

Fisheries in EMS Habitats Regulations Assessment for **Amber** and **Green** risk categories

NWIFCA-MB-EMS-COCKLE-2017 (Leven, Flookburgh and Pilling)

21st August 2017

Completed by: Jon Haines

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 Communitites:

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 maritima*).

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 maritima*).

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 maritima*) (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 maritima*), 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 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.

Duddon Estuary 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.

Fishing activities assessed:**Gear type(s):**

Hand-gathering – Cockle (*Cerastoderma edule*)

1. Introduction

1.1 Need for an HRA assessment

In 2012, the Department for Environment, Food and Rural Affairs (Defra) announced a revised approach to the management of commercial fisheries in European Marine Sites (EMS). The objective of this revised approach is to ensure that all existing and potential commercial fishing activities are managed in accordance with Article 6 of the Habitats Directive.

This approach is being implemented using an evidence based, risk-prioritised, and phased basis. Risk prioritisation is informed by using a matrix of the generic sensitivity of the sub-features of EMS to a suite of fishing activities as a decision making tool. These sub-feature-activity combinations have been categorised according to specific definitions, as red, amber, green or blue.

Activity/feature interactions identified within the matrix as red risk have the highest priority for implementation of management measures by the end of 2013 in order to avoid the deterioration of Annex I features in line with obligations under Article 6(2) of the Habitats Directive.

Activity/feature interactions identified within the matrix as amber risk require a site-level assessment to determine whether management of an activity is required to conserve site features. Activity/feature interactions identified within the matrix as green also require a site level assessment if there are “in combination effects” with other plans or projects.

Some European Sites within the NWIFCA District consist of features that are not fully marine (eg. sand dunes) and therefore fall outwith of the EMS Review process. They have not been included in the original risk matrix. Due to the nature of some of the fisheries in the District, particularly intertidal fisheries, the NWIFCA has adopted the approach of carrying out full HRA on all the features (including non-marine) within European Sites to ensure that any potential risk from fishing activity has been identified and assessed.

Site level assessments are being carried out in a manner that is consistent with the provisions of Article 6(3) of the Habitats Directive, that is to determine that fishing activities are not having an adverse effect on the integrity of the site, to inform a judgement on whether or not appropriate steps are required to avoid the deterioration of natural habitats and the habitats of species as well as disturbances of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this directive.

The purpose of this site specific assessment document is to assess whether or not in the view of NWIFCA the fishing activity of a hand-gathering of cockles at Pilling has a likely significant effect on the qualifying features of the Morecambe Bay and Duddon Estuary European Site, and on the basis of this assessment whether or not it can be concluded that hand-gathering of cockles at Leven Sands will not have an adverse effect on the integrity of this European Site.

1.2 Documents reviewed to inform this assessment

- Natural England's risk assessment Matrix of fishing activities and European habitat features and protected species¹
- Reference list² (Annex 1)
- Natural England's consultation advice (Annex 2)
- Site map(s) – sub-feature/feature location and extent (Annex 3)
- Fishing activity data (map(s), etc) (Annex 4)

2. Information about the EMS

(See cover pages).

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

The Morecambe Bay and Duddon European Site interest features, 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](#), introduced in May 2014.

4. Information about the fishing activity within the site

Hand-gathering of cockles has been a long-standing traditional fishery within Morecambe Bay and the Duddon Estuary. Methods have changed very little over the years, with a jumbo (Annex 6) used to fluidise the soft sediments in which the buried cockles are found resulting in them rising to the sediment surface. They may then be 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 20-25kg cockle sacks. Cockles are able to rebury themselves very quickly, so any not removed will soon become invisible under the sand once again.

Fishermen access the beds by ATVs and 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. Tides in Morecambe Bay are notoriously dangerous for the inexperienced or risk-prone, with tidal ranges up to 10m.

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. It is illustrated particularly well by the most recent experience, whereby extensively high stock levels between 2003 – 05 and 2007 - 08 had been 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 (Cook, 2007. pers.comm.). 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.

¹ See Fisheries in EMS matrix:

http://www.marinemanagement.org.uk/protecting/conservation/documents/ems_fisheries/populated_matrix3.xls

² Reference list will include literature cited in the assessment (peer, grey and site specific evidence e.g. research, data on natural disturbance/energy levels etc)

Since that last spatfall there have been no commercial fisheries in the Bay and indeed all beds have been closed to even the taking of a small amount (5kg per person per day) for personal consumption, 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.

Regulation of Hand-gathering

The current byelaw; NWIFCA Byelaw 3 Permit to Fish for Cockles and Mussels (Annex 7), was introduced in 2012 and succeeded in creating vastly improved management of the fishery. The regulation has created a more professional and responsible group of fishers. NWIFCA Byelaw 3 also specifies methods of fishing and only the use of a craam, rake, spade or jumbo (tamp) are permitted for hand-gathering. It also specifies a closed season from 1st May to 31st August to protect spat, and a minimum landing size.

Under these regulations, the number of permit holders has been reduced significantly. There are currently 101 permits issued for the whole NWIFCA District. Eighteen gatherers are yet to renew (correct 01/08/17). With ten new entrants off the waiting list, a maximum of 131 permit holders would prosecute the fishery.

Joint Liaison Group and Morecambe Bay Action Group

With limited staff resources available to NWIFCA, 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). This joint working is facilitated at a strategic level through a multi-agency liaison group. The completion of a Multi-Agency Operational Plan will have undoubted benefit to the management of the fishery.

Shellfish Hygiene

Classification of shellfish harvesting areas is required and implemented directly in England and Wales under European Regulation 954/2004 to ensure shellfish are fit for human consumption. CEFAS undertake a Sanitary Survey prior to hygiene sampling commencing in new areas or re-commencing where classification has lapsed. Samples are taken monthly by local authorities and tested against standards set in terms of concentrations of Coliform bacteria and Salmonella.

Shellfish production areas are then classified from A to C according to the level of treatment they require prior to their sale to the general public. The latest classifications for the beds in Morecambe Bay can be found on the Food Standards Agency website (www.food.gov.uk).

Biosecurity

Morecambe Bay is currently shellfish disease free and the Authority considers it a priority to maintain this status. The non-native species Japweed (*Sargassum muticum*) and Leathery Sea-squirt (*Styela clava*) 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 the areas from which they come, are regularly and thoroughly checked for invasive non-native species (INNS). The NWIFCA science team will monitor this fishery for any INNS.

Current Status of Stock

To inform the HRA surveys have been carried out on the following bed with the results of which are given below.

Flookburgh

Surveys dates 25th July and 26th July 2017 with 159 survey stations were sampled in total from a grid with stations 500m apart.

Means

Means were calculated from all survey stations with the defined bed area (zero counts on the edge of the bed have been removed).

Mean number of size cockle: 15 per m² (min. 0, max 128)

Mean number of undersize cockle: 20 per m² (min 0, max 264)

Maps

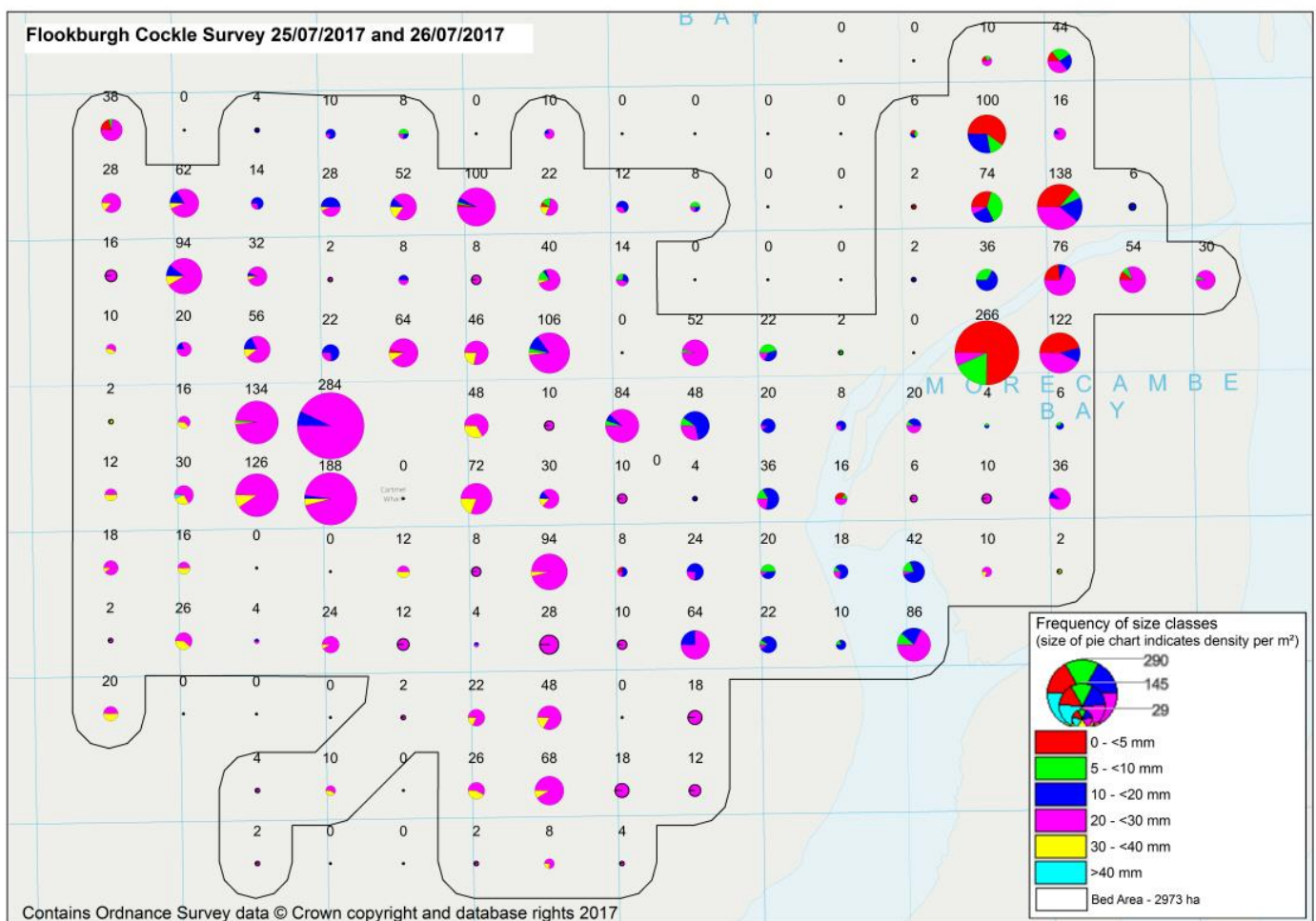
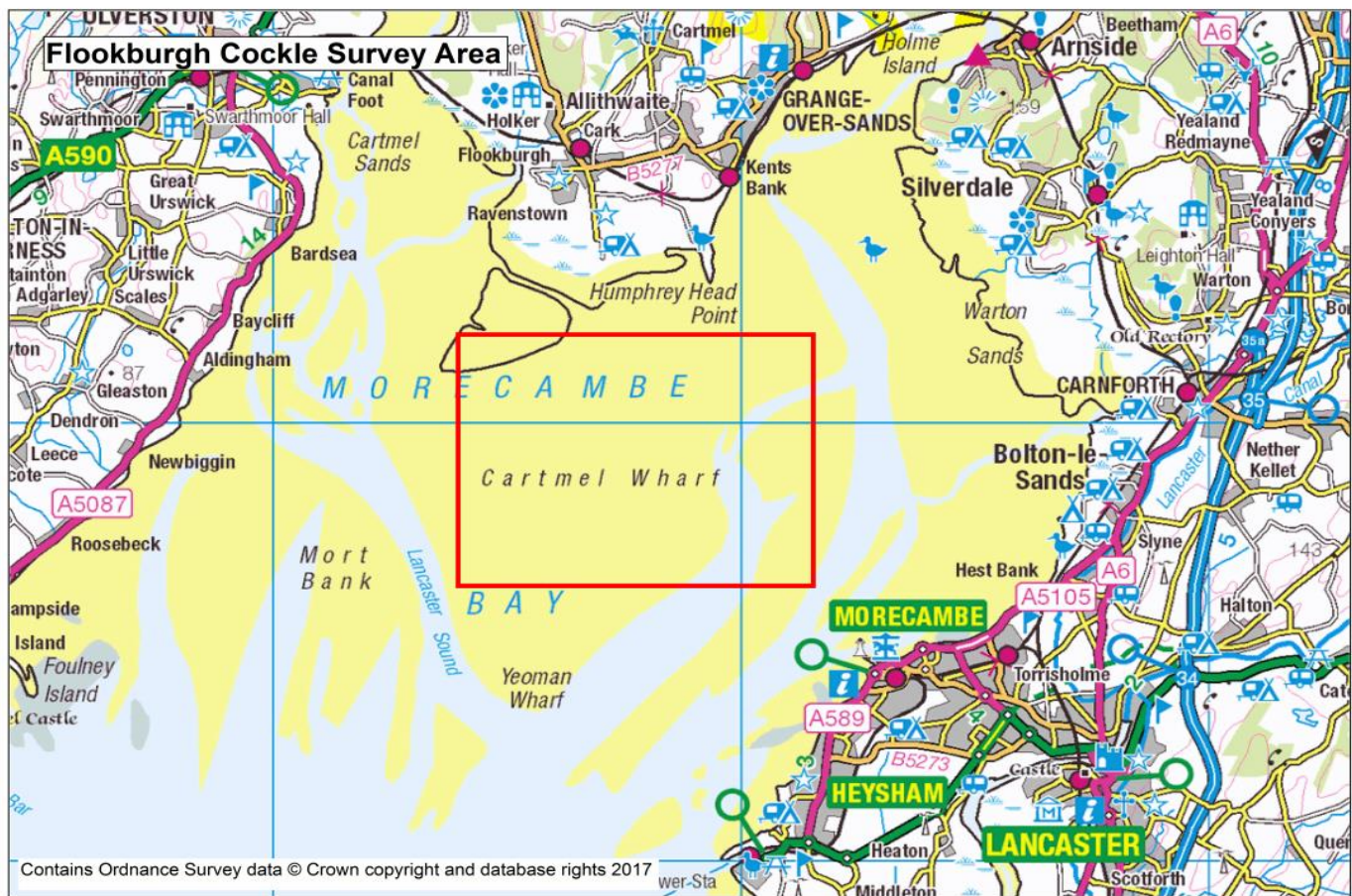
Maps were created showing the overall survey area, density of size cockle, density of undersize cockle and the frequency of size classes (pie charts show the frequency of different size classes, (the size of the pie chart indicates the total density of cockles present).

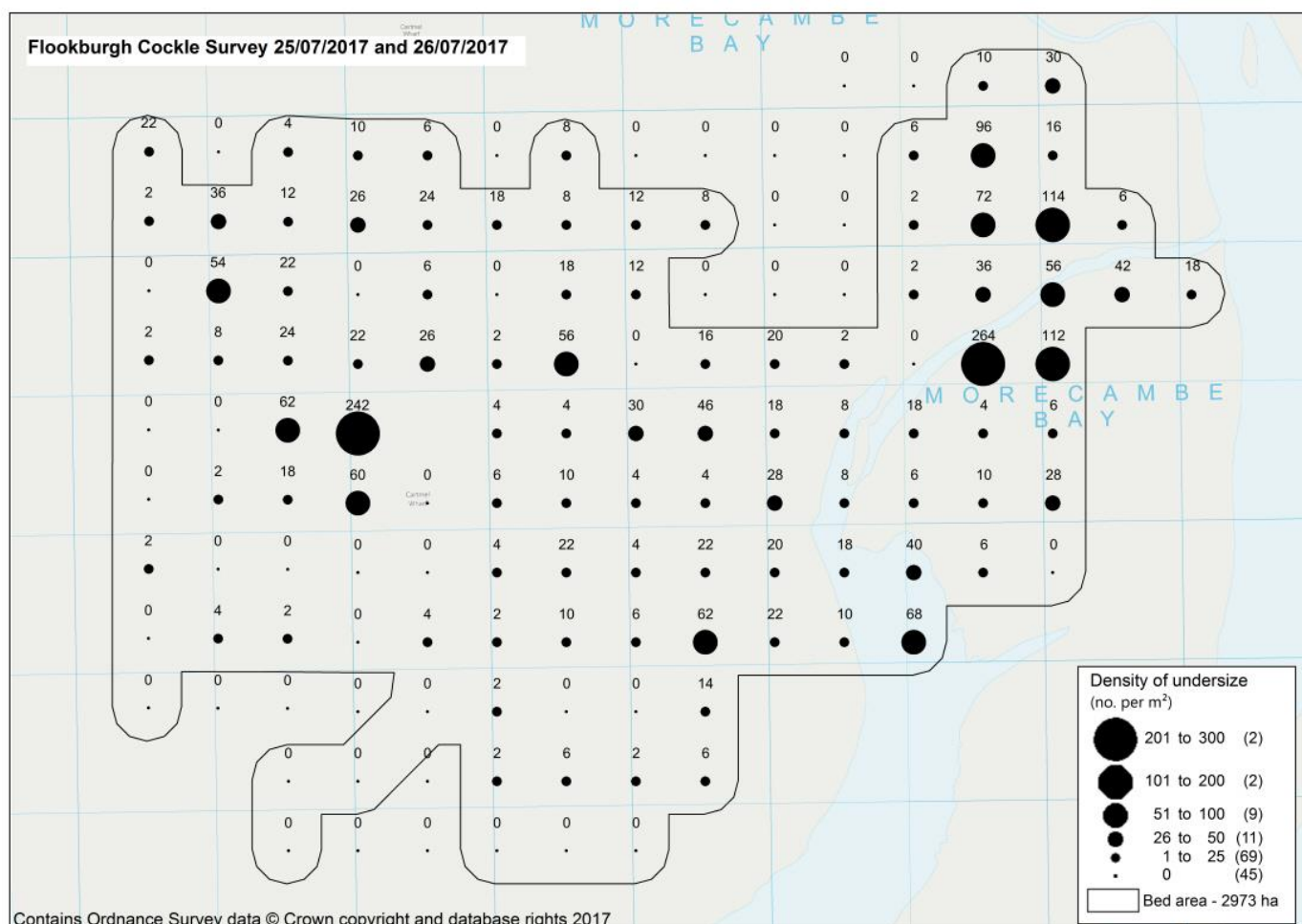
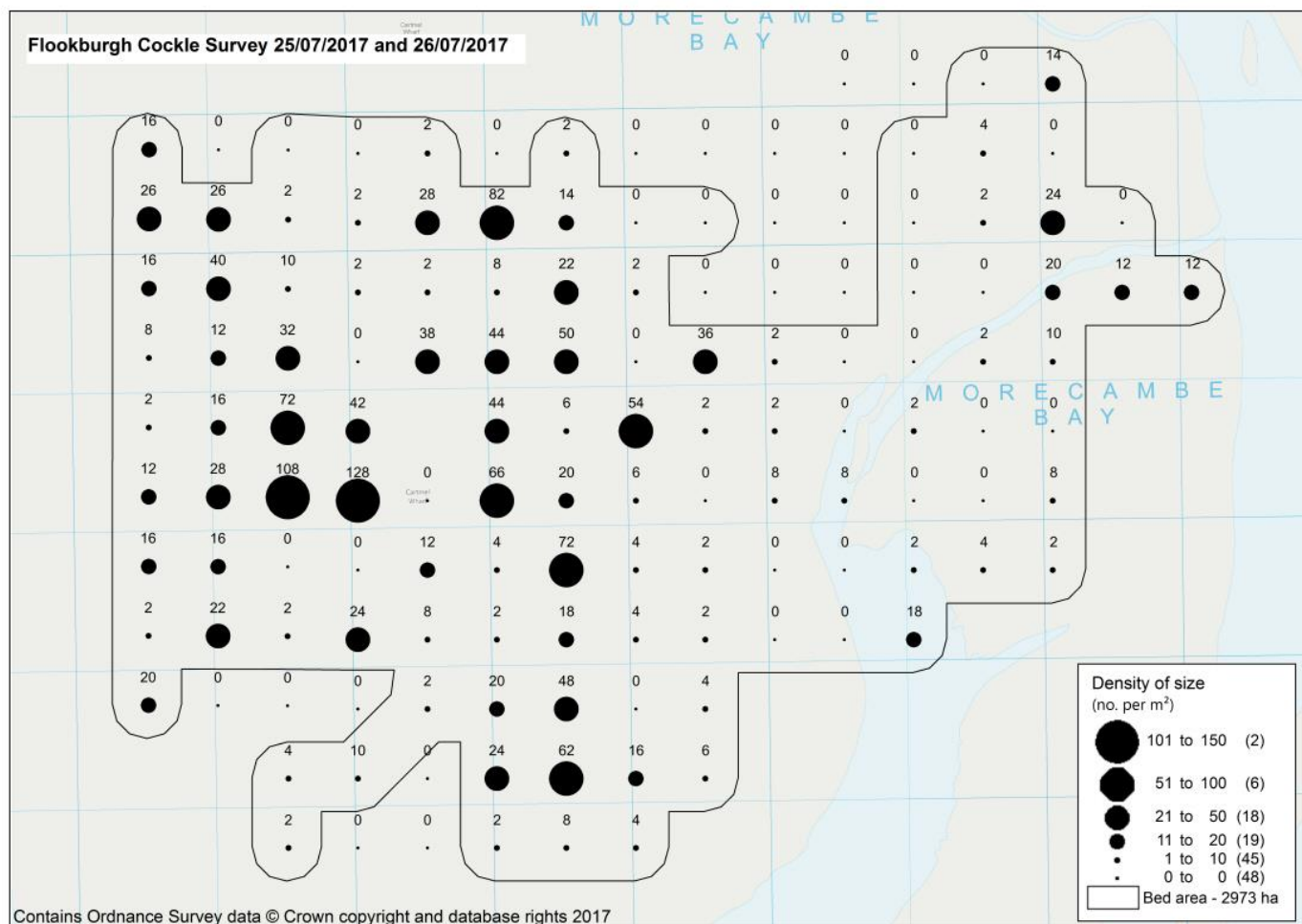
Biomass

	Area (ha)	Size Cockle (tonnes)¹	Undersize Cockle (tonnes)
Flookburgh	2973	4074	632²

¹In regards to biomass size cockle defined as cockle \geq 27mm shell length.

²The biomass of undersize cockle does not include any estimates of cockle less than 10mm in shell length although there are small numbers of this size class on the bed.





Leven

Eighteen survey stations were sampled from a grid with stations 500m apart with fourteen extra stations added to get full coverage of the area of cockle.

Means

Means were calculated from all survey stations with the defined bed area (zero counts on the edge of the bed have been removed).

Mean number of size cockle: 28 per m² (min. 0, max 120)

Mean number of undersize cockle: 20 per m² (min 0, max 88)

Maps

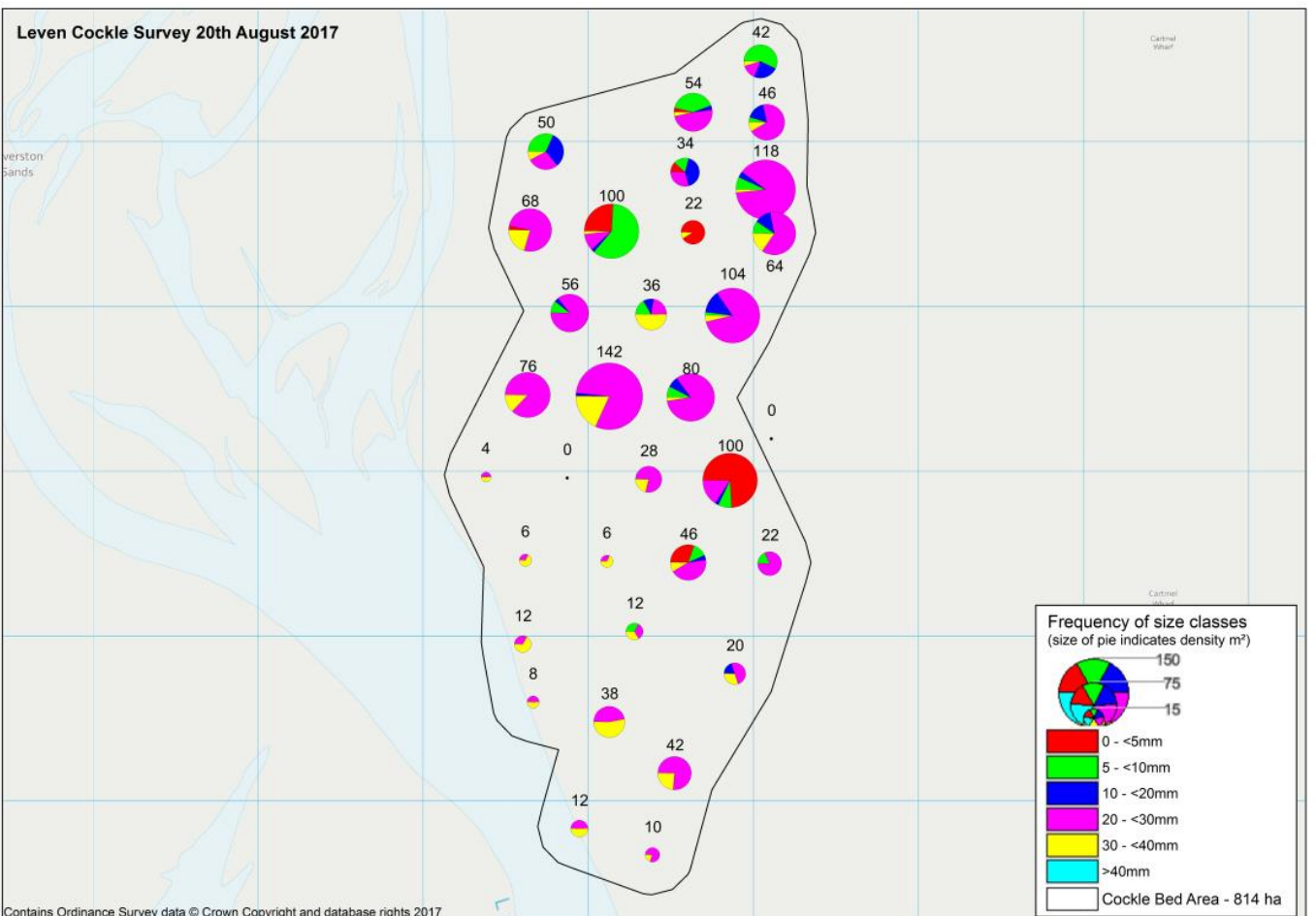
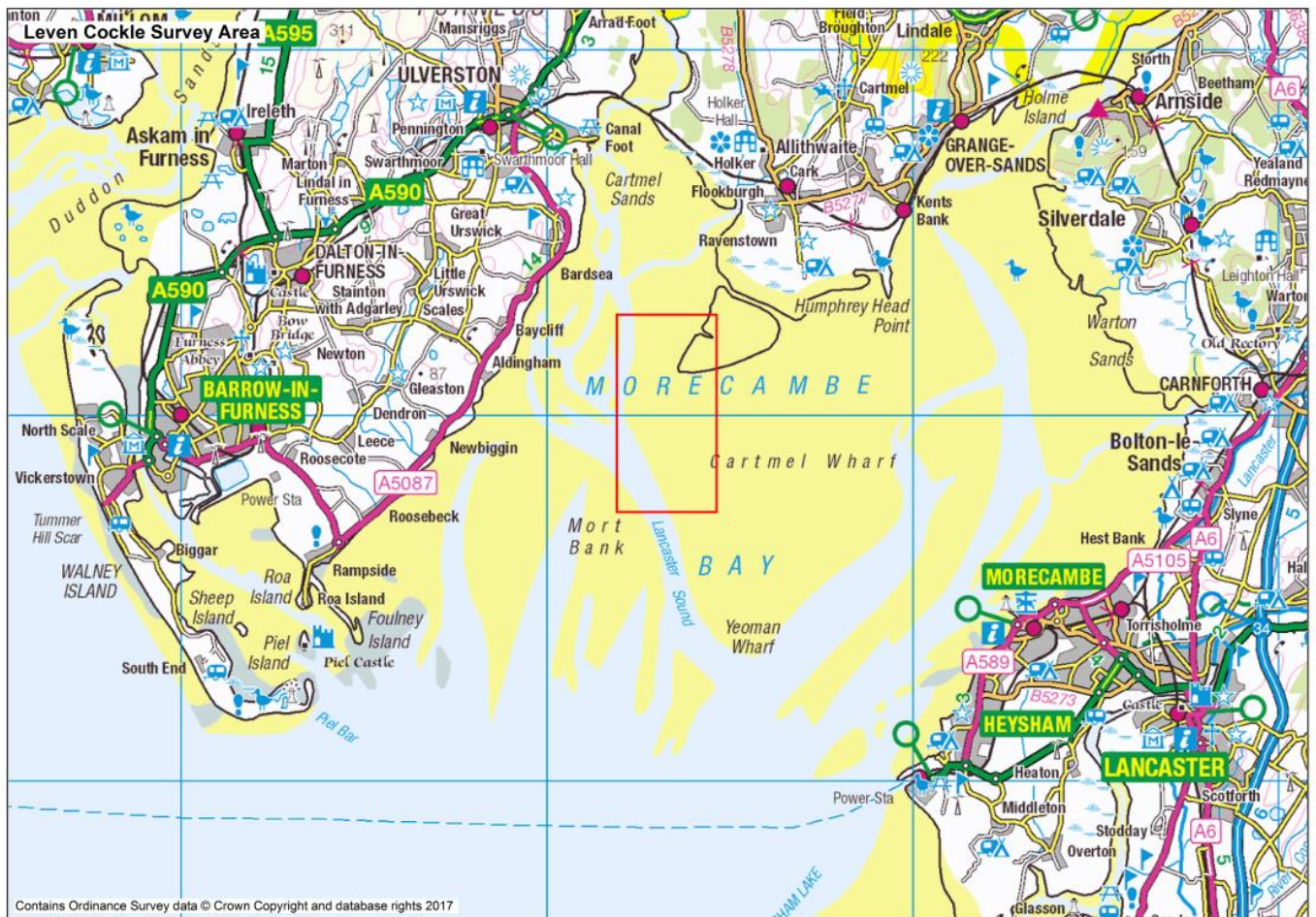
Maps were created showing the overall survey area, density of size cockle, density of undersize cockle and the frequency of size classes (pie charts show the frequency of different size classes, (the size of the pie chart indicates the total density of cockles present).

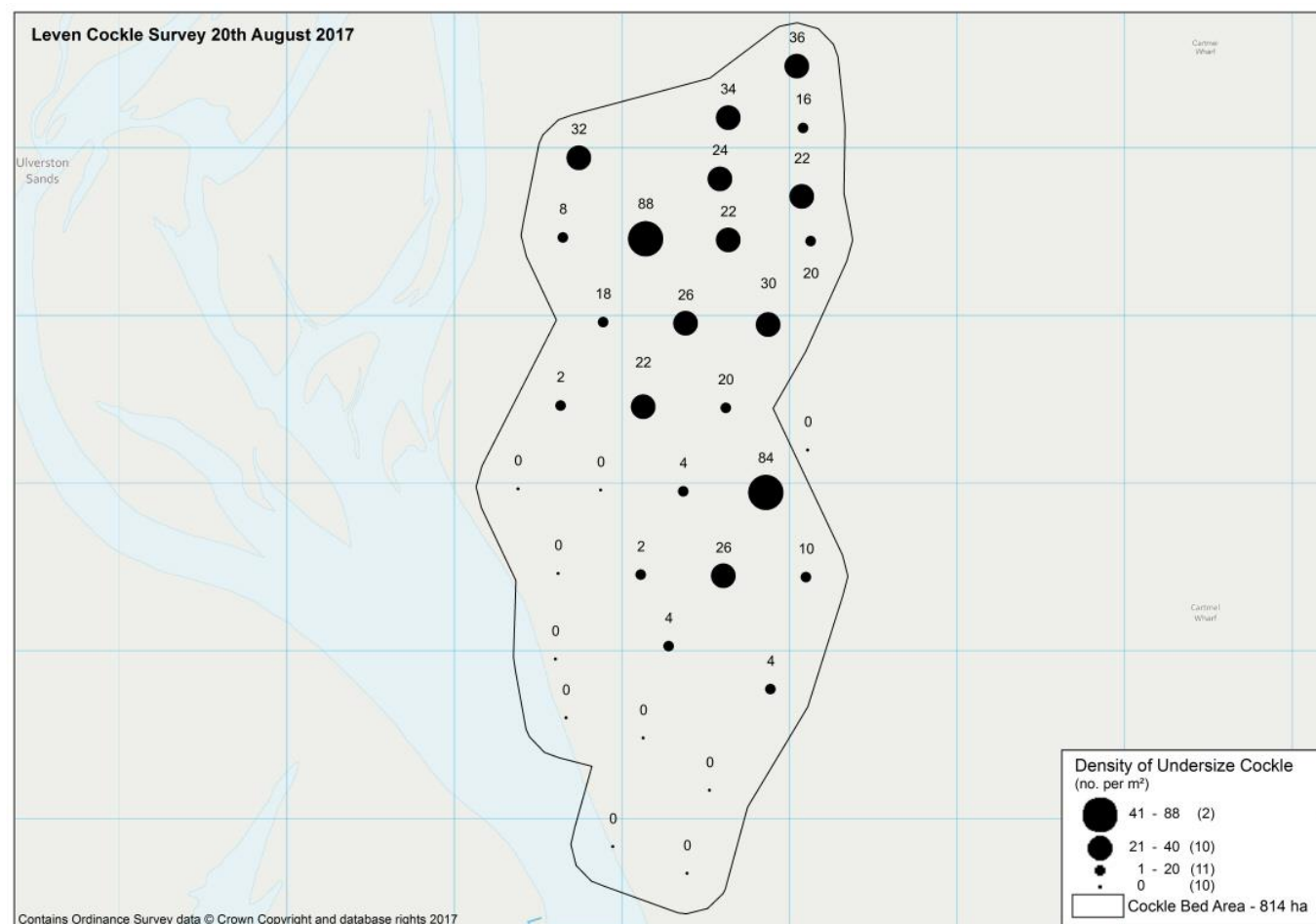
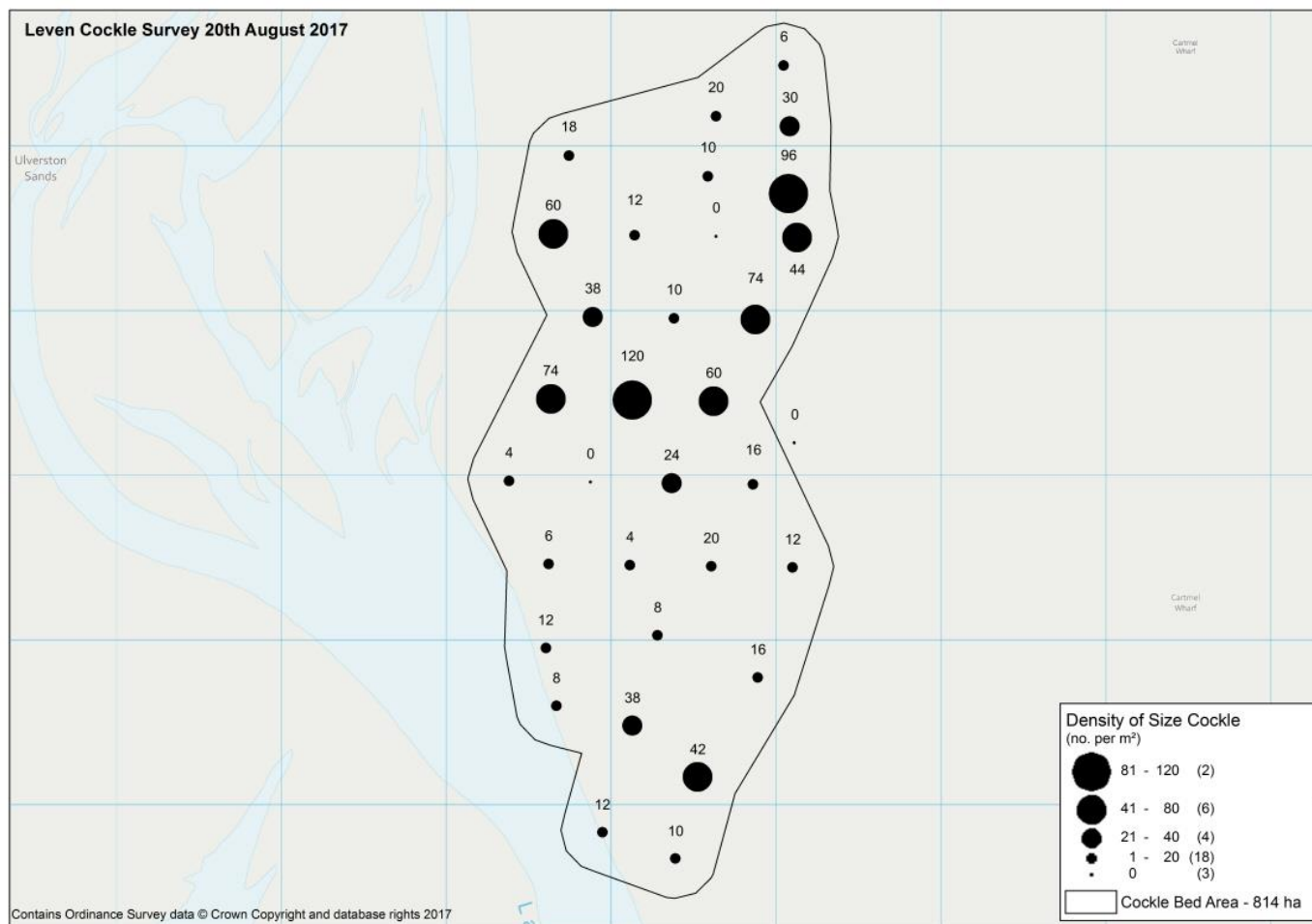
Biomass

	Area (ha)	Size Cockle (tonnes)¹	Undersize Cockle (tonnes)
Leven	814	2202	215²

¹In regards to biomass size cockle defined as cockle \geq 27mm shell length.

²The biomass of undersize cockle does not include any estimates of cockle less than 10mm in shell length although there are small numbers of this size class on the bed.





Pilling

Forty-nine survey stations were sampled from a grid 500m apart with two extra points added beyond the grid to ensure the full extent of the bed is covered. To the east of the bed there is a large area of undersize cockle with very little size cockle mixed in with it. The middle of the bed contains the majority of the size cockle.

Means

Means were calculated from all survey stations with the defined bed area (zero counts on the edge of the bed have been removed).

Mean number of size cockle: 22 per m² (min. 0, max 92)

Mean number of undersize cockle: 37 per m² (min 0, max 624)

Maps

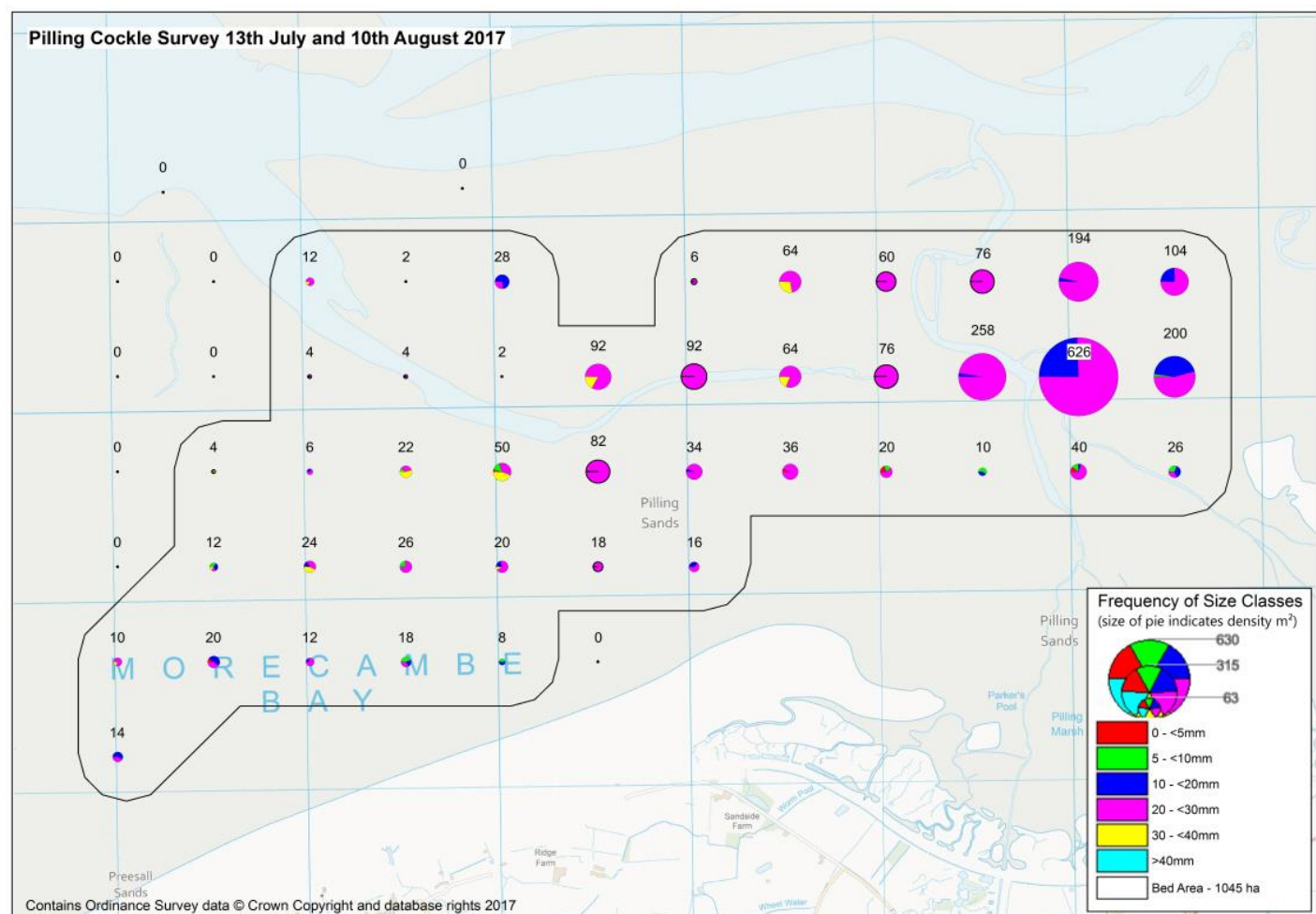
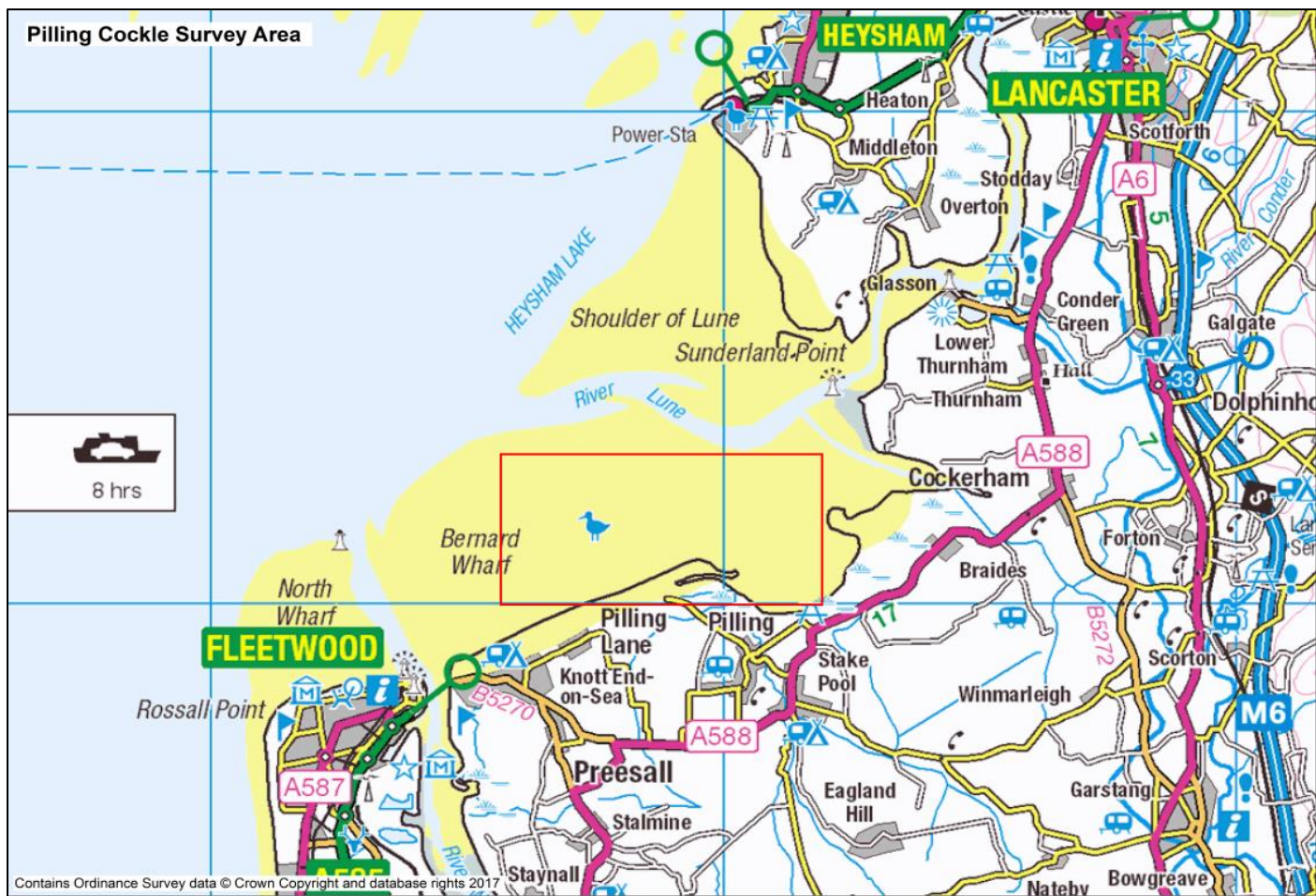
Maps were created showing the overall survey area, density of size cockle, density of undersize cockle and the frequency of size classes (pie charts show the frequency of different size classes and the size of the pie chart indicates the total density of cockles present).

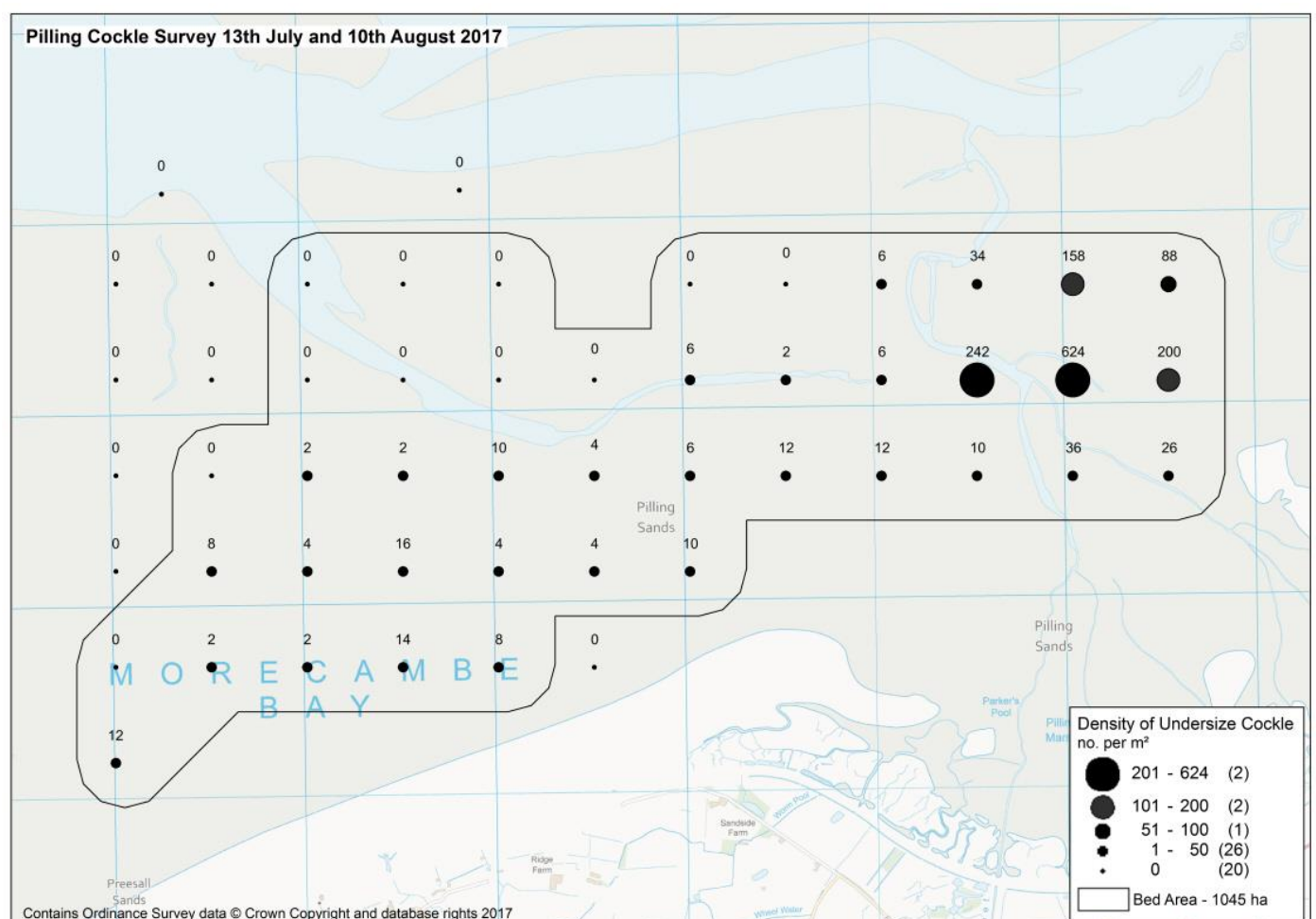
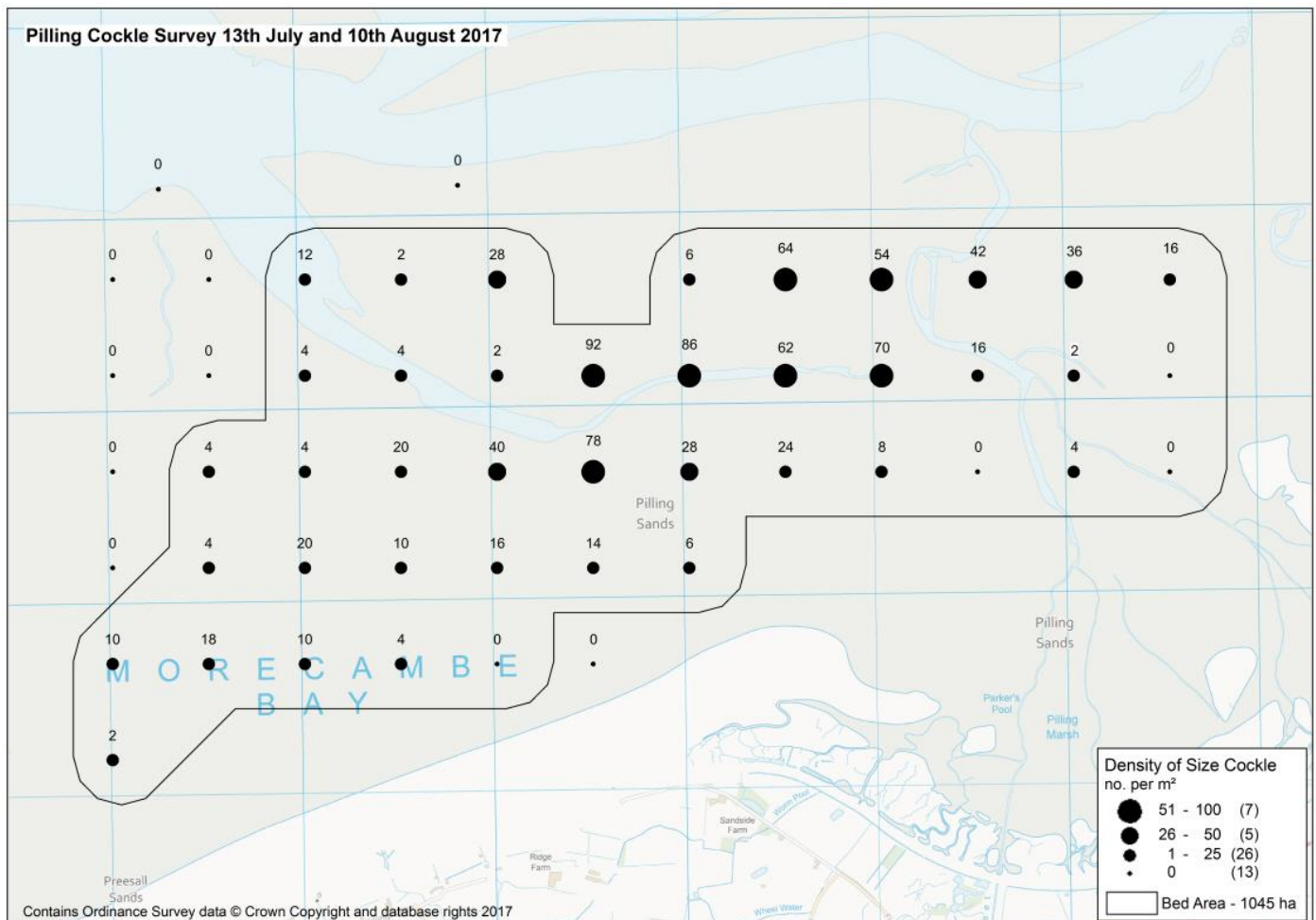
Biomass

	Area (ha)	Size Cockle (tonnes)¹	Undersize Cockle (tonnes)
Pilling	1045	571	3250²

¹In regards to biomass size cockle defined as cockle \geq 27mm shell length.

²The biomass of undersize cockle does not include any estimates of cockle less than 10mm in shell length although there are small numbers of this size class on the bed.





The Proposal

The proposal is for a hand-gathered cockle fishery at Leven, Flookburgh and Pilling Cockle within Morecambe Bay, to open following the end of the closed season on 1st September. The fishery can operate on all days and on any tide due to the size of the bed and the location of the stock. All other cockle beds will have a Byelaw 13a closure on them.

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 EMS³.

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 have been screened out other than those in the table below, due to there being no interaction between the fishing activity and the qualifying features and sub-features.

Pressures: All pressures from the Advice on Operations table provided in the Morecambe and Duddon Estuary Conservation Advice package have been screened out, other than the pressures in the following table, due to the nature of the fishing activity.

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 Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	Sensitive Sensitive	No No	Activity does not occur within the vicinity of intertidal mud

³ 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	Hand-gathering with jumbo and rake unlikely to have any impact in such a highly dynamic site.
	intertidal mixed sediments, intertidal coarse sediment	Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	Sensitive	No	Hand-gathering with jumbo and rake unlikely to have any impact in such a highly dynamic site.
		Genetic modification & translocation of indigenous species	Insufficient Evidence to assess	No	Cockles will be removed straight into bags and away to market. Low level of diversity on sands and highly selective fishery will preclude translocation of other species.
		Litter	Sensitive	Yes	Feature and pressure taken through to AA.
		Physical change (to another seabed type)	Sensitive	No	Hand-gathering with jumbo and rake unlikely to have any impact in such a highly dynamic site.
		Removal of non-target species	Sensitive	No	Highly selective fishery - no by-catch of non-target discards.
		Removal of target species	Sensitive	Yes	Feature and pressure taken through to AA.
H1310 <i>Salicornia</i> and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand; Pioneer saltmarsh H1330. Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) (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.
		Genetic modification & translocation of indigenous species	Sensitive	No	Highly selective fishery will preclude translocation of other species.
		Litter	Sensitive	Yes	Feature and pressure taken through to AA.
		Physical change (to another seabed type)	Sensitive	No	Hand-gathering with jumbo and rake unlikely to have any impact in such a highly dynamic site.
A026 <i>Egretta garzetta</i> ; Little egret	Supporting Habitats assessed above	Removal of target species (cockles)	Some species sensitive, others screened out	Yes	Species sensitive to removal of cockles: - Common eider - Eurasian oystercatcher - Red knot
A038 <i>Cygnus Cygnus</i> ; Whooper swan					
A040 <i>Anser brachyrhynchus</i> ; Pink-footed goose		Removal of non-target species	Sensitive	No	Highly selective fishery. No by-catch or discards of non-target species.
A048 <i>Tadorna tadorna</i> ; Common shelduck					
A050 <i>Anas Penelope</i> ; Wigeon		Visual disturbance	Sensitive	Yes	All species taken through to AA
A054 <i>Anas acuta</i> ; Northern pintail					
A063 <i>Somateria mollissima</i> ; Common eider (Breeding)					
A067 <i>Bucephala clangula</i> ; Goldeneye					
A069 <i>Mergus serrator</i> ; Red-breasted merganser					
A130 <i>Haematopus ostralegus</i> ; Eurasian oystercatcher					
A137 <i>Charadrius hiaticula</i> ; Ringed plover					
A140 <i>Pluvialis apricaria</i> ; European golden plover					

A141 <i>Pluvialis squatarola</i> ; Grey plover					
A142 <i>Vanellus vanellus</i> ; Lapwing					
A143 <i>Calidris canutus</i> ; Red knot					
A144 <i>Calidris alba</i> ; Sanderling					
A149 <i>Calidris alpina alpina</i> ; Dunlin					
A151 <i>Calidris pugnax</i> ; Ruff					
A156 <i>Limosa limosa</i> ; Black-tailed godwit					
A157 <i>Limosa lapponica</i> ; Bar-tailed godwit					
A160 <i>Numenius arquata</i> ; Eurasian curlew					
A162 <i>Tringa totanus</i> ; Common redshank					
A169 <i>Arenaria interpres</i> ; Ruddy turnstone					
A176 <i>Larus melancephalus</i> ; Mediterranean gull					
<i>Phalacrocorax carbo</i> ; Cormorant					
<i>Podiceps cristatus</i> ; Great crested grebe					
A183 <i>Larus fuscus</i> ; Lesser black-backed gull (Breeding)					
A184 <i>Larus argentatus</i> ; Herring gull (Breeding)					
A191 <i>Sterna sandvicensis</i> ; Sandwich tern (Breeding)					
A193 <i>Sterna hirundo</i> ; Common tern (Breeding)					
A195 <i>Sterna albifrons</i> ; Little tern (Breeding)					
Seabird assemblage					
Waterbird assemblage					

<p>Is the potential scale or magnitude of any effect likely to be significant?⁴</p>	<p>Alone</p> <p>Yes</p> <p>Comments :</p>	<p>OR In-combination⁵</p> <p>Yes</p> <p>Comments :</p> <p>These activities also occur at the site:</p> <ul style="list-style-type: none"> • Beam Trawl (Shrimp) • Pots and Creels • Light otter trawl (Fish) • Drift and Fixed nets (including stake) • Longlines • Shrimp push-net • Hand working (mussels) <p>In-combination effects for activities other than mussel fishing will be assessed when all initial TLSEs for a site are completed.</p> <p>In-combination effect with mussel and simultaneous cockle fishery assessed below.</p>
<p>Have NE been consulted on this LSE test? If yes, what was NE's advice?</p>	<p>Yes – see below</p>	

⁴ Yes or uncertain: completion of AA required. If no: LSE required only.

⁵ 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

- 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 effect 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 effect the extent, distribution and condition of the feature.

6.1.2 Exposure

i. Litter

In 2016/2017 cockle fisheries occurred on Leven Island and Pilling Sands cockle beds and in most years there has been a fishery on Heysham Flat for seed mussel as well as ongoing size mussel fisheries around Morecambe Bay. There have been no reports of litter being an issue at any of these fisheries, which are regularly inspected by fishery officers. There is a code of conduct (Annex 8) which sets out good practises for Intertidal shellfish fisheries which includes not leaving litter. When NWIFCA officers are inspecting the fisheries, they will be able monitor levels of littering.

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 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 are provided below in the table. Detailed results in regards to Leven, Flookburgh and Pilling are above in section 4.

Bed Name	Month	Area (ha)	SACFOR Size class <10mm	SACFOR Size class 10 - 30mm	SACFOR Size class >30mm	Average Undersize Cockle Density (m ²)	Average Size Cockle Density (m ²)	Estimated Undersize Cockle Biomass (tonnes) ¹	Estimated Size Cockle Biomass (tonnes) ²
Middleton Sands (main bed)	Mar	334	Frequent	Frequent	Rare	16 (max 72)	4 (max 24)	n/a	n/a
Middleton Sands (dense area of cockle)	Jun	10.9	Rare	Abundant	Rare	Between 200-700 (20-30mm size range)		265	
Pilling Sands	Aug	1045	Occasional	Common	Common	37 (max 624)	22 (max 92)	3250	571
Flookburgh	Jul	2973	Occasional	Common	Common	20 (max 264)	15 (max 128)	632	4074
Leven Sands	Aug	814	Occasional	Common	Common	28 (max 120)	20 (max 88)	215	2202
Duddon Estuary	Mar	n/a	Rare	Rare	Common	n/a	n/a	n/a	n/a
Warton Sands	Aug	Cockles present in low quantities							
Newbiggin		Cockles stock present - not surveyed							
Aldingham		Cockles stock present - not surveyed							

¹In regards to biomass size cockle defined as cockle ≥ 27mm shell length.

²The biomass of undersize cockle does not include any estimates of cockle less than 10mm in shell length although there are small numbers of this size class on the bed.

The target species is size cockle, which will be removed by the fishery. Cockle stocks are naturally highly variable and not a regular feature of this Morecambe Bay with there being very limited stock on any of the beds.

The proposal is to open Leven, Flookburgh and Pilling in Morecambe Bay, the other beds will be closed under NWSFC Byelaw 13A – cockles and mussels management of the fishery, ensuring that the other cockle beds will not be fished. This will leave cockles of varying size classes and densities on the closed beds. Due to the size of the beds, the number of Byelaw 3 permits holders, the other beds and fisheries open in the district and the patchy nature of cockles, the amount of undersized cockle on the beds (in particular Pilling) it is likely that there will be areas of the opened beds that will remain un-fished particular the east side of pilling, as operators will target areas with the greatest concentration of size cockle. On Leven, Flookburgh and Pilling there is estimates to be 4097 tonnes of undersized stock, some of which will grow to size before the closed season in May 2018 but the majority will remain on the bed.

The minimum landings size and other byelaw measures will be enforced rigorously to protect and return juvenile stock to the bed. There is an economical level below which the financial return is not worth the time and effort of gathering the cockle, and the fishermen do not gather all the cockles present on a bed. This ensures that cockles of all sizes are left across the beds for future spawning stock.

There are currently 101 permits issued for the whole NWIFCA District. Eighteen gatherers are yet to renew (correct 01/08/17). With ten new entrants off the waiting list, a maximum of 131 permit holders

would prosecute the fishery. It is predicted from efforts in 2016/2017 season that there will be very little effort on Pilling with only a handful of operators fishing the bed (estimate less than 10). Due to other fisheries, opening in the district (Leasowe) and opened in the Dee the effort is likely to be split across the district, which reduces the pressure on a single bed. This effort will change throughout the season as other beds open and close and as the stocks change depending on the level of fishing.

Byelaw 3 permit holders have to fill in monthly returns and submit them to NWIFCA. The returns include such detail as catch quantity and which tides were fished. A summary from the Leven and Pilling cockle fisheries in 2016/2017 season.

Fishery (Nov-Mar)	Leven	Pilling
Average Landing per Month (tonnes)	50	3.2
Average Number of Permit Holders fishing per Month	32	4
Average Number of Tides Fished by each Permit Holder	11	6

It is expected that the fishing effort will be similar on Pilling due to the stock levels and the other fisheries in the district. There is potential for the Leven and Flookbough fishery to be larger due to the area being opened being larger but it is expected that fishing effort will be similar or only slightly higher in regards to the number of people fishing.

The NWIFCA is 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 point to the fishery is via the concrete track access point at Fluke Hall Lane as used in the Pilling 2016/2017 fishery, there are very few access points to this bed and this is the easiest access point which is the established access point to the fishery, this is likely to be the only access point used. Due to the well-established access route there is very little risk if any of the saltmarsh being damaged.

Leven and Flookburgh

The main access will be via the hard core track off Moor Lane (West Plain). This access route is well established and used in the Leven Island 2016/2017 fishery. There are other possible access route one of which is a Sandgate which is currently established access route that is used by shrimp fishers. It is expected that Moor Lane will be the preferred access route.

There is a code of practise for hand gathered intertidal fisheries that highlight good practise in regards to not damaging saltmarsh. It has also been highlighted to industry the importance of no damage to the saltmarsh and any damage would lead to the fishery being closed. The access will be monitored by NWIFCA officers.

The NWIFCA is confident that it is there will be sufficient monitoring to ensure no damage to the saltmarsh and that it has the power to close a fishery if there is damage occurs and therefore 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

6.2.1 Potential Impacts

- i) Removal of target species (cockles) for Common eider, Eurasian oystercatcher, Red knot;

Cockles form part of an important prey resource for eiders, oystercatchers and knot. If bird populations are to be maintained in healthy condition, sufficient shellfish to meet their demands must remain for them.

If fisheries remove essential prey and there is a lack of food, the impacts on these species will vary at different times of 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 Common eider, Eurasian oystercatcher, Red knot;

A summary table of the cockle stocks in site has been provided in section 6.1.2 (ii). As mentioned in section 6.1.2 (ii) cockle stocks are often absent from the bay suggesting if they are present bivalve

eating bird will utilise them but not necessary rely on them. Mussel beds in the site play are more consistent and a likely to play a more constant role when it comes to bird food requirement.

The summary cockle table shows that on the beds that are remaining closed there are concentration of cockle with varying sizes and density. It also shows that the beds which are opening contain large amount of undersized cockle 5mm – 26mm. In some cases, for example to the east of the Pilling bed in high concentrations. Most of the areas that have undersized cockle also have very little size cockle which means they are areas which are likely to remain unfished leaving these areas relatively undisturbed which can be utilised by bivalve eating birds. On Leven, Flookburgh and Pilling there is currently an estimated 4097 tonnes of undersized stock, some of which will grow to size before the closed season in May 2018 but the majority will remain on the bed. Although the Leven and Pilling beds were opened in 2016/2017 there is still significant stock on both, some of which will be undersize cockle which has grown on but also that there is stock that remained on the bed even though it was fished regularly over the 6 months it was opened.

The biomass figures do not include estimates for under 10mm 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.

From the summary of the number of gathers on each bed from the 2016/2017 fishery from section 6.1.2 ii) and the fact that beds cover a large area it is likely that will be areas that are unfished which can be utilised by the birds.

Below is a summary table of the mussel beds in the site. Many of the mussel beds around the bay contain large amounts of mussel. Although seed mussel on areas of Heysham, Falklands and South America are likely be lost area such as Foulney provides a large area of mixed mussel size classes for the birds to feed on. Due to the highly mixed nature of the mussel on the mussel beds and the potential cockle fishery it is likely the mussel beds will be fished significantly less than previous years as permit holders will be concentrating efforts on cockling.

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	Jun	n/a	Rare	Rare	Common/ Rare	n/a	n/a	n/a	n/a
Black Scar	Jun	n/a	n/a	n/a	n/a	Abundant	Rare	Occassional / Rare	n/a
Kings Scar	Jun	3	Rare	Common	Common/ Rare	n/a	n/a	n/a	n/a
Neckings	Jun	n/a	Abundant	Rare	Common/ Rare	n/a	n/a	n/a	n/a
Rossall skear	Jun	n/a	Rare	Rare	Common/ Rare	n/a	n/a	n/a	n/a
Wyre End	May	No Stock							
Knott End Spit	Stock present – IFCO report (not surveyed)								
Heysham Flat	Jun	34.8	Frequent	Super abundant	Common/ Rare	n/a	n/a	n/a	3212
Heysham Outer Skears	Jul	7.6	Rare	Super abundant	Rare	n/a	n/a	n/a	n/a
Low Bottom	Jun	62.2	Common	Abundant	Abundant	n/a	n/a	n/a	2935

Foulney Ditch	Jun	35.8	Occassional	Abundant	Abundant	n/a	n/a	n/a	3888
Foulney Main Skear	Jun	59.12	Rare	Superabundant	Rare	n/a	n/a	n/a	4611
Foulney Island	Jun	n/a	Rare	Rare	Rare	n/a	n/a	n/a	n/a
Falklands	Jul	15.6	Rare	Abundant	Rare	n/a	n/a	n/a	n/a
South America	Jul	3	Rare	Abundant	Rare	n/a	n/a	n/a	n/a
Hardacre	Jun	No Stock							

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 and the 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. Work is ongoing on bird food requirements and NWIFCA are working with other organisation such as Natural England, RSPB and Bangor University.

- 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 (1st September to October to 30th April). 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.

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 a low numbers of access route onto 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 and Moor Lane at Leven and Flookburgh. The fishery is spatially restricted to 4832 hectares, which constitutes to 7.25% of the total Morecambe Bay and Duddon Estuary SPA. There are also a large proportion of the Bay that holds cockle of varying size ranges which will not be open to fishing and therefore plentiful alternative area for birds to remain undisturbed.

The number of fishermen is anticipated to be low on Pilling and spread out across the beds although there is likely to be more permit holders at Leven and Flookburgh the bed area 4832 hectares is large and fishers are likely to be working in small groups in the middle to low reaches of the bed which will keep disturbance to minimal and any disturbance is only likely to cause temporary and minimal 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 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, when under Natural England advice the

fisheries should be temporarily suspended if local temperatures (as recorded by nearest Met Office data) are below 0°C for 5 consecutive days and remain so until temperatures reach above 0°C. If there is evidence of high levels of disturbance and a risk of adverse effect identified to the European Site then the fishery will be closed.

7. 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 sites a precautionary approach is being taken, and the following management measures implemented:

- a) 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);
- b) Rigorous enforcement of the MLS;
- c) Closure of all other cockle beds under a Byelaw 13a closure
- d) 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)
- e) Monitoring and inspection to ensure no damage to the saltmarsh and that there are no litter issues
- f) NWIFCA enforcement officers will use intelligence and contacts with fellow enforcement agencies to pursue any suspicions of non-permitted or illegal cockling activity.

Table 2: Summary of Impacts

Feature/Sub feature(s)	Conservation Objective	Potential pressure ⁶ (such as abrasion, disturbance) exerted by gear type(s) ⁷	Potential ecological impacts of pressure exerted by the activity/activities on the feature ⁸ (reference to conservation objectives)	Level of exposure ⁹ of feature to pressure	Mitigation measures ¹⁰
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. Target species is size cockle which will be removed by the fishery. Cockle stocks are naturally variable and not a regular feature of this shoreline. MLS and other byelaw measures imposed to protect and return juvenile stock to bed. With management as described, littering and 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
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. The fishery will be closed if littering is a problem. 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

⁶ Guidance and advice from NE.

⁷ Group gear types where applicable and assess individually if more in depth assessment required.

⁸ Document the sensitivity of the feature to that pressure (where available), including a site specific consideration of factors that will influence sensitivity.

⁹ Evidence based e.g. activity evidenced and footprint quantified if possible, including current management measures that reduce/remove the feature's exposure to the activity.

¹⁰ Detail how this reduces/removes the potential pressure/impact(s) on the feature e.g. spatial/temporal/effort restrictions that would be introduced.

		<p>Abrasion/disturbance of the substrate on the surface of the seabed</p> <p>Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion</p>	<p>Potential to effect the:-</p> <ul style="list-style-type: none"> - 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 	<p>Established access points to the bed from previous cockle fisheries. 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.</p> <p>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.</p>	
<p><i>Somateria mollissima</i>; Common eider</p> <p><i>Haematopus ostralegus</i>; Eurasian oystercatcher</p> <p><i>Calidris canutus</i>; Red knot</p>	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)	<p>Potential to effect the:-</p> <ul style="list-style-type: none"> - Food availability - Condition and survival of SPA species - Abundance of SPA species 	Summary tables provided for open and closed cockle beds and condition of mussel beds within the European Site. This along with the number of permit holders, MLS, riddling and other management measures the removal of target species is unlikely to have an adverse effect on the integrity of the European Site.	None
<p><i>Egretta garzetta</i>; Little egret</p> <p><i>Cygnus</i> <i>Cygnus</i>; Whooper swan</p> <p><i>Anser</i> <i>brachyrhynchus</i>; Pink-footed goose</p> <p><i>Tadorna</i> <i>tadorna</i>; Common shelduck</p> <p><i>Anas</i> <i>Penelope</i>; Wigeon</p> <p><i>Anas acuta</i>; Northern pintail</p> <p><i>Somateria mollissima</i>; Common eider</p> <p><i>Bucephala clangula</i>; Goldeneye</p> <p><i>Mergus serrator</i>; Red-breasted Merganser</p> <p><i>Haematopus ostralegus</i>; Eurasian oystercatcher</p> <p><i>Charadrius hiaticula</i>; Ringed plover</p> <p><i>Pluvialis apricaria</i>; European golden plover</p> <p><i>Pluvialis squatarola</i>;</p>	Maintain or restore the population of each of the qualifying features, and, the distribution of the qualifying features within the site	Visual disturbance	<p>Potential to effect the:-</p> <ul style="list-style-type: none"> - Condition and survival of SPA species - Abundance of SPA species - Extent and distribution of supporting habitat available whilst a fishing activity is occurring 	<p>Disturbance to high tide roosting birds is very unlikely due to the timing of the fishery</p> <p>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.</p> <p>The fishery is spatially restricted to 4832 ha which constitutes to 7.25% of the total Morecambe Bay and Duddon Estuary SPA.</p> <p>Areas of the Site will be closed under 13a closure.</p> <p>The number of fishermen is anticipated to be low on Pilling and spread out across the beds.</p> <p>Birds may benefit from loose cockle on the sand after jumbo-ing.</p> <p>There is therefore no reason to</p>	None

<p> Grey plover <i>Vanellus vanellus</i>; Lapwing <i>Calidris canutus</i>; Red knot <i>Calidris alba</i>; Sanderling <i>Calidris alpina alpina</i>; Dunlin <i>Calidris pugnax</i>; Ruff <i>Limosa limosa</i>; Black- tailed godwit <i>Limosa lapponica</i>; Bar-tailed godwit <i>Numenius arquata</i>; Eurasian curlew <i>Tringa totanus</i>; Common redshank <i>Arenaria interpres</i>; Ruddy turnstone <i>Larus melancephalus</i>; Mediterranean gull <i>Phalacrocorax carbo</i>; Cormorant <i>Podiceps cristatus</i>; Great crested grebe Seabird assemblage Waterbird assemblage <i>Larus fuscus</i>; Lesser black-backed gull <i>Larus argentatus</i>; Herring gull <i>Sterna sandvicensis</i>; Sandwich tern <i>Sterna hirundo</i>; Common tern <i>Sterna albifrons</i>; Little tern </p>				<p> suggest that disturbance to birds would be damaging unless weather was exceptionally severe, when under Natural England advice the fisheries should be temporarily suspended if local temperatures (as recorded by nearest Met Office data) are below 0°C for 5 consecutive days and remain so until temperatures reach above 0°C. If there is evidence of high levels of disturbance and a risk of adverse effect identified to the European Site then the fishery will be closed. </p>	
---	--	--	--	--	--

7. Conclusion¹¹

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 Leven, Flookburgh and Pilling will not have an adverse effect on the integrity of the European Site.

8. In-combination assessment¹⁴

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

Heysham Flat Seed Fishery – fishing predicted to stop for seed mussel and byelaw 3 permit holders will focus on the more profitable cockle fisheries in the district.

Size mussel fisheries – There is potential for size mussel fisheries later in the year and early in 2018. Typically, effort on these fisheries is low when cockle fisheries are not open, therefore it is predicted that effort will be less than normal as efforts will be concentrated on cockles.

Tractor shrimp fishery – It is likely that some operators will go both shrimp fishing and cockling on the same tide by gathering cockles on their way to and from the shrimp fishing. Cockle fisheries have the potential to reduce shrimping effort slightly.

8.1.3 In Combination Assessment

Due to the low levels of mussel harvesting effort 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 have departed / are departing to summer breeding grounds, and again the fishery is considered to have No Likely Significant Effect on any conservation features.

The shrimp fishery has undergone a HRA which concluded no adverse effect on the integrity of the European Site any cockle fishing between September to December (main shrimp fishing cross over with the cockle fishing) is likely to decrease the amount of fishing and the activity of travelling to and from the fishery has been accounted for.

Considering mussel, shrimp and cockle fisheries in the Bay in combination the NWIFCA can conclude no adverse effect on the integrity of the European Site providing the management measures of the Leven, Flookburgh and Pilling cockle fishery are implemented and enforced.

9. Integrity test

The NWIFCA concludes no adverse effect on the integrity of the European Site providing the management measures of the Leven, Flookburgh and Pilling cockle fisheries are implemented and upheld.

¹¹ If conclusion of adverse effect alone an in-combination assessment is not required.

Annex 1: Reference list

Atkinson, PW *et al.* 2003. Changes in commercially fished shellfish stocks and shorebird populations in the Wash, England. *Biol Con*, 114, 127-141

Bell, MC *et al.* 2001. Fisheries and bird predation as components of cockle (*Cerastoderma edule*) mortality in the Burry Inlet, South Wales. In: The Life History, Dynamics and Exploitation of Living Marine Resources: Advances in Knowledge and Methodology CM 2001/J:02 ICES

Cook, Bill. (2007). NW&NWSFC Senior Scientist. Personal Communication.

Dare, P. (1976). Settlement, growth and production of the mussel (*Mytilus edulis* L.) in Morecambe Bay. Fishery Investigations. Ministry of Agriculture, Food and Fisheries. London. 28. 1–25 (Ser. 2).

Dare, P.J. (1971). Preliminary studies on the utilisation of the resources of spat mussels, (*Mytilis edulis* L.) occurring in Morecambe Bay, England. International Council on the Exploration of the Sea Committee Meeting, K11. 1–6 (Shellfish and Benthos Comm.).

Goss-Custard JD *et al.* 2004. When enough is not enough: shorebirds and shellfishing. *Proc R Soc Lond B* 271, 233-237

Natural England Marine Interim Conservation Advice for Special Protection Area (UK9005081),
UK9005081_Morecambe_Bay_SPA_Advice_on_Operations
UK9005081_Morecambe_Bay_SPA_SAT_Birds

Natural England Marine Interim Conservation Advice for Special Area of Conservation (UK0013027),
UK0013027_Morecambe_Bay_SAC_Advice_on_Operations
UK0013027_Morecambe_Bay_SAC_Generic_SAT_Habitats
UK0013027_Morecambe_Bay_SAC_Generic_SAT_Species

Wilcox, R. (2013). Review of the incidence of pearling in the mussel, *Mytilus edulis*: With reference to the mussel beds of the Walney Channel, Barrow-in-Furness, Cumbria, England. Cumbria Wildlife Trust and NWIFCA.

Annex 2: Natural England's consultation advice

Date: 25 August 2017
Our ref: 224060
Your ref: NWIFCA-MB-EMS-COCKLE-2017



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

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

T 0300 060 3900

BY EMAIL ONLY

Dear Jon

HRA for proposed opening of the Leven, Flookburgh and Pilling cockle fisheries (Morecambe Bay)

Thank you for your consultation on the above which was received by Natural England on 21 August 2017.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

THE CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2010 (AS AMENDED)

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 the Morecambe Bay and Duddon Estuary Special Protection Area (SPA) and the Morecambe Bay Special Area of Conservation (SAC) which are European sites. The site is also listed as Morecambe Bay Ramsar site¹ and Duddon Estuary Ramsar site and also notified at a national level as Morecambe Bay Site of Special Scientific Interest (SSSI) and Lune Estuary SSSI. Please see the subsequent sections of this letter for our advice relating to SSSI features.

In considering the European site interest, Natural England advises that you, as a competent authority under the provisions of the Habitats Regulations, should have regard for any potential impacts that a plan or project may have². The [Conservation objectives](#) for each

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.

² Requirements are set out within Regulations 61 and 62 of the Habitats Regulations, where a series of steps and tests are followed for plans or projects that could potentially affect a European site. The steps and tests set out within Regulations 61 and 62 are commonly referred to as the 'Habitats Regulations Assessment' process. The Government has produced core guidance for competent authorities and developers to assist with the Habitats Regulations Assessment process. This can be found on the Defra website. <http://www.defra.gov.uk/habitats-review/implementation/process-guidance/guidance/sites/>



European site explain how the site should be restored and/or maintained and may be helpful in assessing what, if any, potential impacts a plan or project may have.

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 of any of the sites in question. Having considered the assessment, and the measures proposed to mitigate for all identified adverse effects that could potentially occur as a result of the proposal, Natural England advises that we concur with the assessment conclusions, providing that all mitigation measures are appropriately secured in any permission given.

Natural England does have some comments to make regarding some of the details within the assessment and the process undertaken (see Appendix 1), however these do not affect the outcome of the assessment.

WILDLIFE AND COUNTRYSIDE ACT 1981 (AS AMENDED)

No objection – no conditions requested

This application is within Morecambe Bay Site of Special Scientific Interest (SSSI) and Lune Estuary SSSI. Natural England is satisfied that the proposed development being carried out in strict accordance with the details of the application, as submitted, will not damage or destroy the interest features for which the site has been notified. We therefore advise your authority that this SSSI does not represent a constraint in determining this application. Should the details of this application change, Natural England draws your attention to Section 28(1) of the *Wildlife and Countryside Act 1981* (as amended), requiring your authority to re-consult Natural England.

Yours sincerely



Emily Hardman

Cheshire, Greater Manchester, Merseyside and Lancashire Area Team

Email: Emily.Hardman@naturalengland.org.uk

Tel: 0208 0268 356



Appendix 1 Detailed comments

Natural England notes that the assessment makes reference to implementation of the BASC Code of Practice during severe weather. This voluntary restraint is implemented when more than half of the 16 meteorological stations in England have recorded frozen conditions for seven consecutive days and is therefore rarely if ever implemented. Natural England therefore requests that the wording in the HRA be revised to state: " the fisheries should be temporarily suspended if local temperatures (as recorded by nearest Met Office data) are below 0°C for 5 consecutive days and remain so until temperatures reach above 0°C".

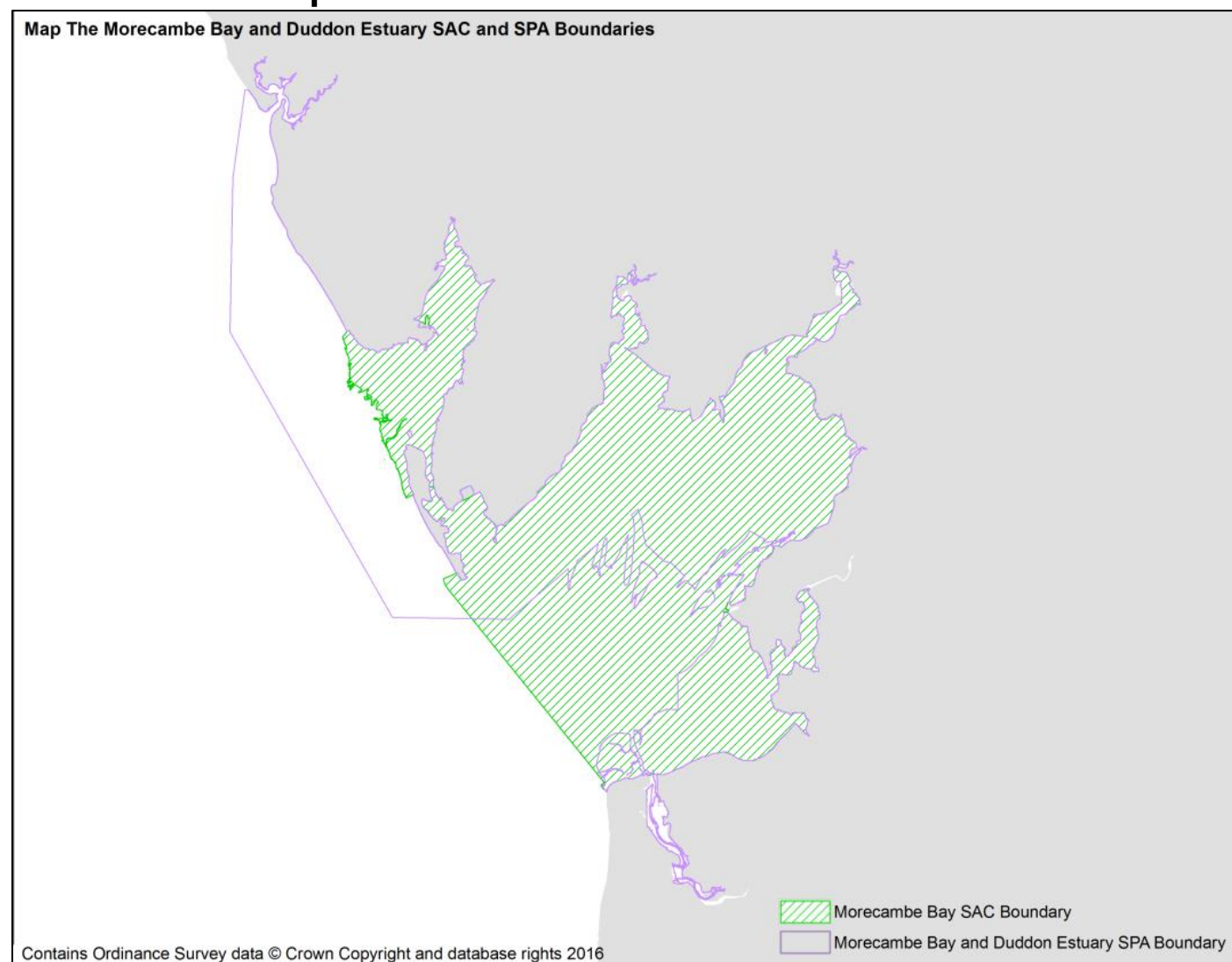
The assessment states that: "Established access points to the bed from previous cockle fisheries. Access and saltmarsh will be monitored and fishers encouraged to act responsibly through Code Of Conduct for Intertidal Shellfisheries". Natural England however notes that for the 2016 cockle fisheries at Leven and Pilling, specific details were included within the authorisations clearly defining the access points for each fishery and prohibiting access onto the saltmarsh with maps defining the authorised fishing areas, prohibited saltmarsh area (Pilling only) and access points as shown below:

- Access to and access from the fishery will be via the hard core track off Moor Lane (West Plain) (SD 36892 74153) [Leven and Flookburgh fisheries]
- Access to and access from the fishery will be via the concrete track access point at Fluke Hall Lane only (SD 389 500) [Pilling fishery]
- No person shall fish, transit, ton up or park any vehicle on the saltmarsh [all fisheries]

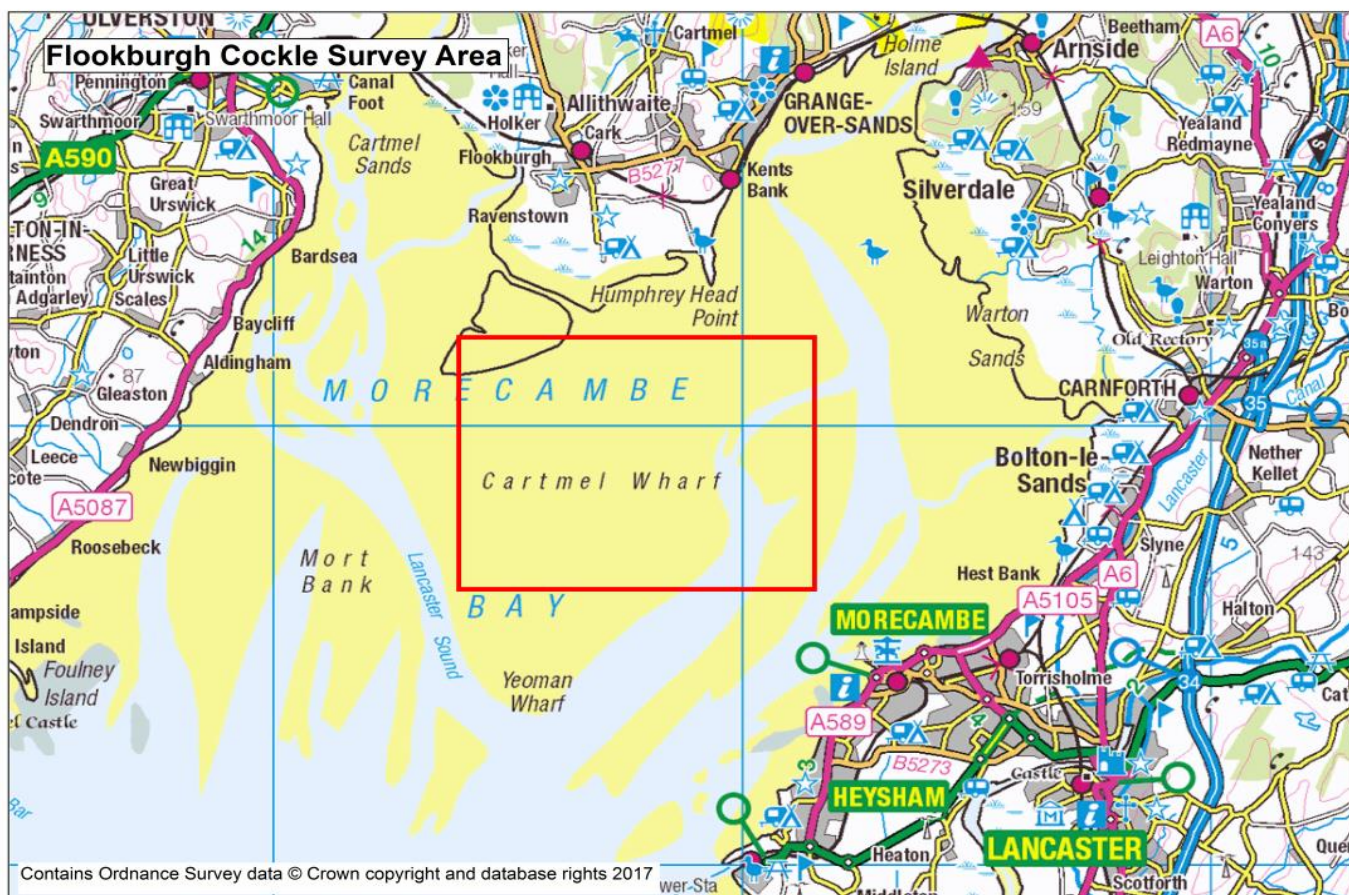
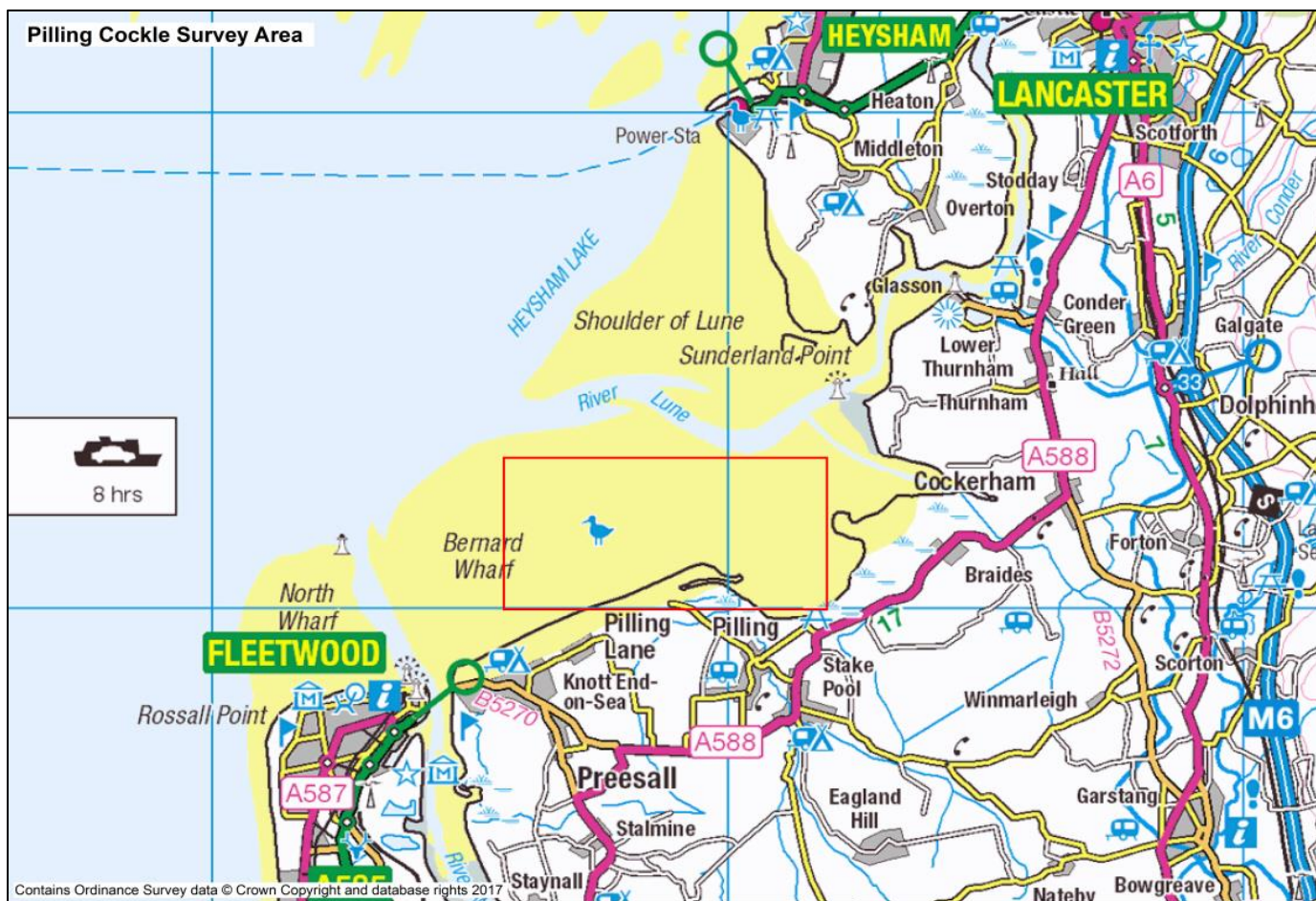
Natural England therefore requests that the same details are included within the authorisations for the three cockle fisheries this year to ensure that damage to the saltmarsh habitats is avoided and that visual disturbance to the SPA birds to minimised. This should be reflected in the HRA.

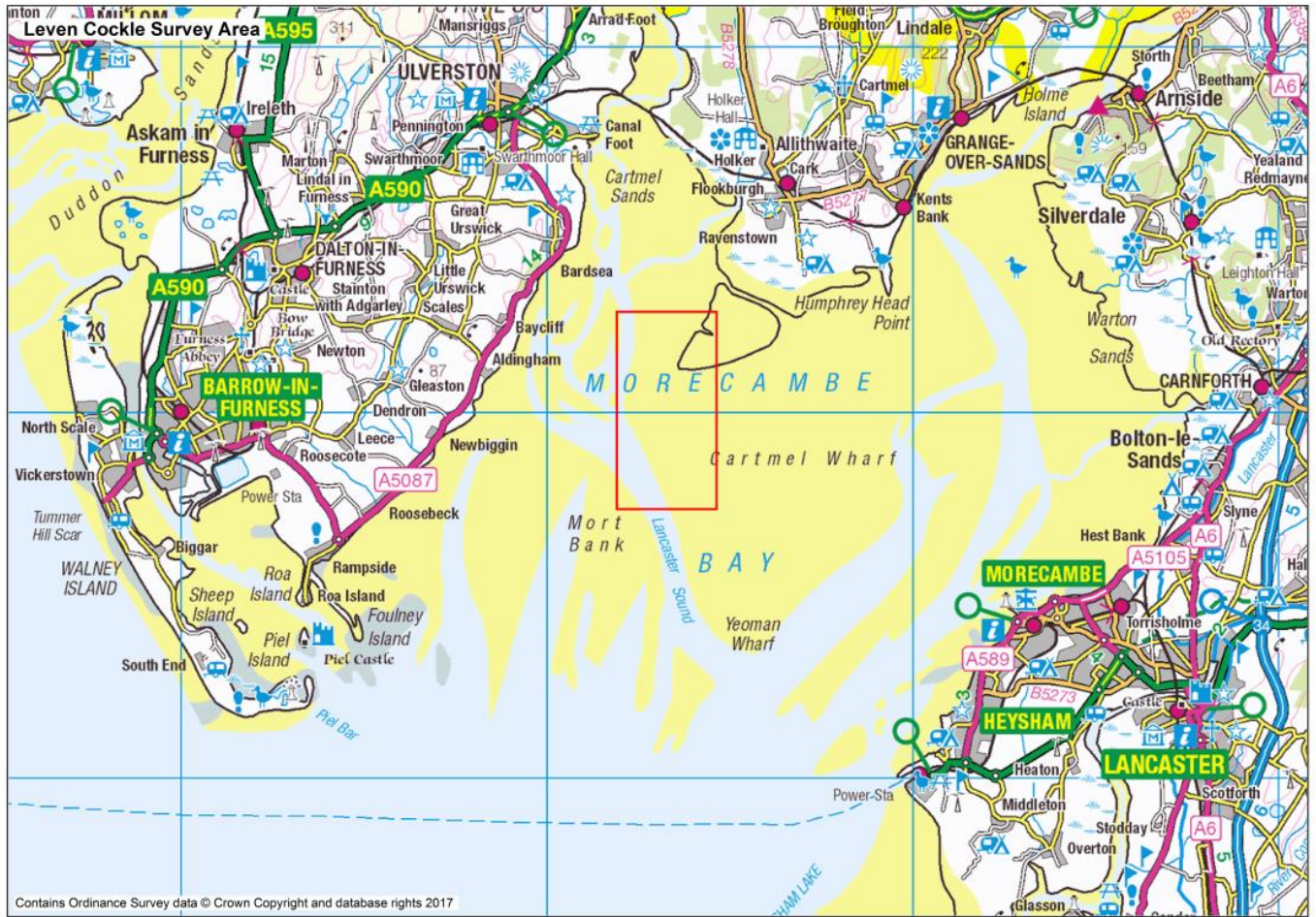


Annex 3: Site Map

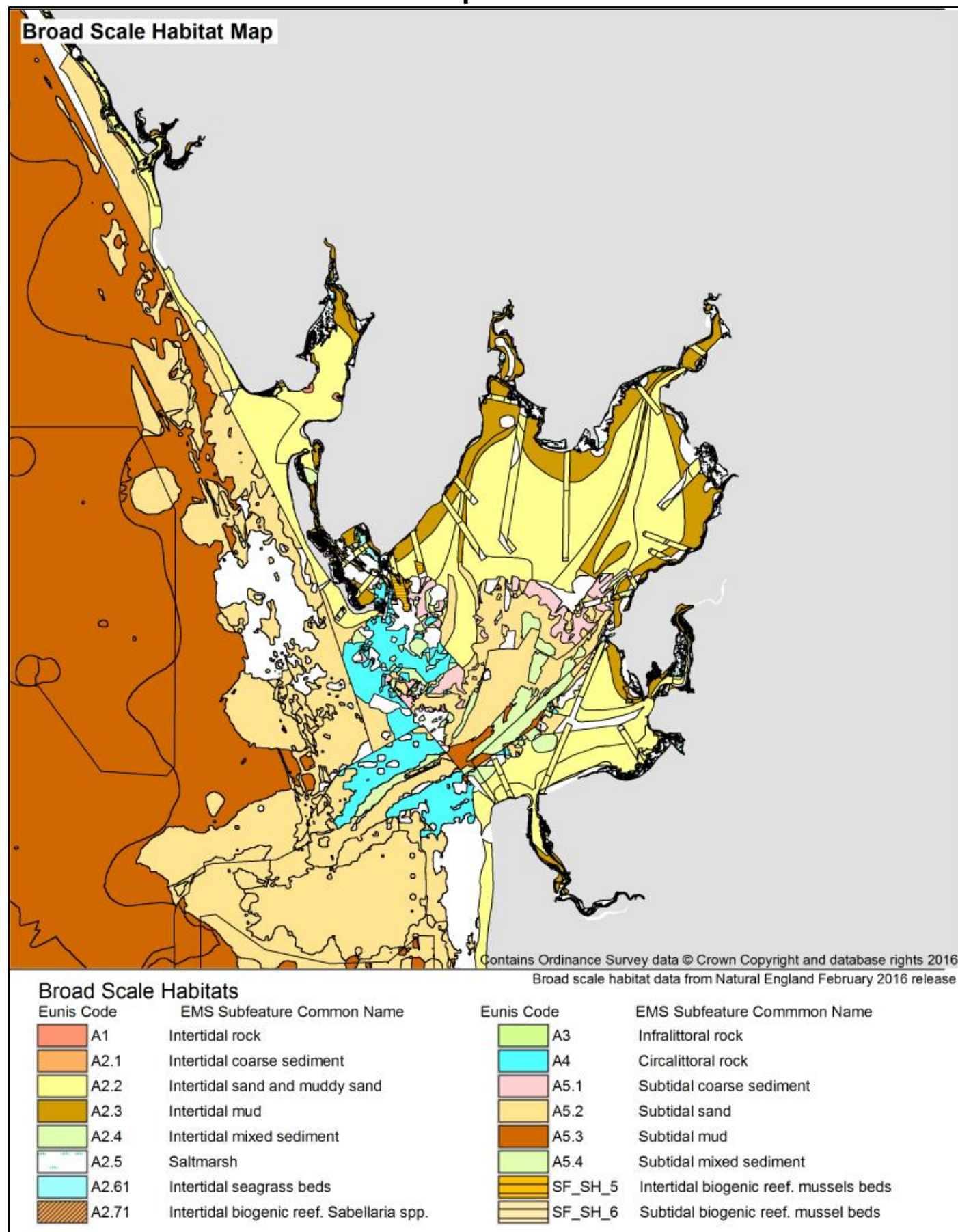


Annex 4: Fishing activity maps





Annex 5: Broad Scale Habitat Map



Annex 6: Fishing activity methods



Illustration of the use of a jumbo, rake and riddle in hand-gathering of cockles

Annex 7: Byelaws regulating cockle fishing in Morecambe Bay

NWIFCA BYELAW 3 - PERMIT TO FISH FOR COCKLES (*Cerastoderma edule*) AND MUSSELS (*Mytilus edulis*)

Interpretation

1. In this byelaw:
 - a. “cockles” means the species *Cerastoderma edule*;
 - b. “mussels” means the species *Mytilus edulis*;
 - c. “fishery” means an area of sea, seabed, exposed estuary, seashore, or other marine environment in any part of the District;
 - d. “the NWIFCA” means the North Western Inshore Fisheries and Conservation Authority and is defined in articles 2 and 4 of the North Western Inshore Fisheries and Conservation Order 2010 (S.I. 2010 No. 2200);
 - e. “the District” means North Western Inshore Fisheries and Conservation District and is defined in articles 3 and 4 of the North Western Inshore Fisheries and Conservation Order 2010 (S.I. 2010 No. 2200);
 - f. “full gathering permit” means a permit which authorises a person to gather cockles and mussels and carry out all related activities, such as moving them and transporting them;
 - g. “support worker permit” means a permit which authorises a person to carry out activities related to the gathering of cockles and mussels, such as moving them and transporting them to support a person with a full gathering permit but only after the cockles and mussels have been placed in a receptacle, and in the case of cockles after having been passed through a riddle, by person with the full gathering permit;
 - h. “gathering” includes all activities related to the gathering of cockles and mussels such as moving and transporting them;
 - i. “Commercial Shellfish Fisheries Area” means an area designated by the NWIFCA pursuant to paragraph 13;
 - j. “Morecambe Bay Commercial Fisheries Area” means the area enclosed by straight lines joining the following co-ordinates in order:
 - I. 54° 08.490’N 03° 02.011’W
 - II. 54° 07.686’N 02° 53.497’W
 - III. 54° 03.204’N 02° 56.331’W
 - IV. 54° 04.062’N 03° 03.776’W
 - V. 54° 08.490’N 03° 02.011’W
 - k. “Ribble Estuary Commercial Fisheries Area” means the area enclosed by straight lines joining the following co-ordinates in order:
 - I. 53° 43.008’N 03° 05.177’W
 - II. 53° 43.572’N 02° 59.986’W
 - III. 53° 40.902’N 03° 00.341’W
 - IV. 53° 40.860’N 03° 05.122’W
 - V. 53° 43.008’N 03° 05.177’W
 - l. “Gangmaster Licensing Authority licence” means a licence issued under the Gangmasters Licencing) Act 2004;
 - m. “Foreshore Gatherers Safety Training Certificate” means a document issued by a Seafish Industry Group Training Association or a trainer approved by the NWIFCA, certifying that the person named on the certificate has completed a safety training course for intertidal shellfishing.

Permit

2. Subject to paragraphs 10, 11, 25 and 26 of this byelaw no person shall gather cockles or mussels within or from a fishery unless he has in his possession a full gathering permit.
3. Subject to paragraphs 10, 11, 25 and 26 of this byelaw, no person shall, in the area of the District below mean high water springs, move or transport cockles or mussels within or from a fishery unless he has either a full gathering permit or a support worker permit.
4. No person shall have in their possession any article for use in the course of or in connection with gathering cockles or mussels within or from a fishery in breach of this byelaw.
5. No person shall have in their possession any cockle or mussel gathered within or from a fishery in breach of this byelaw.

Minimum Sizes

6. No person shall gather within or from a fishery any cockle which will pass through a gauge having a square opening of 20mm measured across each side of the square or any mussel less than 45mm in length.

Fishing Methods

7. No person shall gather cockles or mussels except:
 - a) by hand or using hand-held rakes;
 - b) in the case of cockles by using craams, rakes, spades, tamps or jumbos; or
 - c) by using buckets, sacks, net bags, ton bags and other such containers ordinarily used for the storage of cockles and mussels.
8. No person shall place cockles that have just been fished into a container unless they have been passed through a rigid riddle designed to retain cockles which will not pass through a gauge having a square opening of 20mm measured across each side.

Redeposit

9. Any person who removes or possesses shellfish the removal or possession of which is prohibited by or in pursuance of these byelaws or any Act of Parliament shall immediately redeposit the same without injury as nearly as possible in the fishery from which they were taken or under the written authority of the NWIFCA on another suitable fishery and shall spread them thinly and evenly through the fishery.

Written permission

10. This byelaw shall not apply to any person performing an act which would otherwise constitute an offence against this byelaw if that act was carried out in accordance with a written permission issued by the NWIFCA permitting that act for scientific, management, stocking or breeding purposes.

Exception for Personal Consumption to the Requirement for a permit

11. No person shall require a permit under this byelaw to gather less than a total of 5kg of cockles and 5kg of mussels during a calendar day intended for their own personal consumption within or from a fishery which is neither closed pursuant to paragraph 12 of this byelaw or byelaw 13A of the North Western and North Wales Sea Fisheries Committee (cockles and mussels – management of the fishery) or byelaw 18 of the Cumbria Sea Fisheries Committee (shellfishery – temporary closure) nor designated a Commercial Shellfish Fishery Area pursuant to paragraph 13 of this byelaw nor part of the District managed under the Dee Estuary Cockle Fishery Order (2008).

Fisheries Closure

12. No person shall gather any cockle within or from a fishery on or between the 1st day of May and the 31st day of August in the same year or have in their possession any cockle or mussel from a fishery area that has been closed pursuant to byelaw 13A of the North Western and North Wales Sea Fisheries Committee (cockles and mussels – management of the fishery) or byelaw 18 of the Cumbria Sea Fisheries Committee (shellfishery – temporary closure) or from within that part of the District managed under the Dee Estuary Cockle Fishery Order (2008) without a licence to fish issued within the terms of that Order.

Commercial cockle or mussel fisheries

13. The NWIFCA designates the Morecambe Bay Commercial Fisheries Area and the Ribble Estuary Commercial Fisheries Area as Commercial Shellfish Fisheries Areas.

Application for Permits

14. The period of validity of permits shall be from 1st September in any given year to 31st of August the following year unless otherwise stated. Permits shall be annually renewable subject to paragraph 15 of this byelaw. A fee of £500 will be charged each year by the NWIFCA for all Byelaw 3 permits.
15. Holders of a permit to gather cockles or mussels under this byelaw in any given year shall be entitled to renew the permit for the next year up to one year after the permit term has expired.
16. Applications for the renewal of permits pursuant to this byelaw shall be made using the printed forms available from the NWIFCA offices or the NWIFCA website. Renewal forms will be made available 2 calendar months before the date each permit term begins. On renewal, applicants must satisfy the NWIFCA that at some time in the previous 3 years they have derived a substantial part of their income from fishing activities by providing evidence which may include a personal statement detailing fishing activities in the last 3 years and evidence that tax has been paid on fishing income in the last 3 years.
17. Applications for new permits pursuant to this byelaw shall be made using the printed forms available from the NWIFCA offices or the NWIFCA website. Applications for new permits to be issued pursuant to paragraphs 22 and 27 of this byelaw shall be made by first registering an interest with the NWIFCA in writing. If the number of applicants registering an interest exceeds the number of available permits a waiting list will be compiled on a 'first come, first served' basis and an applicant will be invited to complete an application for a new permit in the first year a new permit becomes available. Applications shall meet all the requirements of paragraph 22 in the case of full gathering permits and paragraph 27 in the case of support worker permits.
18. A permit issued pursuant to this byelaw is not transferable.
19. Failure to produce, on the reasonable demand of a properly warranted Officer or a Constable, a valid permit when carrying out any activity for which a permit is required constitutes a breach of this byelaw.
20. Failure to notify the NWIFCA of any change of name or address during the period of the validity of a permit constitutes a breach of this byelaw.

Filing returns

21. The holder of a permit to gather cockles or mussels under this byelaw shall be required to file with the NWIFCA, no later than the 5th day of the month following, such information in regard to catches and fishing effort for the previous month, under the terms of such permit, as the NWIFCA may require. Nil returns may be required at the discretion of the NWIFCA. Permit holders not filing returns may have their permits suspended by the NWIFCA until returns have been filed.

New Permits

22. New full gathering permits shall be issued each year to a maximum of the first 10 applicants on the waiting list who have not held a permit pursuant to this byelaw in the previous year on production of :
1. evidence of the applicant's identity, containing photograph and signature, such as a valid passport; or a driving licence with photo;
 2. evidence of the applicant's address, such as a utility bill issued in the preceding 4 months of application or a current tenancy agreement;
 3. evidence of the applicant's National Insurance Number;
 4. 2 recent passport style photographs of the applicant signed on the back by the applicant;
 5. the applicant's valid Foreshore Gatherers Safety Training certificate or proof of the successful completion of an equivalent safety training course. Equivalence is determined at the discretion of the NWIFCA; and
 6. payment of the fee set in paragraph 14.

Transitional Arrangements

23. Holders of a permit for 2011/2012 issued under byelaw 5 of the NWIFCA (permit to fish for cockles (*Cerastoderma edule*) and mussels (*Mytilus edulis*)) shall be entitled to renewal of that permit under this byelaw 3 for the year 2012/2013.
24. Permits to fish for cockles and mussels for the year 2012/2013 shall be issued to 40 new applicants under the rules set out in Byelaw 5 of the NWIFCA (permit to fish for cockles (*Cerastoderma edule*) and mussels (*Mytilus edulis*)). No permits to fish for cockles and mussels shall be issued to new applicants under this byelaw 3 for the year 2012/2013.
25. Persons who provide evidence to the satisfaction of the NWIFCA that they have in the past held a permit issued under Cumbria Sea Fisheries Committee byelaw 21 (cockles – permit scheme) or 23 (mussels – permit scheme) and have in the past been engaged in commercial cockle or mussel fishing activities in a specified region or regions within the district formerly administered by the Cumbria Sea Fisheries Committee shall be eligible to apply to the NWIFCA for written authority to continue to fish in any fisheries within that region or regions. The obligations in this byelaw apply to a person fishing under a written authority but no fee is payable for the issue of that authority.
26. Persons who provide evidence to the satisfaction of the NWIFCA that they have in the past been engaged in commercial cockle or mussel fishing activities in a specified region or regions within the Dee Estuary shall be eligible to apply to the NWIFCA for written authority to continue to fish in any fisheries within that region or regions. The obligations in this byelaw apply to a person fishing under a written authority but no fee is payable for the issue of that authority.

Support worker permit

27. Commercial organisations trading in cockles and mussels may apply to the NWIFCA for permits for specified members of staff who they wish to perform ancillary trading activities within a cockle or mussel fishery which would constitute taking, removing or transporting cockles or mussels within or from a fishery including driving transport vehicles, transporting shellfish, weighing shellfish. The NWIFCA may issue up to a maximum of 6 support worker permits to each commercial organisation upon receipt of complete applications on production of:
- The names, contact details, national insurance numbers and proof of right to work of the members of staff. Proof of identity of those members of staff containing photograph and signature, such as a valid passport; or a driving licence with photo and proof of address of those members of staff, such as a recent utility bill;
 - Proof from the annual account or annual report of the organisation's trade in cockles or mussels;
 - Evidence that the organisation holds a Gangmaster Licensing Authority licence for shellfish operations if required;
 - Statement of the duties members of staff will perform in the shellfish fishery;
 - Two recent passport style photographs of the members of staff signed and dated on the back by the members of staff;
 - Valid Foreshore Gatherers Safety Training certificates for each of the members of staff or proof of the successful completion of an equivalent safety training course. Equivalence is decided at the discretion of the NWIFCA; and
 - Payment of the fee set in paragraph 14.

Use of boats

28. No holder of a permit pursuant to this byelaw shall use a boat to access shellfish beds in order to gather, remove or transport cockles or mussels without having their permit endorsed as a boat user by the NWIFCA. The NWIFCA will endorse permits as boat users on production of evidence that the holder has completed training of an equivalent standard to the courses provided by Seafish in: Sea Survival, First Aid, Fire Fighting and Health and Safety Awareness. Equivalence is decided at the discretion of NWIFCA.
29. No person shall be granted an endorsement as a boat user unless they have in their possession a serviceable life jacket and the boat they will use is equipped with a serviceable means of communication such as a VHF radio or mobile telephone, a serviceable means of navigation such as global positioning equipment and serviceable safety provision including marine distress flares and an adequate anchor with a means of effective deployment.

Revocation of Legacy Byelaws

30. Byelaw 5 (permit to fish for cockles (*Cerastoderma edule*) and mussels (*Mytilus edulis*)) made by the NWIFCA is revoked.
31. The following byelaws made by the North Western and North Wales Sea Fisheries Committee are revoked in so far as they apply within the District:
 - (a) byelaw 5 (permit to fish for cockles (*Cerastoderma edule*) and mussels (*Mytilus edulis*));
 - (b) byelaw 13 (cockles – minimum size);
 - (c) byelaw 14 (cockle fishery – seasonal closure);
 - (d) byelaw 15 (mussels – minimum size);
 - (e) byelaw 17 (redeposit of shellfish);
32. The following byelaws made by the Cumbria Sea Fisheries Committee are revoked in so far as they apply within the District:
 - (a) byelaw 5 (minimum removal size for mussels);
 - (b) byelaw 6 (minimum removal size for cockles);
 - (c) byelaw 12 (re-depositing of shellfish);
 - (d) byelaw 16 (cockles - seasonal closure).
 - (e) byelaw 21 (cockles - permit scheme)
 - (f) byelaw 22 (cockles - catch restrictions)
 - (g) byelaw 23 (mussels - permit scheme)
 - (h) byelaw 24 (mussels – catch restrictions)

Explanatory Note: (This note does not form part of the byelaw)

1. *The purpose of this byelaw is to control the exploitation of shellfish fisheries of cockles and mussels to ensure catches remain at a sustainable level and are obtained by sustainable fishing methods. As cockle and mussel fishing can be highly lucrative depending on price variations the NWIFCA has concluded a permit scheme is necessary to limit the number of fishermen and consequently the number of cockles gathered, along with the methods they use.*
2. *The byelaw prohibits the gathering of cockles or mussels for sale without a full gathering permit and prohibits the moving and transporting of cockles or mussels for sale below mean high water springs without a support worker permit (paragraphs 2 and 3). The full gathering permit also permits the holder to move and transport cockles or mussels below mean high water springs (definition of 'full gathering permit' in paragraph 1).*
3. *The byelaw prohibits the possession of articles to gather cockles or mussels in breach of the byelaw and specifies the fishing methods that may be used (paragraphs 4, 7 and 8).*
4. *The byelaw prohibits the possession of cockles or mussels gathered in breach of the byelaw (paragraph 5) and provides for their redeposit (paragraph 9).*
5. *The byelaw sets minimum sizes for cockles and mussels (paragraph 6).*
6. *The byelaw provides an exemption for a person who carries out an act which would otherwise constitute an offence if it is in accordance with a written permission issued by the NIFCA permitting that act for scientific, stocking or breeding purposes (paragraph 10).*
7. *The byelaw provides that a person does not need a permit to gather less than 5kg of cockles or mussels for personal consumption from areas that are not closed or in Commercial Shellfish Fisheries Areas (paragraph 11).*
8. *The byelaw provides for the annual closure of cockle fisheries throughout the District for a specified period (paragraph 12).*
9. *The byelaw provides for the designation of certain cockle beds as Commercial Shellfish Fisheries Areas as shown in the indicative maps (paragraph 13).*

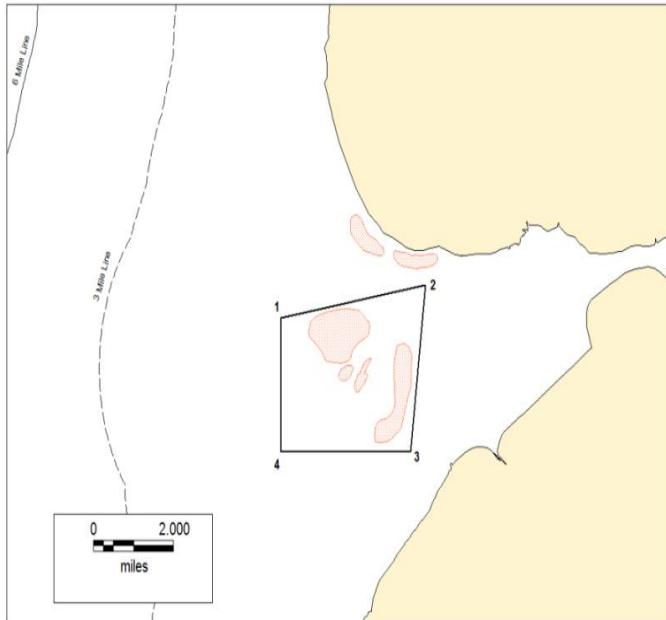


Fig 1. Ribble Commercial Fisheries Area with known historical cockle beds

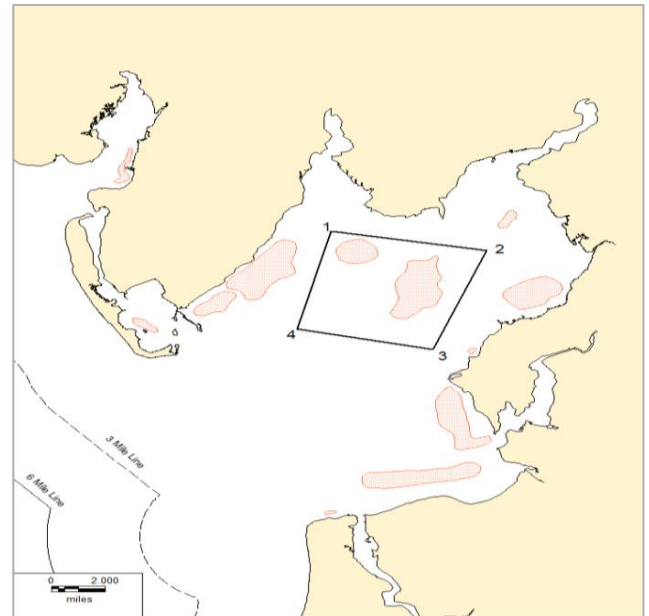


Fig 2. Morecambe Bay Commercial Fisheries Area with known historical cockle beds

10. The byelaw provides an application procedure for permits (paragraphs 14 to 20).
11. The byelaw provides for permit holders to file returns (paragraph 21).
12. The byelaw provides for the renewal of permits and the issue of new permits (paragraph 22).
13. The byelaw provides transitional arrangements for those with a right to gather shellfish under existing byelaws (paragraphs 23 to 26).
14. The byelaw provides for the issue of support worker permits (paragraph 27).
15. The byelaw provides that a full gathering permit must be endorsed if the holder uses a boat to access shellfish beds (paragraphs 28 and 29).
16. The byelaw provides for the revocation of specified byelaws that previously applied in the District (paragraphs 30, 31, and 32).

The North Western Inshore Fisheries and Conservation Authority and the North Western Inshore Fisheries and Conservation District are defined in articles 2, 3 and 4 of the North Western Inshore Fisheries and Conservation Order 2012 (S.I. 2010 No. 2200).

Byelaw confirmed 23.08.12

NWSFC BYELAW 12 - RESTRICTIONS ON FISHING FOR BIVALVE MOLLUSCAN SHELLFISH

This byelaw applies to that part of the District within a line drawn on the seaward side of the baselines 6 nautical miles from the baselines from which the breadth of the territorial sea adjacent to the United Kingdom is measured. For the purposes of this paragraph "the baselines" means the baselines as they existed at 25th January 1983 in accordance with the Territorial Waters Order in Council 1964 (1965 III p.6452A) as amended by the Territorial Waters (Amendment) Order in Council 1979 (1979 II p.2866).

1. No person shall fish for bivalve molluscan shellfish, except
 - a) by hand; or
 - b) in the case of cockles with a craam, rake, spade or jumbo; or
 - c) in the case of mussels with a rake or in that part of the District which is inshore of a line drawn North true from Penmaen-Bach Point (Latitude 53° 17.3' North, Longitude 03° 52.8' West) to the high water mark at Gt. Ormes Head with a rake, provided that the rake is no more than 1 metre in width and that

it is only used from a boat when the mussel bed has at least 1 metre of water over it; or (*applies only to Wales*)

- d) when using a dredge or other appliance where:
- (i) such dredge or appliance is of a pattern approved in writing by the Committee, the Committee having been advised by scientists who in the opinion of the Committee appear to be suitably qualified to comment on the conservation and environmental implications;
 - (ii) such use is in accordance with a written authorisation issued by the Committee and with any conditions subject to which that authorisation was issued, including prohibitions on use at particular times, or in particular areas and definitions of the fishing instrument. The Committee may also require as a condition that returns be made on the species and quantities of bivalve molluscan shellfish taken.
2. no person shall take or use on any mussel bed, any sledge or other contrivance which in the opinion of the Committee is likely to crush or loosen the mussels or loosen the foundations of the bed, without a written authorisation issued by the Committee.
3. no person shall dig in any mussel bed for any purpose without a written authorisation issued by the Committee.

Byelaw confirmed 21.01.98

NWSFC BYELAW 13A - COCKLES AND MUSSELS -MANAGEMENT OF THE FISHERY

1. The Committee, may close any cockle (*Cerastoderma edule*) or mussel (*Mytilis edulis*) bed or part of a bed for the purposes of fishery management or for controlling the rate of exploitation with regard to cockles and mussels.
2. Such closure shall be for a specified period and be undertaken only after the Joint Committee has consulted such persons or bodies appearing to them to represent local cockle or mussel fishermen, and provided the Committee has been advised by fishery scientists who appear to them to be suitably qualified, as to the need for such action.
3. No person shall, without the consent of the Committee, under the written authority in that behalf signed by the Clerk, remove, take or disturb any cockle or mussel from a bed or part of a bed of cockles or mussels which has been closed pursuant to this byelaw.

Byelaw confirmed 29.03.96

NWSFC BYELAW 16 – SHELL FISHERY -TEMPORARY CLOSURE

Where, in the opinion of the Committee, in any fishery, any bed or part of a bed of shellfish is so severely depleted as to require temporary closure in order to ensure recovery, or any bed or part of a bed contains mainly immature shellfish which in the interests of the protection and development of the fishery ought not to be disturbed for the time being, or any bed of transplanted shellfish ought not to be fished until it has become established, and where the bed, or part thereof, has been clearly defined in notices displayed in the vicinity prohibiting the removal or disturbance of the shellfish, no person shall, while the bed or part thereof is so defined, take away or otherwise disturb any shellfish therein.

Provided that no bed or part of a bed may remain closed under this byelaw at any one time for a longer period than one year, without review by the Committee.

Byelaw confirmed 14.09.73

Annex 8 – 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 haming 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