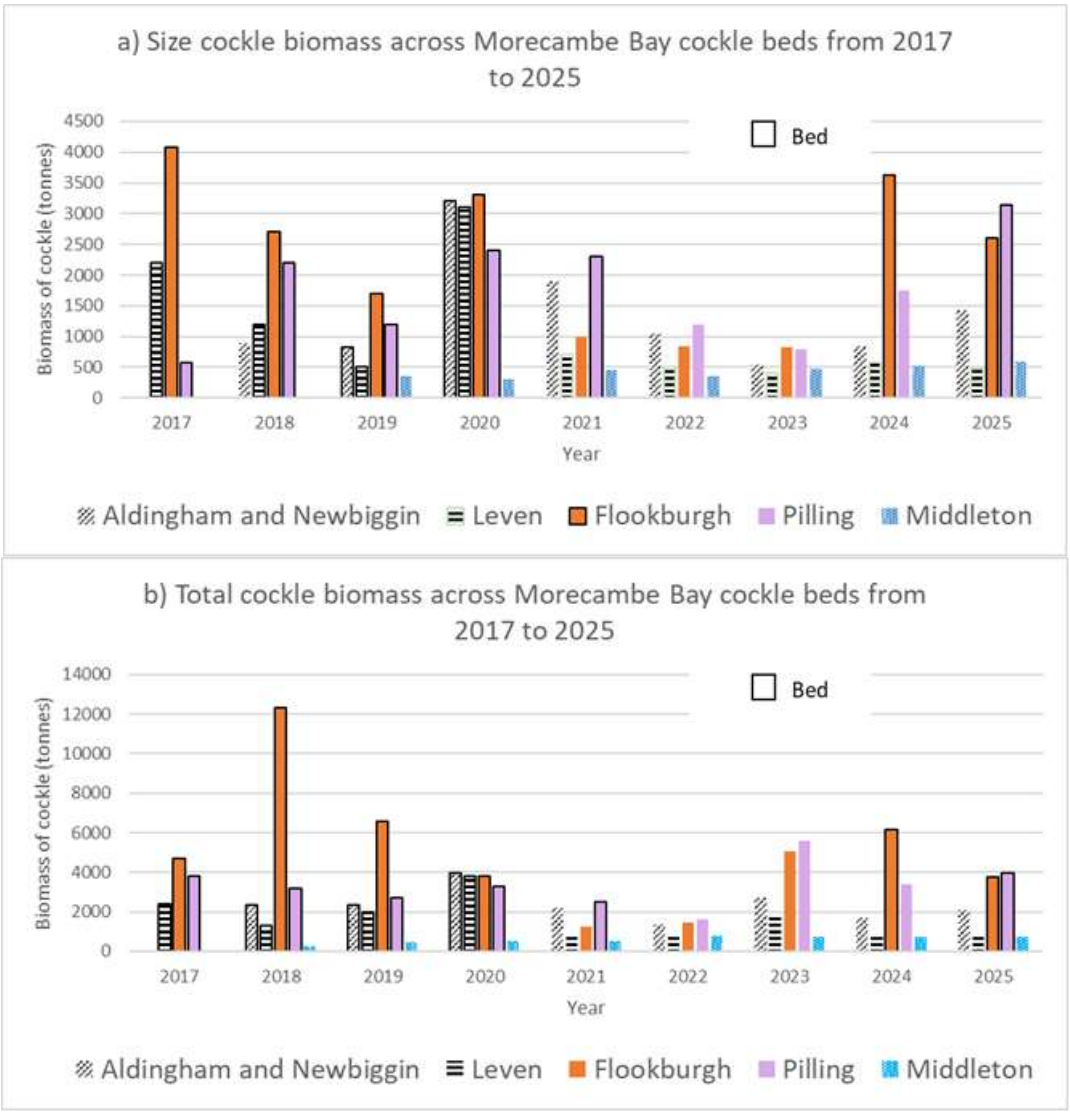


Figure 4.5.3 Biomass of size cockles on the individual Morecambe Bay cockle beds from 2017 to 2025, 4.5.3a) the biomass of size cockle from 2017 to 2025 for all surveyed beds with the corresponding open beds, and 4.5.3b) the biomass of undersize cockle on all surveyed beds from 2017 to 2025.

Biomass of cockle size classes on each bed

Figure 4.5.4a and 4.5.4b shows the biomass of cockles in each size class (0-5 mm, 15-20mm, 20-25mm 25-35mm and 35+mm) for the main Morecambe Bay cockle beds in July 2024, and July 2025 respectively.

For Pilling, and Flookburgh beds, cockles in the 20-25 mm size classes made up a large proportion of their total biomass in July 2024. On Pilling, this size class was protected by the closure of half the bed, and has grown on to contribute to the increase in the 25+mm category seen in 2025

In comparison, Flookburgh has decreased slightly in size cockle biomass but still remains above the minimum threshold it has previously been opened.

The biomass of all size categories remains low across Leven and Middleton, however, there has been a slight increase in size cockle on Newbiggin.

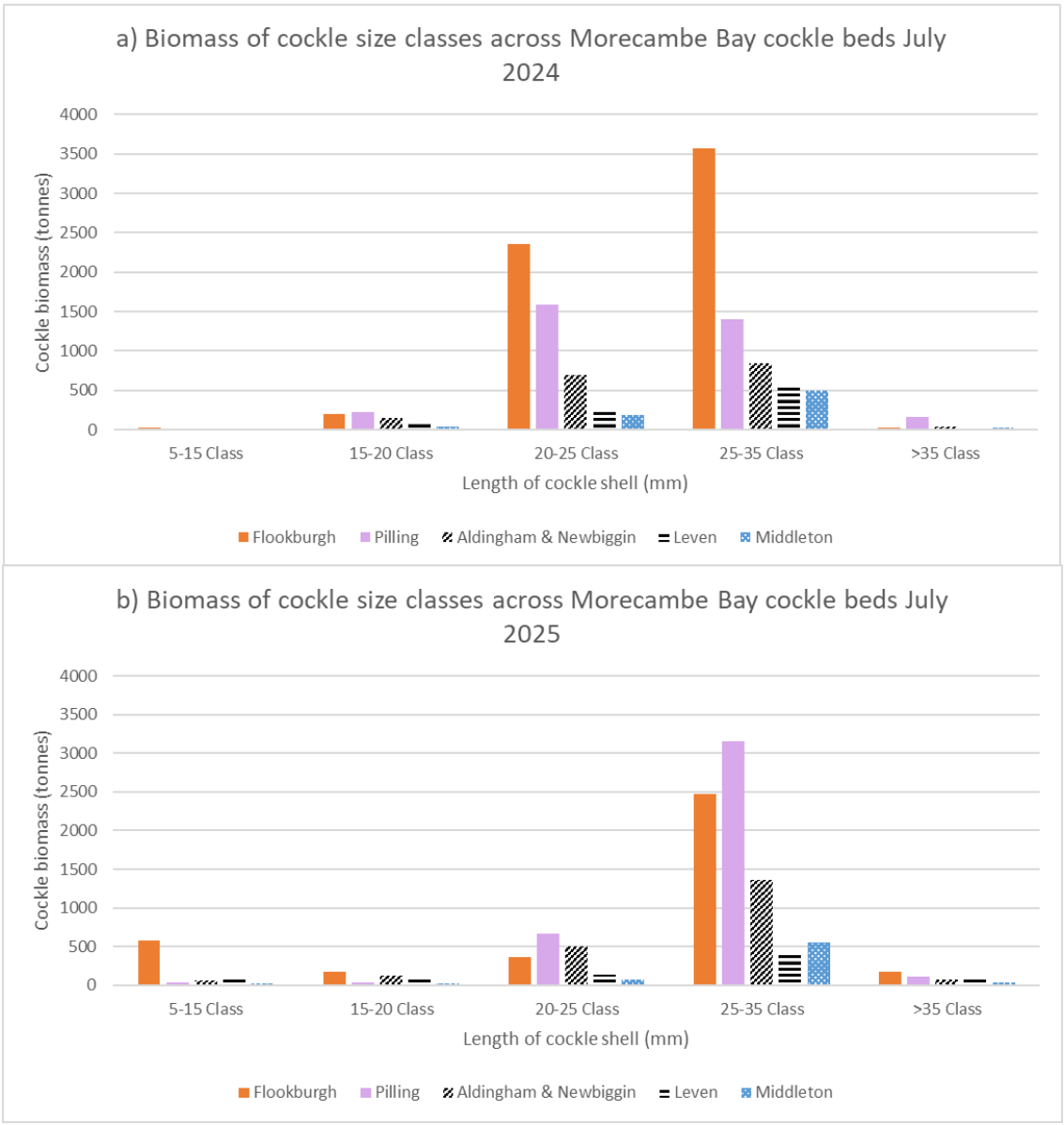


Figure 4.5.4 The biomass of different size classes of cockle for each of the Morecambe Bay cockle beds. 4.5.4a demonstrates this for 2023, and figure 4.5.4b for 2024 and 4.5.4c for 2025 for comparison.

Composition of size classes on individual beds

The composition of size classes across a bed is important to consider as it has implications for fisheries management, and fishing highly mixed stock may have an impact on juvenile cockles survivability.

Size composition and distribution figures for each be are provided in Annex 1. This year, the main beds of Flookburgh and Pilling have discrete areas of size and undersize. Size cockle is in the 25+mm category, significantly larger than the majority of undersize which is within the 5-15mm category. It is therefore, less likely that fishers will target undersize areas. In addition, the large difference in size means it is likely small can be easily riddled out.

Though the biomasses on Leven, Middleton and Aldingham and Newbiggin remain low, they similarly have a larger cohort of size cockle biomass in comparison to undersize, but are slightly more mixed. In particular, Aldingham and Newbiggin, and Middleton cockle beds seem 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:

The results of the 2025 Morecambe Bay cockle survey show:

1. The total biomass across Morecambe Bay has decreased to 11,300 tonnes from 12,894 tonnes in the previous year.
2. The total size biomass across Morecambe Bay has increased to 8,243 tonnes from 7,308 in 2024. This is likely due to the undersize growing to size over the past year. The total undersize biomass, however, has decreased from 5,586 to 3,057.
3. Flookburgh has decreased in size cockle biomass since July 2024, and is relatively low in comparison to the past 8 years. The cockle stocks available are predominantly size, and there is limited undersize cockle available to contribute to the fishery in the following year.
4. Pilling has increased in size cockle biomass to 3,143 tonnes – the highest biomass estimated in the past 8 years. Densities are also high, and size:undersize ratio is acceptable for fishing in comparison to previous years.
5. Newbiggin has increased in size cockle biomass from 846 tonnes to 1,432 tonnes, however, its total cockle biomass remains relatively low. The bed biomass and composition has been stable at this level for the past few years. Much change has been seen in the area of the bed due to channel movements.

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 EMS[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 Flookburgh and Newbiggin cockle beds, in addition to Pilling Sands (opened on 1st of July), for five days in a seven day period, for one tide per day. These beds will be open the same days in any given week, to make sure the disturbance and overall effort aross Morecambe Bay is limited. The rest of the beds in Morecambe Bay (Leven and Middleton) 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

In addition, a TAC will be applied to both the Flookburgh and Newbiggin fisheries. The rationale for the implementation of a TAC is due to the low total biomass seen across the Bay. Though size cockle biomass is highest since before 2017, the total biomass is low. Rationale behind the calculation of a TAC is provided in section 6.2.

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.

Leven and Middleton, will remain closed. 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)

Leven	1050	470	287
Middleton	698	589	115
TOTAL	**1,748**	**1,059**	**1012**

In addition to the biomass on the closed beds, 2,856 tonnes of cockle should remain on Flookburgh after the TAC of 800 tonnes is reached, and 1802 tonnes of cockle should remain on Newbiggin after the TAC of 300 tonnes has been reached.

As fishing has already been underway at Pilling since July, officers are able to make predictions as to the total biomass likely to be removed. Landings data indicates that approximately 257 tonnes of size cockle has been removed from Pilling in July. Typically the rate of removal decreases over time, as the larger proportion of stock is taken from earlier in the fishery. As of August, the rate of removal has dropped to approximately 30 tonnes per week (Figure 6.1.1). At a worst case scenario, assuming the rate of removal remains the same, this will likely mean just under 1100 tonnes could be removed from Pilling. Therefore, considering the TACs on both Newbiggin and Flookburgh, and the predicted removal of cockle from Pilling under worst case conditions – there should be 9100 tonnes of cockle remaining in Morecambe Bay.

This biomass will be be available for birds, recruitment of stock, and some loss due to natural mortality over the winter months. It is, however, highly unlikely that the volume of cockle under worst case scenario will be removed for the following reasons:

a) Numbers of fishers and their rate of removal typically drop off during the course of the season – this has not been factored in to the above calculations
b) Effort will spread to Flookburgh and Newbiggin once opened, and further decrease the biomass predicted to be removed from Pilling
c) It is highly unlikely the TAC for Flookburgh will be reached given the low level of activity seen in the fishery this year, and reports from permit holders.
d) There will be some growth in the undersize biomass of cockle during this time which may contribute to an increase in the overall biomass.

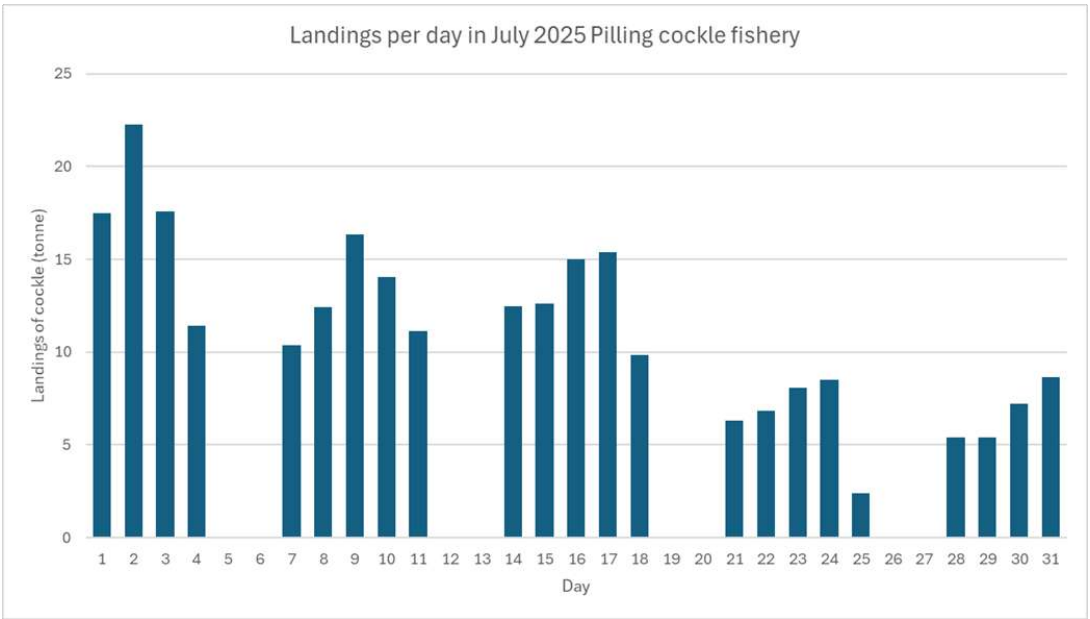


Figure 6.1.1 The biomass of cockle removed each day from Piling fishery since opening. These values are based on fisher returns data.

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.

The size cockle on Pilling and Flookburgh is in a discrete locations and fishing will only occur in areas where the size cockle is at the greatest densities. On Piling, although there is size cockle on a large proportion of the bed much of the bed will remain unfished because the cockle density is not high enough to make it commercially viable to fish. The maximum area likely to be targeted by permit holders on Pilling is 300 hectares of the 1400 hectares of cockle bed. This equates to 21% of Pilling. For Flookburgh, the main area targeted by the fishery is likely to be the Southern portion of the bed, over the channel. In image 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 first year cockles in the northern part of the bed (5-15mm coloured green) over the shoreward side of the main channel. In the lower half of the bed, cockle are predominantly in the 25 mm + category (yellow), which is typically size cockle. The composition of cockles in these two areas are quite distinct, and limit 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.

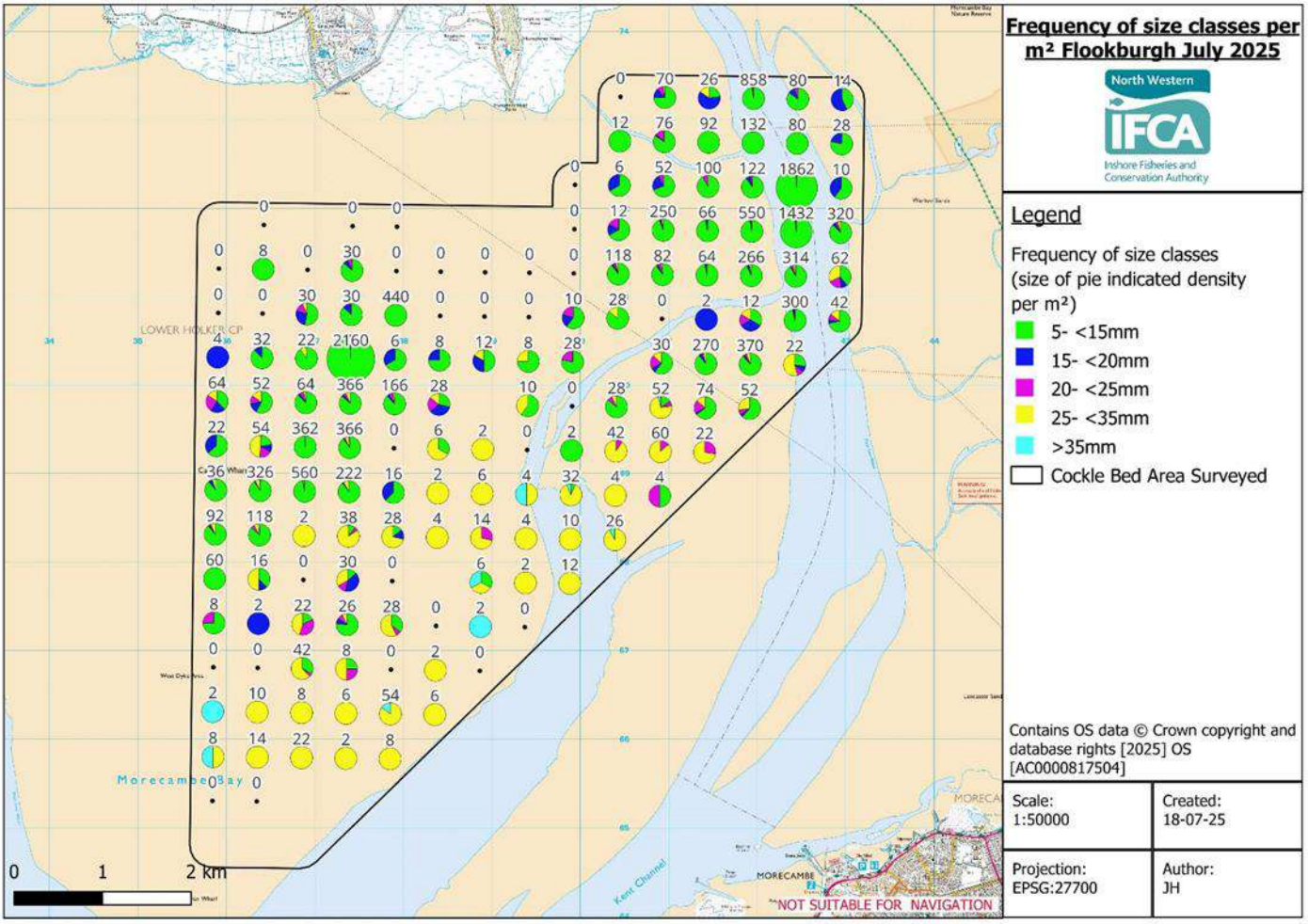


Figure 6.1.2 The Frequency of size classes of cockle per m² Flookburgh July 2025

In 2024, officers mapped the extent of fishing activity on the Flookburgh cockle bed from September to December (Fig 6.1.3). 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 (Fig 6.1.3).

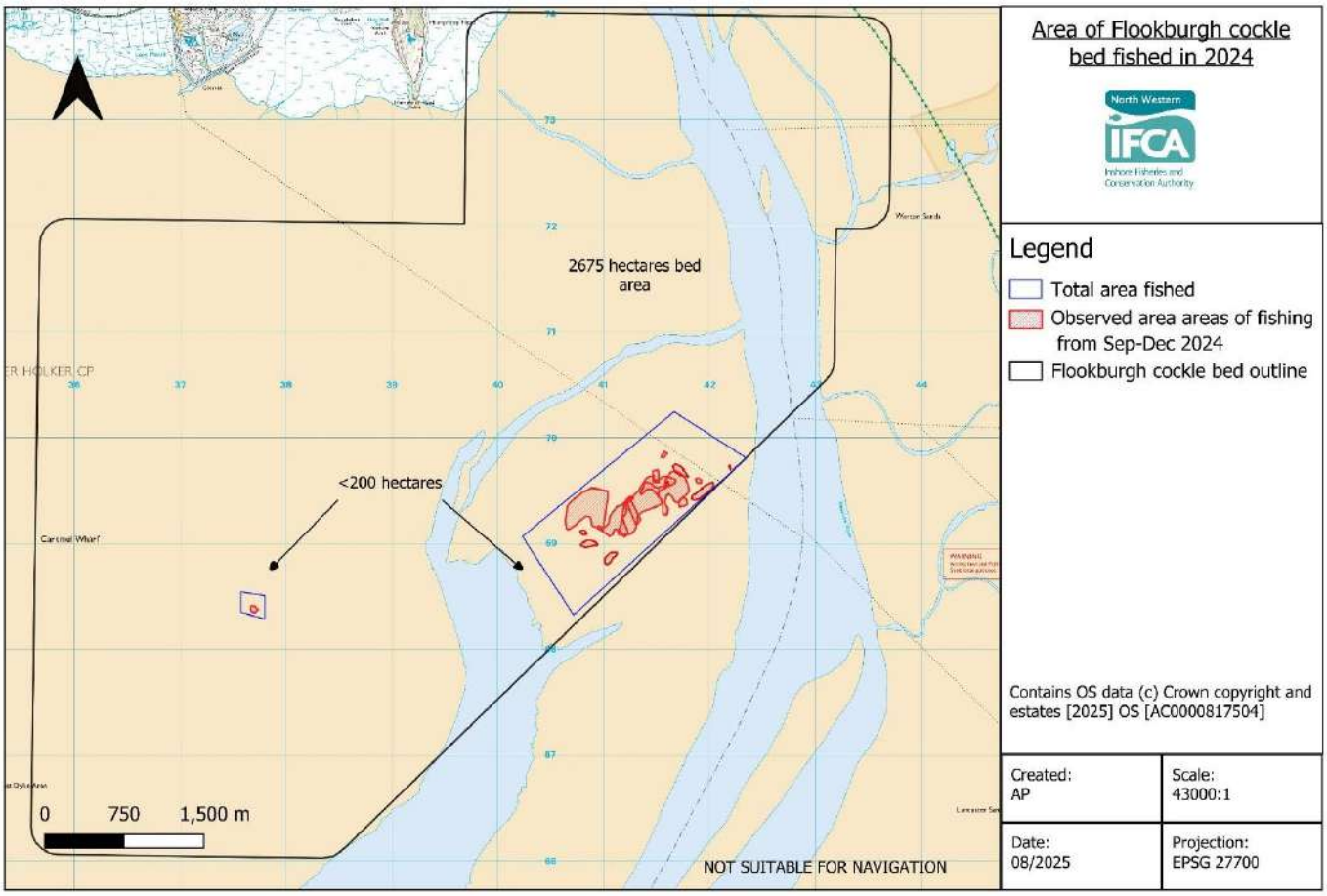


Figure 6.1.3 Area of fishing activity from September to December 2024 on Flookburgh cockle bed.

Table 6.1.2.2. Date of fishery observations and total area fished by permit holders on Flookburgh in 2024.

Date	**Area fished**
Sep 3rd	12 hectares
Sep 9th	11 hectares
Oct 15th	13 hectares
Oct 24th	4 hectares
Dec 9th	0.5 hectares

The dense areas targeted in 2024, are in a similar location again in 2025. Given the size composition and distribution of cockle on the bed it is likely a similar area will be targeted again in 2025. Therefore, under a precautionary approach assuming worst case scenario, NWIFCA

officers assume double the area fished in 2024 could be fished in 2025/26. Therefore, 400 hectares of the Flookburgh cockle bed could be targeted by cockle fishing practices. This leaves an estimated 2600 hectares of bed that will experience little to no cockle fishing effort.

On Newbiggin, Figure 6.1.4 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. Therefore, as a precautionary estimate, just over a quarter of Newbiggin (500 hectares) will be considered targeted for fishing in this assessment.

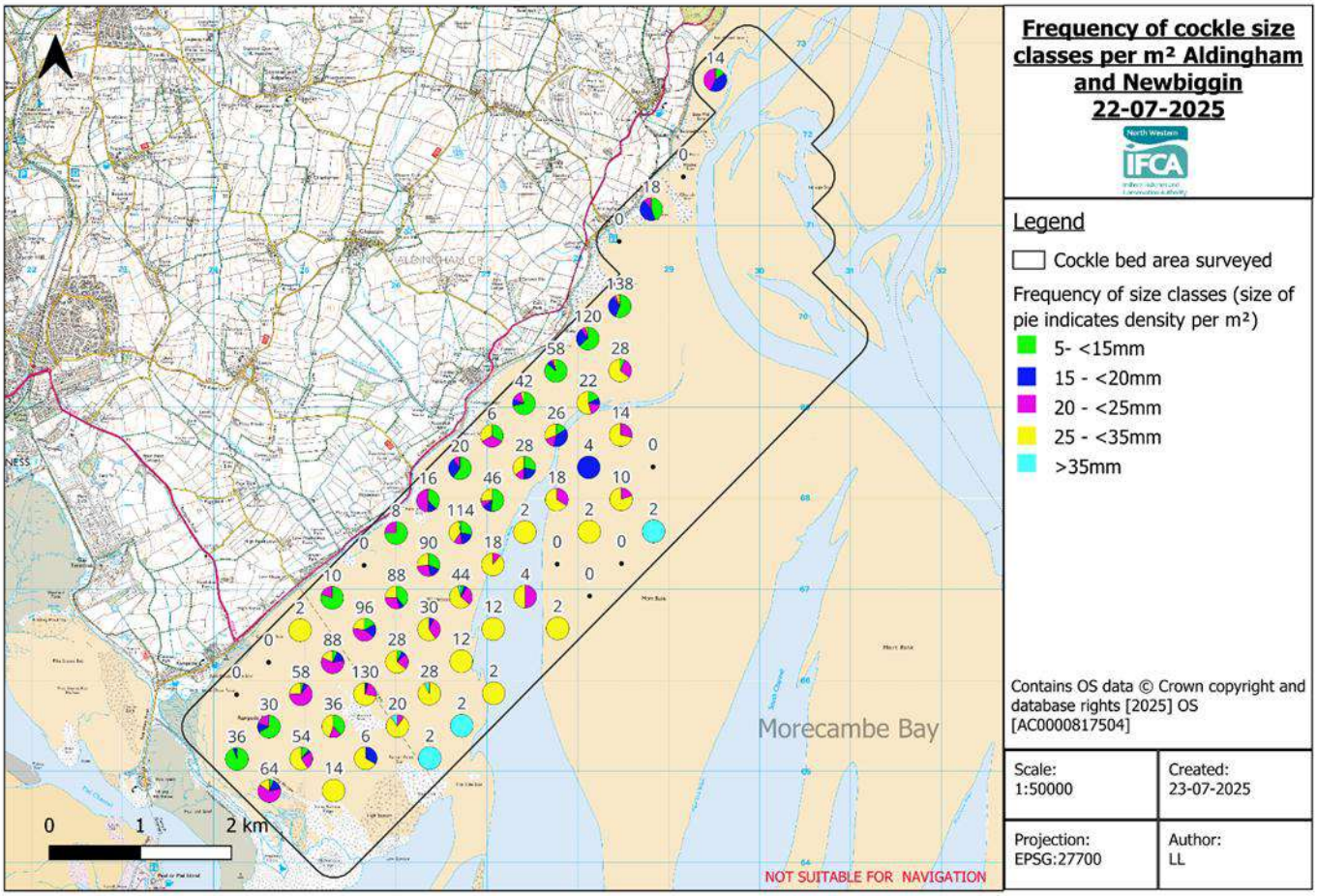


Figure 6.1.4 The Frequency of size classes of cockle per m² Newbiggin July 2025

Therefore, considering Morecambe Bay as a whole – the total area likely to be fished under a worst case scenario is 1200 hectares, out of a total of 7,598 hectares – equating to 15% of the total cockle beds. This leaves approximately 6,398 hectares unlikely to be fished (85%).

3-Duration of the fishery

In addition, NWIFCA propose a 5 day a week, one tide a day fishery for all open cockle beds, with the five days being the same across all sites to ensure fishing activity across the bay is limited to 5 tides a week out of a possible 14. The current stock level across the bay is near to the lower limit NWIFCA has previously recommended opening a fishery. 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, allows for the fishery to sustain for longer, 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 fishery is highly selective with minimal bycatch, however, there is the potential for damage to occur to juvenile species or other bivalves. The current fishery at Pilling has been opened in the current closed season, which was introduced to protect both spawning stock and juvenile cockle as there was concern that cockle spat, were more susceptible to damage from the activities associated with a hand gathered fishery. In addition, there is a high presence of small (5-15 mm) cockle on many of the beds (for example see Flookburgh figure 6.1.2). These may also be susceptible to damage from fishing activities due to having smaller shells.

NWIFCA tested a number of fishing methodologies to investigate the potential impact of jumbo-ing and raking on juvenile cockle. Unfortunately, due to the difficulty of designing a methodology that removes the numerous variables that affect the breakage rates of cockles, changing environmental factors and the natural variation of cockle densities, the investigations did not produce results from which the difference in sample size (number of individuals) could be assigned to damage or loss during the fishing activity. However, a number of observations can be drawn from the data collected. There were no significant numbers of damaged cockle observed in any of the samples and although the sample sizes (number of individual cockles) varied between treatments (control, jumbo-ing, jumbo-ing and raking) there was no significant mortality of juvenile stock from fishing.

The size cockle on both Flookburgh and Pilling is in discrete locations and fishing will only occur in areas where the size cockle is at the greatest densities. On Newbiggin, though stock is mixed, there is not a high percentage of small cockle, and the larger size cockle is concentrated towards the lower portions of the bed. Large proportions of Pilling, Newbiggin and Flookburgh will likely remain unfished because the size cockle density is not high enough to make it commercially viable to fish it. The maximum area likely to be targeted by permit holder on Pilling is 300 hectares of the 1400 hectares of cockle bed. This equates to 21% of Pilling. On Flookburgh, fishing is likely to take place in a similar area to that seen in 2024 (see section above and figure 6.1.3), as a precautionary approach, NWIFCA has estimated 13% of Flookburgh being targeted. On Newbiggin, fishing activity will be concentrated in the lower half of the Newbiggin cockle bed, the points with the highest densities making up approximately a quarter of the bed. Therefore, as a precautionary estimate, just over a quarter of Newbiggin (500 hectares) will be considered targeted for fishing.

When considering the impacts of fishing to other bivalves and molluscs, 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; the bivalve *Limecola balthica* can be mixed in with cockles, but based on their

morphology, the impacts of fishing would be very similar to that of juvenile cockle and would therefore be minimally impacted from fishing activity. No other species have been observed in significant numbers.

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

Pilling Sands

The main access point to Pilling cockle fishery is via the concrete track access point at Fluke Hall Lane as used in previous fisheries. There are very few other access points to this bed and as this is the easiest route to the fishery, and parking / tonning up areas exist there, it is likely to be the only access point used. This route is well-established and there is very little risk if any of the saltmarsh being damaged. As there is a small chance other access routes could be used, the Fluke Hall Lane access route will be the only access point allowed through the flexible permit conditions of the fishery.

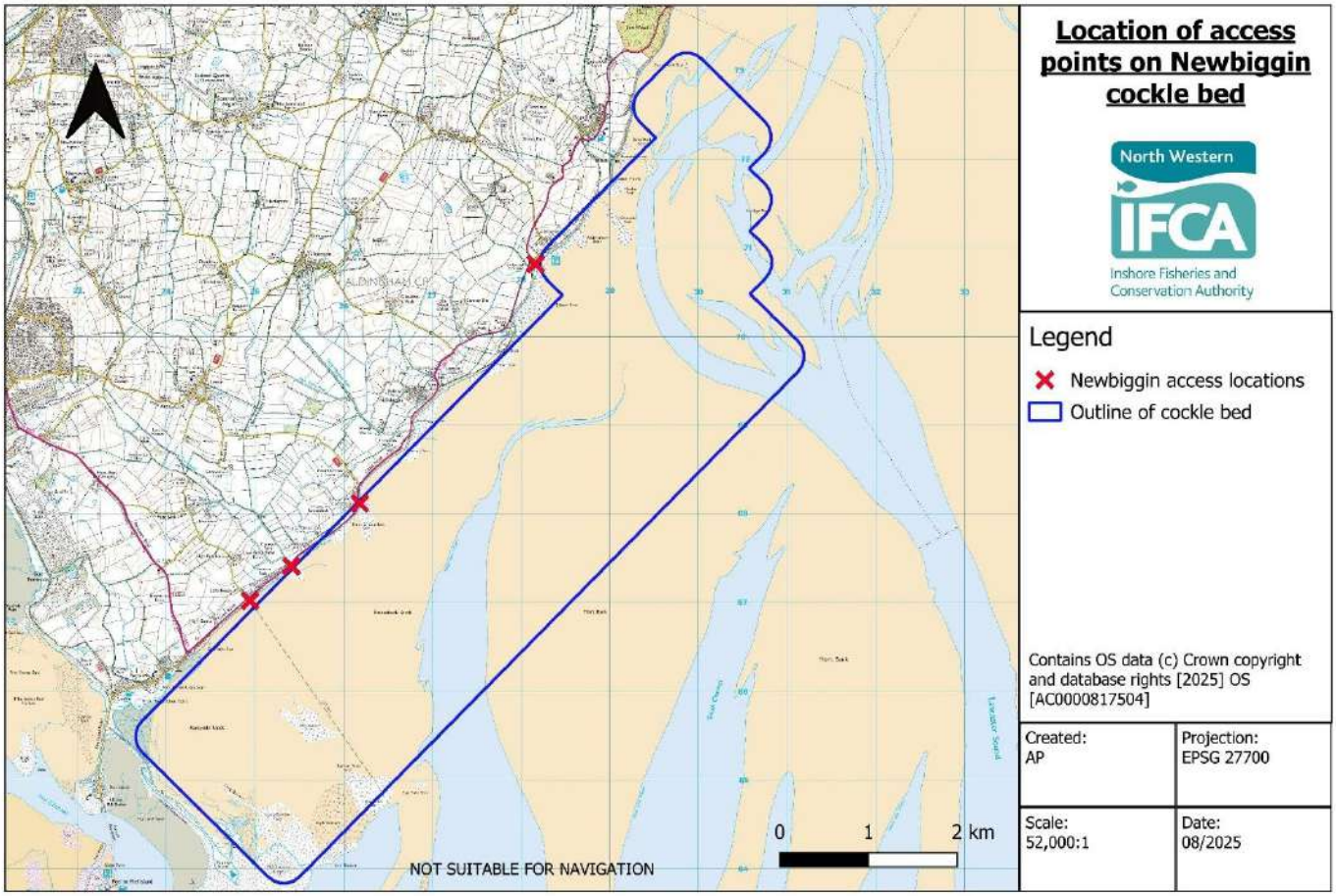
Flookburgh

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.



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 table of the cockle stocks has been provided in section 4.5 and section 6.1 (ii) above, gives detailed information about the amount of cockle that will be left on closed cockle beds and the areas of unfished and therefore undisturbed cockle beds which will be available for bird food requirements. Currently, there is no agreed baseline limit for Morecambe Bay cockle stocks. A Bird Food Model is being developed by Dr Richard Stillman and NE, to assist with this. A proxy baseline is currently used based on previous recommendation thresholds.

Flookburgh total cockle biomass is similar in total to year 2020 estimates when the fishery was opened, and Newbiggin total cockle biomass is similar in total to year 2018 and 2019 when the fishery was also opened, though size cockle those years was less. And the total biomass of cockle in Morecambe Bay exceeds that which it has previously been recommended open.

However, the stocks are comparatively low, and as such, it is important for there to be management measures in place to limit removal.

To ensure removal of cockle remains at a sustainable level, Flookburgh and Newbiggin cockle beds have had a TAC applied. When determining whether to apply a TAC, and how much the TAC should be, the following factors are considered:

1) The total cockle biomass (including size and undersize) available in Morecambe Bay
2) The total cockle biomass (including size and undersize) on each bed
3) The biomass of cockle predicted to be removed from Pilling (previously opened in July) (see section 6.1)

Information on stock assessments, previous recommendation thresholds, and historic landings data are used to inform the TAC calculation.

At a worst case scenario, 1100 tonnes could be removed from Pilling. Therefore, considering the TACs on both Newbiggin and Flookburgh, and the predicted removal of cockle from Pilling under worst case conditions – a total of 2200 tonnes of cockle could be there should be 9100 tonnes of cockle remaining in Morecambe Bay. However, it is likely that there will be more available, considering, a) fishers are unlikely to mee the TAC proposed, b) the estimates of removal for Pilling cockle bed are based on early landings data, which typically declines after the first two months, and c) there will be some further growth of undersize cockle over the remaining summer months. Only 30 out of 150 permit holders are currently operating in Pilling where cockle is in greater densities and more easily accessible than Flookburgh – it is therefore unlikely that after the first week of the Flookburgh fishery opening, the numbers will exceed 30-40 for the duration of the fishery. These numbers are supported by the 2024 fishery data.

The lowest biomass Morecambe Bay has been opened on was 10,942 in 2017. That season, approximately 1,384 tonnes was removed according to fisher returns. This would have left 9,558 tonnes available in the area. Under a worst case scenario, 9,100 tonnes could be left on the bed post fishing, however, NWIFCA predict a realistically similar amount to 2017 will be left on the beds this year given the factors presented above.

In addition, as a proportion of the size cockle available on all beds, the TACs do not exceed the maximum quantities previously removed, and ensure that each individual bed does not drop below the lowest size biomass a fishery has previously been recommended open on, for example:

1) The lowest size biomass Morecambe Bay has previously been opened was 4,635, this year size cockle biomass is the second highest it has been since 2017, at 8,243 tonnes. At a worst case scenario, the removal of a predicted 2,200 tonnes keeps size cockle above 6,000 tonnes.
2) On Flookburgh, an 800 tonne TAC would bring the size cockle biomass to 1809 from 2609 tonnes, above the lowest size biomass Flookburgh has previously been opened in 2019 at 1,702 tonnes.
3) At 1435 tonnes of size, the 300 tonne TAC on Newbiggin does not bring it below previous lower thresholds the fishery has been opened on.

A small spat settlement of 5-15mm cockles was observed during the June/July surveys.

There was a low-density of 2024 cockle some of which was under 5mm in length. The biomass figures from the surveys do not include estimates for under 5mm cockle due to the highly variable nature of cockle this size. Some of which will be within the 4-13mm size class suitable for knot to feed on. Enforcement of the minimum size of cockle within NWIFCA Byelaw 3 means undersize cockle will remain on the beds.

In addition, NWIFCA propose a 5 day a week, one tide a day for all beds. Reducing the number of days and tides the fishery is open for, allows for the fishery to sustain for longer, and allows time for officers to receive and review returns data (required once per month) to assess whether the fishing effort will reduce the total cockle stocks below the minimal threshold.

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 is provided in Table 6.2.2.1, showing the biomass (where calculated), coverage, density and size range of mussel.

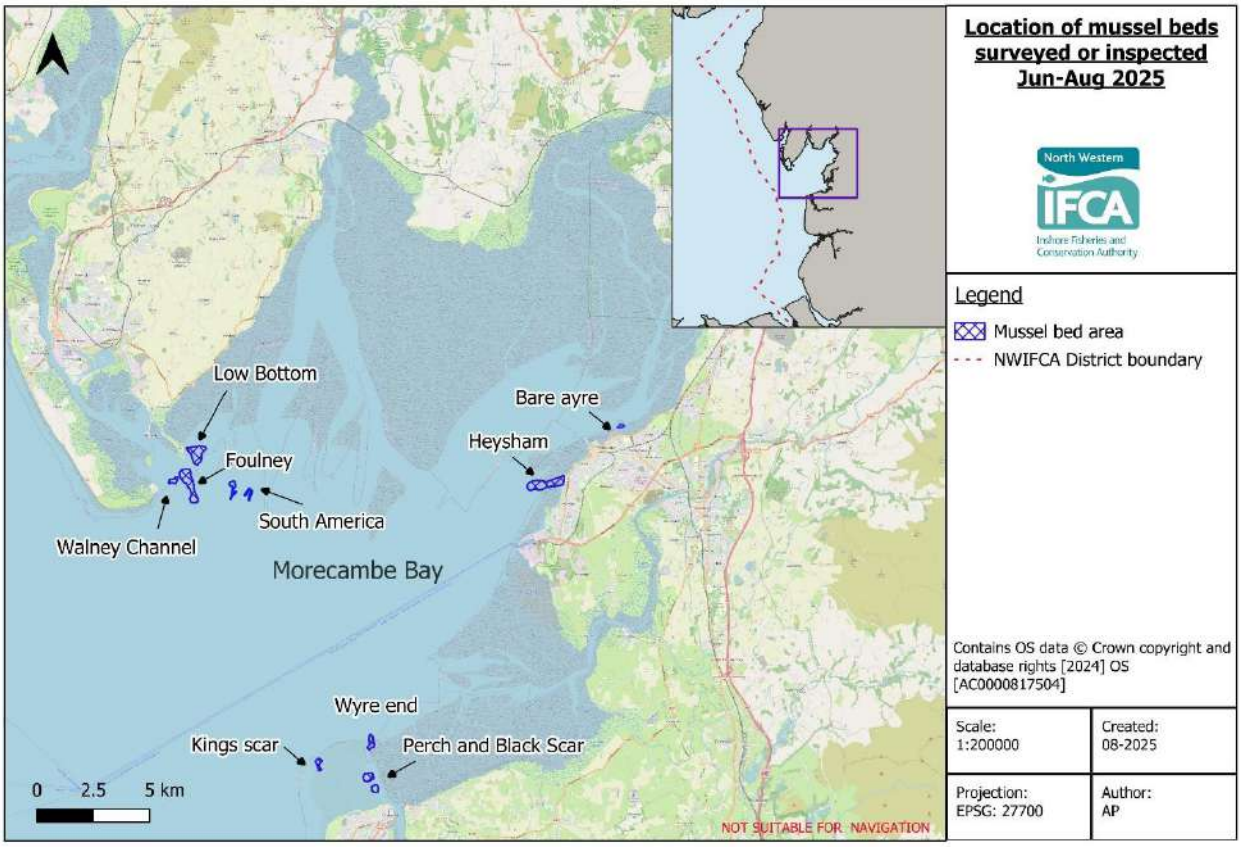


Figure 1. Location of the mussel beds in Morecambe Bay 2025

Table 6.2.2.1 – Summary of Dutch Wand surveys, and NWIFCA inspections in Morecambe Bay mussel beds 2025

Month	Name	Survey Method	Area (ha)	Description
Mar-25	Heysham	Inspection	n/a	Very little mussel has persisted from 2024 as is typically on Heysham, what mussel remained was patchy and between 25-35mm in length.
Mar-25	Bare Ayre	Inspection	~1	Small strip of mussel 200 by 50m along the channel edge, 25-35mm in length with an occasional size mussel. This area has not received a mussel settlement for an number of years.
Apr-25	South America	Inspection	17.5	Area comprises of three distinct areas with patchy mussel ranging from 50-60mm in length. Some new 2025 mussel settlement along the outer edge of one of the areas.

Apr 25	Low Bottom	Dutch Wand	35	Undersize Mussel Size Mussel Total	397 tonnes 1657 tonnes **2054 tonnes**
May 25	Foulney Skear	Dutch Wand	39	Undersize Mussel Size Mussel Total	924 tonnes 1961 tonnes **2885 tonnes**
May 25	Walney Channel	Dutch Wand	9	Undersize Mussel Size Mussel Total	2 tonnes 445 tonnes **447 tonnes**
May 25	Heysham	Inspection	30	An area of dense 2025 seed mussel was present from conger rock to Dallam Dyke 15-20mm.	
June, July and Aug 25	Fleetwood (Rossal, Necking, Kings, Perch and Black Scar)	Inspection	26	Total area of seed on Rossal, Necking and Kingscar is >9 hectares. The area is large and varies from 10-80%. Total are of seed on Perch and Black scar is 17 hectare with 10% coverage of Perch and, 50-60% coverage on Black.	
Aug 25	Wyre end	Inspection	13.5	Thick uniform seed covered the majority of the site at 10-15 mm. With 90% coverage and no size mussel.	

In addition to the mussel beds which have been inspected there is known mussel bed in Walney Channel near the bridge 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 the current and 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 Flookburgh cockle bed are separate from the main areas of size, meaning fishers will be unlikely to interact with them. There is minimal undersize cockle on both Pilling and Newbiggin, and areas of dense size mussel are in discrete locations where fishers will preferably

target. 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 Pilling cockle bed from the 1st of July 2025 until the 28th of February 2026. Flookburgh and Newbiggin cockle beds are proposed opened from September, until the 28th of February 2026. The fishery as a whole (all 3 beds inclusive) will be open five days, Monday to Friday, for one tide per day.

Morecambe Bay is a vital over-wintering area for waders including cockle predating species such as oystercatcher and knot. There is subsequently a risk of disturbance to these birds during fishing activity, which will be focussed around low water times.

Disturbance to high tide roosting birds is very unlikely due to the timing of the fishery – ie. fishers will access the beach around two to three hours after high water and will have left the area around two to three hours before high water. On Flookburgh and Pilling, 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. On Newbiggin, there is no saltmarsh habitat, however birds may still utilise the top of the beach. , The access routes at all 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.

All open fisheries in Morecambe Bay will be limited to five days a week, Monday to Friday , for one tide per day. The open tide will likely be the one with the most daylight as this is preferable to permit holders. This leaves 9 tides out of 14 not disturbed by cockle fishers, and beds will be closed for at least one tide per day. All beds will be shut on the same tides – for example there will not be a morning ride fishery on Pilling, and an evening tide fishery on Flookburgh – they will be opened at the same time. This will help reduce disturbance by:

1) Providing for a greater number of hours of darkness for birds
2) Limiting disturbance to one tide
3) Limiting effort as fishers will target only on bed over the duration of a tidal cycle

There are also large areas of the Bay that hold cockle and mussel of varying size ranges which will either not be open to fishing (Leven and Middleton) or will not be targeted by gatherers due to the lack of size cockle (see section 6.1.2). These will provide alternative areas for birds to remain undisturbed.

At Flookburgh the bed area is very large and fishers are likely to be working in small groups in the middle to low reaches of the bed which will minimise disturbance which is only likely to cause temporary and insignificant displacement as there will be large areas not being fished. 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 at Flookburgh and may benefit from loose cockle on the sand after jumbo-ing (pers. comm. Knott M. 2018).

The number of permit holders attending a fishery and the duration over which they continue to attend depends on the price of cockles, and how easy the stock is to fish.As seen with nearly all of the cockle fisheries over the last 9 years, the majority of effort is in the first one to two months, after which the number of permit holders fishing reduces significantly. At Pilling this year, initial numbers of permit holders were around 60 at the beginning of the fishery in July, this has now declined to 30 fishers by the beginning of August.

Based on the stock and previous experience it is likely that there will be interest in the Flookburgh fishery for the first month, with upwards of 70 permit holders accessing the fishery. However, as the stocks are lower in density that in 2024, it is likely these numbers will decrease quickly after the first two months, likely down to around 30 per day, as seen in previous years. In addition, if the TAC is reached, the fishery will be closed and fishing will cease.

Newbiggin cockle bed has not been open to fishing in the last 5 years, however, size stock is comparatively low in comparison to the other open beds. Given the greater stock available on Flookburgh and Pilling, 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. Pilling Sands is located within the Lune Estuary and therefore there is the potential for disturbance. Main locations for roosting are noted as Conder Estuary Marsh, Glasson Marsh and Middleton, other important locations include West Plain, Potts Corner, Ocean Edge, Plover Scar and locations on Walney Island (close to Newbiggin). Flookburgh access route is through West Plain and therefore there is potential for disturbance. The roost sites are away from the main access point onto Pilling sands and although West Plain is an important roost site, the fishery will take place three hours either side of low

water which will further reduce disturbance. There is potential for the birds to be present on Pilling Sands, Newbiggin and Flookburgh 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, five days a week (Mon-Fri) 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 to Pilling. Any disturbance will be minimal and any displacement temporary and short lived, with the fishery only being opened five 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, grey plover, knot, 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. 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 five days in any seven day period, for one tide per day. 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 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 the fishery operates three hours either side of low water, therefore very unlikely to disturb a roost at high water that occurs on large spring tides. West Plain is not known to be a roost site for Grey Plover. There is potential for the birds to be present on Pilling Sands, Flookburgh 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 is likely to be targeted by permit holder on Pilling is 300 hectares of the 1500 hectares of cockle bed, and on Flookburgh is 400 hectares out of 3050 hectares, and 500 hectare on Newbiggin. 7,598 hectares – equating to 15% of the total cockle beds. This leaves approximately 6,398 hectares unlikely to be fished (85%).

Disturbance will be reduced further from previous fisheries, 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 the July and August. 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 is through the saltmarsh. The access routes are established access routes 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.

Oystercatcher: Important roosting sites are located at East Plain and Hesk Bank, West Plain and South Walney. Flookburgh access route is through West Plain and therefore there is potential for disturbance. The fishery will take place three hours either side of low water which will make disturbance to roost site unlikely. There is potential for the birds to be present on Pilling Sands, Newbiggin and Flookburgh while feeding. However, as detailed above, a large proportion of the available beds will be available for Oystercatcher to feed. Oystercatchers feed on a mixture of shellfish species including mussels, and can be dependent on feeding location.

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 as the fishery is in August to September and for a short period of time disturbance is likely to be minimal if any.

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. Flookburgh and 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 Pilling Sands, Newbiggin and Flookburgh 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.

Pink-footed goose: the Wyre Estuary is where the main concentration of the species is, particularly around Pilling. It is known that Pink-footed geese will roost on Pilling particularly on the fringes of the saltmarsh and the upper shore. They leave naturally at dawn to feed and return at dusk. There is potential for disturbance of roost in the hours of darkness through the winter while the fishery is open. Last year, concerns were raised by local stakeholders regarding disturbance to pink-footed geese at Pilling from those accessing the fishery during hours of darkness when the fishery was opened for a limited time in October.

Geese are most vulnerable between November and March (figure 6.2.2.2). With the fishery opening 1st of July it is expected that the majority in of effort is in the first one to two months, after which the number of permit holder fishing will reduce significantly down to probably less than 20 permit holders. This will significantly reduce the risk of disturbance to pink-footed geese.

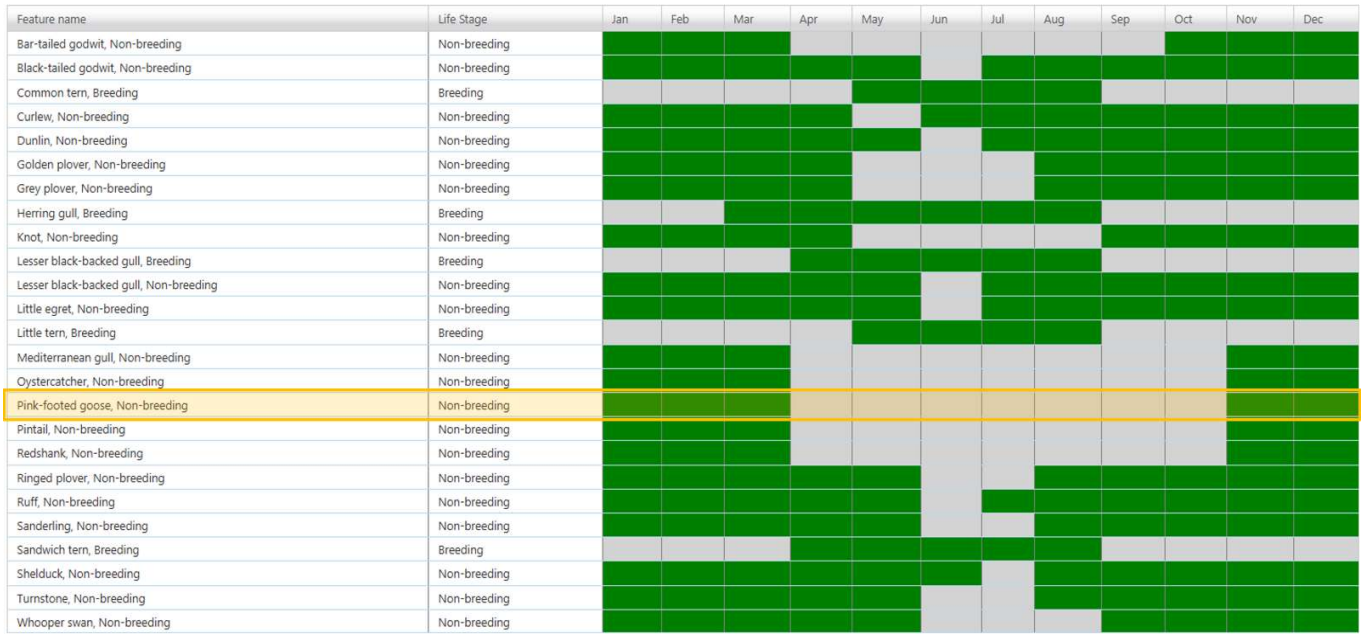


Figure 6.2.2.2: The seasonal presence of protected bird features in Morecambe Bay and Duddon Estuary SPA – Natural England designated sites.

Although reduced there is still a risk between November and February when the timing of the fishery access coincides with hours of darkness when they are roosting and in close proximity to roosting sites.

NWIFCA conducted observations on the fishery and the behaviour of the pink-footed geese at Pilling from January 2025. Officers estimated the location of geese if present and the behaviour when fisher accessed the fishery. Geese were observed 8 times (figure 6.2.2.3) over 17 patrols (table 6.2.2.1). Permit holders were active during 10 of these patrols and 5 times when the geese were present. The number of permit holders where low with a maximum of 6 present on any one tide.

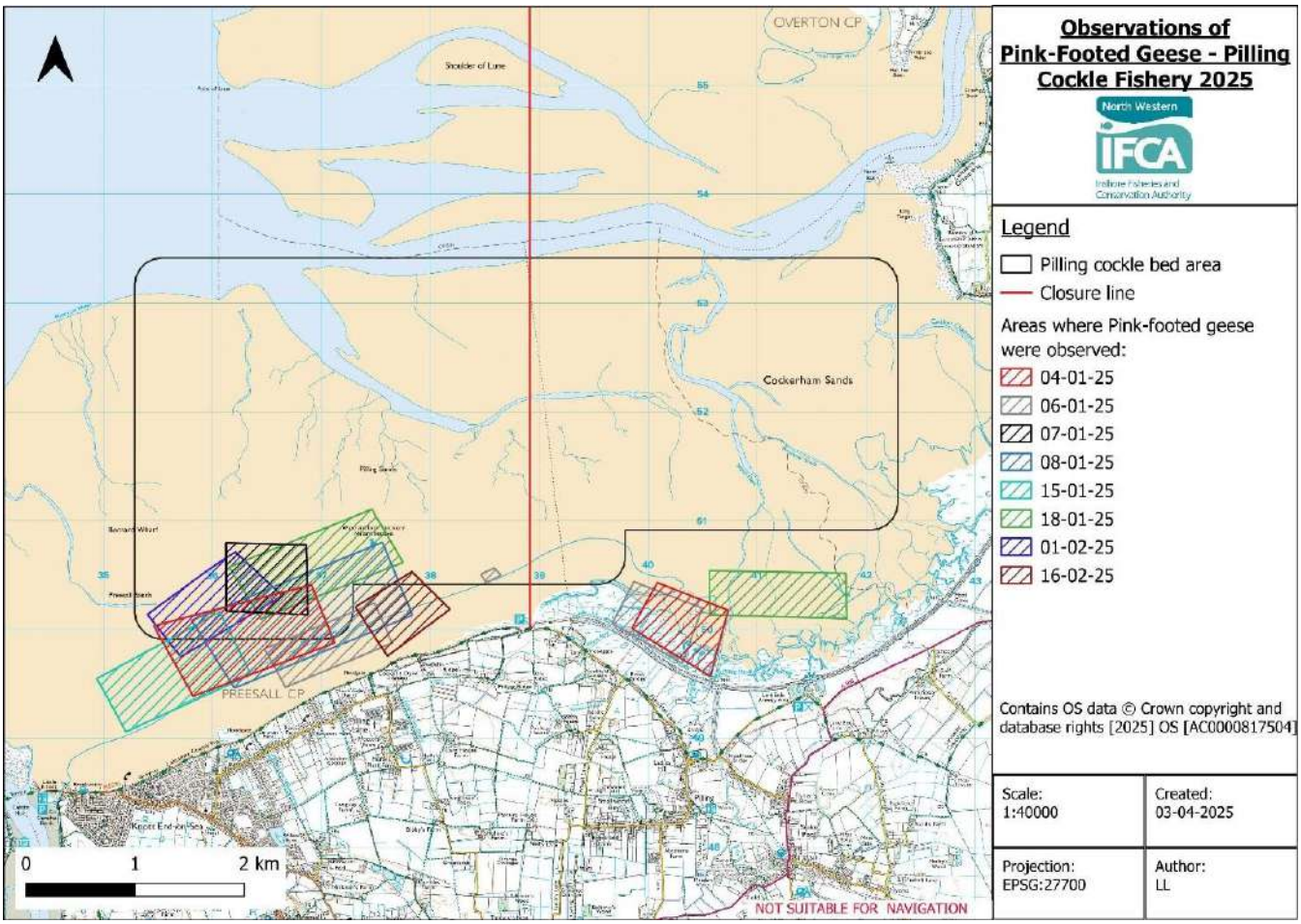


Figure 6.2.2.3: Map of areas where pink-footed geese were observed by NWIFCA officers. Cockle fishing is prohibited east of the closure line indicated in red. The exact areas and distances are officers best estimates.

Table 6.2.2.1: Observations of geese, fishers and any disturbances to the geese caused by fishing activity. Presence of Geese or fishers is indicated in Red. No presence of Geese of fishers is indicated in light green. No disturbance is indicated in dark green, orange indicates potential disturbance.

Date	Low Tide Time	Geese Present	Fishers Present and Number	Geese Disturbed
04-01-2025	08:17	Y	Y - 4	N
05-01-2025	08:22	N	N	N/A
06-01-2025	09:57	Y	Y -2	N
07-01-2025	10:45	Y	N	N/A
08-01-2025	11:50	Y	N	N/A
11-01-2025	15:54	N	Y - 6	N/A
14-01-2025	18:21	N	Y - 1	N/A
15-01-2025	19:05	Y	Y - 1	N
18-01-2025	08:12	Y	Y - 3	Unknown
19-01-2025	08:42	N	Y - 4	N/A
20-01-2025	09:12	N	Y - 4	N/A
25-01-2025	14:44	N	Y - 3	N/A
27-01-2025	16:18	N	N	N/A
28-01-2025	17:23	N	N	N/A
01-02-2025	07:31	Y	N	N/A
16-02-2025	07:44	Y	Y - 5	N

17-02-2025	08:09	N	N	N/A

The geese were present at observations that occurred on morning tides, and although there was a heightened response (geese calling more frequently) when the quad bikes started up and transited to the fishery the disturbance was great enough for the geese to be displaced and the geese would naturally leave a few hours after sunrise.

Indication from the initial monitoring is that at low levels of permit holders the disturbance to the geese is minimal. As it is expected that there will be low numbers of permit holders in the months the geese are present, and due to the restricted tide and day fished it is unlikely that disturbance will be an issue. NWIFCA will continue to monitor and make observation on the interaction of pink-footed geese and permit holders at Pilling and discuss with Natural England should there be cause for concern.

Mediterranean gull, lesser black-backed gull, herring 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 five 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.

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.

NWIFCA is confident that with the monitoring of number of permit holders fishing and the interaction between pink-footed geese and permit holders and the ability to adapt management through the flexible permit conditions, 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 five days in a seven day period.
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.
h) Monitoring of the interaction between permit holders and pink-footed geese, looking particularly at disturbance.

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				Main activity within the fishery outside of the main overwintering bird timeframe. Disturbance will be minimised by vehicles only travelling to and from the fishery once each way per tide and via a prescribed access point (Fluke Hall Lane at Pilling). Monitoring focussed on interaction being permit holders and pink-footed geese. 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 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 five days in a seven day period. 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 June/July 2025

Pilling Cockle Survey 24-06-2025

Officers present: AP, JH, GG, LL
Tides: LW 17:34 1.7m (Liverpool Tides)

Survey method - Jumbo and 0.5m^2 quadrat

78 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 increased in density from April with a max of 258 cockles per m², though it is still relatively low across the bed, with an average of 22 per m². There is evidence of a 2025 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	22 per m²	(min 0, max 258)
Mean number of undersize cockle	14 per m²	(min 0, max 200)
Mean number of 0-5mm cockle	10 per m²	(min 0, max 200)
Mean weight of size cockle kg/m²	0.206 kg/m²	(min 0, max 2.384)
Mean weight of undersize cockle kg/m²	0.055 kg/m²	(min 0, max 0.906)

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	**1525**	**3143**	**838**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
27	**30**	**671**	**3150**	**103**

[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.

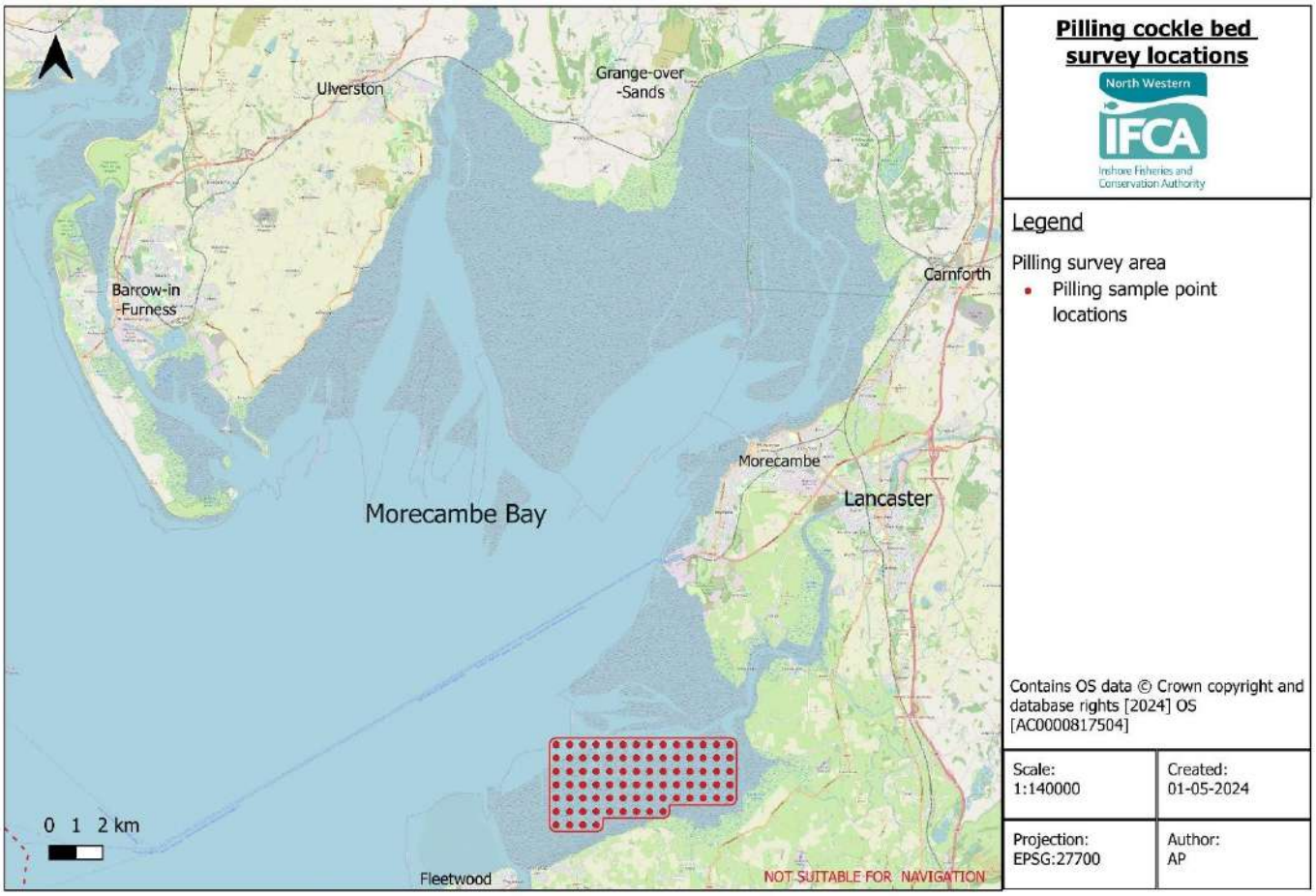


Figure 1. Illustration of position of Pilling Survey Area

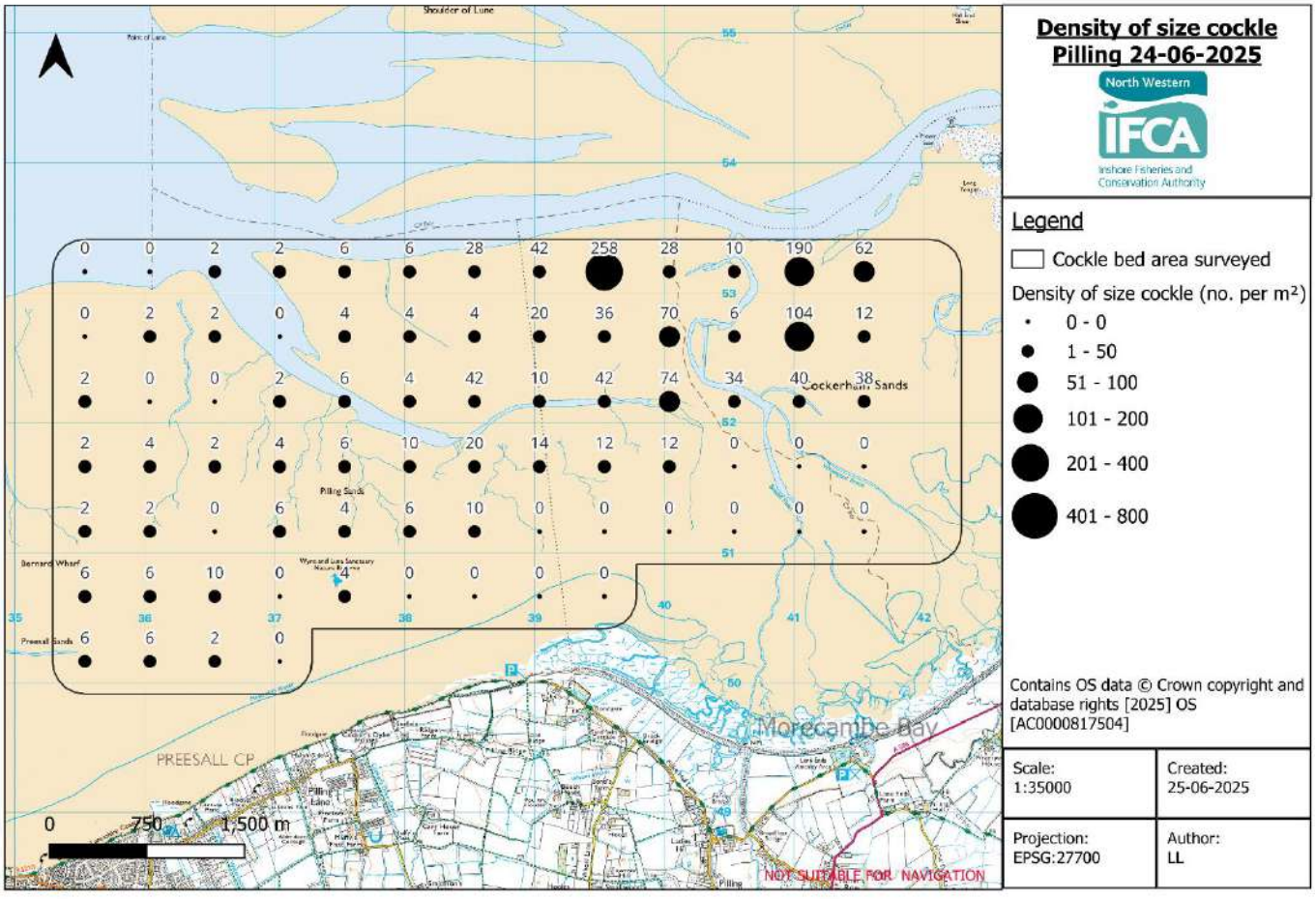


Figure 2. Density of size cockle per m² at Pilling April 2025.

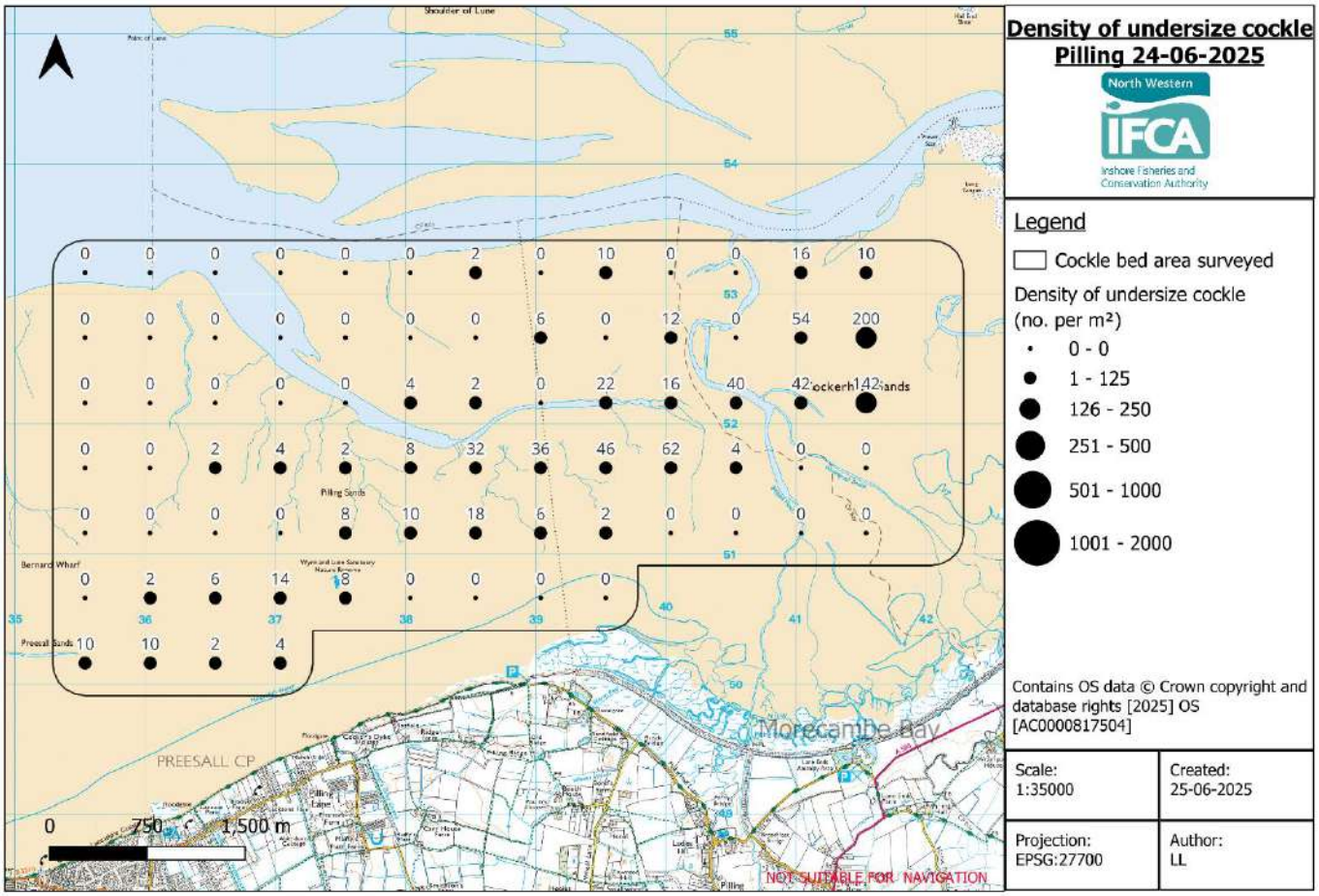


Figure 3. Density of undersize cockle per m² at Pilling June 2025

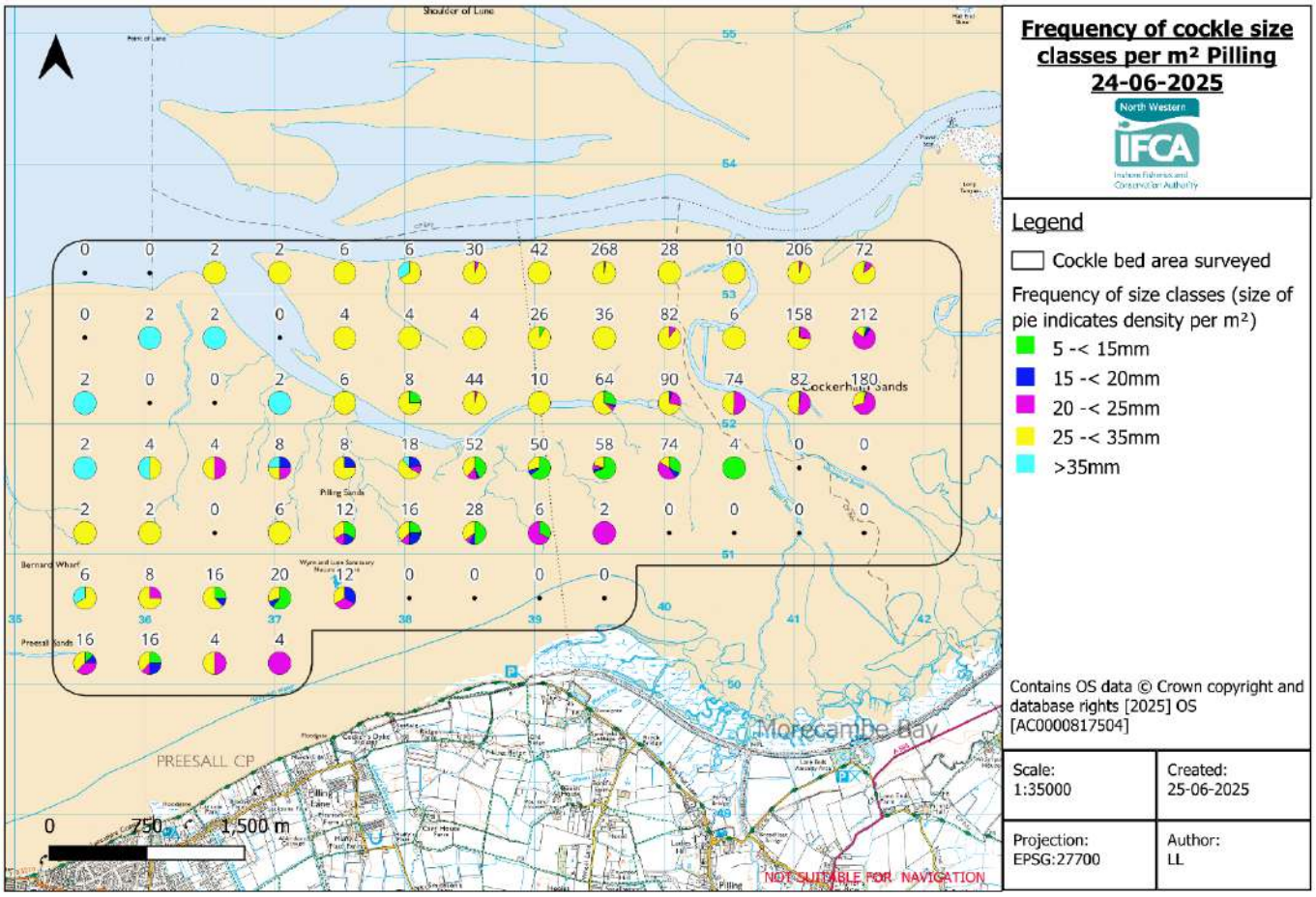


Figure 4. Frequency of size classes of cockle per m² at Pilling June 2025.

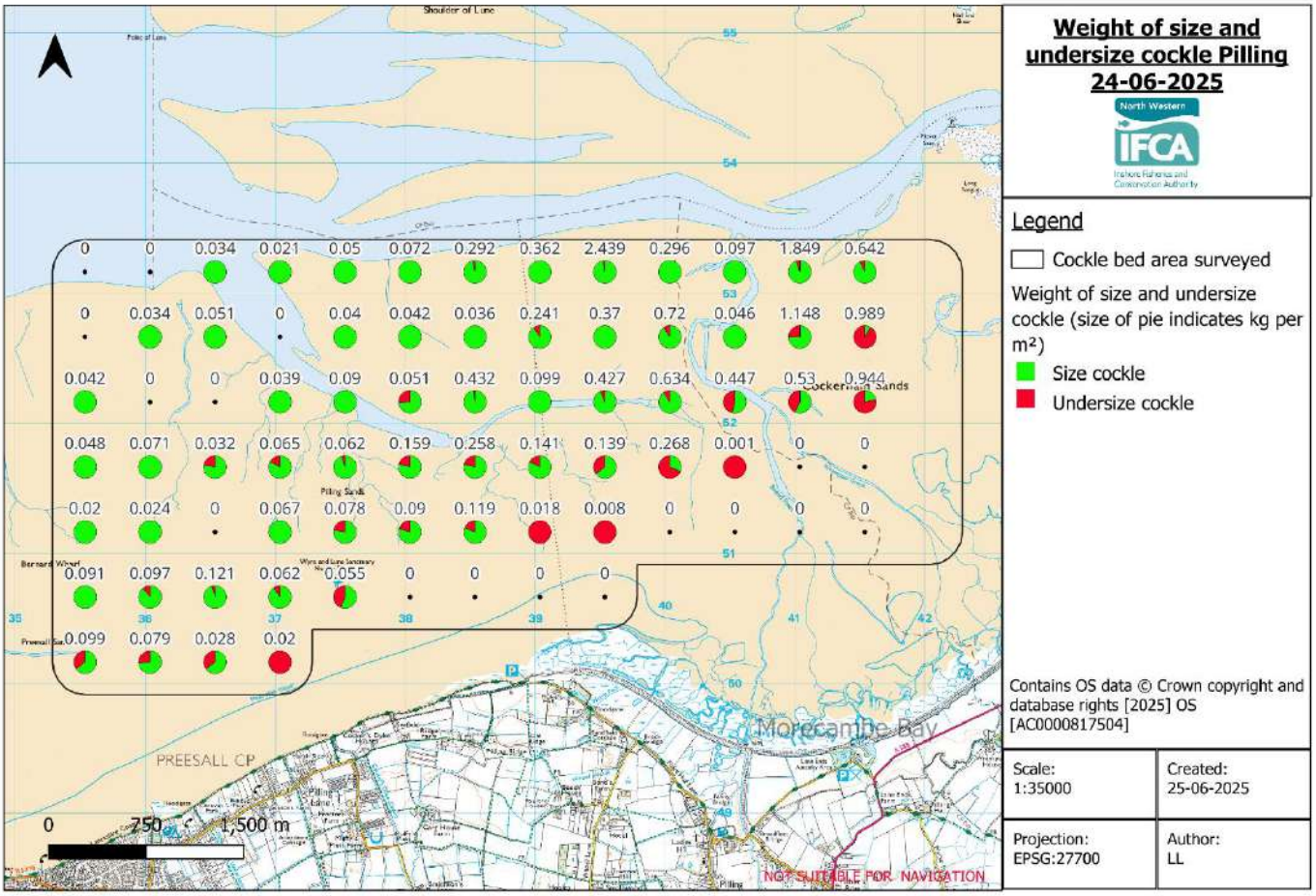


Figure 5. Weight of size and undersize

Flookburgh Cockle Survey 15&17-07-25

Officers present:		ID, CT, AP, JH, GG, LL
Tides:	15-07-25	LW 09:35 1.5m (Liverpool Tides)
	17-07-25	LW 10:56 1.9m (Liverpool Tides)

Survey method - Jumbo and 0.5m^2 quadrat

153 stations were sampled from a 500m grid, for the summer survey the 2023 extension area has become permanent, and the grid was extended North to include are area fished in the later part of the 2024/25 cockle fishery. The channels cutting through the bed has combined into one meaning more of the bed could be sampled compared to the April surveys. The bed area has increased due to the above reasons, and because of a new settlement across a large area of the bed which is 4-12mm in size, and in relatively high densities. The cockle is mixed across the bed and ranged in size from 5mm to 35mm.

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	8 per m²	(min 0, max 54)
Mean number of undersize cockle	115 per m²	(min 0, max 2158)
Mean number of 0-5mm cockle	60 per m²	(min 0, max 2000)
Mean weight of size cockle kg/m²	0.086 kg/m²	(min 0, max 0.798)
Mean number of undersize cockle kg/m²	0.038 kg/m²	(min 0, max 0.337)

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	**3050**	**2609**	**1147**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
573	**170**	**358**	**2477**	**176**

[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.

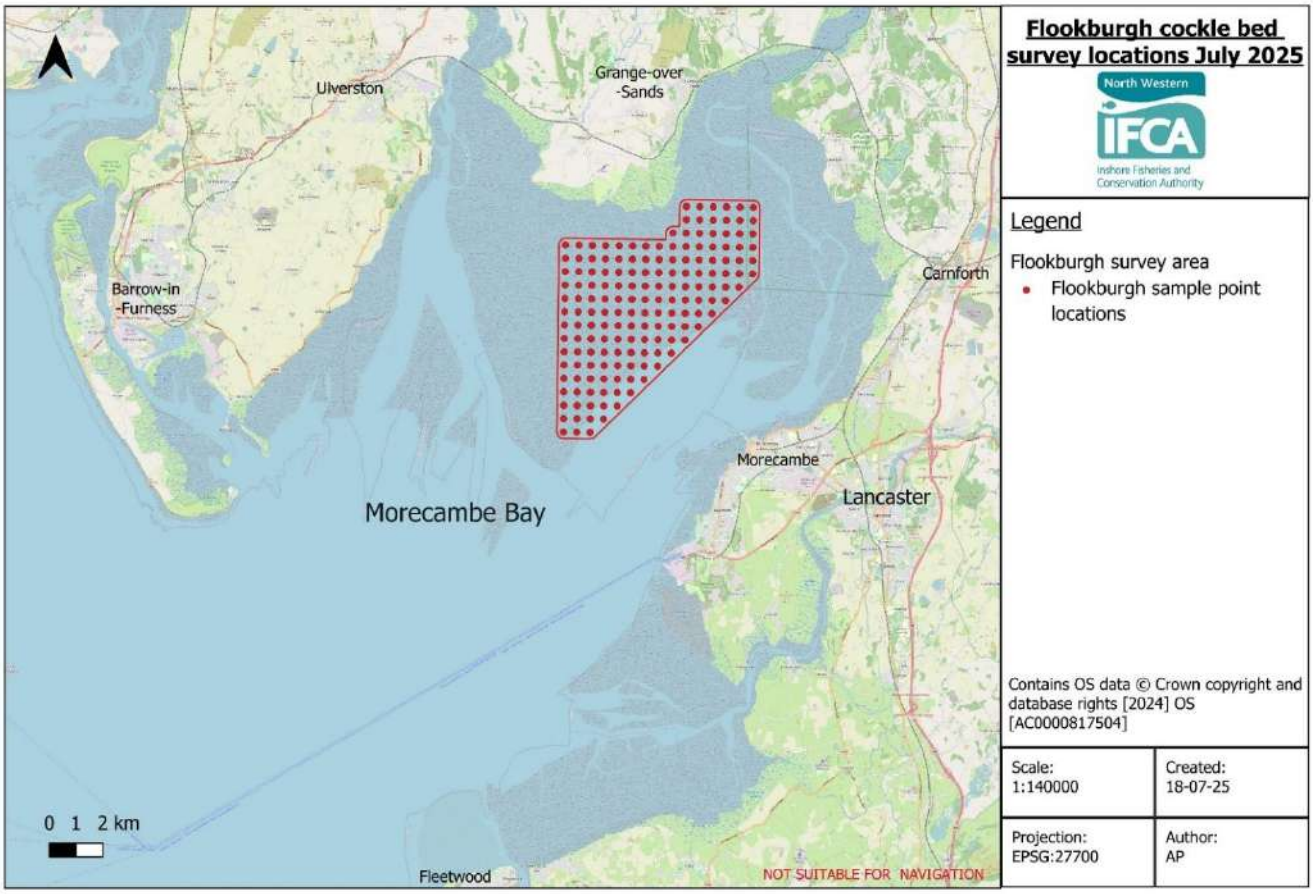


Figure 1. Illustration of position of Flookburgh Survey Area.

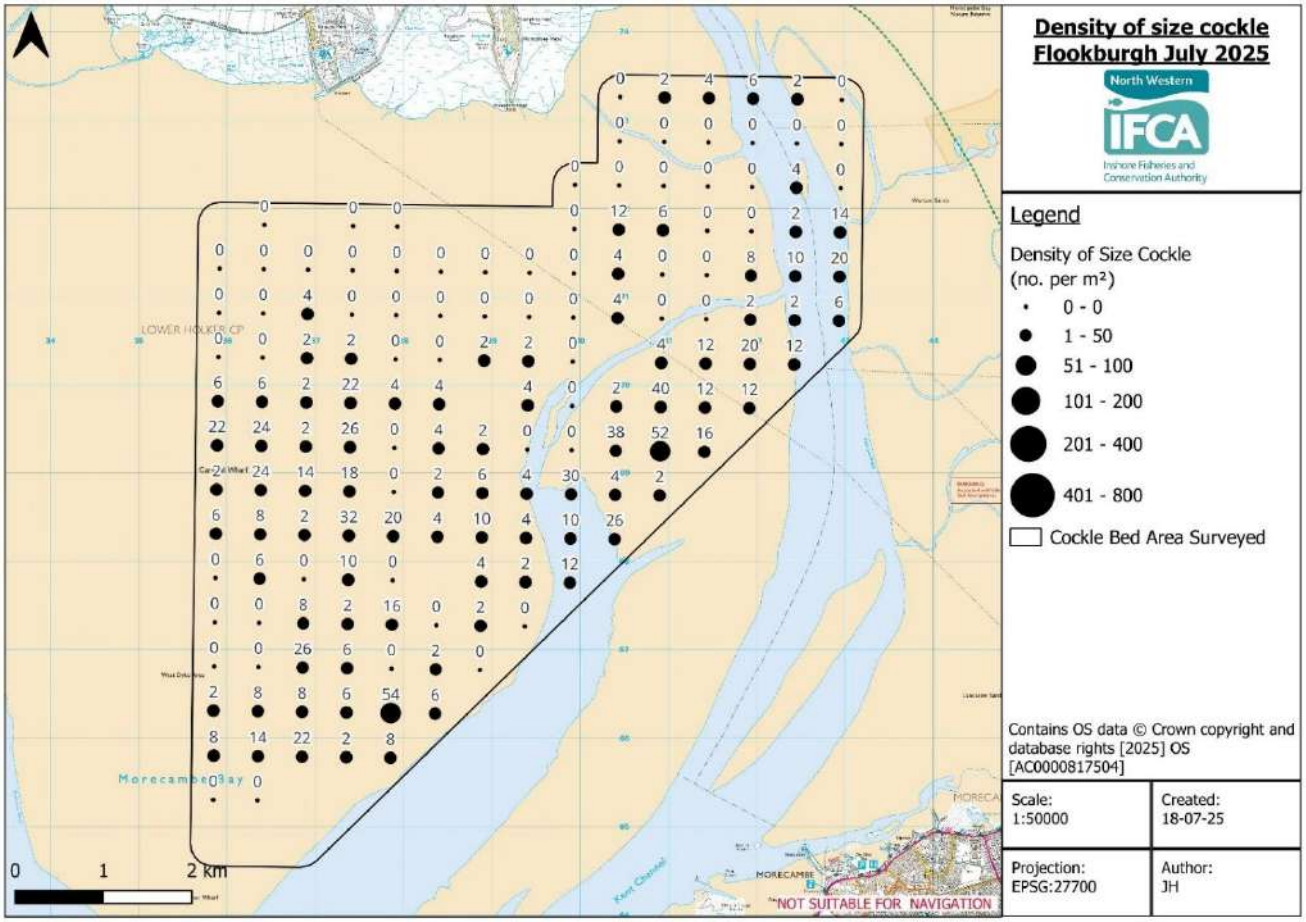


Figure 2. Density of size cockle per m² Flookburgh July 2025.

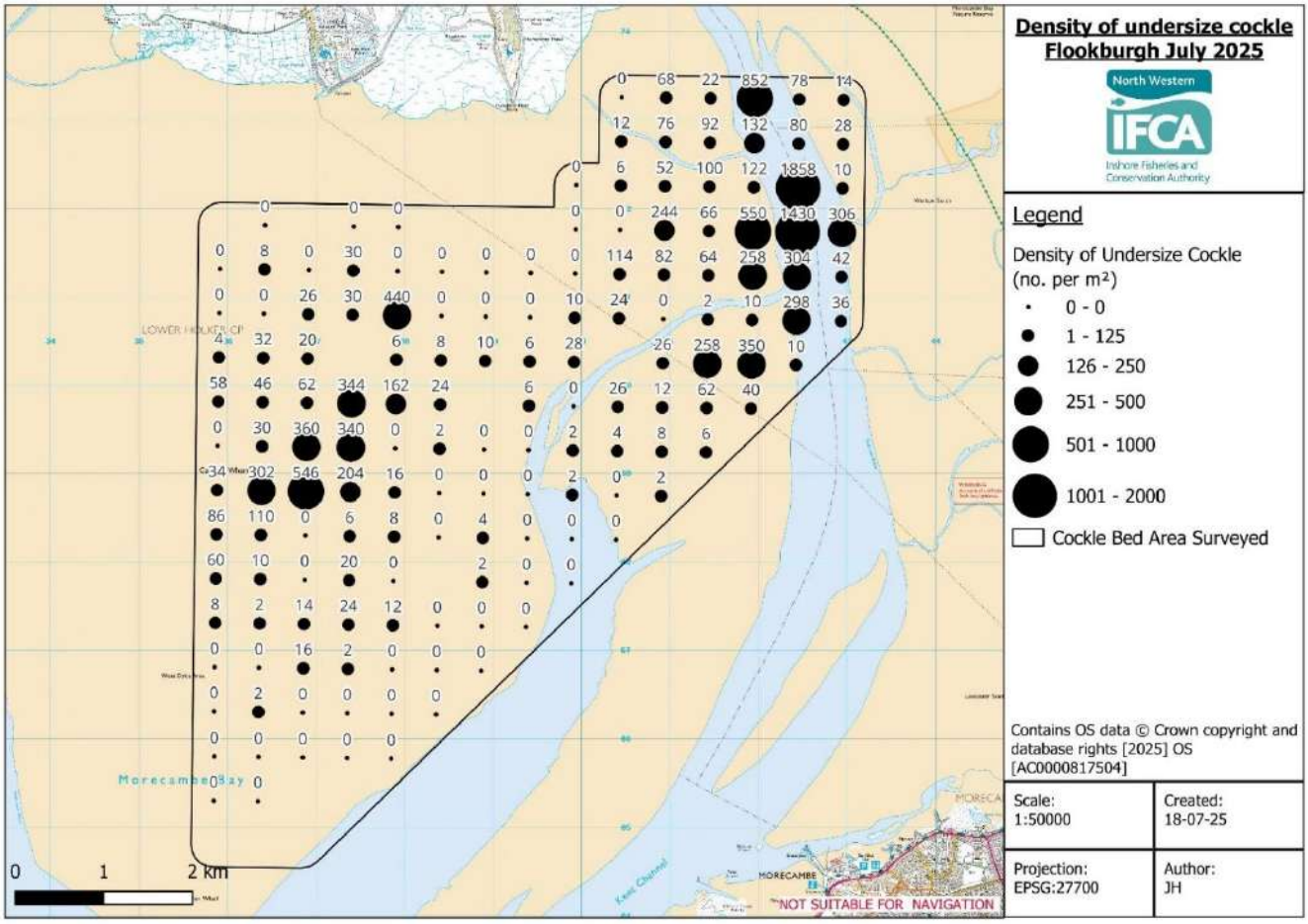


Figure 3. Density of undersize cockle per m² Flookburgh July 2025.

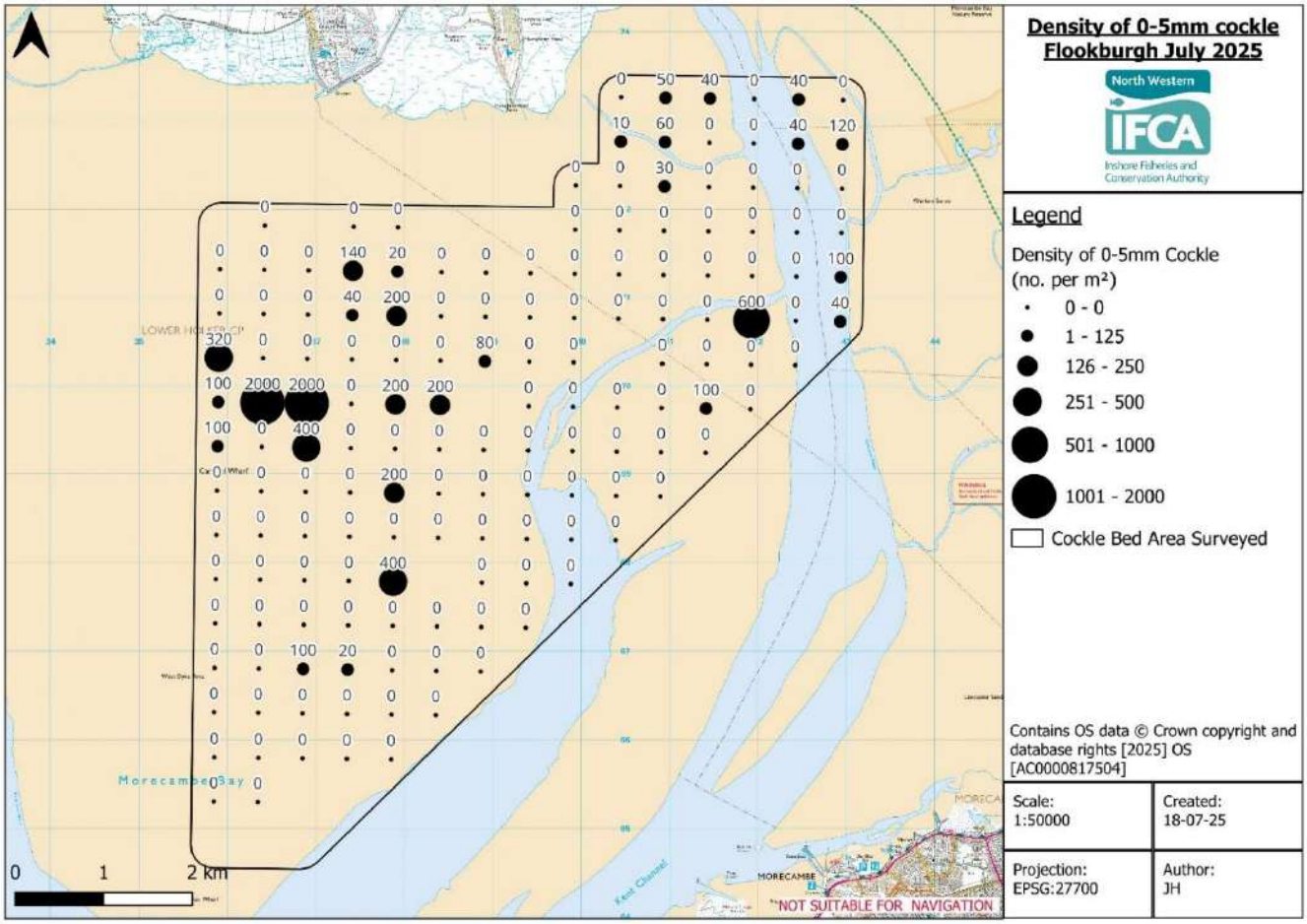


Figure 4. Density of 0-5mm cockle per m² Flookburgh July 2025.

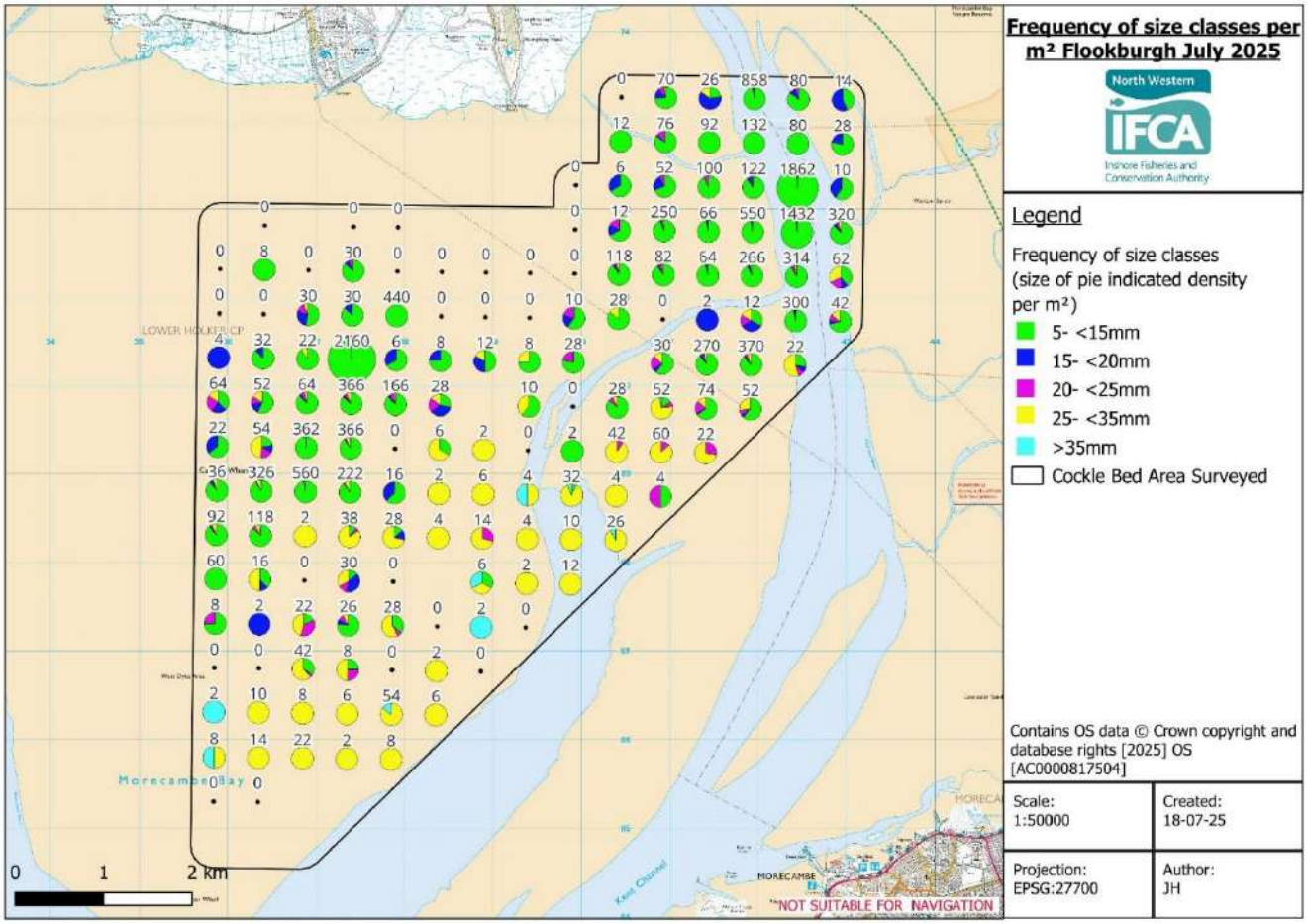


Figure 4 Frequency of size classes of cockle per m² Flookburgh July 2025.

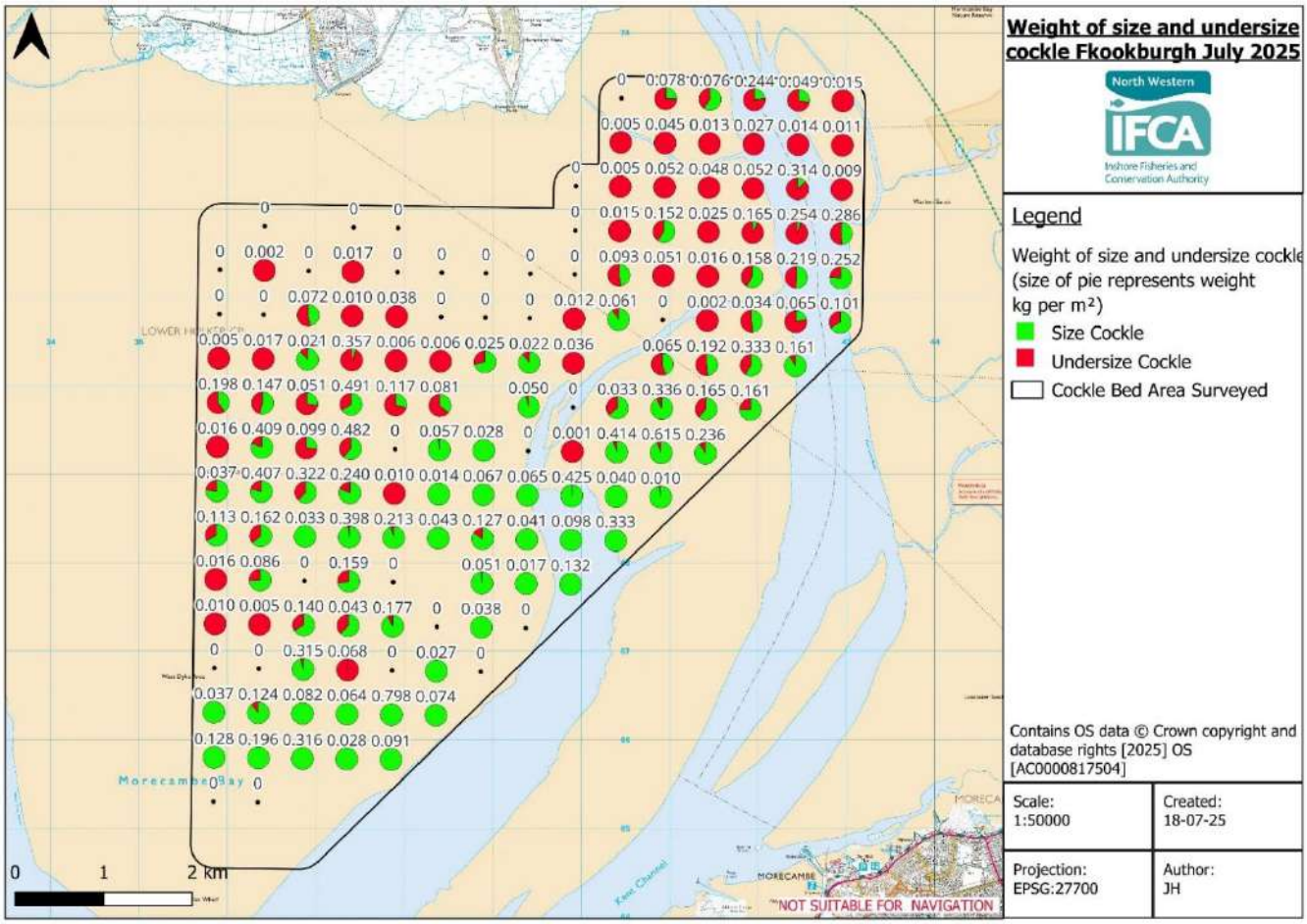


Figure 5 Weight of size and undersize cockle kg/m² at Flookburgh July 2025.

Middleton Cockle Survey 08-07-25

Officers present: JH, GG, AG, GE
Tides: LW 16:55 2.7m (Liverpool tides)

Survey method - Jumbo and 0.5m^2 quadrat

74 stations were sampled from a 350m grid. There was a wide range of cockle sizes across the bed from 5mm to >35mm. Size cockle is relatively low in density but present across most of the bed. The population was dominated by the 25–35 mm size class, which accounted for approximately 78% of the total biomass. Smaller contributions came from the 20–25 mm class (11%), the >35 mm class (5%) and the 15-20 mm class (3%). There is an increase in smaller size classes of cockle in the 0-5mm and 5-15mm range since the April 2025 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 but has been included as a separate figure.

Mean number of size cockle	8 per m²	(min 0, max 44)
Mean number of undersize cockle	9 per m²	(min 0, max 40)
Mean number of 0-5mm cockle	21 per m²	(min 0, max 200)
Mean weight of size cockle kg/m²	0.084 kg/m²	(min 0, max 0.519)
Mean number of undersize cockle kg/m²	0.016 kg/m²	(min 0, max 0.072)

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	**698**	**589**	**115**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
15	**24**	**76**	**551**	**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.

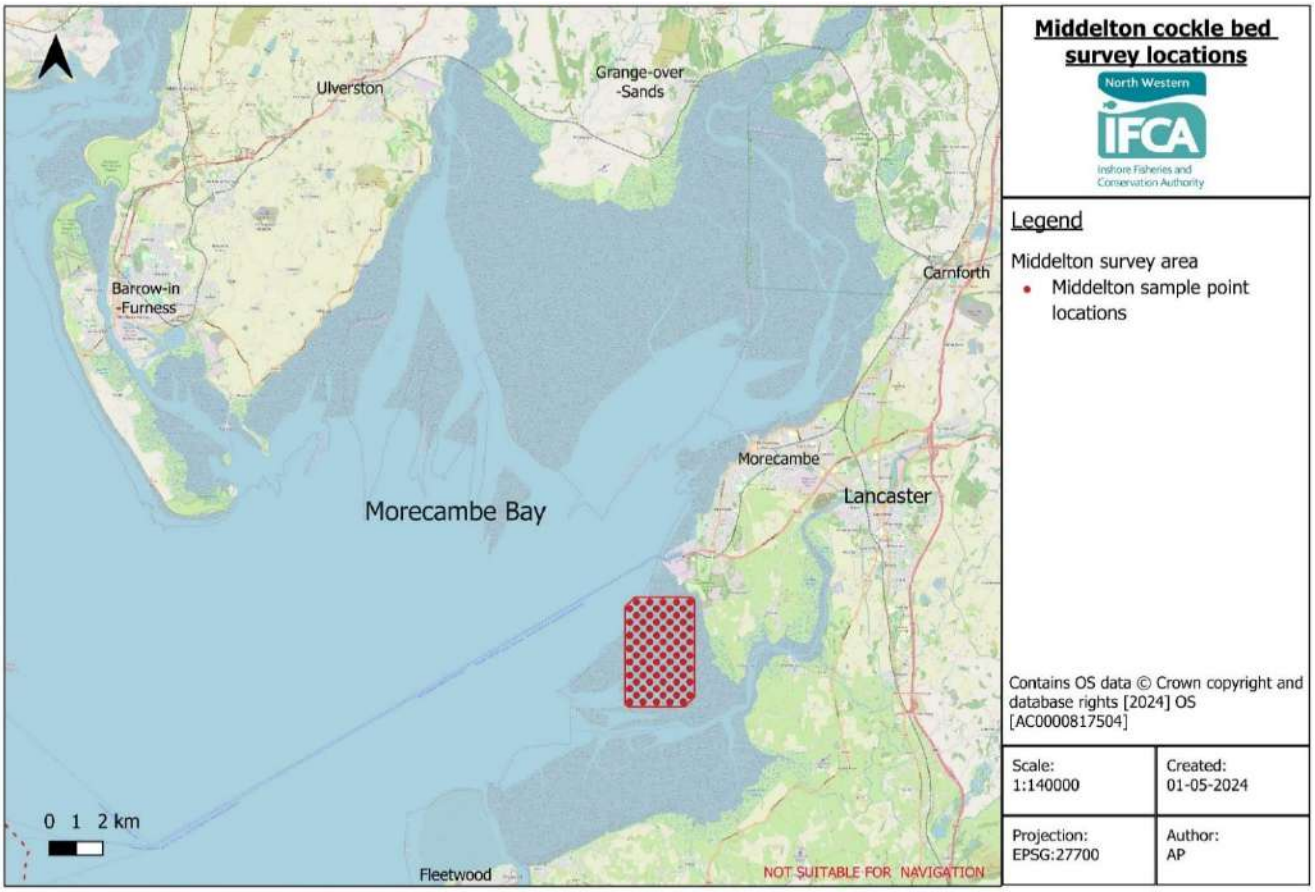


Figure 1. Illustration of position of Middleton Survey Area.

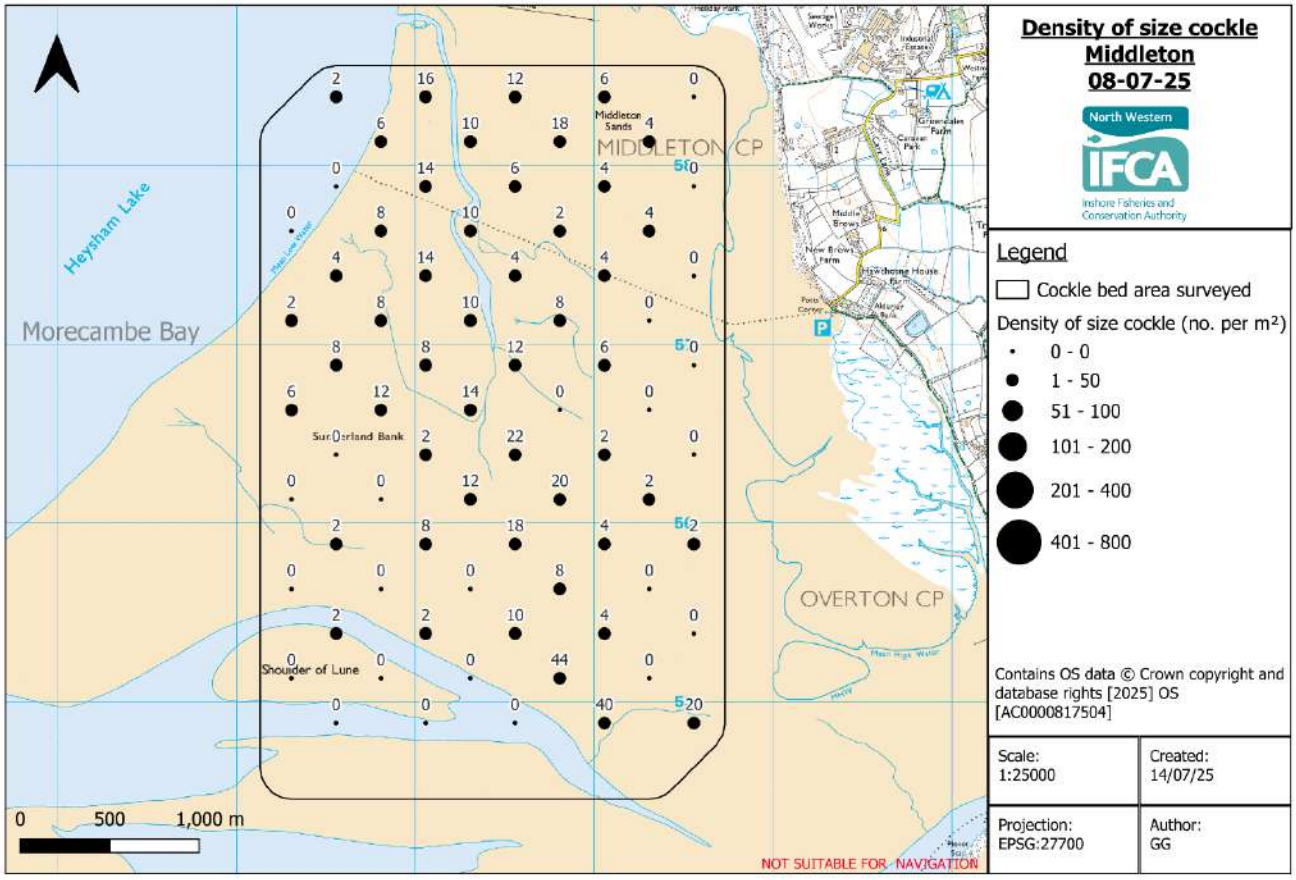


Figure 2. Density of size cockle per m² at Middleton July 2025.

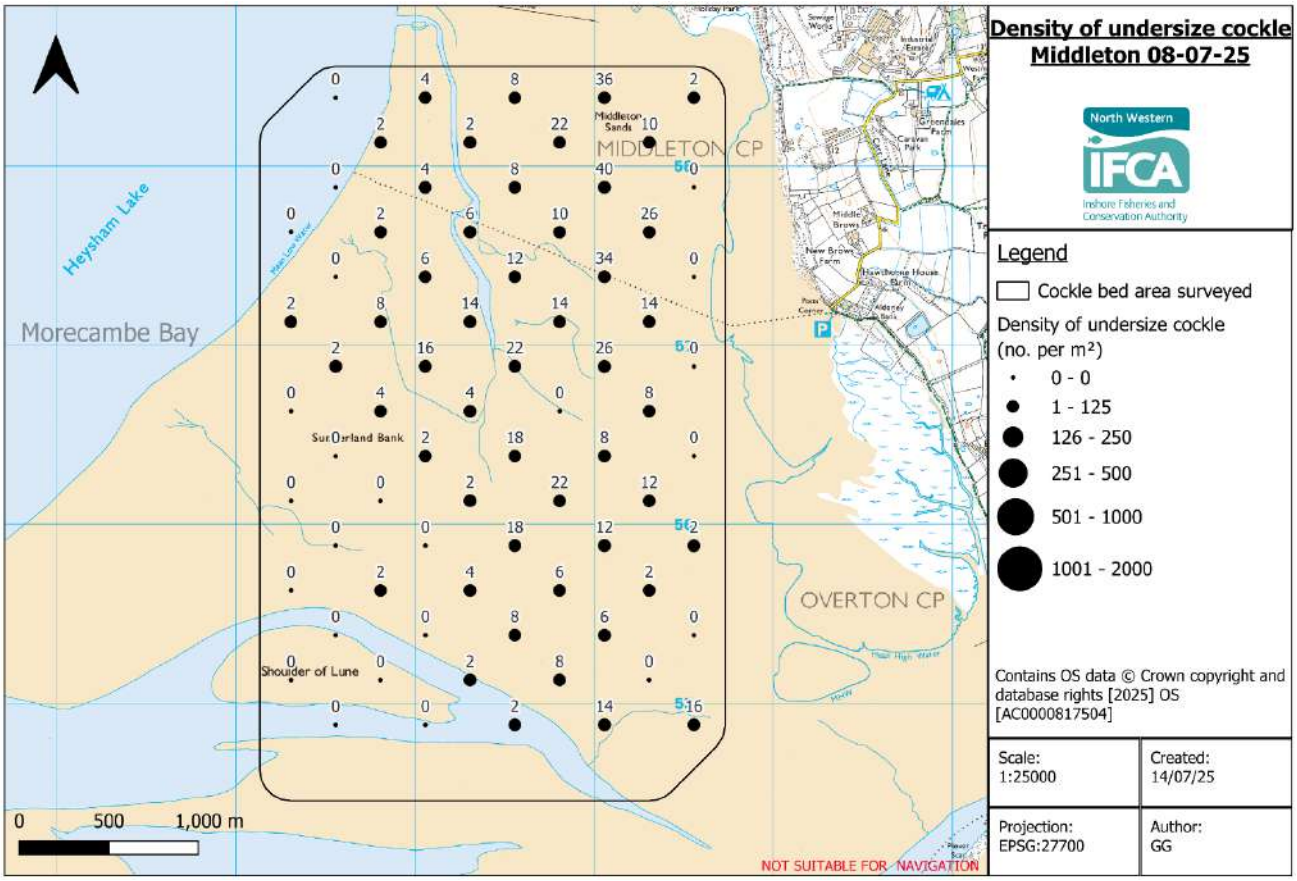


Figure 3. Density of undersize cockle per m² at Middleton July 2025.

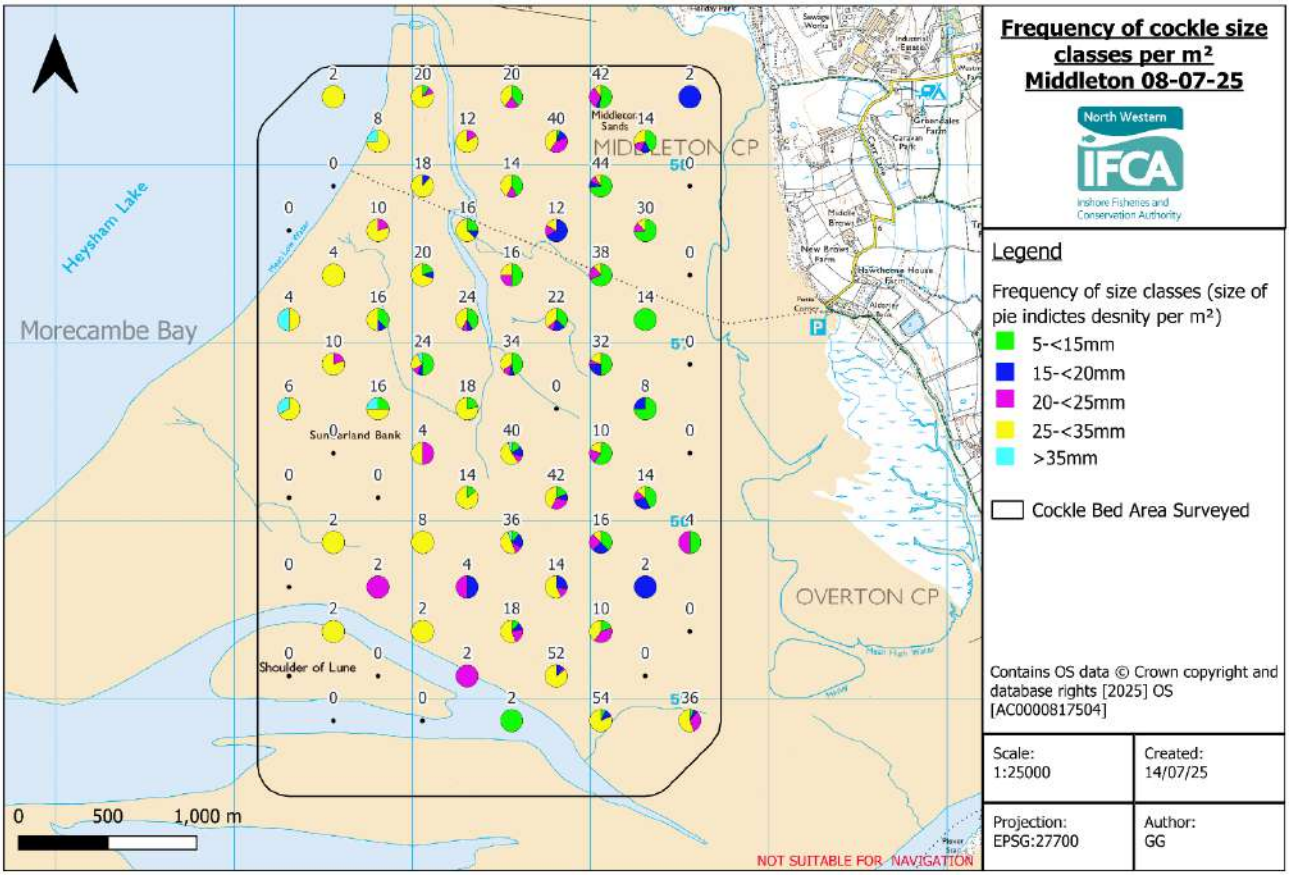


Figure 4. Frequency of size classes of cockle per m² at Middleton July 2025.

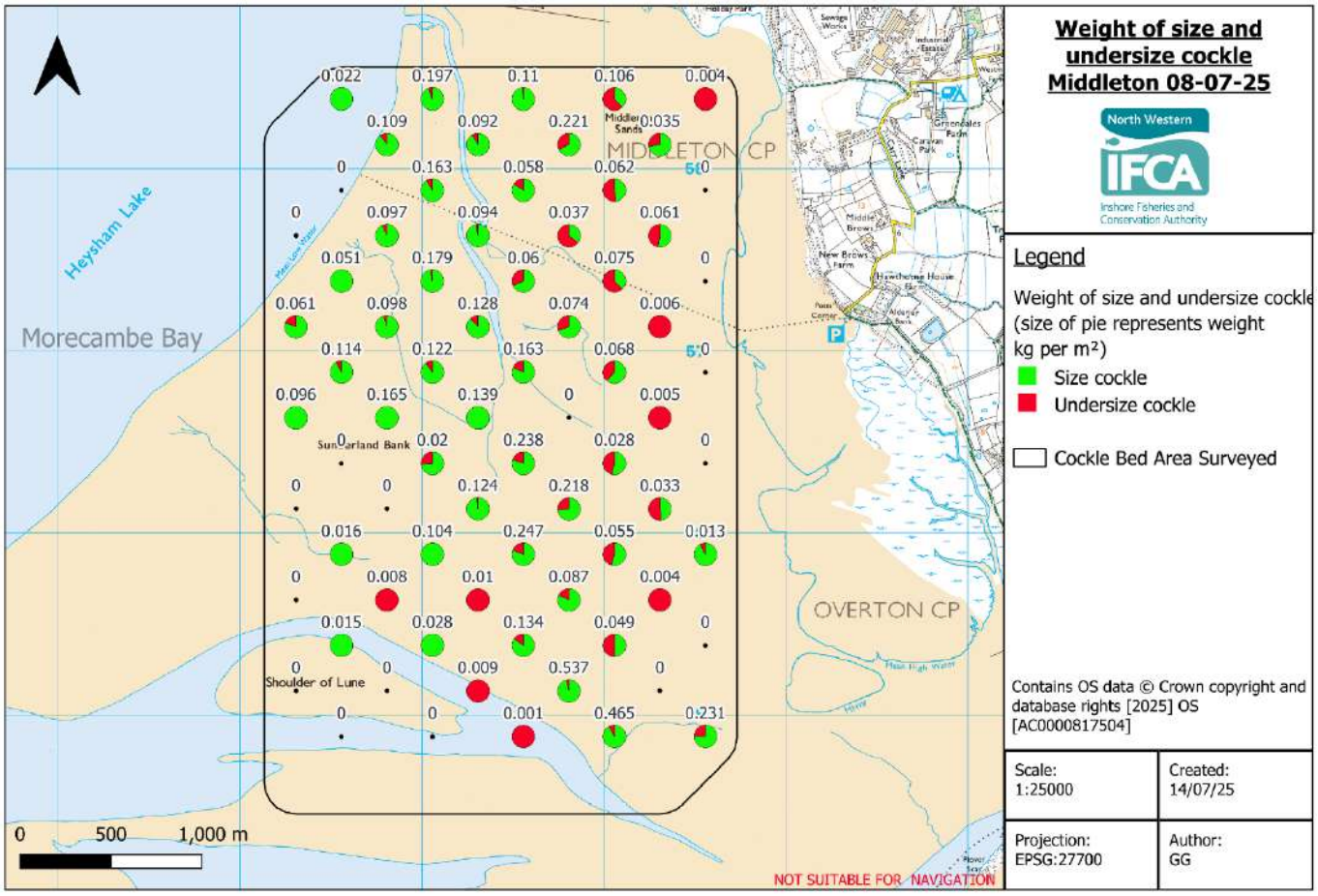


Figure 5. Weight of size and undersize cockle kg/m² at Middleton July 2025.

Leven Cockle Survey 09-07-25

Officers present: ID, CT, GG, JH

Tides: LW 17:39 2.5m (Liverpool Tides)

Survey method - Jumbo and 0.5m^2 quadrat

66 stations were sampled from a 500m grid. There was an area to the Southwest of the survey grid that could not be survey 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 smaller size classes of cockle in the 0-5mm and 5-15mm range.

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 36)
Mean number of undersize cockle	30 per m²	(min 0, max 354)
Mean number of 0-5mm cockle	28 per m²	(min 0, max 400)
Mean weight of size cockle kg/m²	0.045 kg/m²	(min 0, max 0.312)
Mean weight of undersize cockle kg/m²	0.027 kg/m²	(min 0, max 0.089)

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	**1050**	**470**	**287**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
66	**84**	**132**	**408**	**68**

[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.

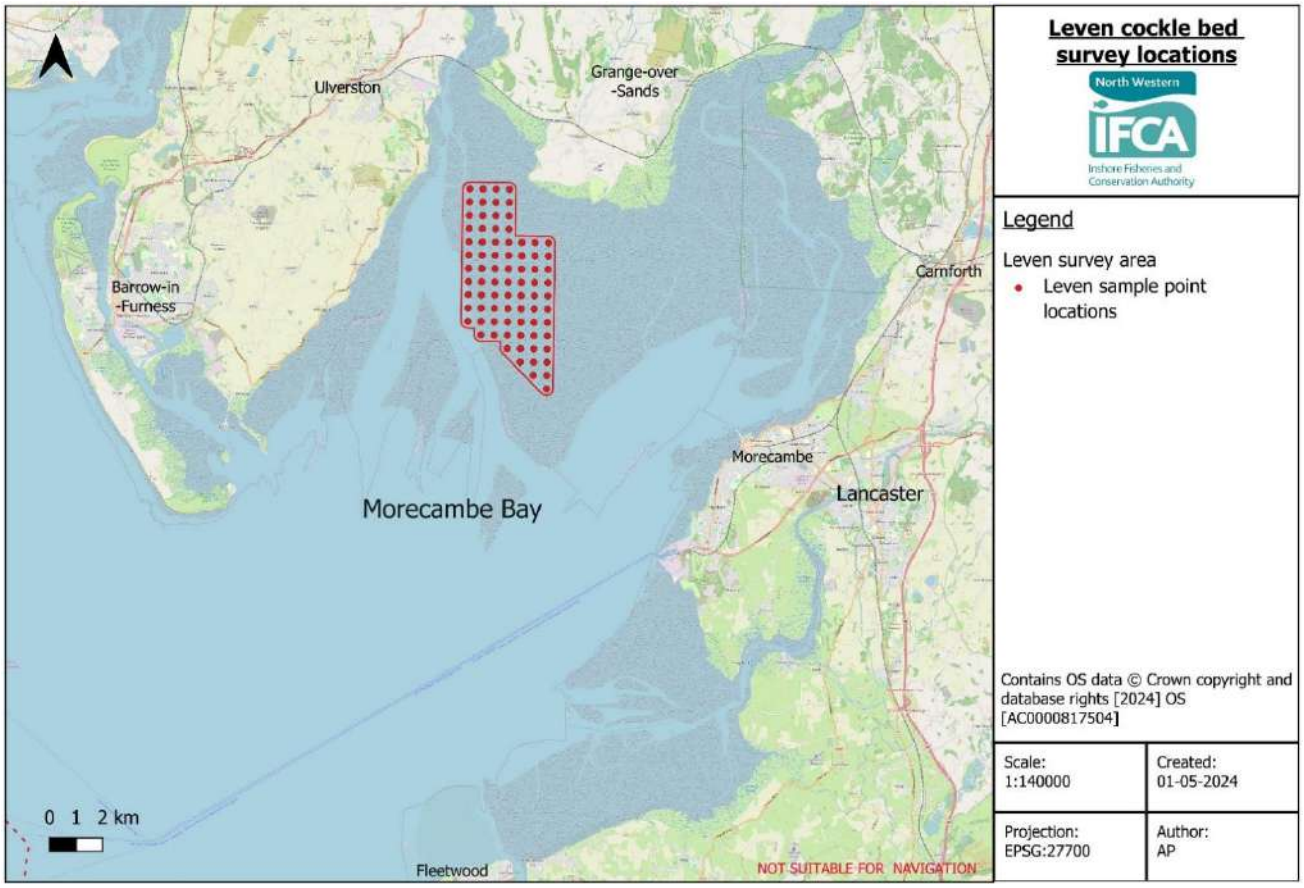


Figure 1. Illustration of position of Leven Survey Area

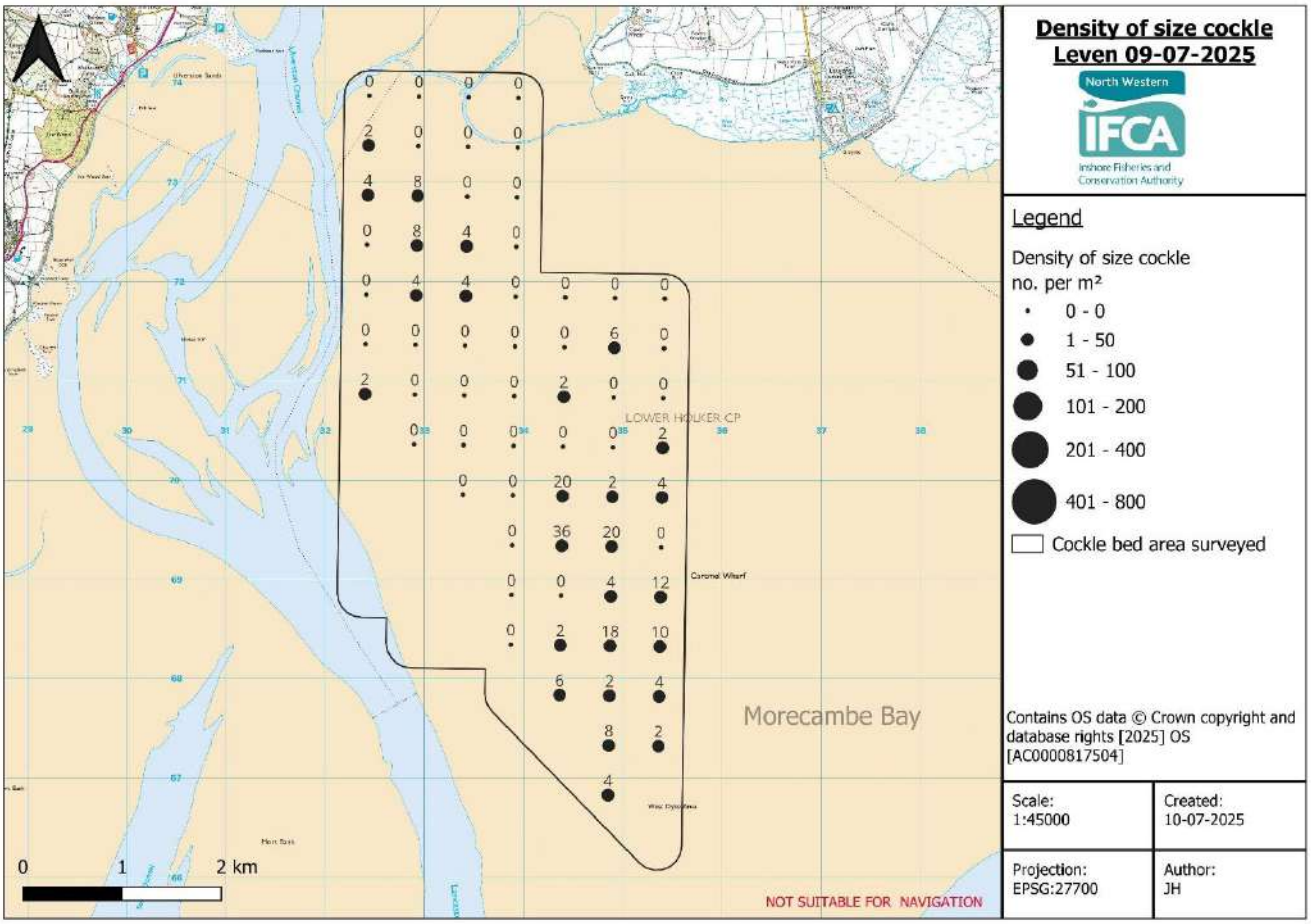


Figure 2. Density of size cockle per m² Leven July 2025

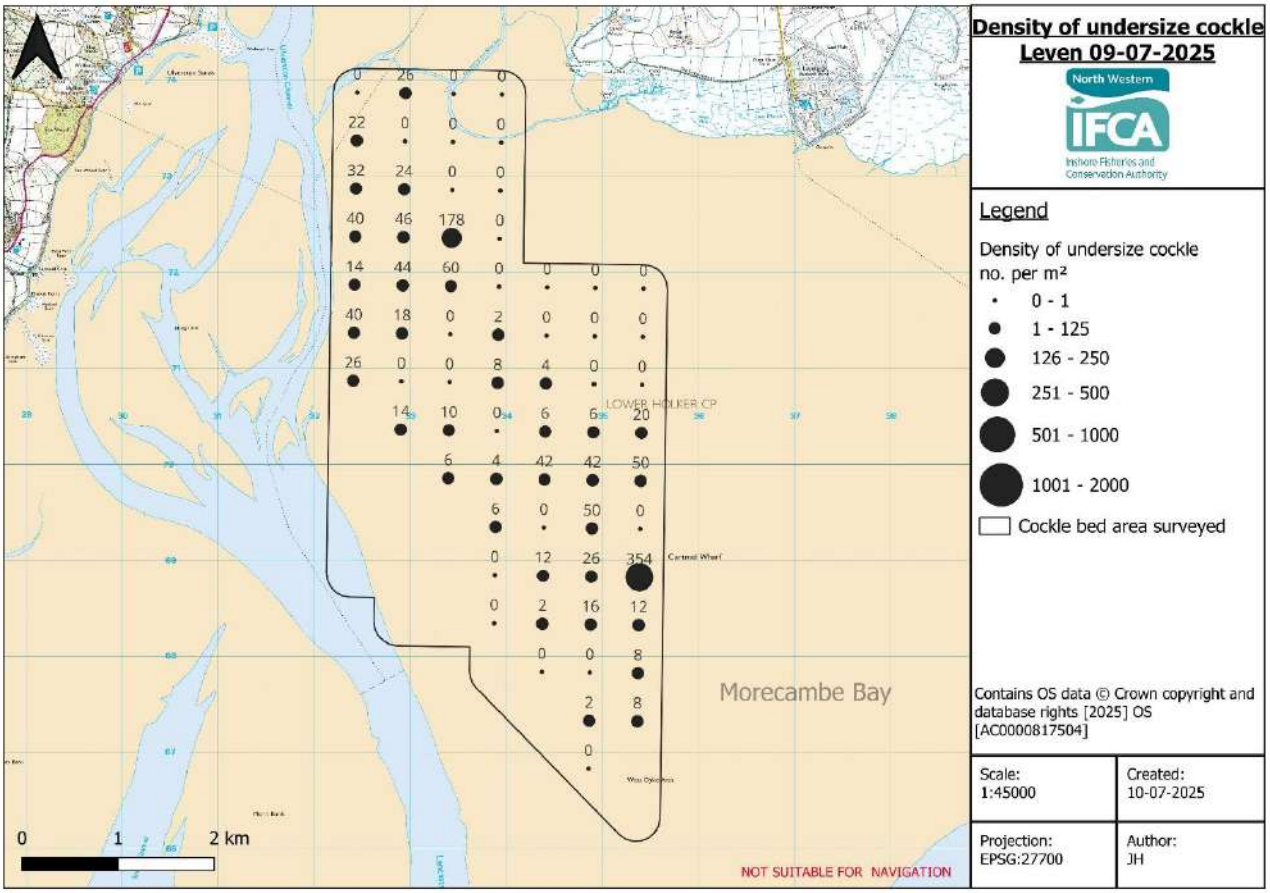


Figure 3. Density of undersize cockle per m² Leven July 2025

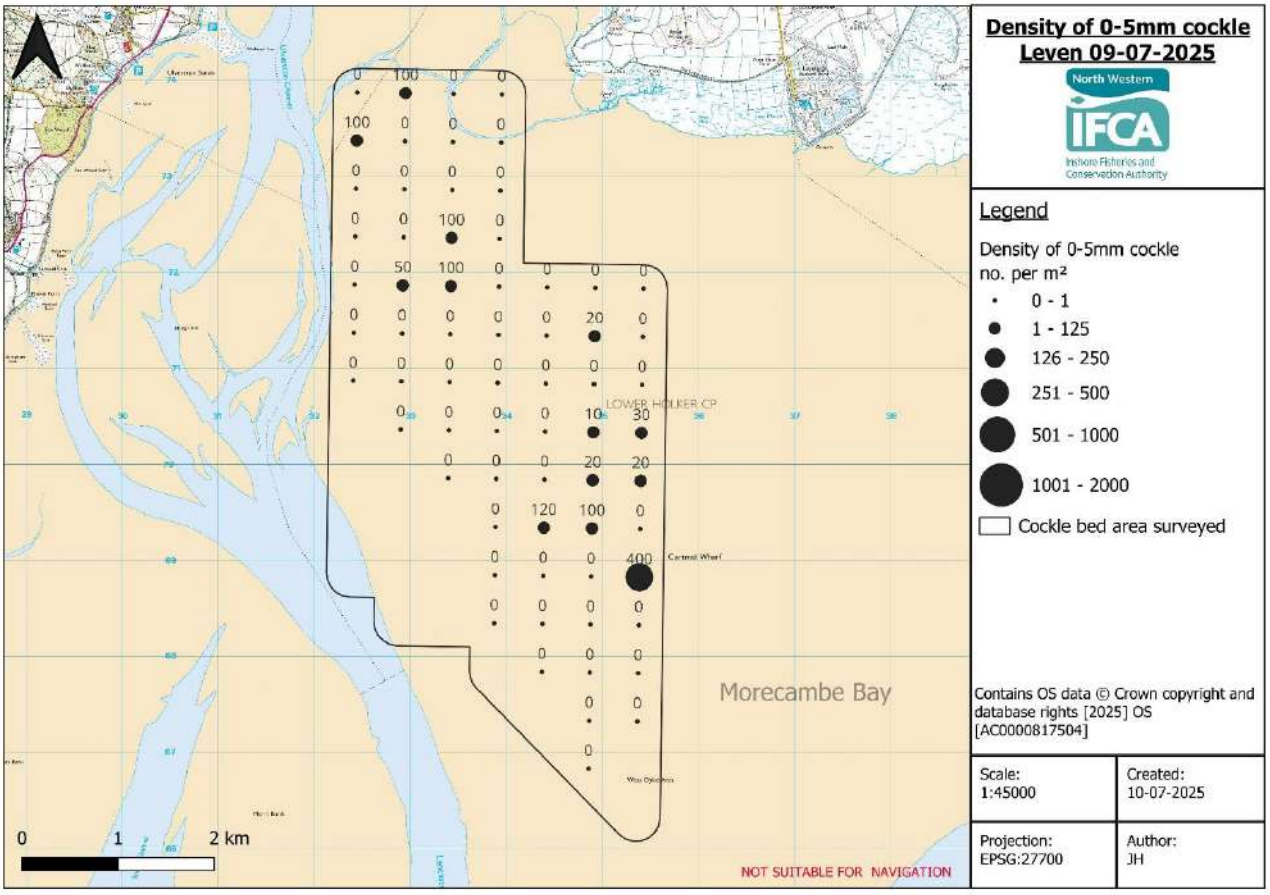


Figure 4. Frequency of 0-5mm cockle per m² Leven July 2025

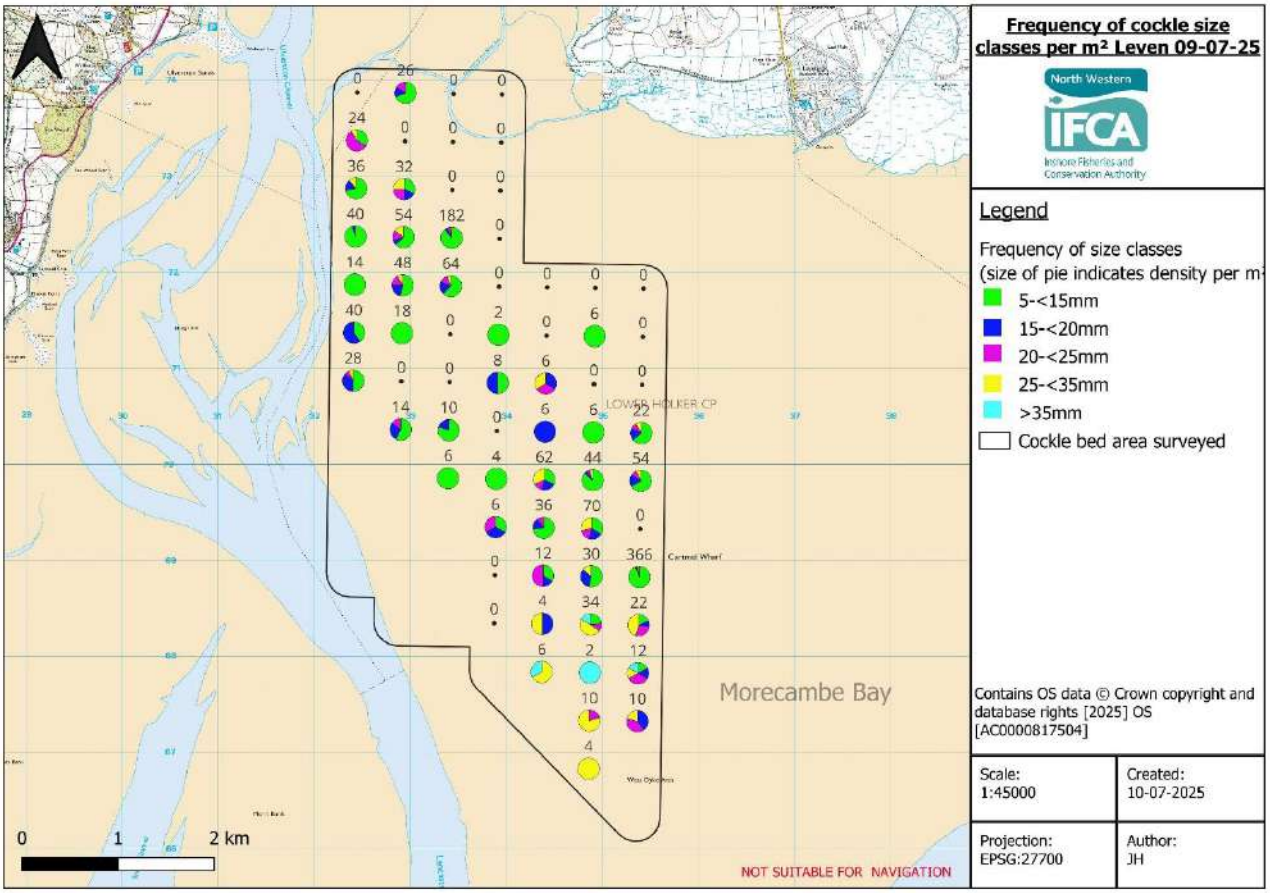


Figure 5. Frequency of size classes of cockle per m² Leven July 2025

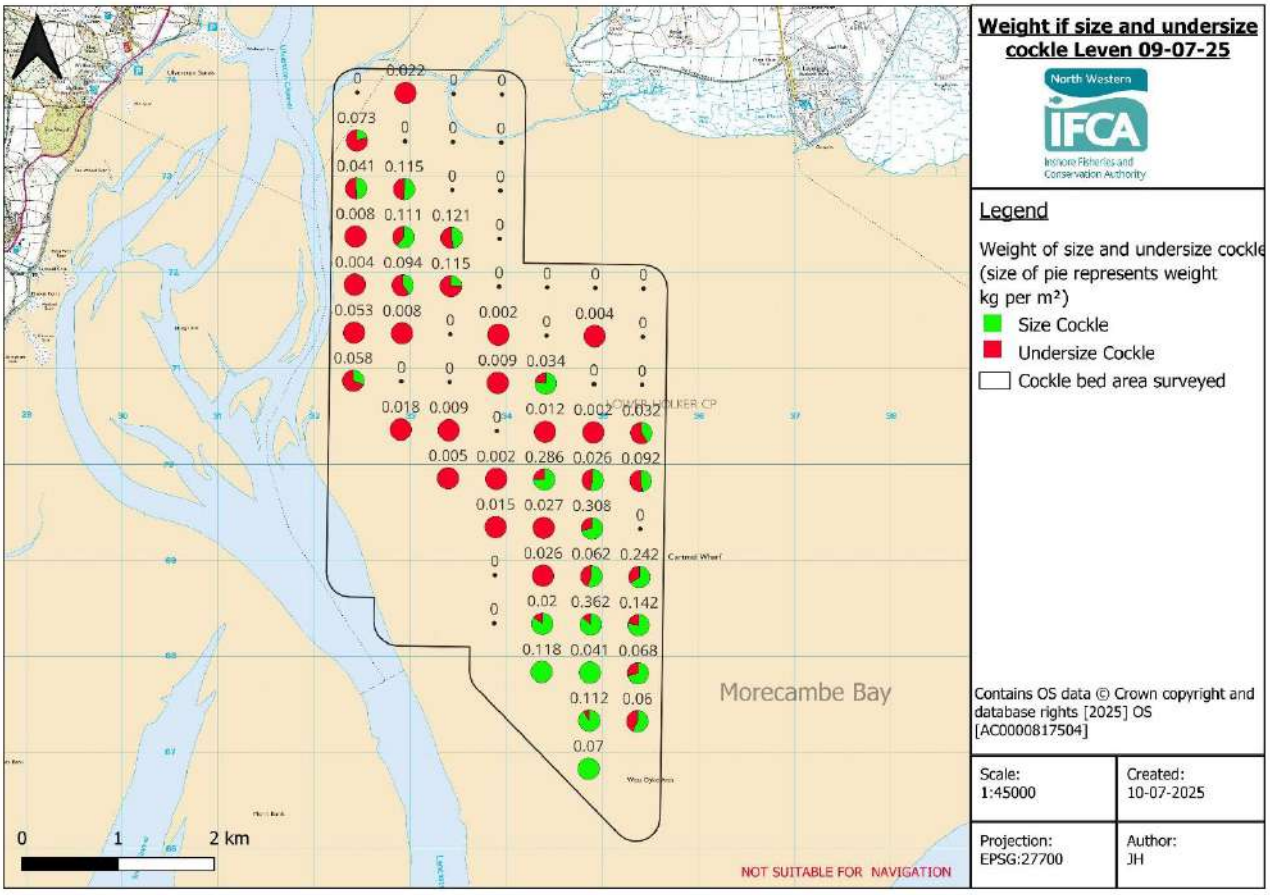


Figure 6. Weight of size and undersize cockle kg/m² at Leven July 2025.

Aldingham and Newbiggin Cockle Survey 02-07-2025 & 22-07-2025

Officers present: AP, GG, LL, ID

Tides: 02-07-2025 LW 11:36 2.5m (Liverpool Tides)
22-07-2025 LW 16:22 2.5m (Liverpool Tides)

Survey method - Jumbo and 0.5m^2 quadrat

An initial survey was undertaken on the 2nd of July, where 50 stations were sampled from a 500m grid. An additional 15 sample stations were added to the west of the bed, and surveyed on the 22nd of July to ensure the full extent of the cockle bed was captured. The survey grid has been changed since the survey in April to also 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.

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 and similar to the April survey. There is evidence of a 2025 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	11 per m²	(min 0, max 98)
Mean number of undersize cockle	24 per m²	(min 0, max 130)
Mean number of 0-5mm cockle	17 per m²	(min 0, max 400)
Mean weight of size cockle kg/m²	0.112 kg/m²	(min 0, max 0.975)
Mean weight of undersize cockle kg/m²	0.053 kg/m²	(min 0, max 0.328)

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	**1275**	**1432**	**670**

5-15 Class (tonnes)	15-20 Class (tonnes)	20-25 Class (tonnes)	25-35 Class (tonnes)	>35 Class (tonnes)
58	**116**	**506**	**1356**	**66**

[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.

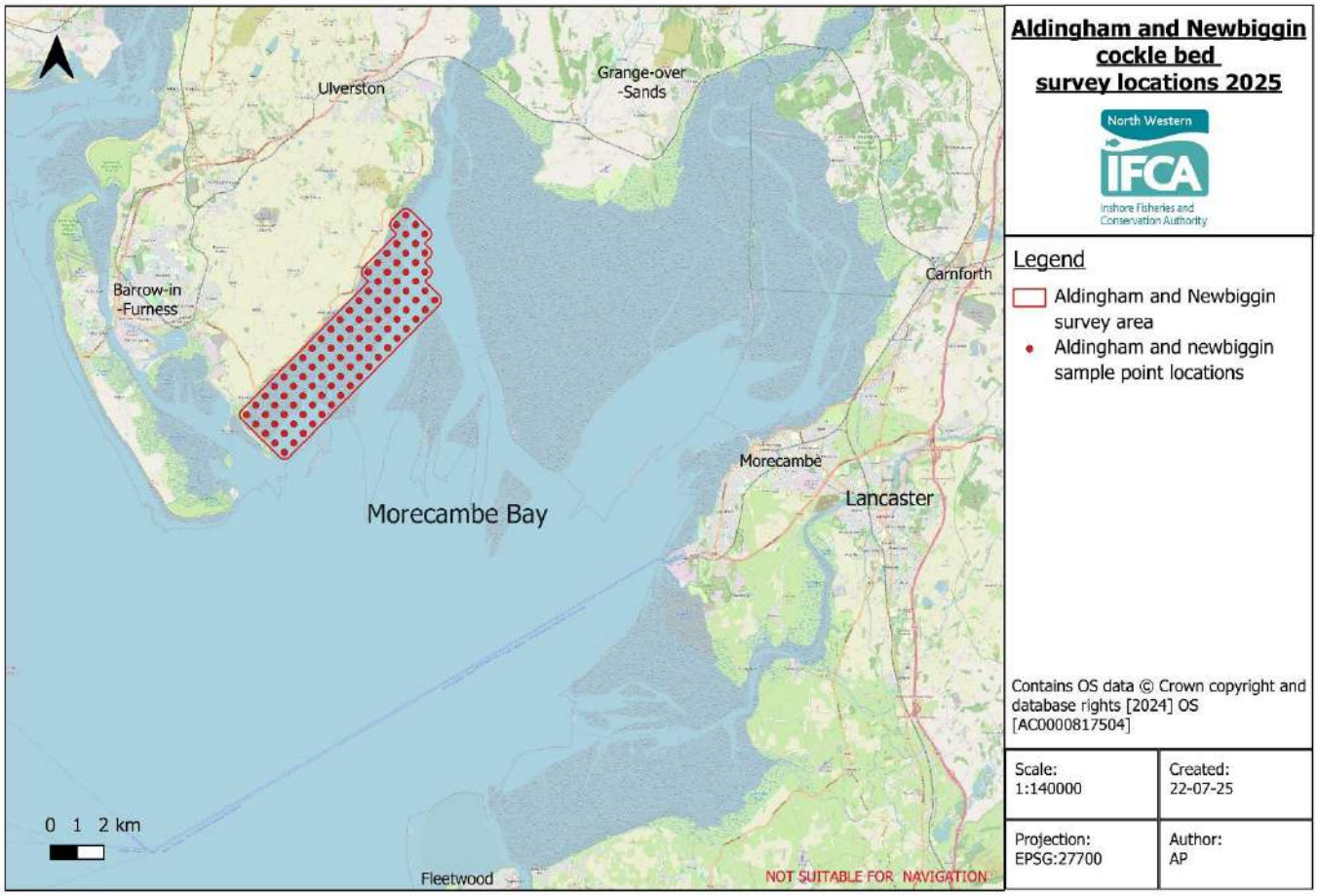


Figure 1. Illustration of position of Aldingham and Newbiggin Survey Area.

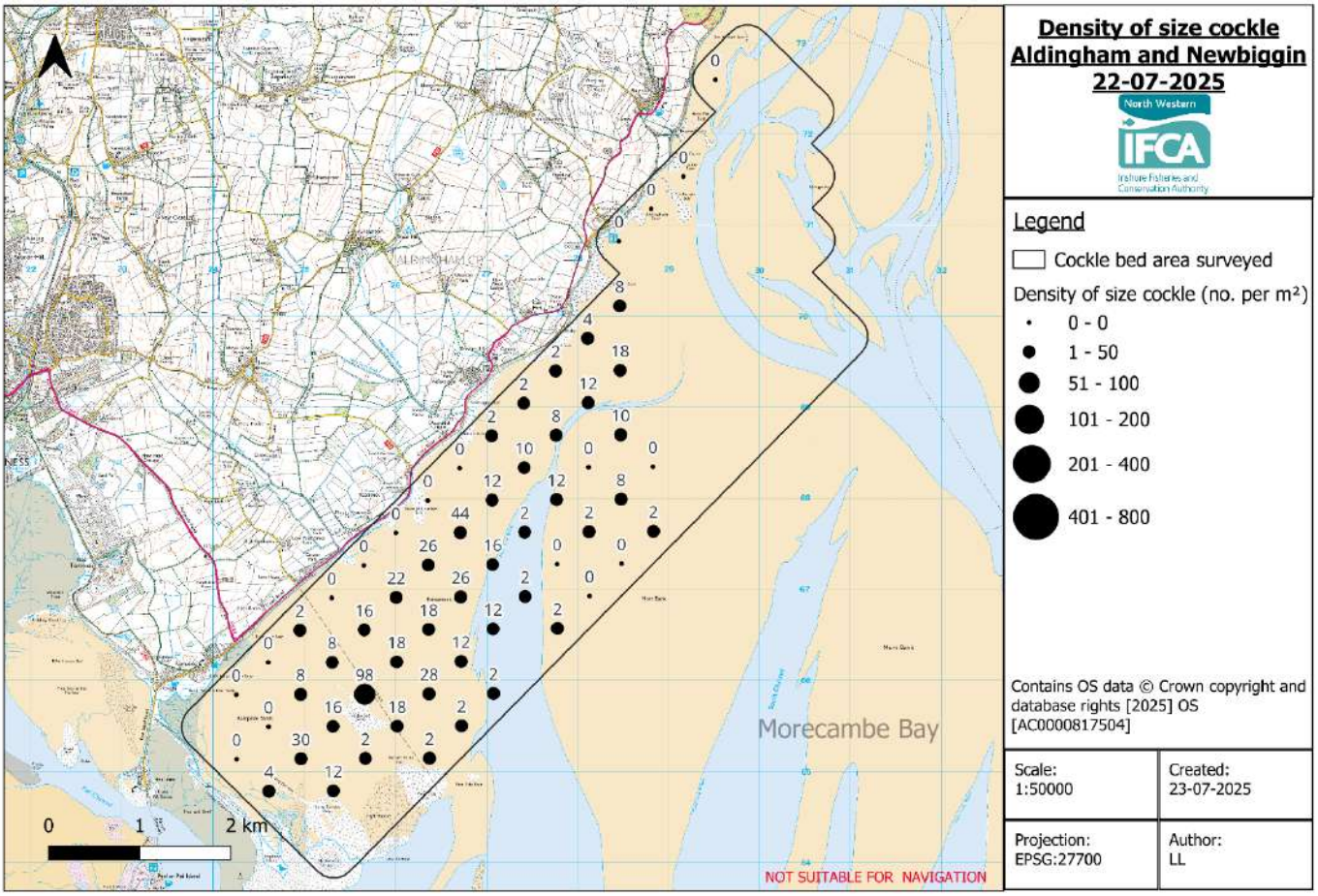


Figure 2. Density of size cockle per m² at Aldingham and Newbiggin July 2025.

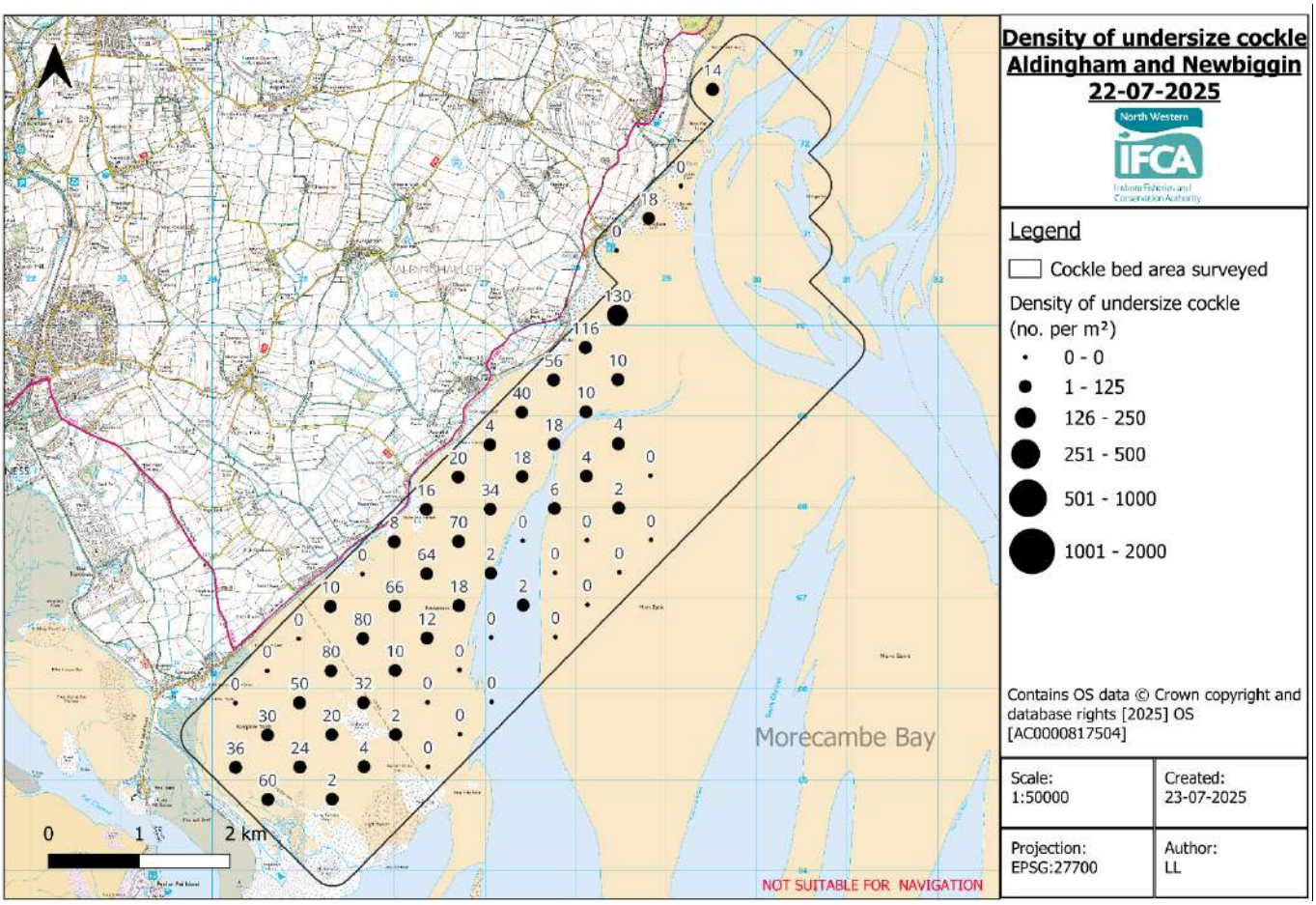


Figure 3. Density of undersize cockle per m² at Aldingham and Newbiggin July 2025.

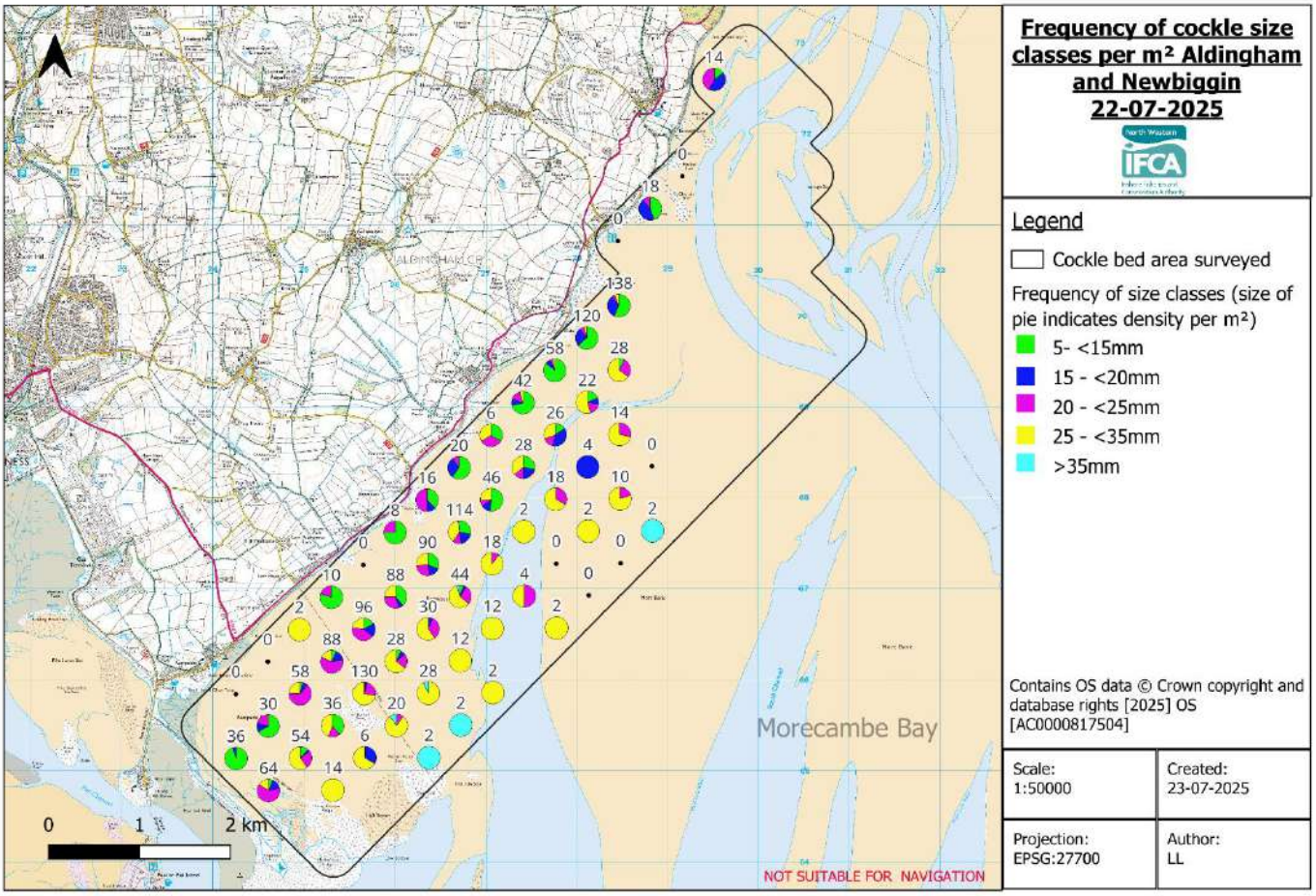


Figure 4. Frequency of size classes of cockle per m² at Aldingham and Newbiggin July 2025.

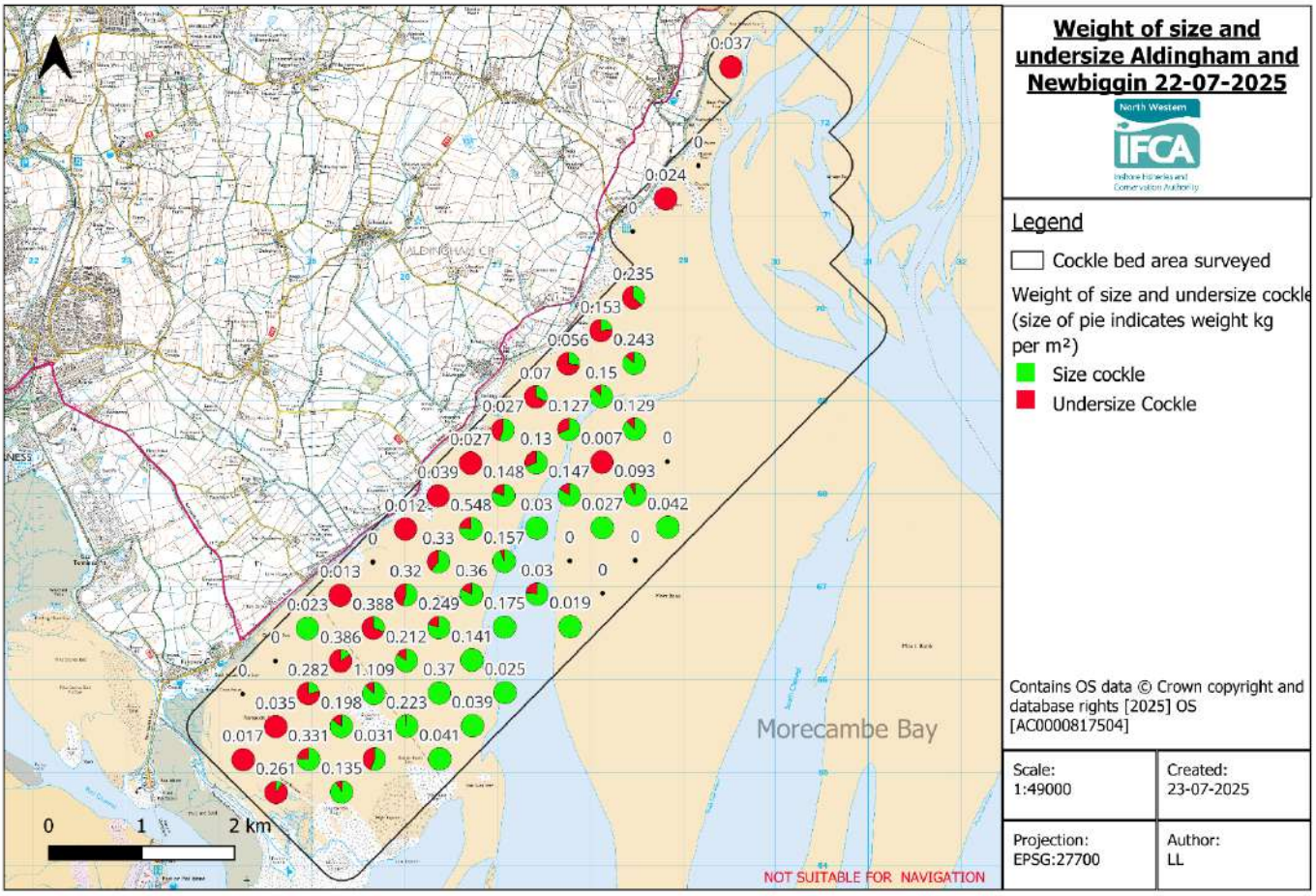


Figure 5. Weight of size and undersize cockle kg/m² at Aldingham and Newbiggin July 2025.

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 **at or below 0 degrees Celsius for 60 hours total out of 120 consecutive hours (5 days).***

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