Morecambe Bay Cockle Fisheries Habitats Regulations Assessment 21st January - 30th April 2019

Introduction

There is a long history of management of hand-gathered cockle fisheries in Morecambe Bay and specifically on Flookburgh / Leven Sands and Pilling cockle beds. The NWIFCA has carried out Habitats Regulations Assessments for these fisheries each time they have been opened since 2016. The most recent HRAs are available on the NWIFCA website: https://www.nw-ifca.gov.uk/marine-protected-areas/hra/ These contain lengthy detail about the nature of the fisheries, the variability of the stock, the conservation features for which the site is designated, their conservation status, the potential risks fishing activity could pose to the features, along with detail on potential impacts, vulnerability, and features' exposure to pressures. Finally the HRAs contain detail of the management (byelaws, and specific measures for each year depending on circumstances of the management and the stock) to ensure no risk to the integrity of the European Site.

Considering the history of these fisheries there seems little point in producing a lengthy document which repeats the information contained in previous versions. A restricted fishery was authorised at Flookburgh / Leven Sands in October 2018 which was subsequently closed by the NWIFCA Authority. The current proposal is to open three cockle beds in Morecambe Bay on 21st January 2019. The NWIFCA has taken the approach to summarise the factors that have changed since the opening of the fishery in October 2018, and carry out an Appropriate Assessment on these. This is provided in concise format below.

Please refer to the HRA for these cockle fisheries carried out for 2017 for the most up-to-date detailed information on all factors that are not covered in this document: **NWIFCA-MB-EMS-2017.** The HRA carried out for the October 2018 fishery **Leven and Flookburgh 2018** is also available. Both can be found at: https://www.nw-ifca.gov.uk/marine-protected-areas/hra/

Reasons for Re-assessing the 2018 Fishery

On the 8th October 2018 a restricted 'craam only' fishery was authorised on Flookburgh and Leven Sands beds in Morecambe Bay under NWSFC Byelaw 13a - Cockles and Mussels - Management of the Fishery. Conditions were attached to the written authorisation to fish, detailed in the HRA for that fishery.

Significant non-compliance with the prohibition of the use of a rake to protect juvenile cockle within the authorisation was detected by NWIFCA Enforcement officers. The Authority could no longer be confident that the fishery conformed to the Habitats Regulations Assessment. A meeting of NWIFCA Technical, Science and Byelaws Sub-Committee was held on the 6th November 2018 where the decision was taken to revoke the authorisation and close the fishery until stocks could be resurveyed and the HRA amended if necessary.

Since the closing of the cockle beds, five cockle beds within Morecambe Bay European Site have been resurveyed to provide information on stock levels. A meeting has been held with industry to discuss the issue of non-compliance in the 2018 fishery and proposals on the potential of re-opening the cockle beds before the closes season (May to August).

This document assesses the potential impacts of opening a hand-gathered cockle fishery at Newbiggin, Flookburgh / Leven Sands and Pilling Sands cockle beds.

1. Change to Site Information

Addition of Wyre – Lune recommended Marine Conservation Zone (MCZ). The site is designated for smelt (*Osmerus eperlanus*). The Pilling cockle bed is within the rMCZ but due to the nature of the activity (intertidal hand-gathered cockle fisheries) it is extremely unlikely that there will be any impact on smelt from the fishery.

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

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

2. Information about the fishing activity within the site

Regulation of Hand-gathering – change in number of permit holders

There are currently 109 NWIFCA Byelaw 3 permit holders with a possible 17 still to renew, giving a maximum 126 permit holders for 2018/2019 (correct 12-12-18). This is a reduction from the maximum 131 permit holders in 2017/2018.

3. Current Status of main Cockle Stocks within Morecambe Bay

For all surveys:

a) Survey method - Jumbo and 0.5m^2 quadrat.

b) Means were calculated from all stations with zero counts on the edge of the bed 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.

c) 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 density of the 0-5mm size class and the frequency of size classes of cockle.

d) In estimating biomass, size cockle is defined as cockle which will not pass through a square gauge 20 x 20mm in size. 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 although there are large areas of with this size class on the bed.

Middleton Cockle Survey 19-11-18

41 stations were sampled from a 250m grid. 13 additional station were added to ensure full coverage. The density of size cockle across the bed is relatively low with a small area with a high density of size cockle. The area of dense cockle is relatively small at approximately 5 hectares. The bed has consistent settlement of 2018 cockle ranging from 0-15mm in shell length. A total of 6 over 35mm cockle were sampled.

Means

The bed area has been split into two areas to ensure the area with a high density of cockle with a higher number of sample stations does not skew the averages.

Dense Area (5 hectares)

Mean number of size cockle	242 per m^2	(min 210, max 274)
Mean number of undersize cockle	170 per m^2	(min 100, max 240)
Mean number of 0-5mm cockle	0 per m^2	(min 0, max 0)

The Rest of the Bed (604 hectares)

Mean number of size cockle	9 per m^2	(min 0, max 48)
Mean number of undersize cockle	267 per m^2	(min 0, max 1976)
Mean number of 0-5mm cockle	41 per m^2	(min 0, max 267)

Biomass

	Area (ha)	Size Cockle (tonnes)	Undersize Cockle (tonnes)
Middleton Dense Area	5	120	<10
Middleton Rest of the Bed	604	550	350

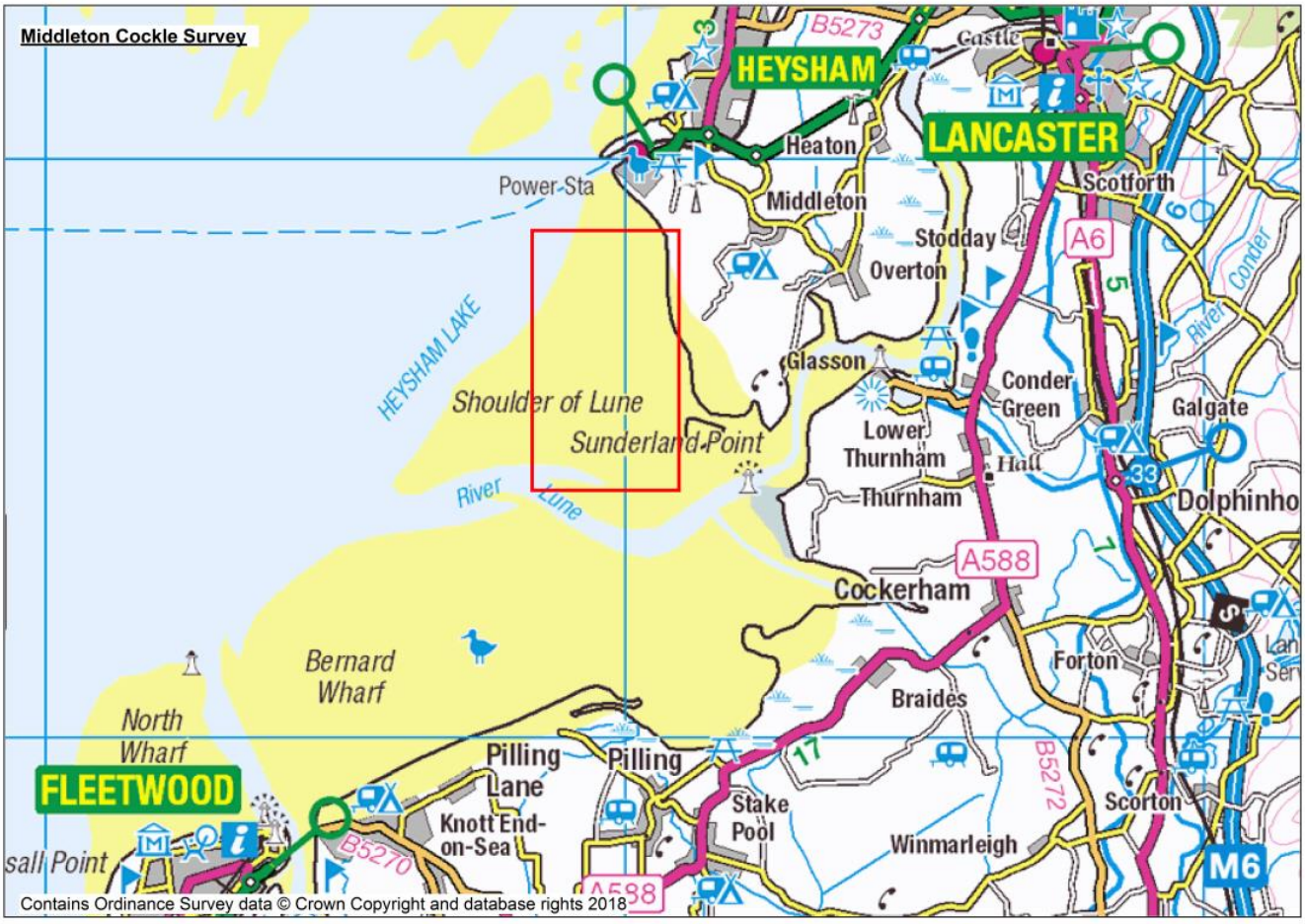
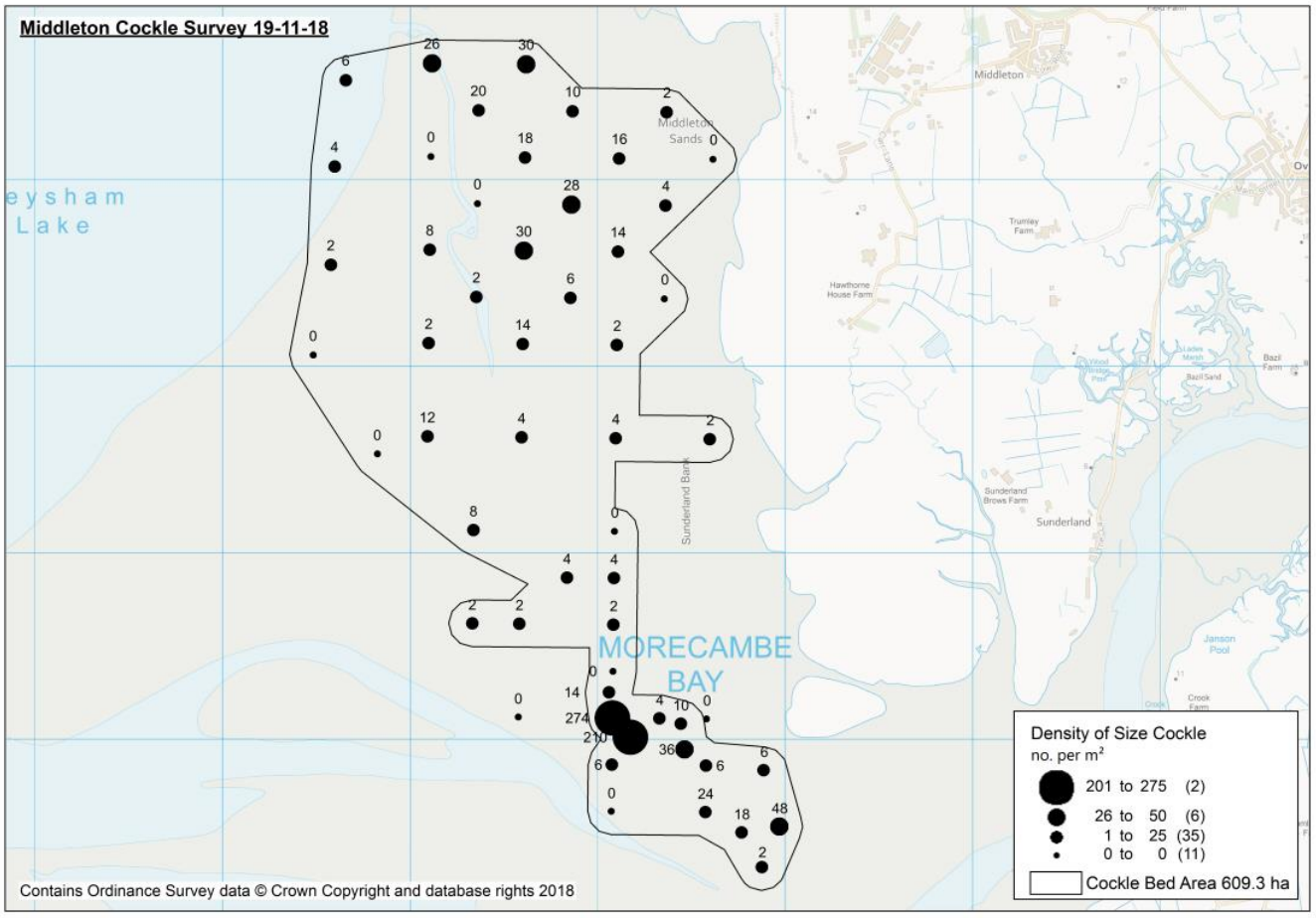
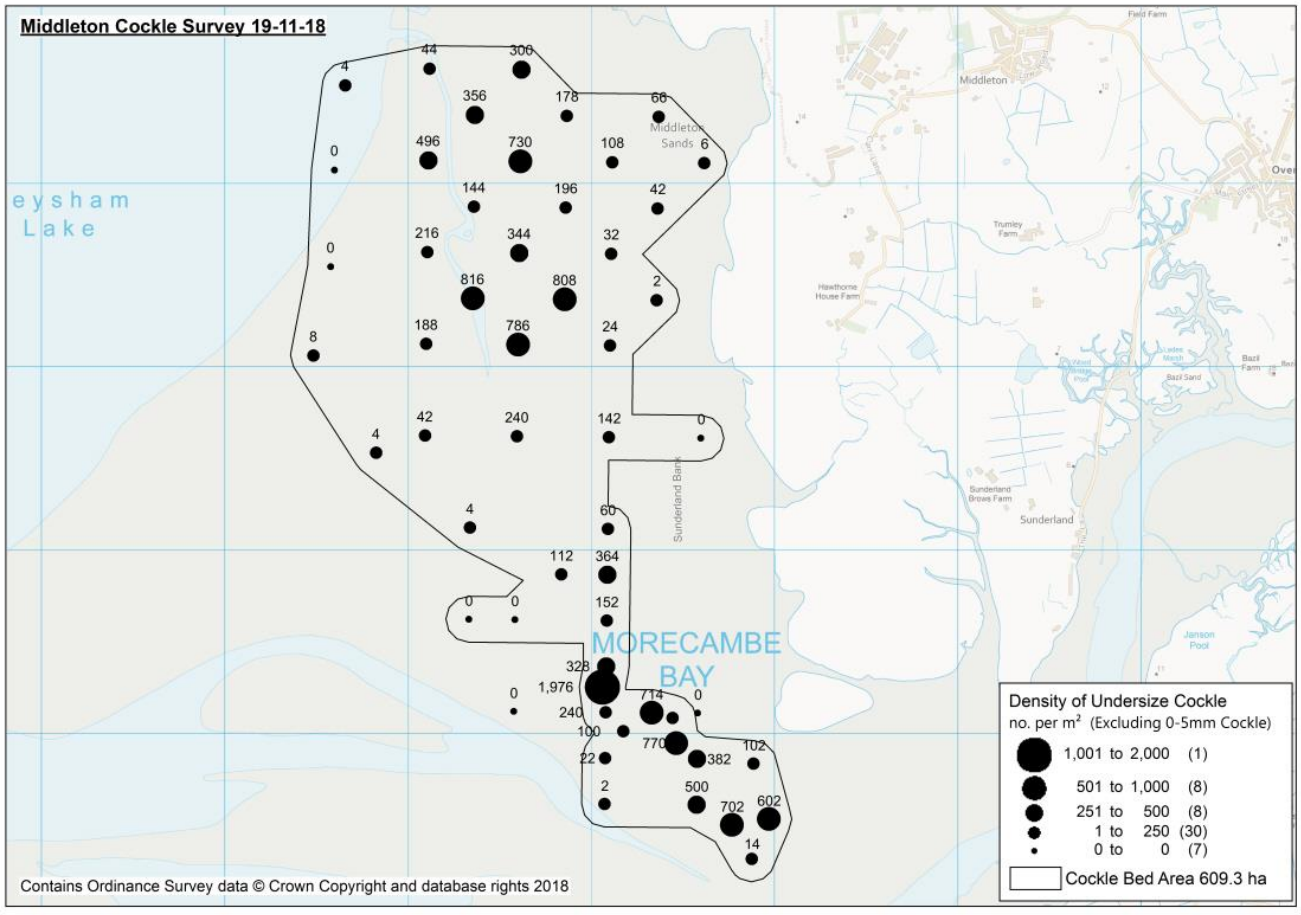


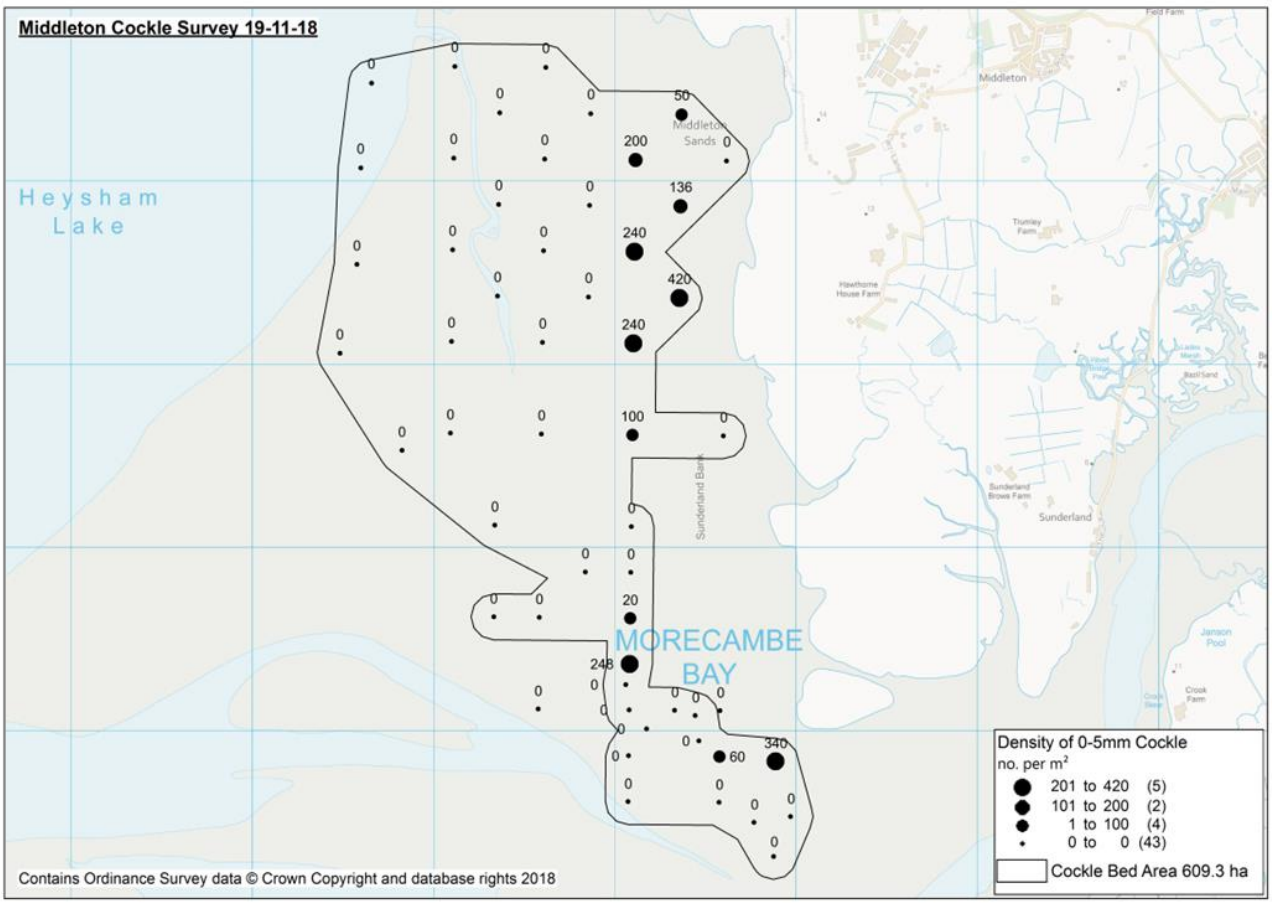
Illustration of position of Middleton Sands cockle bed



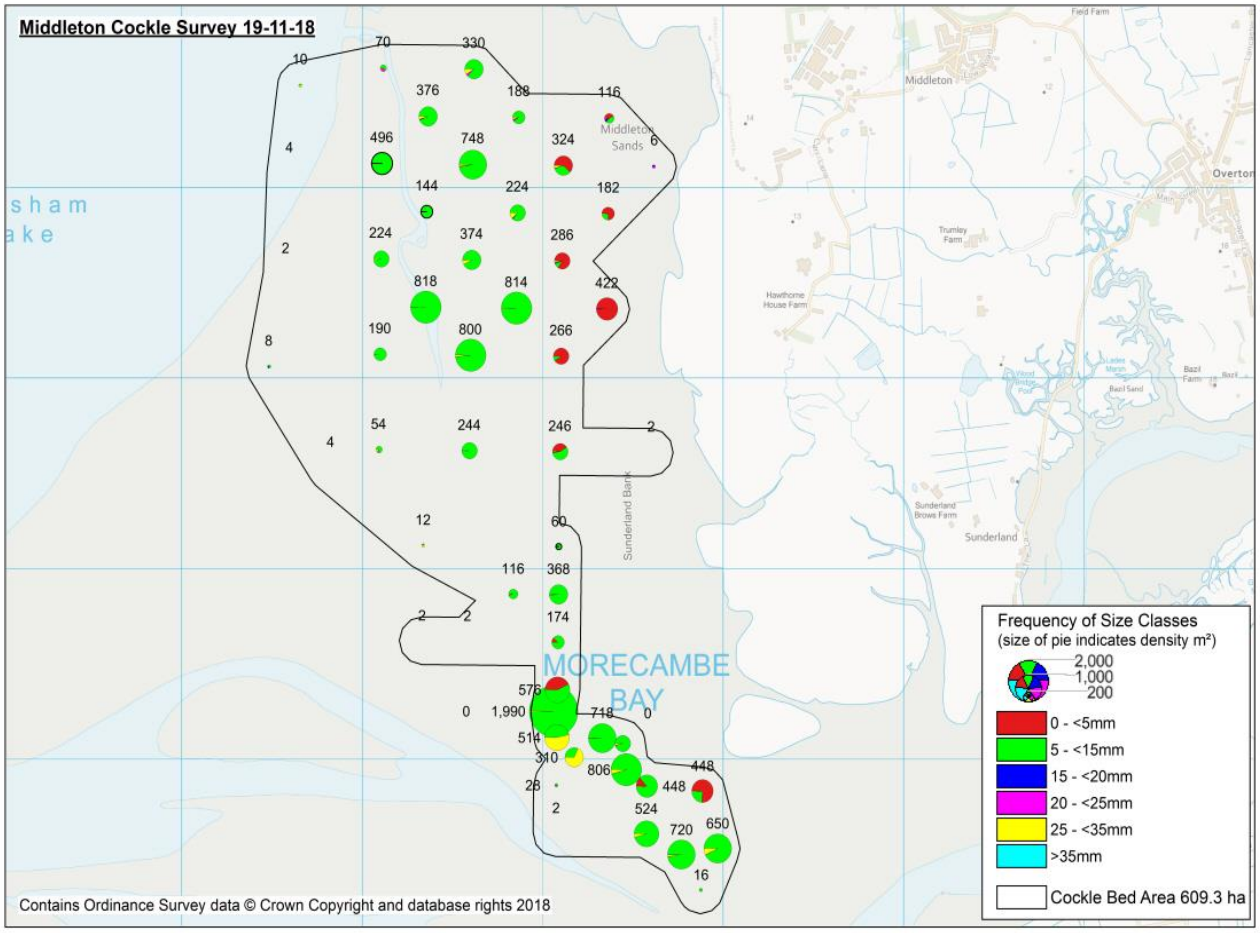
Density of size cockle per m² Middleton Sands November 2018



Density of undersize cockle per m² Middleton Sands November 2018



Density of 0-5mm cockle per m² Middleton Sands November 2018



Frequency of size classes of cockle per m² Middleton Sands November 2018

Newbiggin & Aldingham Cockle Survey 22-11-18

45 stations were sampled from a 500m grid. Three additional stations were added to ensure full coverage. The density of size cockle across the bed was relatively low. Smaller cockle ranging from 5-15mm in shell length was consistent across the bed with a dense patch opposite Roosebeck. A large portion of the cockle in the 5-15mm size category was at the upper end of the size range. A total of 62 over 35mm cockle were sampled.

Means

Mean number of size cockle	10 per m²	(min 0, max 44)
Mean number of undersize cockle	200 per m²	(min 0, max 2238)
Mean number of 0-5mm cockle	14 per m²	(min 0, max 200)

Biomass

	Area (ha)	Size Cockle (tonnes)[1]	Undersize Cockle (tonnes)
Newbiggin & Aldingham	**680**	**900**	**1450**

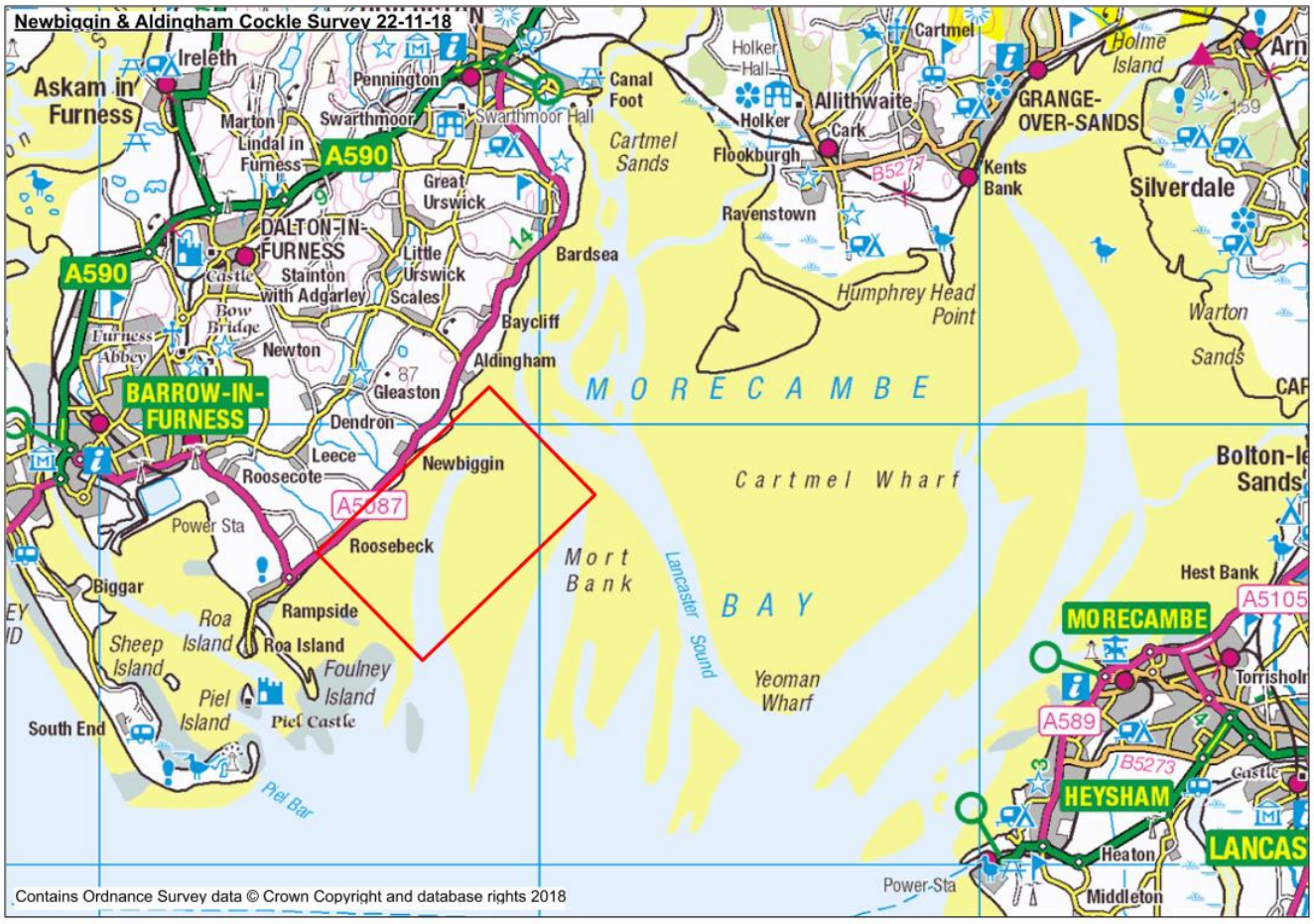
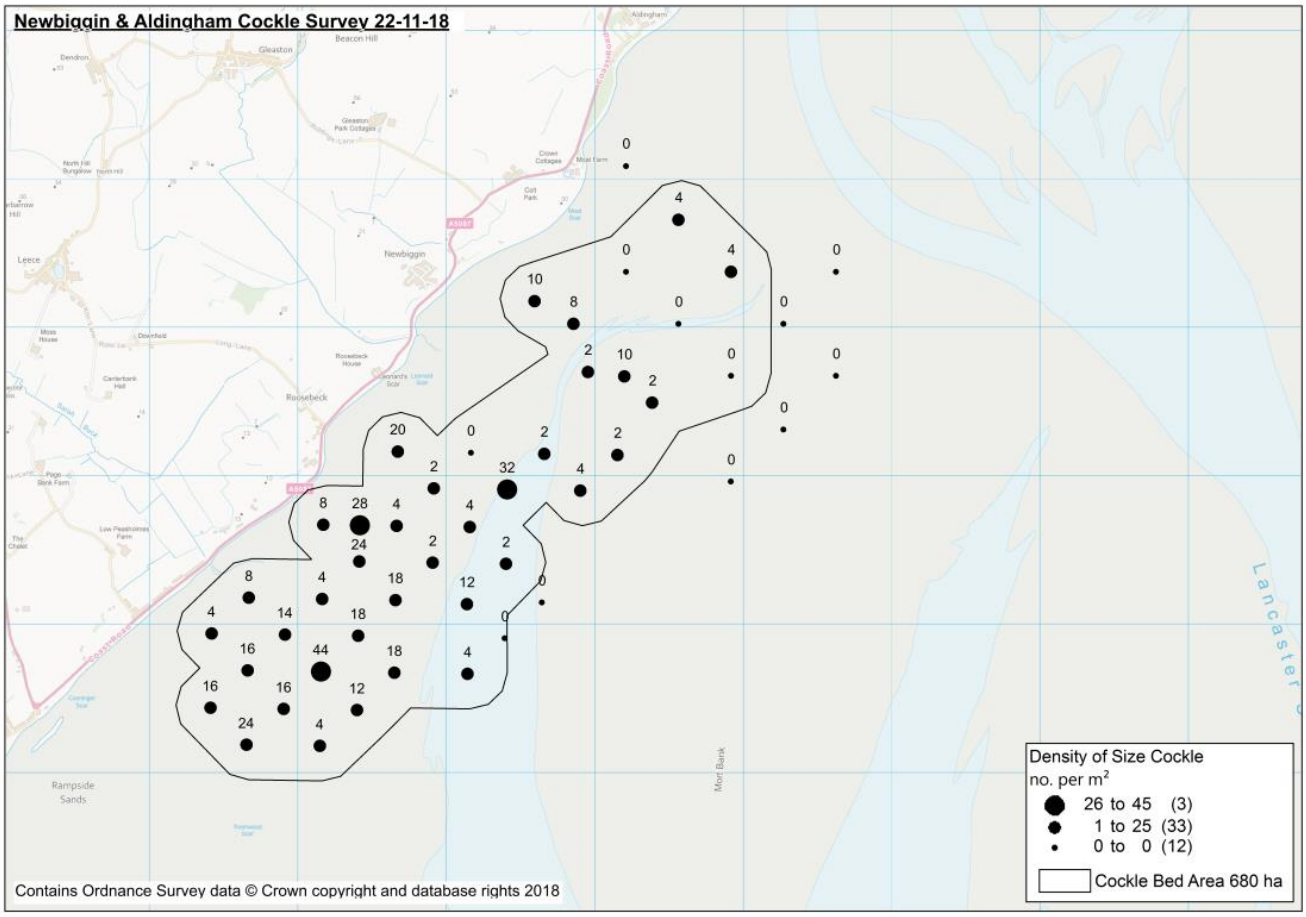
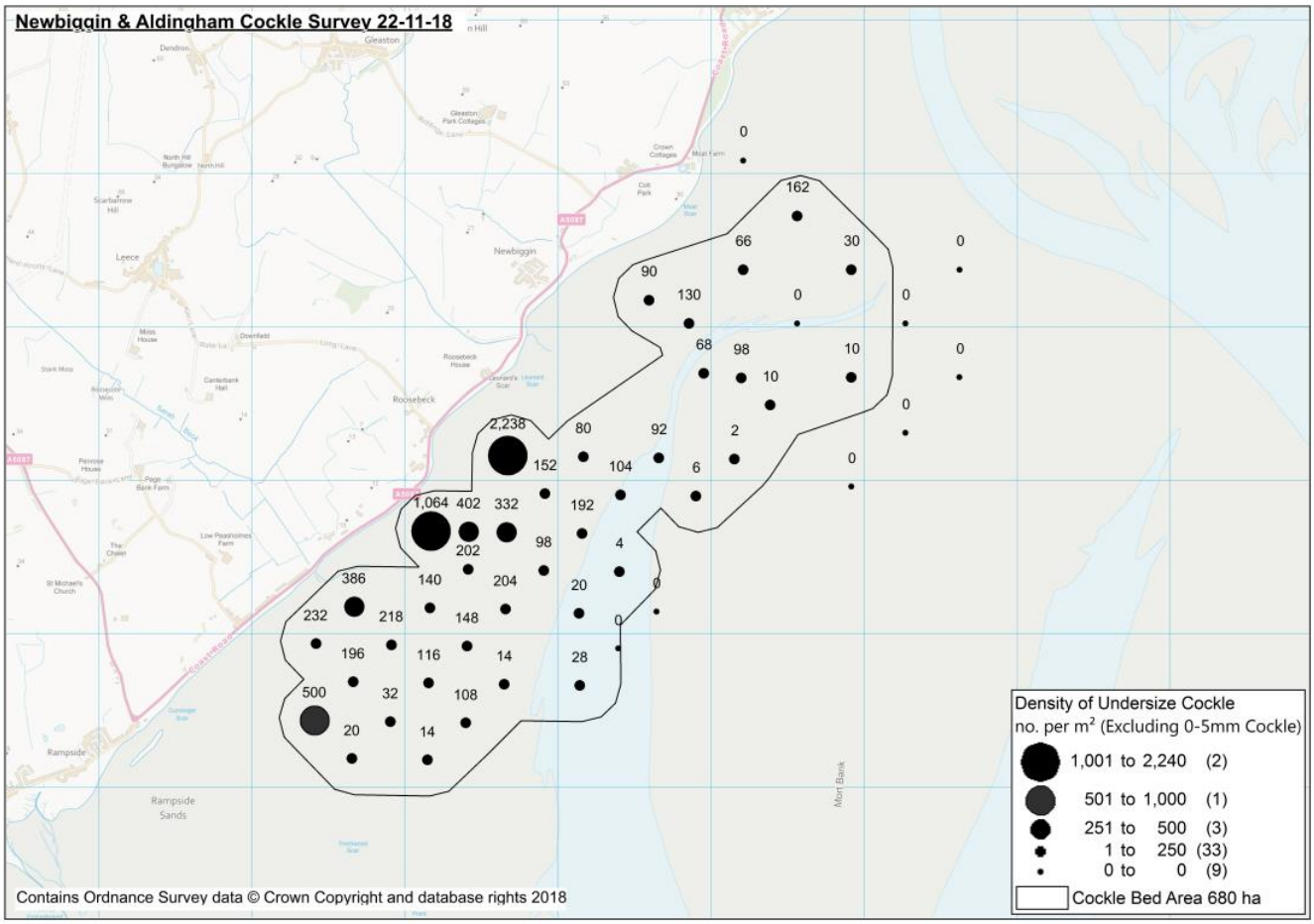


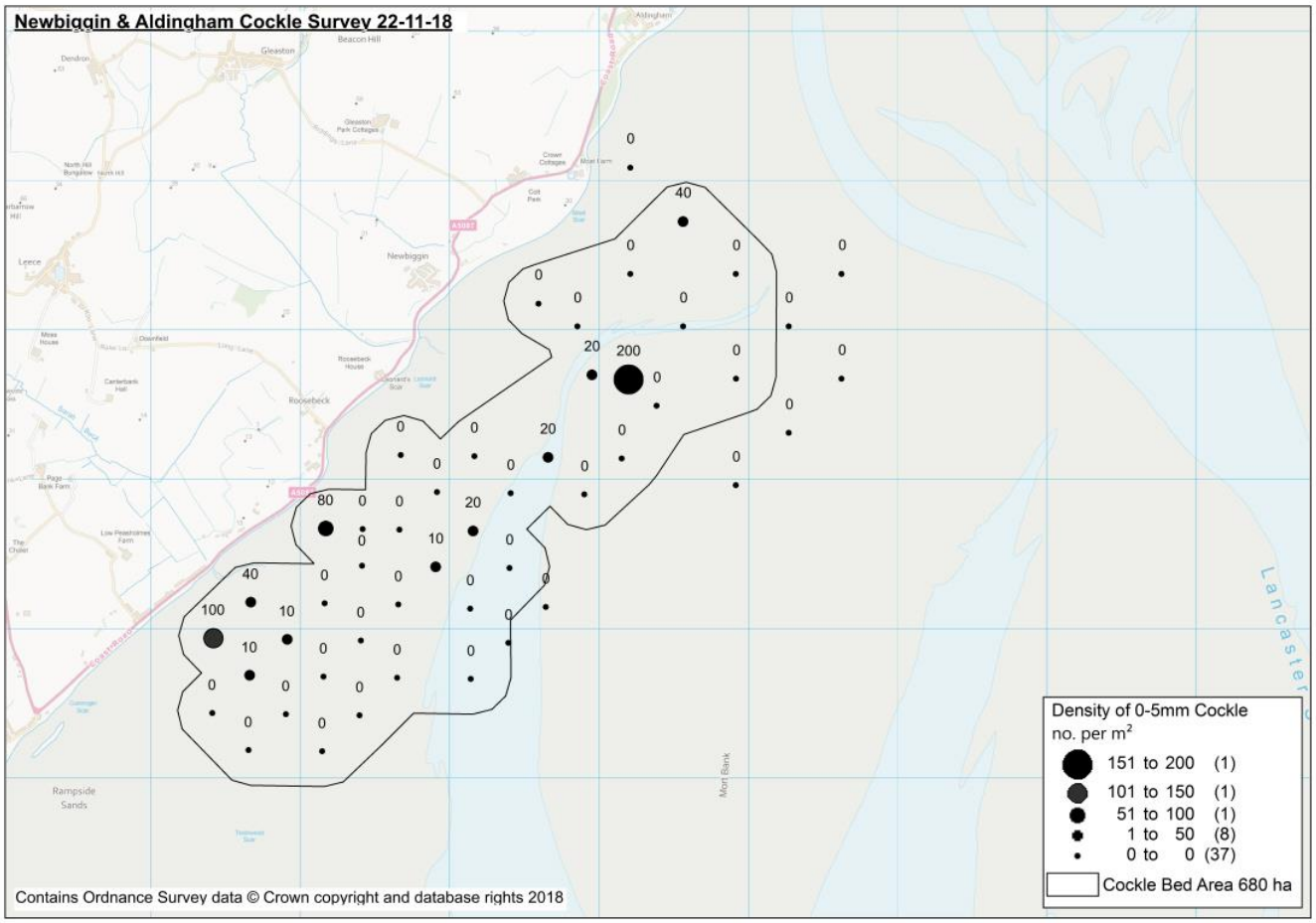
Illustration of the position of Newbiggin & Aldingham cockle bed



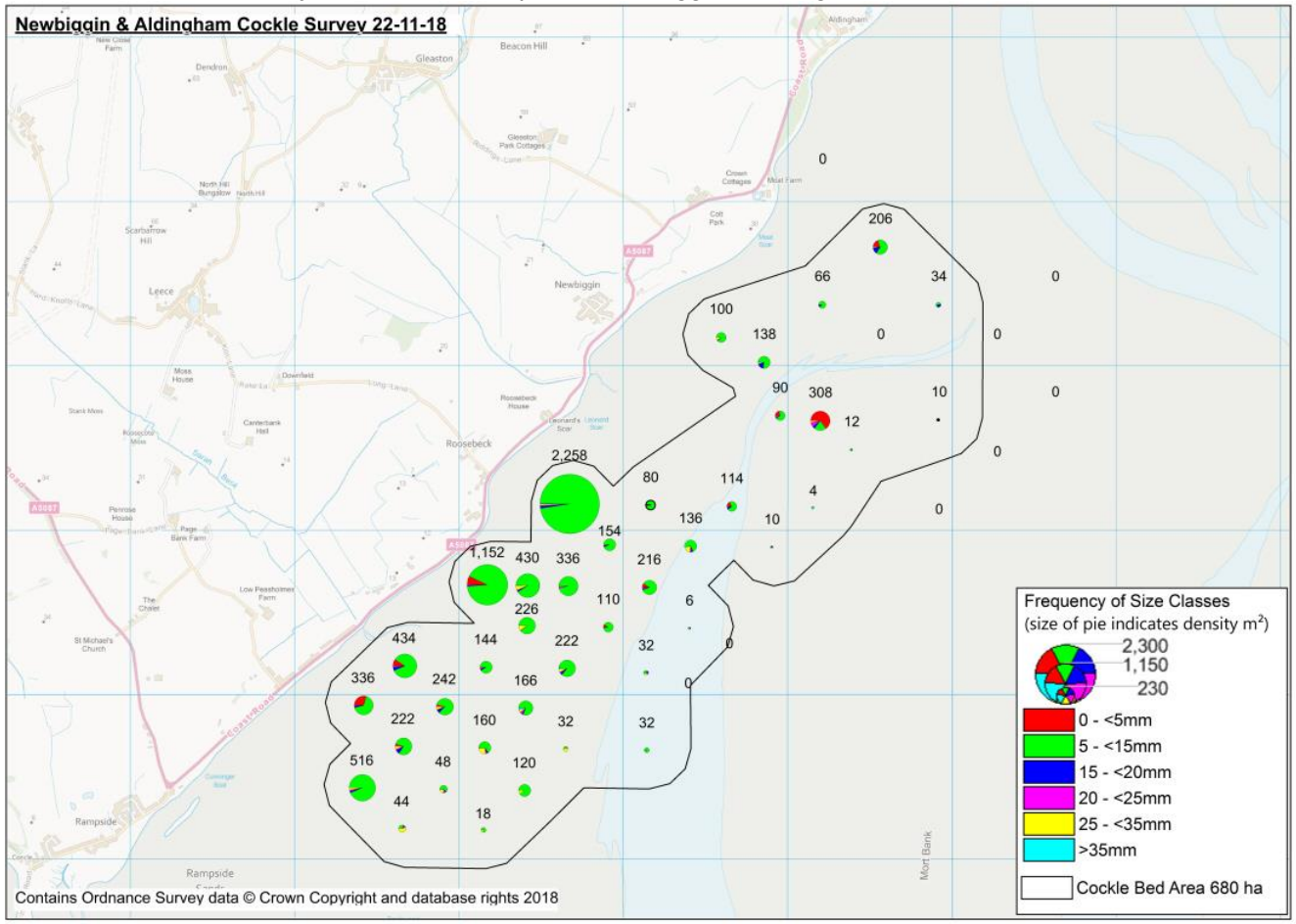
Density of size cockle per m² Newbiggin & Aldingham November 2018



Density of undersize cockle per m² Newbiggin & Aldingham November 2018



Density of 0-5mm cockle per m² Newbiggin & Aldingham November 2018



Frequency of size classes of cockle per m² Newbiggin & Aldingham November 2018

Leven cockle Survey 21-11-18

57 stations were sampled from a grid 500m apart. The density of size cockle across the bed was relatively low. Smaller cockle in the 5-15mm size category was consistent across the bed with increased density observed in the northwest area of the bed, much of this cockle was 10-15mm in shell length. There was a late 2018 settlement of spat observed at around a quarter of stations sampled. A total of 26 over 35mm cockle were sampled.

Means

Mean number of size cockle:	10 per m^2	(min 0, max 48)
Mean number of undersize cockle:	170 per m^2	(min 2, max 928)
Mean number of 5mm cockle	8 per m^2	(min 0, max 100)

Biomass

	Area (ha)	Size Cockle (tonnes)[1]	Undersize Cockle (tonnes)[2]
Leven	**803**	**1000**	**1100**

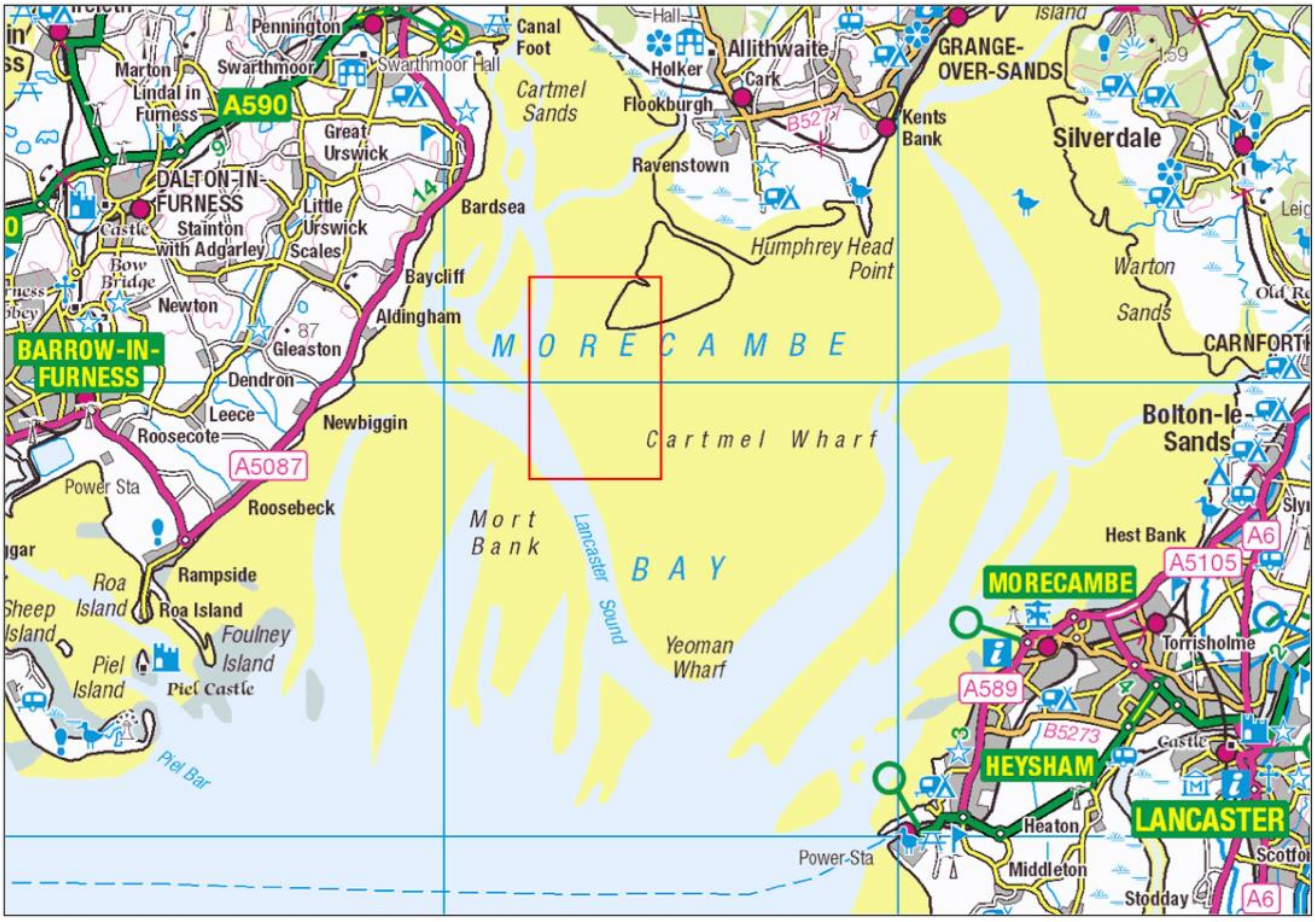
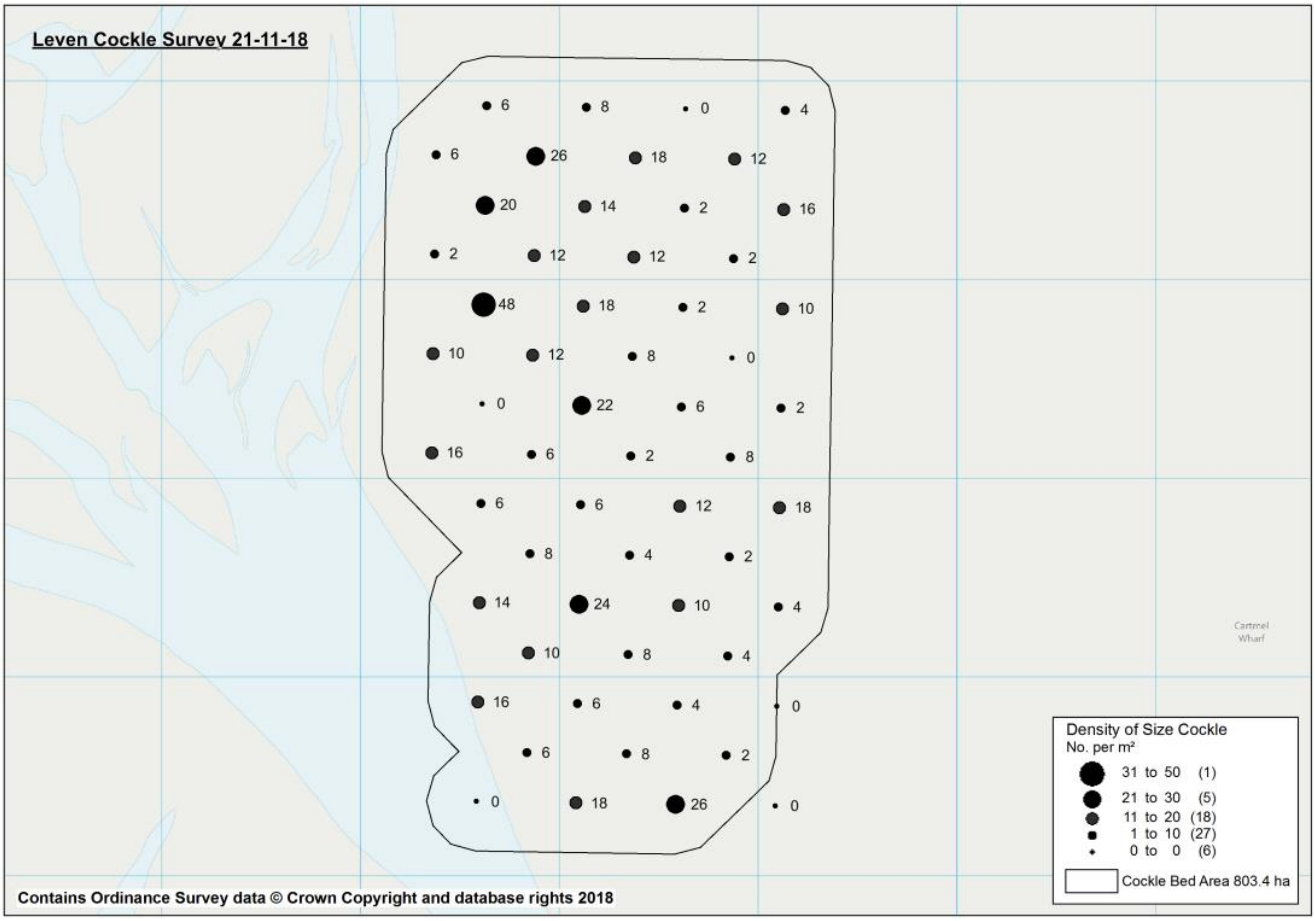
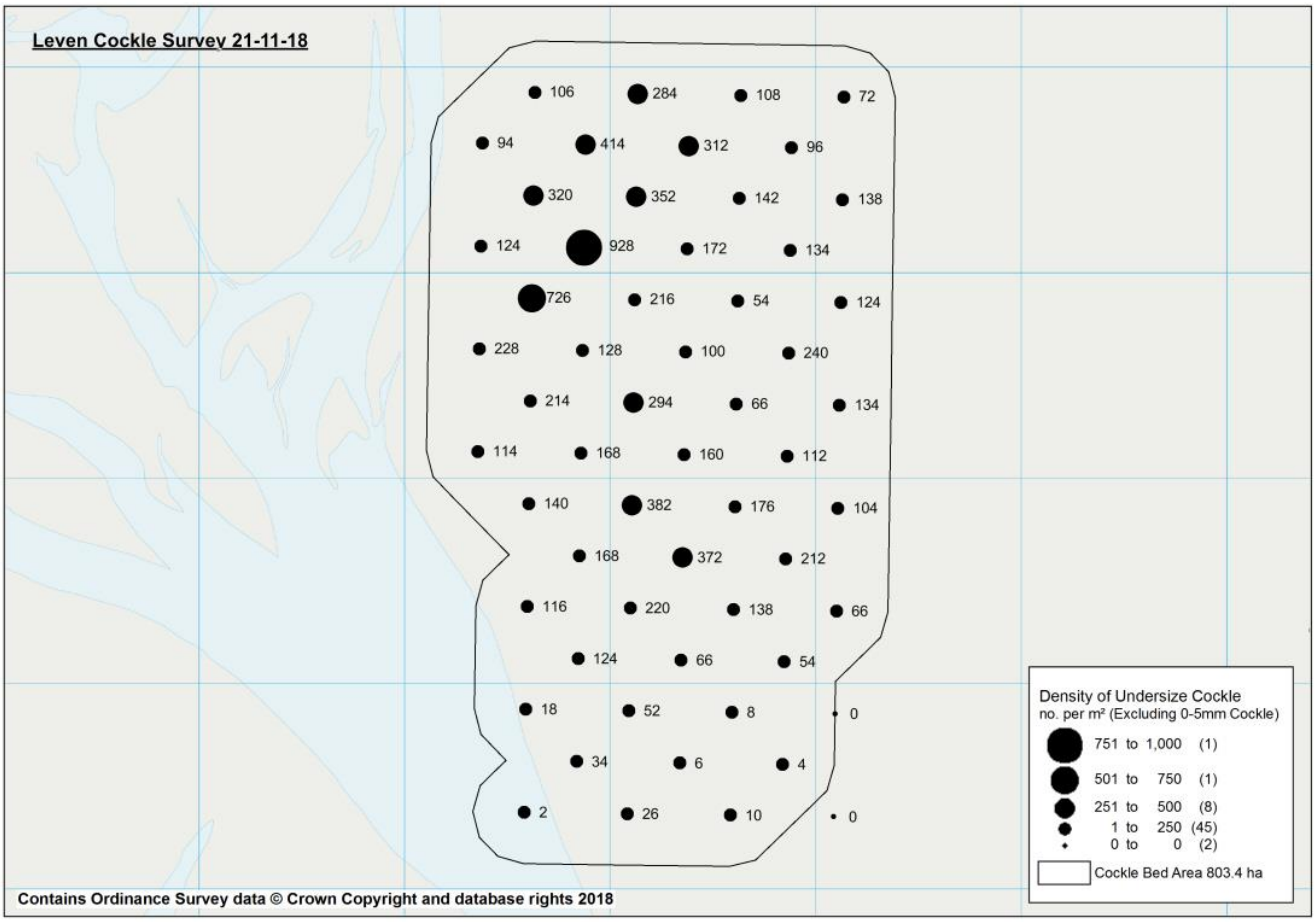


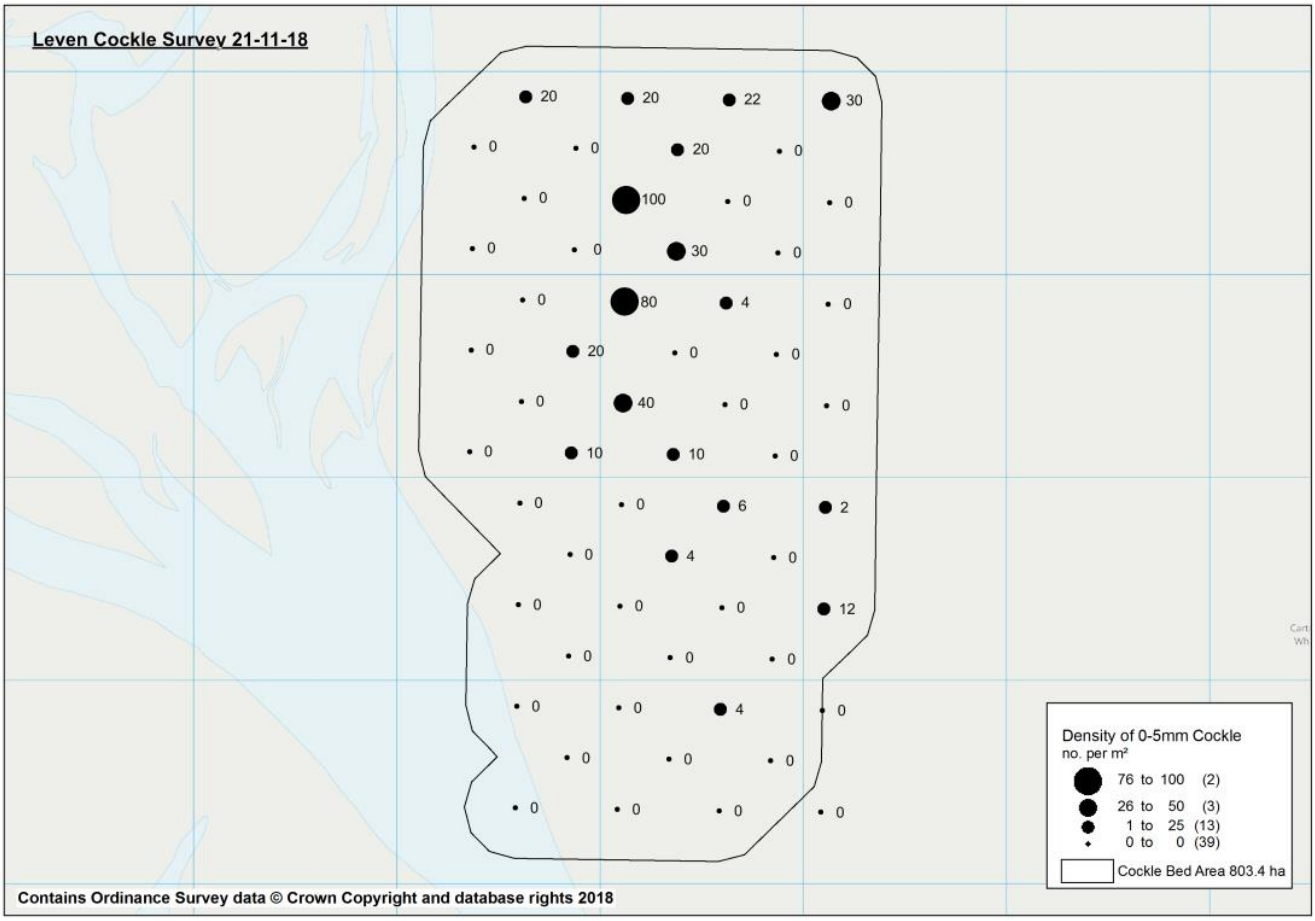
Illustration of position of Leven Island cockle bed



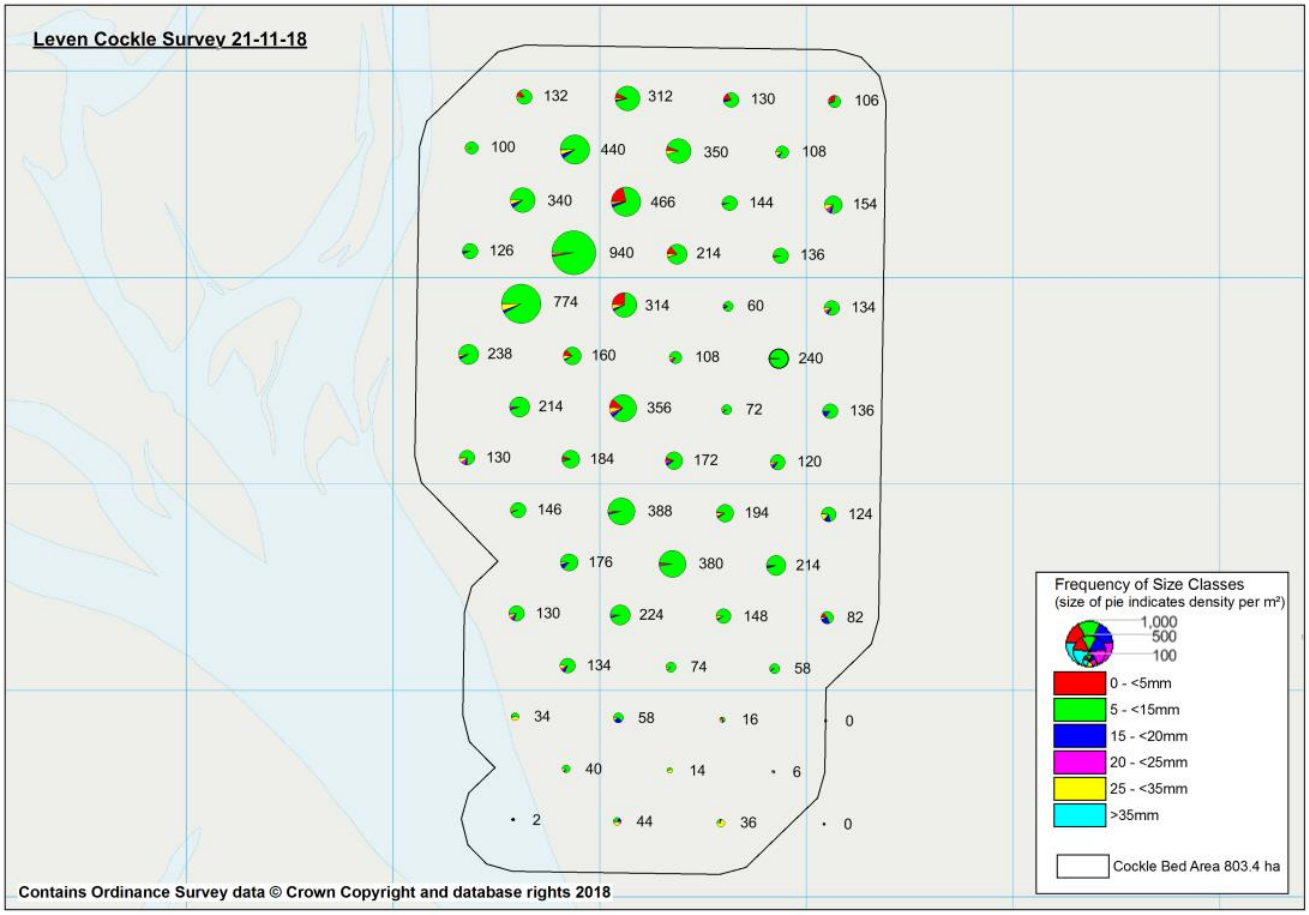
Density of size cockle per m^2 Leven Island November 2018



Density of undersize cockle per m^2 Leven Island November 2018



Density of 0-5mm cockle per m^2 Leven Island November 2018



Frequency of size classes of cockle per m² Leven Island November 2018

Pilling Cockle Survey 27-11-18

Tides: LW 08:06 1.7m (Liverpool tides)

53 stations were sampled from a 500m grid. The density of size cockle across the bed is relatively low with an area to the east of the bed with a higher density of size cockle. The bed has consistent settlement on 2018 cockle ranging from 0-15mm in shell length. A total of 46 over 35mm cockle were sampled.

Means

Mean number of size cockle	22 per m²	(min 0, max 194)
Mean number of undersize cockle	192 per m²	(min 0, max 1114)
Mean number of 0-5mm cockle	13 per m²	(min 0, max 200)

Biomass

	Area (ha)	Size Cockle (tonnes)	Undersize Cockle (tonnes)
Pilling	**1110**	**2700**	**2100**

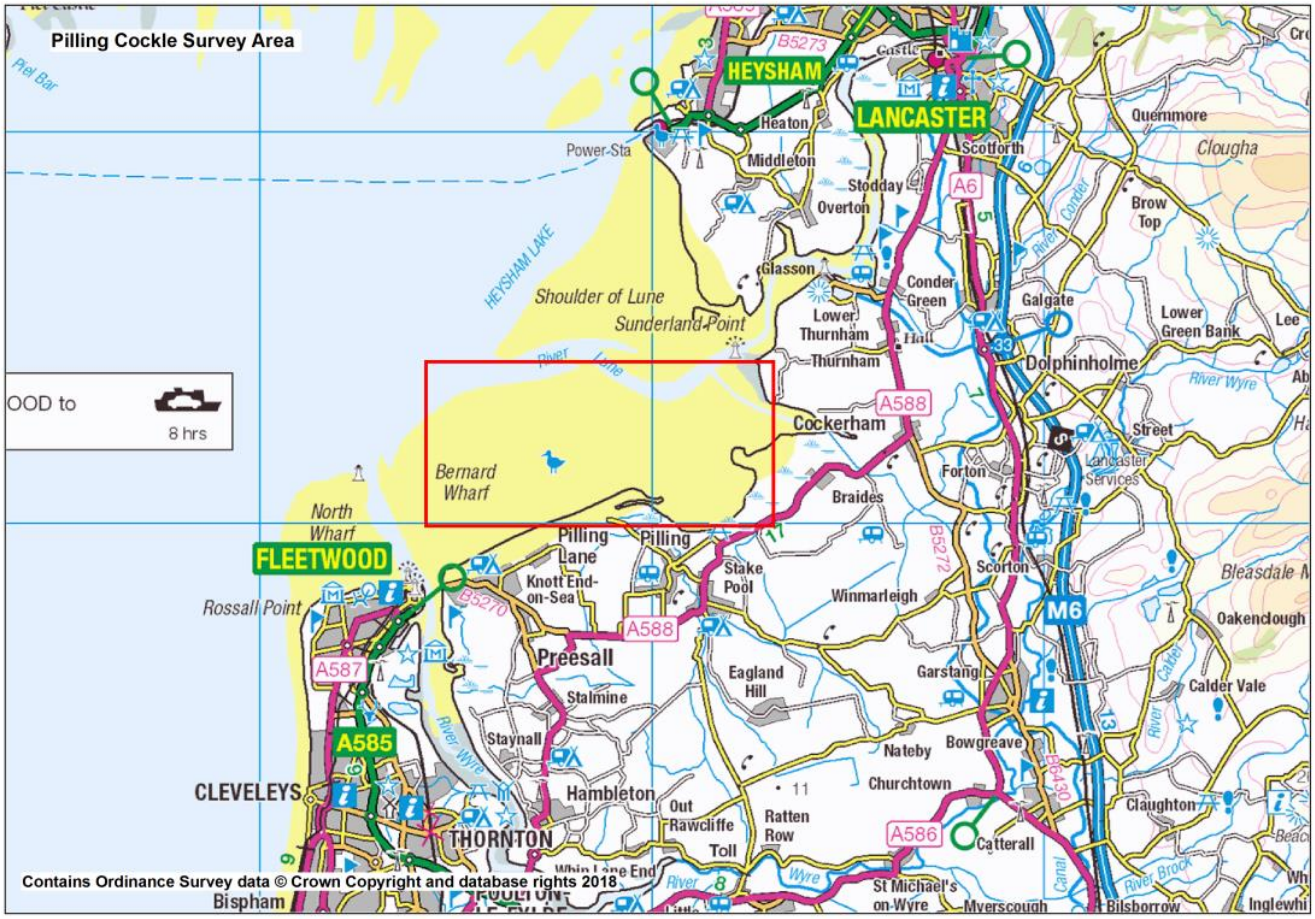
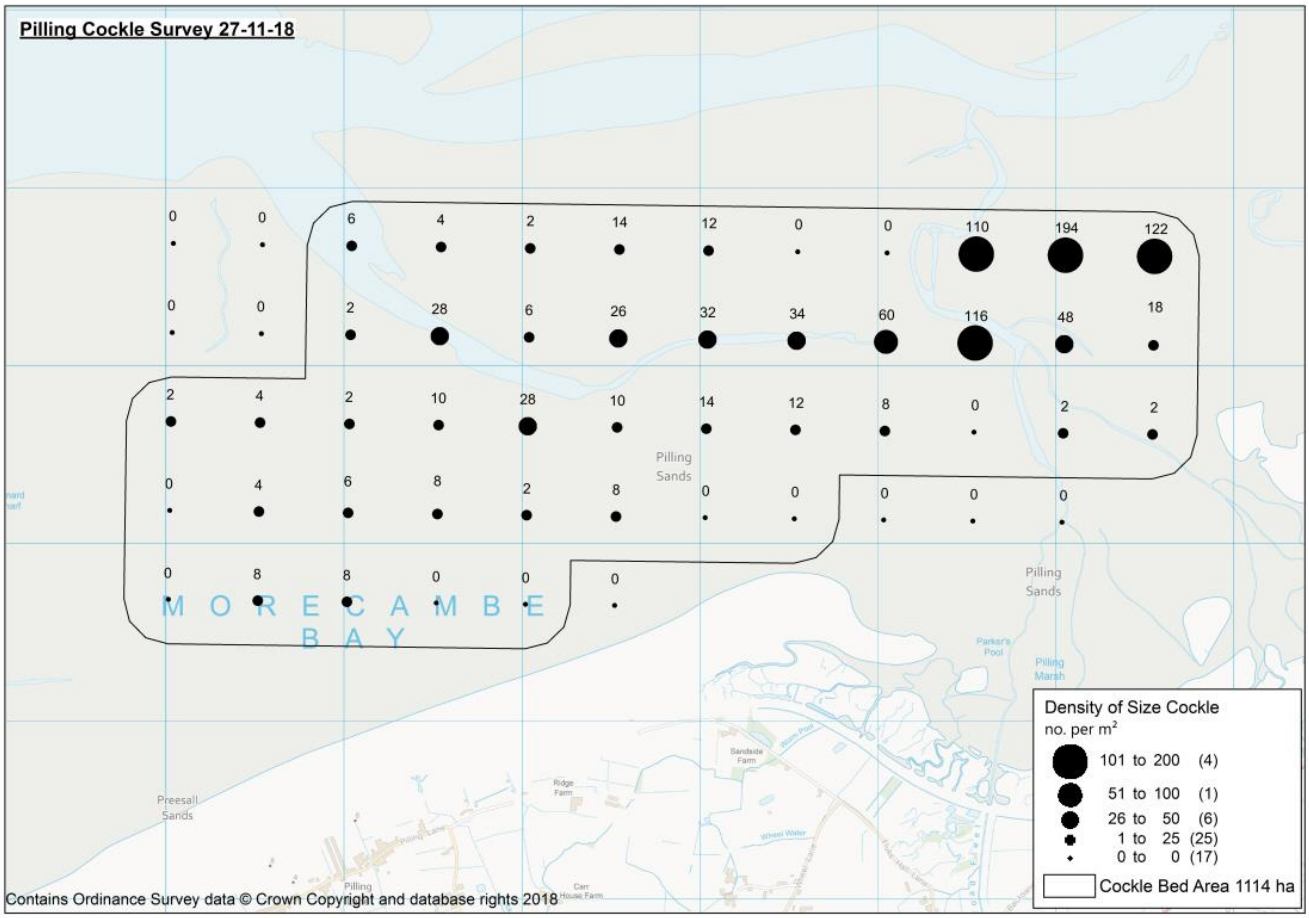
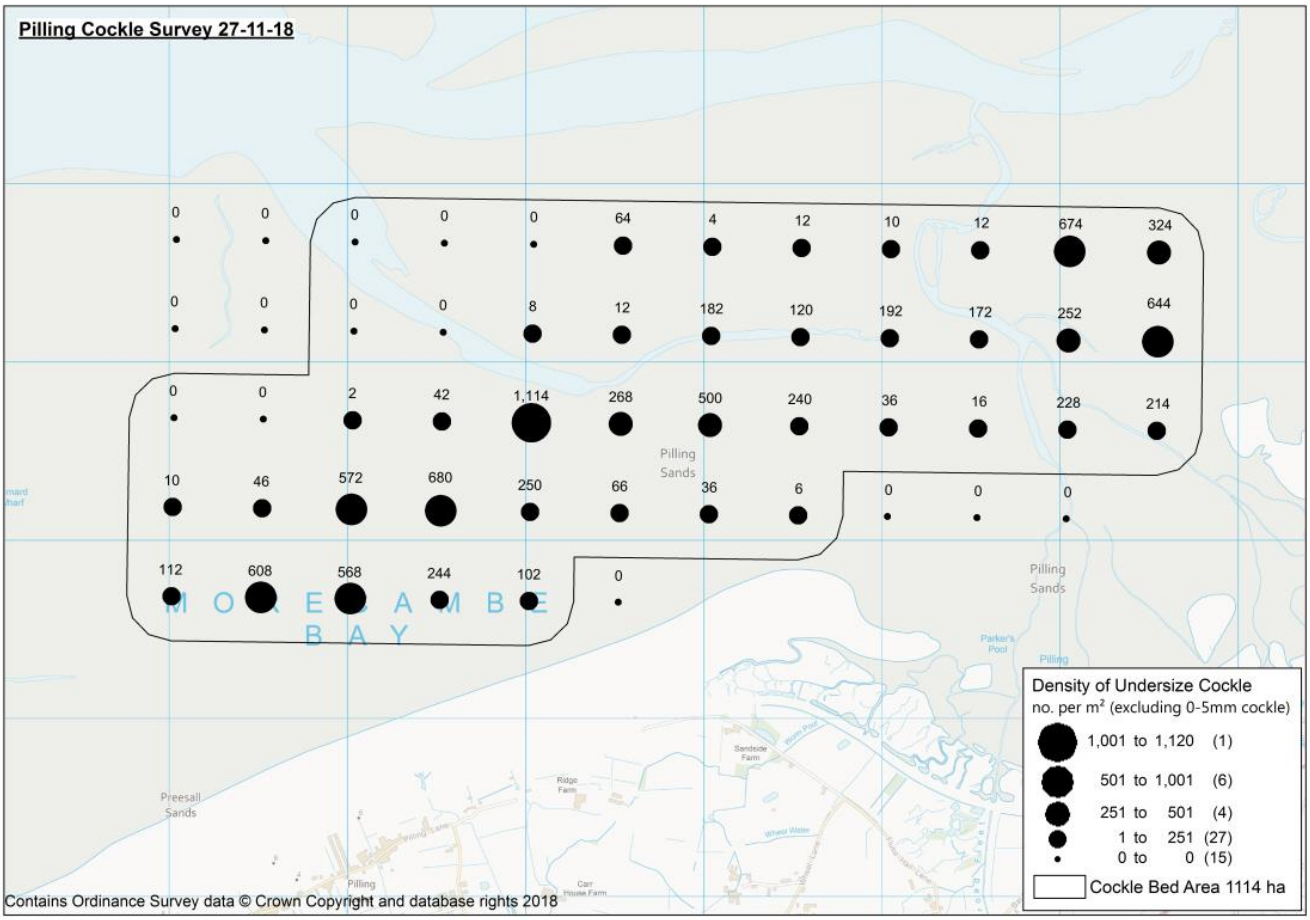


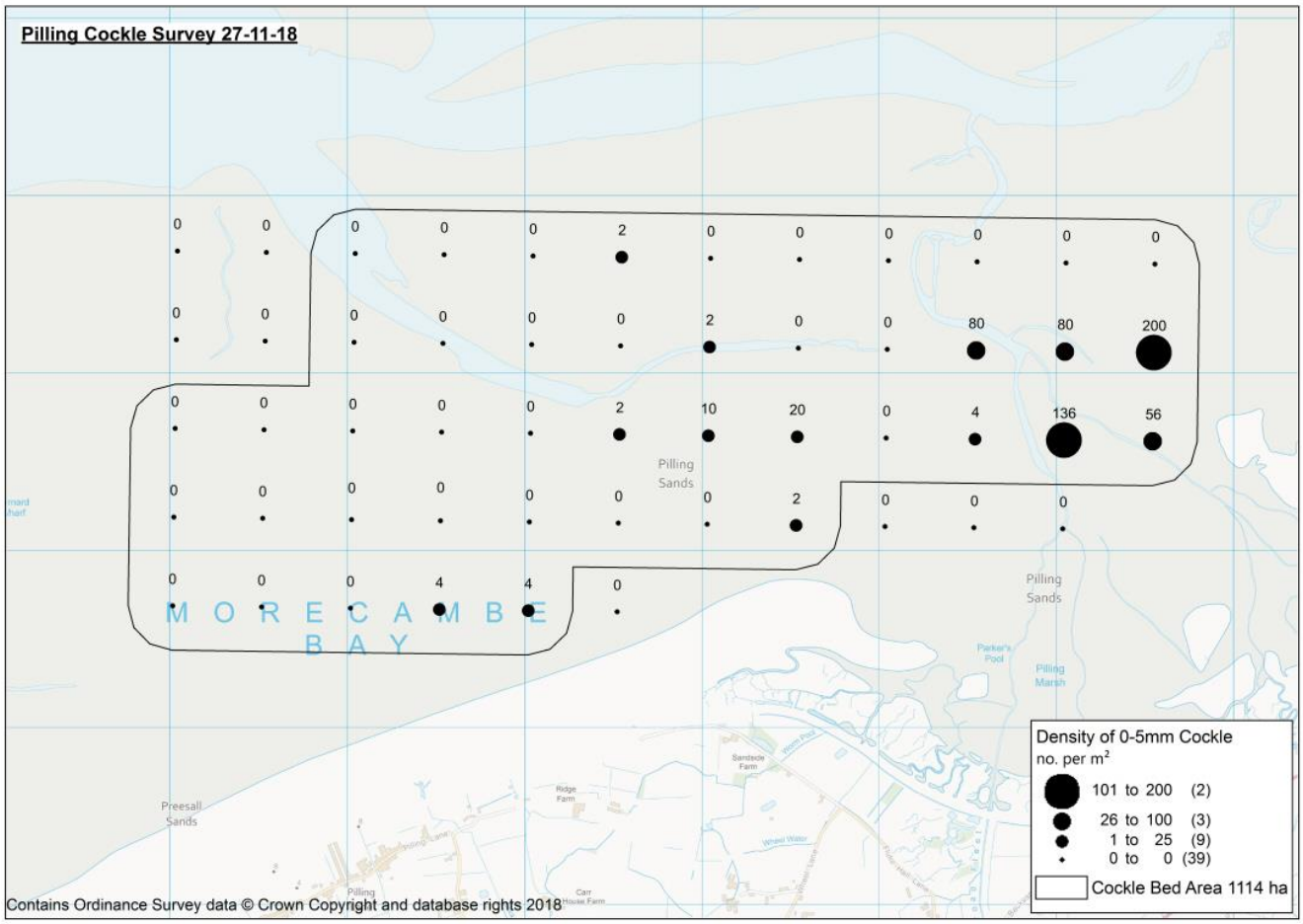
Illustration of position of Pilling Sands cockle bed



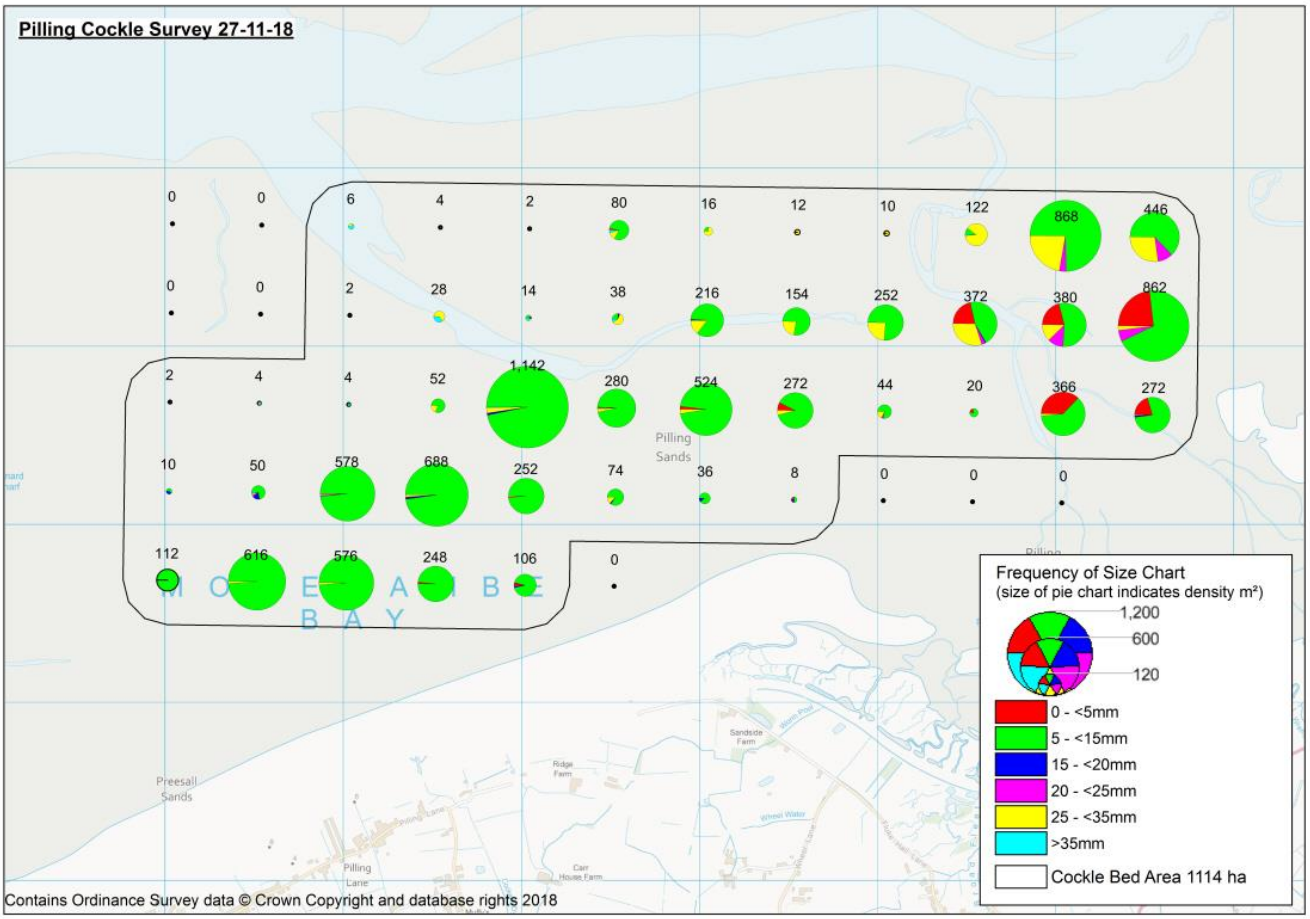
Density of size cockle per m² Pilling Sands November 2018



Density of undersize cockle per m² Pilling Sands November 2018



Density of 0-5mm cockle per m² Pilling Sands November 2018



Frequency of size classes of cockle per m² Pilling Sands November 2018

Flookburgh Cockle Survey 28-11-18 & 29-11-18

Tides: 28-11-18:- LW 08:51 2.1m
29-11-18:- LW 09:46 2.6m (Liverpool tides)

115 stations were sampled from a 500m grid, a combination of tides, weather and channels prevented full coverage of the south western area of the bed. The density of size cockle across the bed was relatively low, although an area of 40-60 per m² size cockle was present in the western area of the bed. A total of 70 over 35mm cockle were sampled. The bed has a consistent settlement of 2018 cockle ranging from 0-15mm in shell length. Oystercatchers and knot were present throughout the bed feeding on cockle.

Means

Mean number of size cockle	6 per m²	(min 0, max 60)
Mean number of undersize cockle	342 per m²	(min 0, max 4228)
Mean number of 0-5mm cockle	22 per m²	(min 0, max 1220)

Biomass

	Area (ha)	Size Cockle (tonnes)	Undersize Cockle (tonnes)
Flookburgh	**2325**	**1900**	**12000**

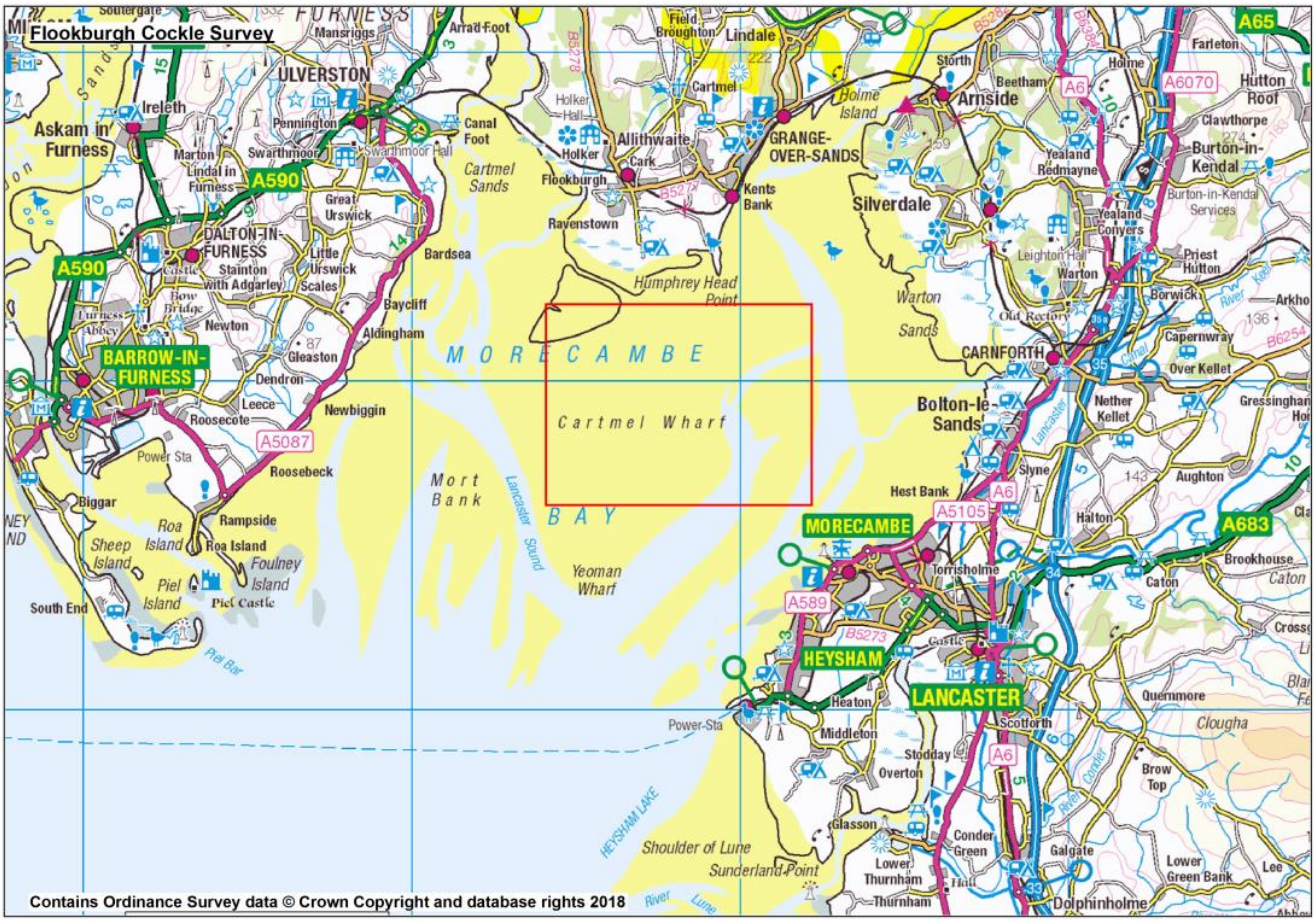
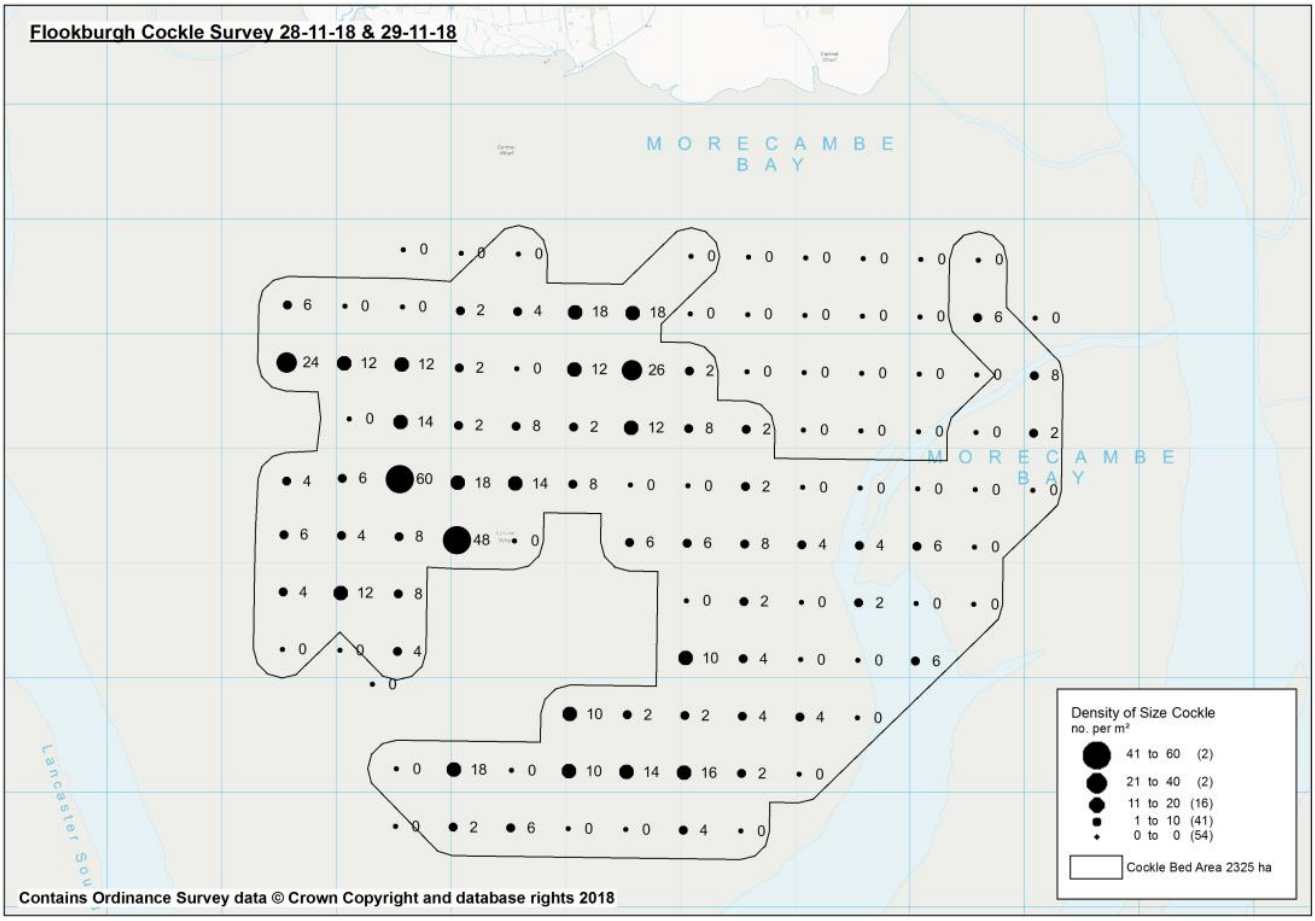
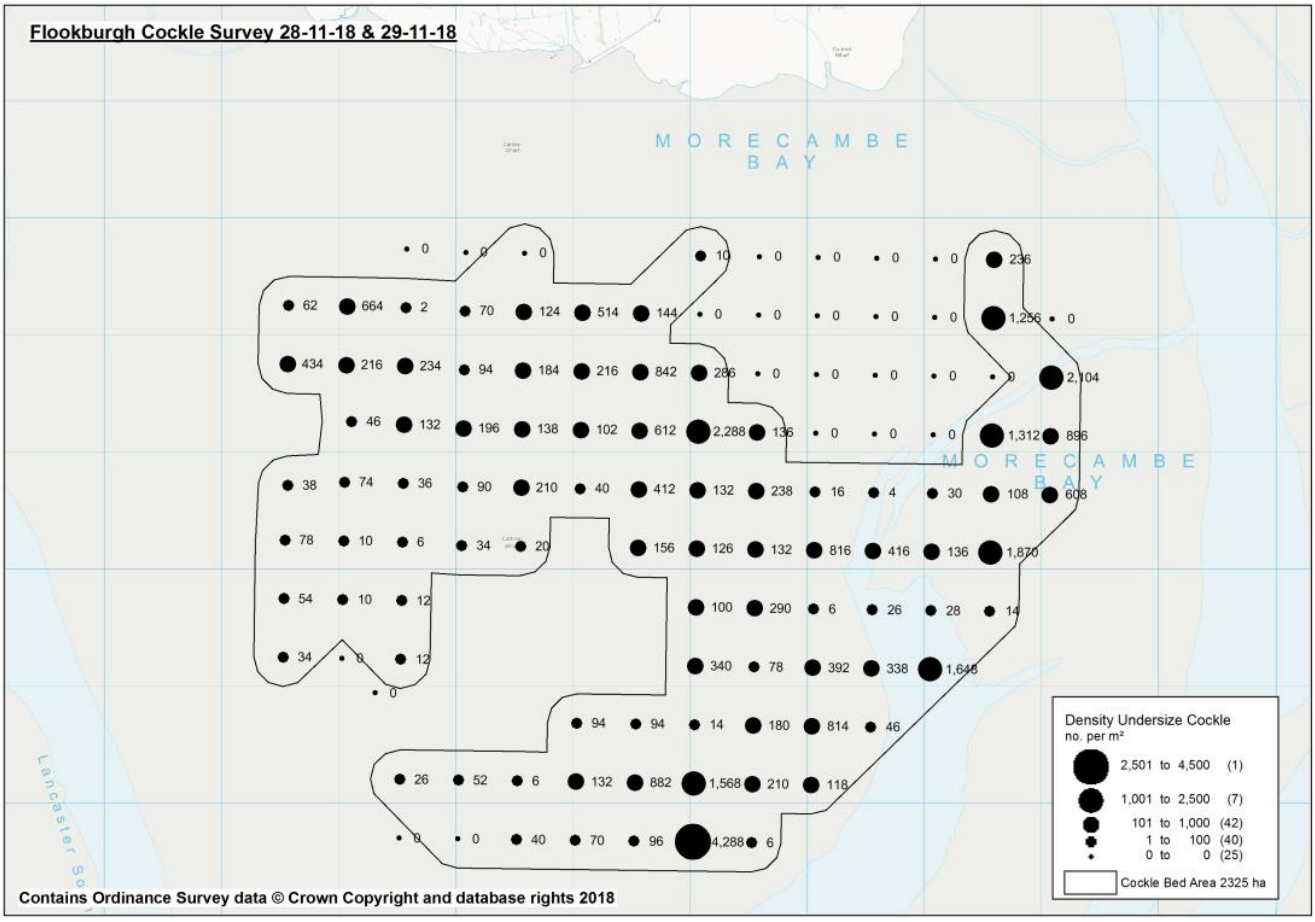


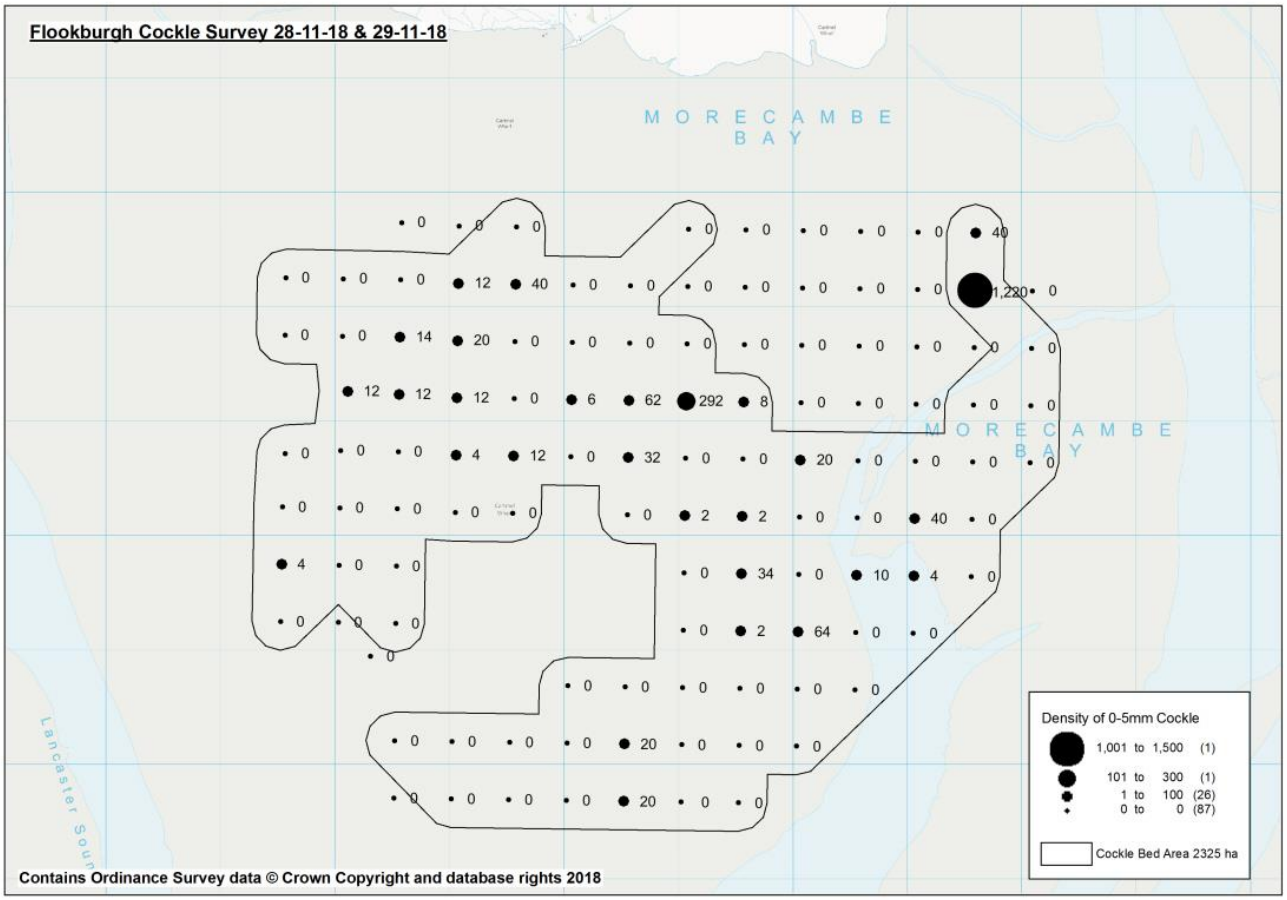
Illustration of position of Flookburgh cockle bed



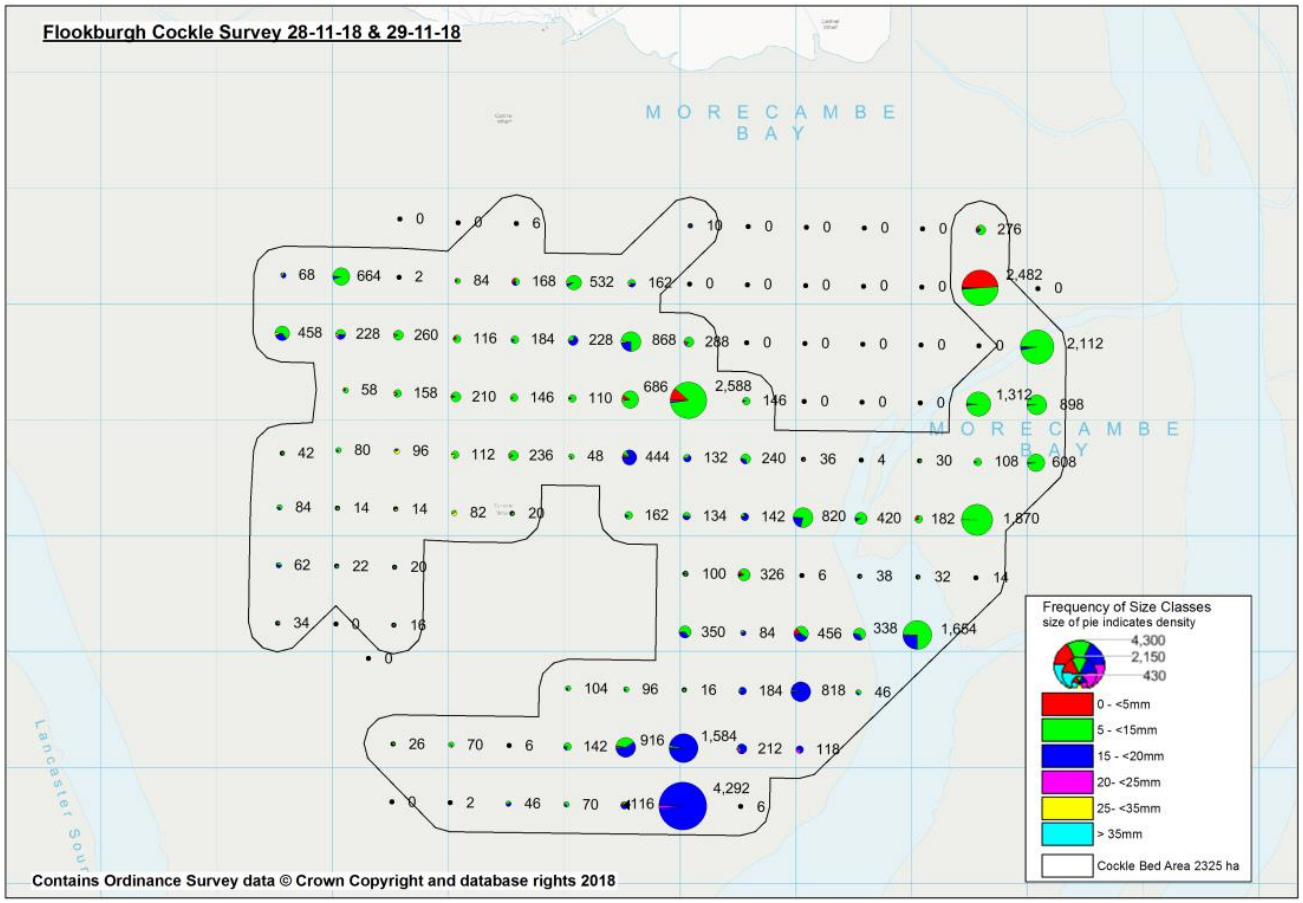
Density of size cockle per m² Flookburgh November 2018



Density of undersize cockle per m² Flookburgh November 2018



Density of 0-5mm cockle per m² Flookburgh November 2018



Frequency of size classes cockle per m² Flookburgh November 2018

Two tables of the survey results for Morecambe Bay Cockle Stocks Novermber 2018 are produced on the below, showing a break down in table format of the stocks.

Cockle Bed	Name of Parts of Cockle Bed if Split	No. of stations sampled	Bed Area (ha)	No. of stations within the bed area	No. of stations with undersize cockle (% of stations within the bed area)	No. of stations with size cockle (% of stations within the bed area)	No. of stations with ≥ 20m² size cockle (% of stations within the bed area)	Approximate area of stations with ≥ 20m² size cockle in hectares (% of bed area)	Estimated Biomass of Size Cockle (tonnes)	Estimated Biomass of Undersize Cockle (tonnes)
Aldingham & Newbiggin	Total	48	680	40	39 (98%)	36 (90%)	6 (15%)	75 (11%)	900	1450
Leven	Total	57	803	55	55 (100%)	51 (93%)	5 (9%)	62 (7%)	1000	1100
Flookburgh	Total	115	2325	92	90 (98%)	61 (66%)	4 (4%)	100 (4%)	1900	12000
Middleton	Dense Area	2	5	2	2 (100%)	2 (100%)	2 (100%)	5 (100%)	120	<10
	Rest of Bed	52	604	50	45 (90%)	41 (82%)	8 (16%)	100 (16%)	550	350
	Total	54	609	52	47 (90%)	43 (83%)	10 (19%)	105 (17%)	670	350
Pilling	East	23	500	20	20 (100%)	15 (75%)	8 (40%)	200 (40%)	2200	1000
	West	30	610	25	18 (72%)	21 (84%)	3 (12%)	75 (12%)	500	1100
	Total	53	1110	45	38 (84%)	34 (76%)	11 (24%)	275 (24%)	2700	2100
Total			**5527**						**7170**	**17000**

Cockle Bed	Tide Height LW (m)	Size Range (mm)	Min Density 0 - 5mm cockle per m²	Max Density 0 - 5mm cockle per m²	Mean Density 0 - 5mm cockle per m²	Min Density Undersize per m²	Max Density Undersize per m²	Mean Density Undersize per m²	Min Density Size per m²	Max Density Size per m²	Mean Density Size per m²
Pilling East	1.7	1 to +35	0	200	30	4	674	194	0	194	39
Pilling West	1.7	1 to +35	0	4	>1	0	1114	191	0	28	8
Middleton (dense area excluded)	2.9	1 to +35	0	267	41	0	1976	267	0	48	9
Middleton (dense area	2.9	1 to +35	0	0	0	100	240	170	210	274	242 within 5 ha
Newbiggin and Aldingham	1.6	1 to +35	0	200	39	0	2238	199	0	44	10
Leven Sands	2.0	1 to +35	0	100	8	2	928	170	0	48	10
Flookburgh	2.1 and 2.6	1 to +35	0	1220	22	0	4228	342	0	60	6

4. Proposal

The proposal is to authorise the removal of size cockles in a hand-gathered cockle fishery at Newbiggin, Flookburgh / Leven Sands and Pilling Sands cockle beds, within Morecambe Bay, to open 21st January 2019 until the closed season which starts on 1st May 2019 unless closed by NWIFCA prior to this date for management reasons.

5. Test for Likely Significant Effect (LSE)

- No change to TLSE table within 2017 HRA the same features and pressures have been taken through to appropriate assessment as listed below.

6. Appropriate Assessment

Potential risks to features

6.1 Potential risks to SAC and SPA supporting habitat features

- Intertidal sand and muddy sand
- Intertidal mixed sediments, intertidal coarse sediment
- Saltmarsh

6.1.1 Pressures and Potential Impacts

i. Litter

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, mixed and coarse sediments only

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

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

Since 2016 there have been a number of cockle fisheries in Morecambe Bay (Flookburgh, Leven Sands and Pilling Sands) and in most years there has been a fishery on Heysham Flat for seed mussel as well as on-going size mussel fisheries around Morecambe Bay. There have only been a few reports of litter being an issue at any of these fisheries, which are regularly inspected by fishery officers. Where issues have been raised officers work with gatherers, buyers and the local authority to resolve the issues. A Code of Conduct of Intertidal Hand-gathering includes responsibility for littering. NWIFCA takes a swift response to any alerts to littering issues.

The NWIFCA is confident that littering will be minimal and 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, mixed and coarse sediments only

Surveys have been carried out across Morecambe Bay and a summary of results have been provided above in Section 3. Further to the above information there is will also be limited stocks of size and undersize cockle on many of the other beds around Morecambe Bay these include Cockerham Sands, Warton Sands, Aldingham and Duddon Sands.

The proposal is to open Newbiggin, Flookburgh / Leven Sands and Pilling Sands cockle beds in Morecambe Bay to cockle hand gathering. All other beds would remain closed under NWSFC Bylaw 13a Cockle and Mussel – Management of the Fishery, leaving areas unfished.

From the surveys the following statements describe the cockle stocks in Morecambe Bay as a whole:

- Generally mean densities of size cockle are low over most areas of each bed. There are discrete patches of dense size cockle but this is not consistent across the beds.
- There is a relatively consistent distribution of undersize and spat cockle indicating at least two settlements during 2018. On some beds the latest recruitment appears to have been late October.
- The undersize / juvenile cockle is mixed in with size cockle.

The proposed fisheries would be managed under NWIFCA Byelaw 3 – Permit to Fish for Cockle and Mussels which includes management measures such as the minimum sizes, fishing methods and the requirement of a permit for commercial fishing. There are currently 109 NWIFCA permits issued with a maximum of 126 permit for the whole NWIFCA District. It is predicted from the stock information, hygiene classification of each bed, communication with permit holders and from officers' experience of Morecambe Bay cockle fisheries since 2016, that there are only likely to be 40 active permit holders fishing at any one time with the majority of effort being at Pilling Sands with a maximum of 40 permit holders fishing any one tide. Flookburgh and Leven Sands are likely to see a maximum of 20 permit holders and Newbiggin having the least amount of effort with an estimate of 5 permit holders fishing any one tide. The opening of four beds across the site ensures that effort is spread out and not concentrated on one bed.

Due to the proposal of opening a large proportion of the Morecambe Bay cockle beds, the nature of the stocks (low densities of size cockle with high densities of juvenile cockle), the potential of damage to juvenile cockle from fishing and that illegal fishing has been known to have occurred at Middleton, the NWIFCA will take a precautionary approach and implement the following management measures to be fully confident of no risk of adverse effect on the integrity or conservation status of the site.

Part opening of Pilling Sands as a hand-gathered rake fishery

Although the cockle at Pilling Sands is of mixed year classes and sizes, there are some clear differences between the east and the west of the bed. The area east of the access slipway contains the majority of size cockle and the area where size cockle density is highest. The area west of the slipway consists of higher densities of juvenile cockle and lower densities of size cockle. By only opening the east side of the bed a large area will be left unfished and protected with a mix of cockle size classes consisting of approximately 500 tonnes of size cockle and 2700 tonnes of undersize cockle over an area of 500 hectares.

When assessing the open (east) side of Pilling Sands, NWIFCA have considered the worst case scenario of all size cockle being removed by fishing and that the use of a rake would cause significant damage to juvenile stock. NWIFCA scientists carried out a breakage rate experiment on juvenile cockle at Pilling Sands in November 2018. Results showed no significant difference between jumboed-only areas, and

jumboed and raked areas. The ground at Pilling Sands is relatively soft and a mix of mud and sand where the dense patches of cockle are found. It is accepted that although this result provides some evidence of lack of damage by raking to juvenile cockle on the soft ground at Pilling Sands, it cannot be used as a definitive indication of impact of this fishing method. Hence the above approach of assuming worst-case scenario for the purposes of this assessment. In order to provide further evidence on the impact of raking on juvenile cockles, NWIFCA plans to continue this work on breakage rates at both Pilling Sands and at Flookburgh / Leven Sands where the sand is harder, and with industry assistance. Results will inform future management decisions.

Craam only fishery at Newbiggin, and Flookburgh / Leven Sands.

A craam is a traditional method for fishing areas with large cockle at low densities as it is used to only remove selected large cockle. It eliminates the use of a rake, meaning less disturbance to the undersize cockle and eradicating the chance of damage by raking action. The use of a craam also reduces the amount of cockle which can be removed from the bed by a permit holder during one tide and therefore slows the removal rate of size cockle from the bed.

The highest predicted landings expected from the Newbiggin, Leven and Flookburgh Craam fishery is 600 tonnes from the opening of the beds to the start of the closed season based on the following:

- 150kg per person per tide
- 40 permit holders fishing one tide per day every day until the closed season
- There are 100 days from 21st January to 30th April

NWIFCA will check the figures used above against inspection reports from when the fishery opens and landing returns submitted by Byelaw 3 permit holders to ensure that the predicted figures are correct or an over estimate.

On Newbiggin, Leven and Flookburgh beds there is an estimated 3800 tonnes of size cockle. Using the 600 tonnes predicted landings, this would leave 3200 tonnes of size cockle on the beds.

The fishing will occur in the areas where the size cockle is largest and at the greatest densities and 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 it.

The fishing will target the largest cockles on the bed with the majority of the cockle being three to four years old, which in Morecambe Bay is towards the end of its life span. It is uncertain whether this cockle would survive the winter and reach condition for spawning in the spring / summer.

Access for the Flookburgh / Leven Sands Fishery

The Flookburgh / Leven Sands cockle bed covers a vast area. The main fishery area lies a distance from the shore and that there are a number of access routes on to the bed. In order to ensure that gatherers are compliant with the use of a craam there will be only one authorised point of access, which will be the established access point via the hard core track off Moor Lane (West Plain).

Access for the Newbiggin fishery

The Newbiggin cockle bed lies close to the top of the beach with a clear line of sight from many vantage points A defined access point is therefore not considered necessary from an enforcement point of view.

Reduced jumbo size at Newbiggin, and Flookburgh / Leven Sands fisheries

By restricting the size of the jumbo authorised for use in the fishery to 182cm in length and 35cm in width it decreases the overall area from which the cockles are removed and the amount of cockle being disturbed and harvested from the bed. A smaller jumbo size also reduces the weight which helps minimises the impact on the cockles and in particular the damage to juvenile cockle.

By implementing the above management measures the NWIFCA can be confident that the removal of target species from the intertidal sand and muddy sand, mixed and coarse sediments sub-features will have no risk of adverse effect on the integrity or conservation status of the site.

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

Pilling Sands

The main access to the fishery is via the concrete track access point at Fluke Hall Lane as used in the fisheries since 2016. There are very few other access points to this bed and as this is the easiest route to the fishery, 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.

Flookburgh / Leven Sands

The only authorised access will be via the hard core track off Moor Lane (West Plain). This access route is well established and has been used in the fisheries since 2016. There is no risk of damage to saltmarsh features.

Newbiggin

There is no interaction between, parking, access or fishing with any saltmarsh feature, due to distance of the feature from fishery.

The Code of Practice for Intertidal Hand gathered 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

In addition to the 2017 HRA (NWIFCA-MB-EMS-2017) grey plover, dunlin, sanderling and turnstone have been highlighted as having a restore objective for the population target.

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 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 will be 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 prior to migrations north 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 with lower and upper size limits of around 5 and 12.5mm shell length respectively (Bell et al 2001).

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) Visual disturbance - All SPA species within vicinity of fishery, on the saltmarsh access route 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 mid-March some species, such as 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 this nationally declining species.

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 3. Abundant cockle stocks are often absent from the Bay suggesting if they are present bivalve eating bird will utilise them but do not

necessarily rely on them. Mussel beds in the site are more consistent and a likely to play a more constant role when it comes to bird food requirement.

Mitigation and management from section 6.1.2(ii) which reduces the exposure of the removal of target species for SPA species:-

Part opening of Pilling as a hand-gathered rake fishery

Only opening part of the bed will leave a large area unfished area with a mix of cockle size classes consisting of approximately 500 tonnes of size cockle and 2700 tonnes of undersize cockle over an area of 500 hectares which will be available to birds as prey.

Craam only fishery at Newbiggin, and Flookburgh / Leven Sands

The use of a craam selects large cockle and removes the use of a rake, meaning less disturbance to the undersize cockle and removing the chance of damage by the raking action. The use of craam also reduces the amount of cockle which can be harvested from the bed by a permit holder in one tide and therefore slows the removal rate of size cockle from the bed, leaving a greater feeding resource on the bed.

On Newbiggin, Leven and Flookburgh beds there is an estimated 3800 tonnes of size cockle. Assuming the 600 tonnes predicted landings in section 6.1.2 (ii) above this would leave 3200 tonnes of size cockle on the beds.

Reduced jumbo size at Newbiggin, and Flookburgh / Leven Sands

By restricting the size of the jumbo authorised for use in the fishery to 182cm in length and 35cm in width it decreases the overall area from which the cockles are removed and the amount of cockle being disturbed and harvested from the bed, leaving a greater feeding resource on the bed.

Other Mitigating Factors

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

On all of the open beds the fishing will occur in the areas where the size cockle is largest and at the greatest densities, and 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 it.

The beds to be opened contain large amounts of undersized cockle 5mm – 20mm. Flookburgh in particular has an estimated 12,000 tonnes of undersize. Most of the areas that have the highest density of undersize cockle have very little size cockle mixed in, resulting in areas which are likely to remain unfished and undisturbed.

NWIFCA scientists recorded large numbers of bivalve eating birds while carrying out the cockle surveys - approximately 1000 oystercatchers at low water feeding on the abundance of 14-17mm cockle at Flookburgh, and large flocks of knot feeding on an area of mainly 5-15mm cockle at Flookburgh and Pilling Sands. Both species were also observed feeding along the low water line at Middleton Sands.

The biomass figures from the surveys do not include estimates for under 5mm cockle due to the highly variable nature of cockle this size. This is typically the size of cockle which knot feed on and because of the minimum size of cockle within Byelaw 3 this cockle will remain on the bed.

Below is a summary table of the mussel beds in the site. Many of the mussel beds around the Bay contain large volumes of mussel. Although the majority of seed mussel on areas of Heysham, Falklands and South America are likely to have been scoured out, mussel beds such as Foulney provide a large area of mixed mussel size classes for the birds to feed on.

Bed Name	Month	Area (ha)	Densities			Percentage Cover			Biomass (tonnes)
			Size Class < 10mm	Size Class 10 - 30mm	Size Class > 30mm	Size Class < 10mm	Size Class 10 - 30mm	Size Class > 30mm	
Perch Scar	Limited stock the majority has been washed away								
Black Scar	Limited stock								
Kings Scar	Most years the Fleetwood and Wyre mussel beds get a settlement, most of which get washed away during the summer. The beds are surveyed late spring, early summer, where there are areas of mussels of varying size classes which have persisted through the winter.								
Neckings									
Rossall skear									
Wyre End									
Knott End Spit									
Heysham Flat & Knott End Skear	Southern area of skear had experienced a significant amount of scour and loss of top layer of mussel, with some areas having lost mud also. Other than that the whole of main skear and the entirety of Knott End skear held superabundant seed mussel. The majority of it was hard in – the only area with any mud under was in the upper skear where the abundant mussel was of around 20mm shell length and very soft shelled. The superabundant mussel on the lower areas of the skear and Knott End skear was of around 30mm shell length.								
Heysham Outer Skears	Skears look to be covered in mussel (observation from Knott End skear) and it is expected that there is a similar mussel composition as that present on Heysham main skear and Knott End skear. There were numerous oystercatchers and gulls observed on the outer skears.								
Low Bottom – Foulney Ditch	The area between the main Foulney Skear and the oyster frames typically gets a settlement of seed which scours out through the winter. There is a large area on more stable mussel bed from mid shore down towards low tide near the main Foulney skear that persists through the winter.								
Foulney Main Skear	Sep	55	Occasional	Abundant	Common	n/a	n/a	n/a	6570
Foulney Island	Sep	8.2	Rare	Abundant	Rare	n/a	n/a	n/a	2176
Foulney Green Buoy	Apr	34	Rare	Abundant	Abundant	n/a	n/a	n/a	4822
Falklands	Sept 2018 – Area looks to be covered in mussel (observation from Foulney Island), the area looks very black with the presence of numerous gulls.								
South America	No stock known								

Table 1 showing the mussel stocks around Morecambe Bay

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, mixed and coarse sediments supporting habitats 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) Visual disturbance - All SPA species within vicinity of fishery, on the saltmarsh access route and over the sandbanks

The fishery will be prosecuted throughout the winter months (21st January to 30th April 2019). Morecambe Bay is a vital over-wintering area for waders including cockle predating species such as oystercatcher and knot. Whilst surveying Officers have noted numbers of oystercatchers out on all the cockle beds, a sight that has been absent during years of low cockle stocks (Knott. M. pers. comm). There is subsequently a risk of disturbance to these birds during fishing activity, which will be focussed around low water times.

Mitigation and management from section 6.1.2(ii) which reduces the exposure of visual disturbance for SPA species:-

Part opening of Pilling as a hand-gathered rake fishery

Only opening part of the bed will leave a large area 500 hectares of unfished cockle bed with limited disturbance from fishing.

One access point to the Flookburgh / Leven Sands fishery

Having one access point to the Flookburgh / Leven Sands fishery will limit the amount of disturbance on the saltmarsh and higher up the shore. Access by the majority of vehicles will only occur once out and once back on each tide.

Other Mitigating Factors

Disturbance to high tide roosting birds is very unlikely due to the timing of the fishery – ie. fishers will access the beach around three hours after high water and will have left the area around three hours before high water. 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. These access routes are habitually used by dog walkers, other members of the public who walk out over the sands and by other fishing activities such as shrimping and intertidal netting. Birds are therefore likely to be habituated to a certain level of disturbance.

Disturbance will be minimised by vehicles only travelling to and from the fishery once each way per tide and via a low number of access points with the main access points being Fluke Hall Lane at Pilling, Moor Lane at Flookburgh / Leven Sands and from one of the access slips from the sea wall at Newbiggin. There are also a large areas of the Bay that holds cockle of varying size ranges which will either not be open to fishing or parts of the open beds which contain very little size but high densities of undersize and therefore will not be targeted by gatherers. These will provide plentiful alternative area for birds to remain undisturbed.

The number of fishermen is anticipated to be low across the beds with the most activity in a relatively small area at Pilling where there is the highest density of size cockle. At Flookburgh / Leven Sands 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 have also been seen to be feeding very close to hand-gatherers at Flookburgh and may benefit from loose cockle on the sand after jumbo-ing.

There is therefore no reason to suggest that disturbance to birds would be damaging unless weather was exceptionally severe. NWIFCA will carry out an assessment of risk in conjunction with Natural England during periods of cold weather and may close the fishery if cold weather is predicted to be below zero for more than 12 hours a day for 5 consecutive and advice is that fishing poses a risk to SPA features. If there is evidence of high levels of disturbance and a risk of adverse effect identified to the European Site then the NWIFCA Authority will close the fishery / fisheries.

7. Summary of Management and Mitigation to Ensure No Adverse Effect on the Integrity of the European Site:

In order for the NWIFCA to be fully confident of no risk of adverse effect on the integrity or conservation status of the site, a precautionary approach is being taken, and the following management measures implemented:

a) Part opening of Pilling as a hand-gathered rake fishery
b) Craam only fishery at Newbiggin, and Flookburgh / Leven Sands
c) Reduced jumbo size at Newbiggin, and Flookburgh / Leven Sands
d) One access point to the and Flookburgh / Leven Sands fishery
e) A multi-agency enforcement approach to ensure only legitimate permit holders commercially fish the bed (NB there is a per person daily personal consumption allowance for non-commercial gathering, and this will also be checked and enforced)
f) Rigorous enforcement of the MLS
g) Closure of all other cockle beds under a Byelaw 13a closure
h) Monitored landings through:

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

    ii. Monthly landings returns from Byelaw 3 permit holders (required under byelaw)

i) Monitoring and inspection to ensure no damage to the saltmarsh and that there are no litter issues
j) NWIFCA enforcement officers will use intelligence and contacts with fellow enforcement agencies to pursue any suspicions of non-permitted or illegal cockling activity
k) Use of the NWIFCA Compliance and Enforcement Strategy which defines how the NWIFCA will enforce local, national and international law. (https://www.nw-ifca.gov.uk/compliance-enforcement-strategy/)

NWIFCA have held meetings with representatives from industry since the decision to close the previous fishery due to non-compliance with craam-only management. 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 mean 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, intertidal mixed sediments, intertidal coarse sediment (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 Removal of target species	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. Removal of target species could change the invertebrate community composition of the sandbanks.	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. Proposal of opening numerous beds across the site, even with current management has the potential to have an adverse effect on the integrity of the site therefore further mitigation required as described. With mitigation the removal of target species is unlikely to have an adverse effect on the integrity of the European Site.	None - current management measures sufficient with monitoring of the fishery - Part opening of Pilling Sands - Craam only and reduced Jumbo size at Flookburgh, Leven and Newbiggin fisheries - One access point to the Flookburgh/ Leven and Newbiggin fisheries **With management as described, 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 fishery will be closed if littering is a problem. Established access points to the bed from previous cockle fisheries. Access and saltmarsh will be monitored and fishers encouraged to act responsibly	None - current management measures sufficient with monitoring of the fishery One access point to the Flookburgh/ Leven and Newbiggin fisheries

		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	through Code Of Conduct for Intertidal Shellfisheries. NWIFCA will liaise closely with local authority and NE, for early detection of any problems.	**With management as described, littering and abrasion and penetration of substrate 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	Proposal of opening numerous beds across the site, even with current management has the potential to have an adverse effect on the integrity of the site therefore further mitigation required as described. With mitigation the removal of target species is unlikely to have an adverse effect on the integrity of the European Site.	- Part opening of Pilling Sands - Craam only and reduced Jumbo size at Flookburgh/ Leven and Newbiggin fisheries - One access point to the Flookburgh/Leven and Newbiggin fisheries **With management as described, 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 - *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	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 Disturbance will be minimised by vehicles only travelling to and from the fishery once each way per tide and via a low number of access points with the main access points being Fluke Hall Lane at Pilling and Moor Lane at Leven and Flookburgh. Areas of the Site will be closed under B13a closure, including half of Pilling Birds may benefit from loose cockle on the sand after jumbo-ing. Cold weather closure in place	- Part opening of Pilling Sands - One access point to the Flookburgh/Leven and Newbiggin fisheries **With management as described, visual disturbance is unlikely to have an adverse effect on the integrity of the European Site.**

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 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 proposal is to authorise the removal of size cockles by permitted hand-gatherers from cockle fisheries at Newbiggin, Flookburgh / Leven Sands and Pilling Sands. These beds lie within Morecambe Bay European Site. The fishery to open 21st January until the closed season starts on 1st May 2019, unless closed by NWIFCA prior to this date for management reasons.

The fishery can operate on all days and on any tide due to the size of the beds and the location of the stock. Due to the mix of 2018 spat and size cockle in some areas the proposal is for a craam only fishery with the use of a restricted sized jumbo / tamp to protect the juvenile stock. Within the authorisation there are specific access, parking and tonning up restrictions for Flookburgh/ Leven Sands. Only part of the Pilling cockle bed will be opened leaving one half unfished and undisturbed as mitigation. The full authorisations can be found in Annex A. All other cockle beds in the Bay and District-wide will be closed under NWSFC Byelaw 13a and Cumbria SFC B18.

The management and mitigation measures incorporated into this fishery, and the use of an effective enforcement team of NWIFCA Officers with multi-agency support, allows the NWIFCA to conclude that the hand-gathered cockle fishery at Newbigin, Flookburgh / Leven Sands and Part of Pilling Sands will have no risk of adverse effect to the integrity of the European Site.

8. In-combination assessment

a) Other ongoing and authorised fisheries:

Heysham Flat Seed Fishery – fishing has stopped due to a change on the ground and difficulty in fishing. It is very unlikely to restart whilst the cockle fisheries are open. The nature of the ground indicates that the majority of the stock may well persist through the winter.

Size mussel fisheries – there is a low level of activity on the size mussel fishery on Foulney near the Walney Channel side of the skear. Typically, effort on these fisheries is low (around six gatherers) when cockle fisheries are not open. It is therefore predicted that effort will be less than normal as efforts will be concentrated on cockles.

Tractor shrimp fishery – currently the shrimp fishing is poor, and there is a reduced level of effort. Effort is likely to be concentrated on the cockle fishery with some fishing for shrimps and cockle fishing on the same tide.

b) Assessment

Due to the low levels of mussel harvesting impacts on habitats and disturbance levels to birds are considered to have No Likely Significant Effect on the conservation features. Removal of the mussel resource is minimal with large reserves remaining as bird prey resource at a time of year when over-wintering birds are returning. ***For these reasons NWIFCA is confident that the cockle fishery will have No Likely Significant Effect on any conservation features.***

The shrimp fishery in Morecambe Bay has undergone a separate HRA which assessed travel to and from the fishery. This HRA concluded No Risk of Adverse Effect on the Integrity of the European Site. After December the main activity within the shrimp fishery has finished and there is likely to be little shrimp fishing while the cockle fishery is open. ***Combined with the current reduced effort in the shrimp fishery NWIFCA can conclude No Likely Significant Effect from the cockle fishery on any conservation features.***

Considering in combination effects of the mussel, shrimp and cockle fisheries in the Bay, the NWIFCA can conclude No Risk of Adverse Effect on the Integrity of the European Site.

9. Integrity test

The NWIFCA concludes No Risk of Adverse Effect on the Integrity of the European Site providing the management measures of the Flookburgh / Leven Sands, Newbiggin and Pilling Sands cockle fisheries are implemented and upheld.

North Western IFCA
Inshore Fisheries and Conservation Authority

Newbiggin Sands: Authorisation for Cockle Fishing using a craam

21 January to 30 April 2019.

1. The Newbiggin Sands cockle fishery was closed on 1 September 2018 until further notice to protect stocks.

2. This notice constitutes written authorisation under NWSFC Byelaw 13A for NWIFCA Byelaw 3 permit holders to fish for cockles using a craam only from 12.00, 21 January to 2359, 30 April 2019.

3. The open area at Newbiggin Sands is defined by the following coordinates and shown in the map below.

ID	Lat DEGREES AND DEC MINS	Long DEGREES AND DEC MINS	Lat DEC DEGREES	Long DEC DEGREES
A	54 07.288N	03 06.240W	54.121467	-3.104
B	54 07.292N	03 02.496W	54.121533	-3.0416
C	54 04.472N	03 01.150W	54.074533	-3.019167
D	54 04.238N	03 09.131W	54.070633	-3.152183
E	54 04.387N	03 09.337W	54.073117	-3.155617
F	54 04.310N	03 09.509W	54.071833	-3.158483

Conditions

4. Byelaw 3 applies. Byelaw 3 paragraph 7a and b do not apply to this fishery.

5. In this fishery no person shall gather cockles except by hand using a ‘jumbo’ (tamp) and/or craam. Use, carriage or possession of any rake within the fishery is prohibited, including rakes which have been cut down to 3 prongs.

6. The seasonal closure will commence on 1 May. Returns must be filed.

7. A person must not obstruct an IFCO pursuant to MACAA s292(4) carrying out a relevant function pursuant to MACAA s287.

8. A craam (example shown below) made up of no more than 3 fine or thin curved prongs may be used.

9. A ‘jumbo’ or tamp must be no more than 182cm (6 foot) length and 35cm (14 inches) width as measured from its extremities including any extensions.

10. Vehicles used to access the fishery must be ATV or Tractors. There shall be no parking of any other vehicle or tonning up in the intertidal or saltmarsh areas.

11. Fishing or vehicle movement must not damage shellfish beds or saltmarsh or cause excessive bird disturbance.

12. The NWIFCA may close the fishery or take other appropriate management action if in the opinion of NWIFCA Officers or Scientists there is a failure to comply with these conditions. Such closure or management action may take place with immediate effect.

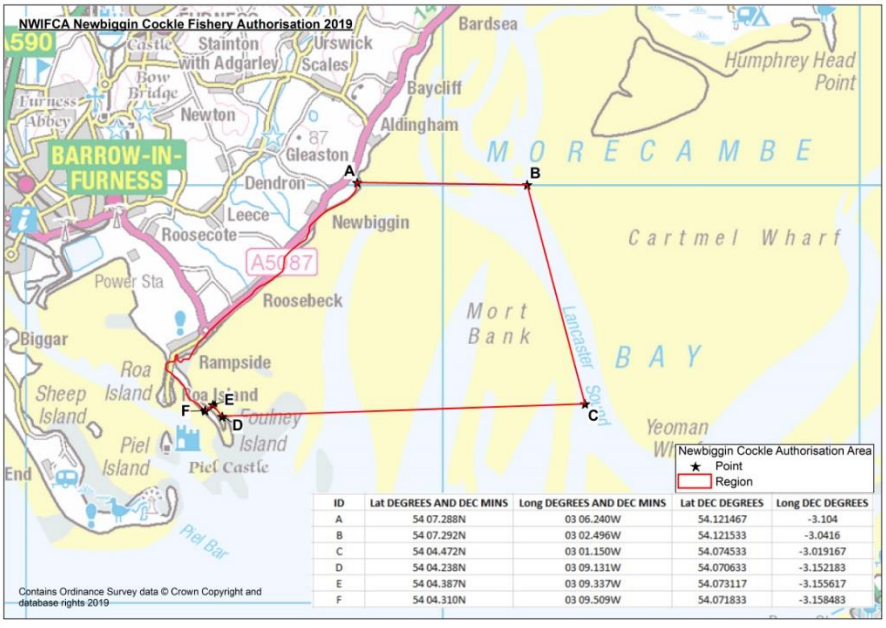
13. Damage to conservation features could lead to prosecution;

14. NWIFCA may close the fishery during periods of cold weather (predicted below zero temperatures for more than 12 hours a day for 5 consecutive days) or advice from Natural England.

15. The area open to fishing is also the area classified by environmental health services under the shellfish hygiene regulations. Selling cockles taken from outside the classified area could lead to prosecution by EHS services.

16. Definition of a craam: A short handled three pronged fork, as illustrated in the photograph below. A craam should be used to select and flick large cockles individually into a net or basket. Used correctly a craam has minimal impact on a cockle bed. Using a craam as a rake may damage juvenile cockles and other features of the habitat.

17. Map showing authorised Area



ID	Lat DEGREES AND DEC MINS	Long DEGREES AND DEC MINS	Lat DEC DEGREES	Long DEC DEGREES
A	54 07.288N	03 06.240W	54.121467	-3.104
B	54 07.292N	03 02.496W	54.121533	-3.0416
C	54 04.472N	03 01.150W	54.074533	-3.019167
D	54 04.238N	03 09.131W	54.070633	-3.152183
E	54 04.387N	03 09.337W	54.073117	-3.155617
F	54 04.310N	03 09.509W	54.071833	-3.158483

Dr S ATKINS Chief Executive NWIFCA

Flookburgh and Leven Sands: Authorisation for Cockle Fishing using a craam

21 January to 30 April 2019

18. The Flookburgh and Leven Sands cockle fisheries were closed on 1 September 2018 until further notice to protect stocks.

19. This notice constitutes written authorisation under NWSFC Byelaw 13A for NWIFCA Byelaw 3 permit holders to fish for cockles on Flookburgh and Leven Sands using a craam only from 12.00 21 January to 2359 30 April 2019.

Conditions

20. Byelaw 3 applies. Byelaw 3 paragraph 7a and b do not apply to this fishery.

21. In this fishery no person shall gather cockles except by hand using a 'jumbo' (tamp) and/or craam. Use, carriage or possession of any rake within the fishery is prohibited, including rakes which have been cut down to 3 prongs.

22. The seasonal closure will commence on 1 May. Returns must be filed.

23. A person must not obstruct an IFCO pursuant to MACAA s292(4) carrying out a relevant function pursuant to MACAA s287.

24. A craam (example shown below) made up of no more than 3 fine or thin curved prongs may be used.

25. A 'jumbo' or tamp must be no more than 182cm (6 foot) length and 35cm (14 inches) width as measured from its extremities including any extensions.

26. Vehicles used to access the fishery must be ATV or Tractors. There shall be no parking of any other vehicle or tonning up on the intertidal area, saltmarsh or hard core track.

27. The fisheries must be accessed via the hard core track off Moor Lane, West Plain (SD36892 74153) as shown in the photo below.

28. Fishing or vehicle movement must not damage shellfish beds or saltmarsh or cause excessive bird disturbance.

29. The NWIFCA may close the fishery or take other appropriate management action if in the opinion of NWIFCA Officers or Scientists there is a failure to comply with these conditions. Such closure or management action may take place with immediate effect.

30. Damage to conservation features could lead to prosecution.

31. NWIFCA may close the fishery during periods of cold weather (predicted below zero temperatures for more than 12 hours a day for 5 consecutive days) or on advice from Natural England.

32. The area open to fishing is also the area classified by environmental health services under

the shellfish hygiene regulations. Selling cockles taken from outside the classified area could lead to prosecution by EHS services.

33. Definition of a craam: A short handled three pronged fork, as illustrated in the photograph below. A craam should be used to select and flick large cockles individually into a net or basket. Used correctly a craam has minimal impact on a cockle bed. Using a craam as a rake may damage juvenile cockles and other features of the habitat.

34. Photo showing only authorised access to the fisheries.

Dr S ATKINS Chief Executive NWIFCA

NORTH WESTERN INSHORE FISHERIES AND CONSERVATION AUTHORITY
Website: www.nw-ifca.gov.uk E-mail: office@nw-ifca.gov.uk

MAIN OFFICE
1 PRESTON STREET
CARNFORTH
LANCASHIRE, LA5 9BY
Tel: (01524) 727970

WHITEHAVEN OFFICE
6 DUNCAN SQUARE
WHITEHAVEN
CUMBRIA, CA28 7LN

PARTIAL OPENING OF BEACH TO COCKLING

1. The North Western Inshore Fisheries and Conservation Authority District has lifted the closure to cockling under Byelaw 13A ON THE EASTERN PART OF PILLING COCKLE BED from a line drawn due north from the position on the top of the embankment, illustrated below, and given as:

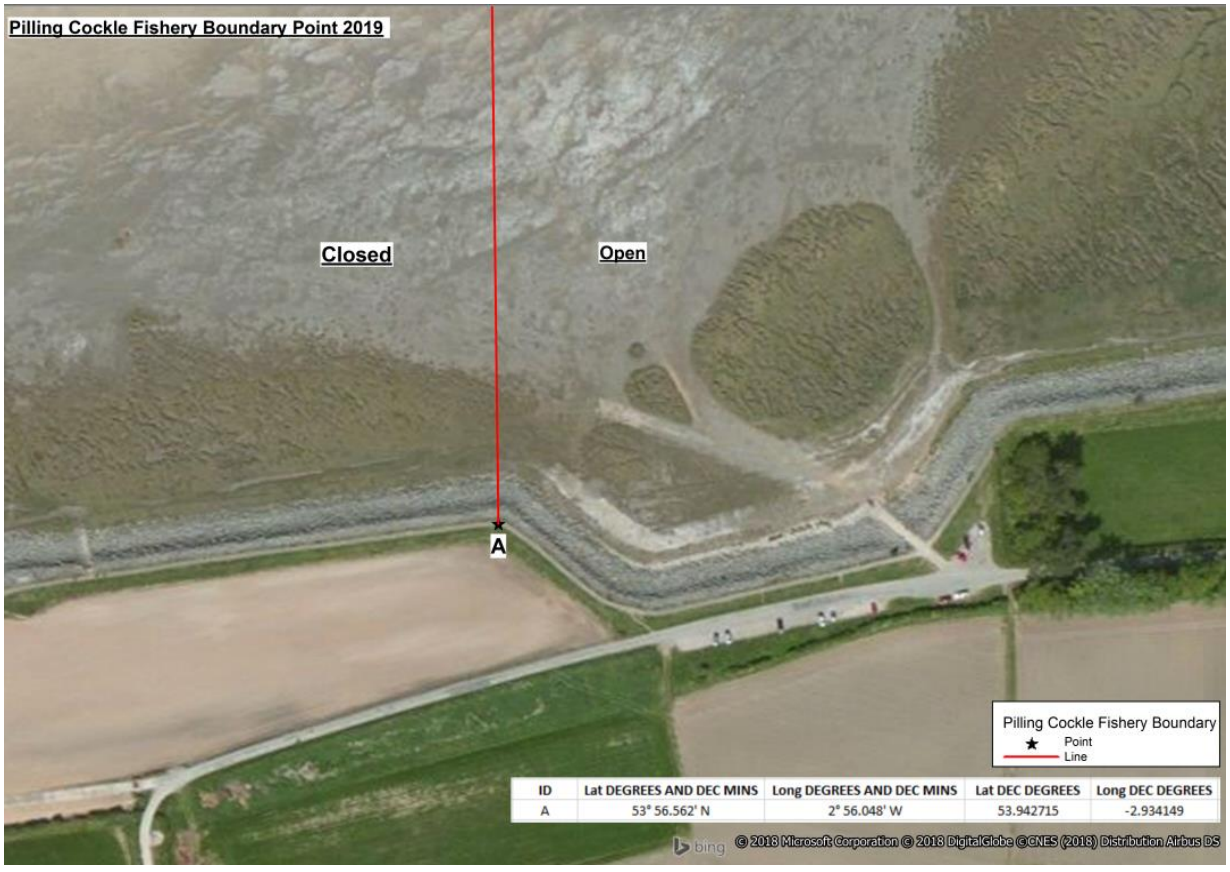
   53° 56.562' N 2° 56.048' W

2. This area is open to cockle gathering from 12:00 (midday) on 21st January to 30th April 2019.

3. It is an offence for any person to remove cockles from any other part of this cockle bed or any other shore within the NWIFCA District.

4. If you have any queries about this closure, please contact our Carnforth office.

21st January 2019



Annex B: Natural England's Consultation Advice

Date: 18 January 2019
Our ref: 269841

North Western Inshore Fisheries and Conservation Authority (NWIFCA)
Preston Street
Carnforth
Lancashire
LA5 9BY

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

BY EMAIL ONLY

Dear Jon,

Morecambe Bay Cockle Fisheries Habitats Regulations Assessment 21st January - 30th April 2019

Thank you for your email dated 10 January 2019 on the above Habitats Regulations Assessment (HRA) for the opening of the Newbiggin, Flookburgh and Leven Sands, and east Pilling cockle beds. The following constitutes Natural England's formal statutory response to the updated HRA provided on 17 January 2019.

Internationally and nationally designated sites

The application site is within a European designated site (also commonly referred to as Natura 2000 sites), and therefore has the potential to affect its interest features. European sites are afforded protection under the Conservation of Habitats and Species Regulations 2010, as amended (the 'Habitats Regulations'). The application site is within Morecambe Bay Special Area of Conservation (SAC) and Morecambe Bay and Duddon Estuary Special Protection Area (SPA), which are European sites. The site is also listed as Morecambe Bay Ramsar site[1] and also notified at a national level Morecambe Bay Site of Special Scientific Interest (SSSI) and Lune SSSI.

No objection

Natural England notes that your authority, as competent authority under the provisions of the Habitats Regulations, has undertaken an Appropriate Assessment of the proposal in accordance with Regulation 61 of the Regulations. Natural England is a statutory consultee on the Appropriate Assessment stage of the Habitats Regulations Assessment process.

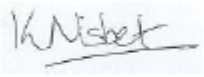
Your appropriate assessment concludes that your authority is able to ascertain that the proposal will not result in adverse effects on the integrity (AEOI) of any of the sites in question. Natural England advises that the Appropriate Assessment considers the relevant in-combination plans and projects, in this case other intertidal shellfisheries in Morecambe Bay. Having considered the assessment, and the measures proposed to mitigate

[1] Listed or proposed Wetlands of International Importance under the Ramsar Convention (Ramsar) sites are protected as a matter of Government policy. Paragraph 118 of the National Planning Policy Framework applies the same protection measures as those in place for European sites.

for all identified adverse effects that could potentially occur as a result of the proposal, Natural England advises that we concur with the assessment conclusions, providing that all mitigation measures are appropriately secured in any permission given. See Annex A for further details.

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

Yours sincerely,



Katherine Nisbet
Marine Lead Adviser – Cumbria Area Team

Email: Katherine.Nisbet@naturalengland.org.uk
Tel: 07917474331

Annex A

Natural England agree with the conclusion in the HRA of No Adverse Effect on Site Integrity, based on the following principles:

- Fishing intensity will be restricted as only Byelaw 3 permit holders will be allowed to harvest cockles
- Only size cockle is taken with the majority of cockles on the beds undersize, which is the feeding target for the majority of SPA birds. These undersize cockles are preserved and kept on the beds retaining the feeding resource for the birds.
- Flookburgh/Leven and Newbiggin will be strictly enforced as a cram only fishery to protect young cockle from damage and limit the fishing rates.
- Monthly records of tonnage of cockle removed will be kept and monitored to ensure fishing levels correspond with the that expected and outlined in the HRA
- There are other cockle beds (Middleton Sands, Cockerham Sands, Warton Sands, Aldingham and Duddon Sands, plus small patches elsewhere) which have significant amounts of cockle in the Bay, these will remain unfished and act as alternative feeding areas where disturbance is an issue on the fished beds.
- Cockles represent only a portion of the diet of SPA birds, other food resources (e.g. Mytilus, Macoma, Polychaetes, Hydrobia) remain unaffected.
- Observations show that birds show only temporary disturbance to the movement of fishers and return quickly to feeding on areas of the cockle beds around the fishermen.