

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

NWIFCA-MNNWF-DE-LB-COCKLE Leasowe

18th August 2017 – revised 6th September 2017

Completed by: M.Knott

Site: Mersey Narrows and North Wirral Foreshore

Qualifying Feature(s):

SPA and Ramsar

A157. *Limosa lapponica*; Bar-tailed godwit (non-breeding)

A177. *Hydrocoloeus minutus*; Little gull (non-breeding)

A143. *Calidris canutus islandica*; Knot (non-breeding)

A193. *Sterna hirundo*; Common tern (non-breeding)

A193. *Sterna hirundo*; Common tern (breeding)

Waterbird assemblage

Site Sub-feature(s):

SPA and Ramsar

Supporting habitats: Intertidal rock, intertidal biogenic reef – mussel beds, intertidal sand and muddy sand, intertidal mud, intertidal mixed sediment, coastal lagoons, saltmarsh (Atlantic salt meadows and *Salicornia* and other annuals), freshwater and coastal grazing marsh, water column.

Generic sub-feature(s): Estuarine birds, Benthic feeding seabirds, Intertidal mud and sand, Coastal lagoons.

High Level Conservation Objectives:

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.

Site: Dee Estuary

European Designated Sites: UK0030131 Dee Estuary/Aber Dyfrdwy Special Area of Conservation (SAC)
UK9013011 The Dee Estuary Special Protection Area (SPA)
UK11082 The Dee Estuary Ramsar Site

European Marine Site: Dee Estuary

Only features within the English part of the EMS are assessed by NWIFCA.

Qualifying Feature(s):

SAC and Ramsar

H1130. Estuaries
H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats
H1210. Annual vegetation of drift lines (NON MARINE)
H1230. Vegetated sea cliffs of the Atlantic and Baltic coasts; Vegetated sea cliffs (NON MARINE)
H1310. *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand
H1330. Atlantic salt meadows (*Glaucopuccinellietalia maritimae*); Atlantic salt meadows
H2110. Embryonic shifting dunes; 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)
H2190. Humid dune slacks (NON MARINE)
S1095 *Petromyzon marinus* Sea lamprey
S1099 *Lampetra fluviatilis* River lamprey
S1395 *Petalophyllum ralfsii* Petalwort (NON MARINE)
Natterjack toad (NON MARINE)

SPA and Ramsar

A048 *Tadorna tadorna*; Common shelduck (Non-breeding)
A052 *Anas crecca*; Eurasian teal (Non-breeding)
A054 *Anas acuta*; Northern pintail (Non-breeding)
A130 *Haematopus ostralegus*; Eurasian oystercatcher (Non-breeding)
A141 *Pluvialis squatarola*; Grey plover (Non-breeding)
A143 *Calidris canutus*; Red knot (Non-breeding)
A149 *Calidris alpina alpina*; Dunlin (Non-breeding)
A156 *Limosa limosa islandica*; 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)
A191 *Sterna sandvicensis*; Sandwich tern (Non-breeding)
A193 *Sterna hirundo*; Common tern (Breeding)
A195 *Sterna albifrons*; Little tern (Breeding)
Waterbird assemblage

Site sub-feature(s)/Notable Communities:

SAC and Ramsar

Estuaries: Sub-tidal sediment communities, Intertidal hard substrate communities, Intertidal mudflats and sandflats communities, *Salicornia* and other annuals, *Sabellaria* sp. reef, Atlantic salt meadow, Annual vegetation of drift lines.

Intertidal mudflats and sandflats: Intertidal gravel and clean sand communities, Intertidal muddy sand communities, Intertidal mud communities.

Pioneer saltmarsh: Pioneer low marsh communities, ephemeral saltmarsh vegetation

Atlantic salt meadows: Low to mid marsh communities, mid to upper marsh communities, transitional communities

Annual vegetation of drift lines

River lamprey

Sea lamprey

Supporting habitat: *Natterjack toad* – coastal sand dunes

SPA and Ramsar

Estuary channels (subtidal sediment communities and the water column), Intertidal mudflats and sandflats, Saltmarsh communities, Shingle banks/ridges, Rockysore communities

Generic sub-feature(s):

Intertidal gravel and sand; Intertidal mud; Saltmarsh spp.; Intertidal mud and sand; annual vegetation of drift lines; river lamprey; sea lamprey; *Sabellaria* sp. reef, Estuarine fish community; Intertidal bedrock reef; Intertidal boulder and cobble reef; Estuarine birds; Surface feeding birds; Benthic feeding seabirds.

High Level Conservation Objectives:

Dee Estuary 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.

Dee 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.

European Marine Site: Liverpool Bay

European Designated Site: UK9020294 Liverpool Bay / Bae Lerpwl SPA

NB. Consultation on site extension took place in November 2016, and this assessment includes the geographical and feature extents of the proposed extension and treats the site as if the designation has occurred.

Qualifying Feature(s):

A001 *Gavia stellata* Red-throated diver (non-breeding)
A065 *Melanitta nigra* Common scoter (non-breeding)
A177. *Hydrocoloeus minutus*; Little gull (non-breeding)
A193 *Sterna hirundo*; Common tern (Breeding)
A195 *Sterna albifrons*; Little tern (Breeding)
Waterbird assemblage including *Mergus serrator* (red-breasted merganser) and *Phalacrocorax carbo* (cormorant).

Site sub-feature(s):

Sublitoral sand and mud, Water column

Generic sub-feature(s):

Pursuit and plunge diving birds, Benthic feeding seabirds, Sub-tidal muddy sand.

High Level Conservation Objectives:

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (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, 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.

Site: North Wirral Foreshore SSSI

North Wirral Foreshore is located between the outer Dee and Mersey Estuaries. This site is an area of intertidal sand and mudflats and embryonic saltmarsh which is of considerable importance as a feeding and roosting site for passage and wintering flocks of waders, wildfowl, terns and gulls.

The embryonic mixed saltmarsh is formed principally from common saltmarsh-grass *Puccinellia maritima* and glasswort *Salicornia europaea*, together with some common cord-grass *Spartina anglica*.

Whilst North Wirral Foreshore is not comparable with either the Dee Estuary or the Mersey Estuary in terms of the numbers and diversity of passage and wintering birds, it is still of great value for the populations of knot, dunlin and bar-tailed godwit it supports.

The wintering populations of knot (20,000+), bar-tailed godwit (2,000+) and dunlin (10,000+) are the most significant because their numbers regularly exceed 1% of their total British and Irish wintering populations. Redshank (1,000+), turnstone (500+) which feed on the rocky shore at Perch Rock and on the rocky sea walls, oystercatcher (500+), curlew, grey plover and black-tailed godwit are other waders which regularly roost here in relatively high numbers. Small populations of wildfowl, including common scoter, scaup and goldeneye, red-throated diver and great crested grebe also frequently winter on this 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 hand-gathering of cockles at Leasowe, Wirral, has a likely significant effect on the qualifying features of the Mersey Narrows and North Wirral Foreshore, Dee Estuary or Liverpool Bay European Sites, and on the basis of this assessment whether or not it can be concluded that hand-gathering of cockles at Leasowe will not have an adverse effect on the integrity of these European Sites.

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). The Dee Estuary SAC and SPA are cross boundary sites between England and Wales, this assessment only covers the English/NWIFCA area of the SAC, but all features and sub-features of the SPA.

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

Dee Estuary SAC - Reefs: All bottom towed gear is prohibited around the area of *Sabellaria alevolata* reef, Hilbre Island by NWIFCA Byelaw 6 – Protection for European Marine Site Features.

4. Information about the fishing activities within the site

Hand-gathering of cockles has been a long-standing traditional fishery within the NWIFCA District as well as other fisheries around the UK. 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 (defined in NWIFCA Byelaw 3) 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, if not swiftly predated on by the birds that follow the fishermen. Fishermen access the beds by ATVs and tractors due to the high risk of getting stuck in soft sediment. Cockles are transported from the bed to the buyers where tonning up (loading cockles into tonne bags) occurs and the live cockle is put on to articulated lorries carrying 20 tonnes each, and sent directly off to Europe or to processing plants – their immediate destination depends on their size and the classification of the bed (see below).

The North Wirral Foreshore (Leasowe) cockle fishery is highly variable in its production. Past records show this 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 2009 - 11 had been preceded by a long period of low or non-existing stocks. The fishery was heavily fished in 2010-11 leaving low densities on the bed.

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 fishery there have been no commercial fisheries in this site and indeed all beds have been closed to even the taking of a small amount (5kg per person per day) for personal consumption. The current stock is the result of a spatfall in autumn 2016, which was concentrated in a soft muddy area between the breakwaters at Gunsight, and which has now grown rapidly, and to some extent thinned out and spread further across the bed.

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 a vastly improved management of what was sometimes described as an itinerant and unruly fishing community. 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.

The number of permit holders under these regulations has been greatly reduced. 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.

Multi-Agency Liaison 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 on the North Wirral coast can be found on the Food Standards Agency website (www.food.gov.uk).

Biosecurity

The North Wirral coastline and Dee Estuary are currently shellfish disease free and the Authority considers it a priority to maintain this status. 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 invasive species (INNS). The NWIFCA science team will monitor this fishery for any INNS.

There have been records of a Chinese Mitten Crab population having become established in the Dee Estuary, particularly in the upper reaches along the muddy banks.

Current Status of Stocks and Proposed Fishery

To inform this HRA a survey was carried out on 11th August 2017, results of which are given below.

Thirty-eight stations were sampled from a grid 250m apart with extra points added between some points. The bed can be split into two distinct areas, one area high up the beach and relatively muddy that has a high density of cockle, and an outer area where the cockle has spread out from the dense and is in lower densities. This outer area consists of sand waves with muddy patches in between and the majority of the cockle lies in the muddy patches. A high majority of the cockle is size and fishable. The undersize stock consists of a large proportion that will reach size soon.

Means

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

Dense Area

Mean number of size cockle: 396 per m² (min. 8, max 1430)
Mean number of undersize cockle: 102 per m² (min 0, max 510)

Outer Area

Mean number of size cockle: 34 per m² (min. 0, max 266)
Mean number of undersize cockle: 3 per m² (min 0, max 30)

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 (Size cockle defined as cockle \geq 27mm shell length).

	Area (ha)	Size Cockle (tonnes)	Undersize Cockle (tonnes)
Dense Area	77.24	3007.9	271.9
Outer Area	135.20	515.6	20.9
<u>Total</u>	<u>212.4</u>	<u>3523.5</u>	<u>292.8</u>

Percentage of cockle in 20 – 30mm size range (from sub-sample of 100 cockles) just under size (ie. 24 – 26.99mm) = 32%.



Fig. 1. Position of Leasowe cockle bed August 2017

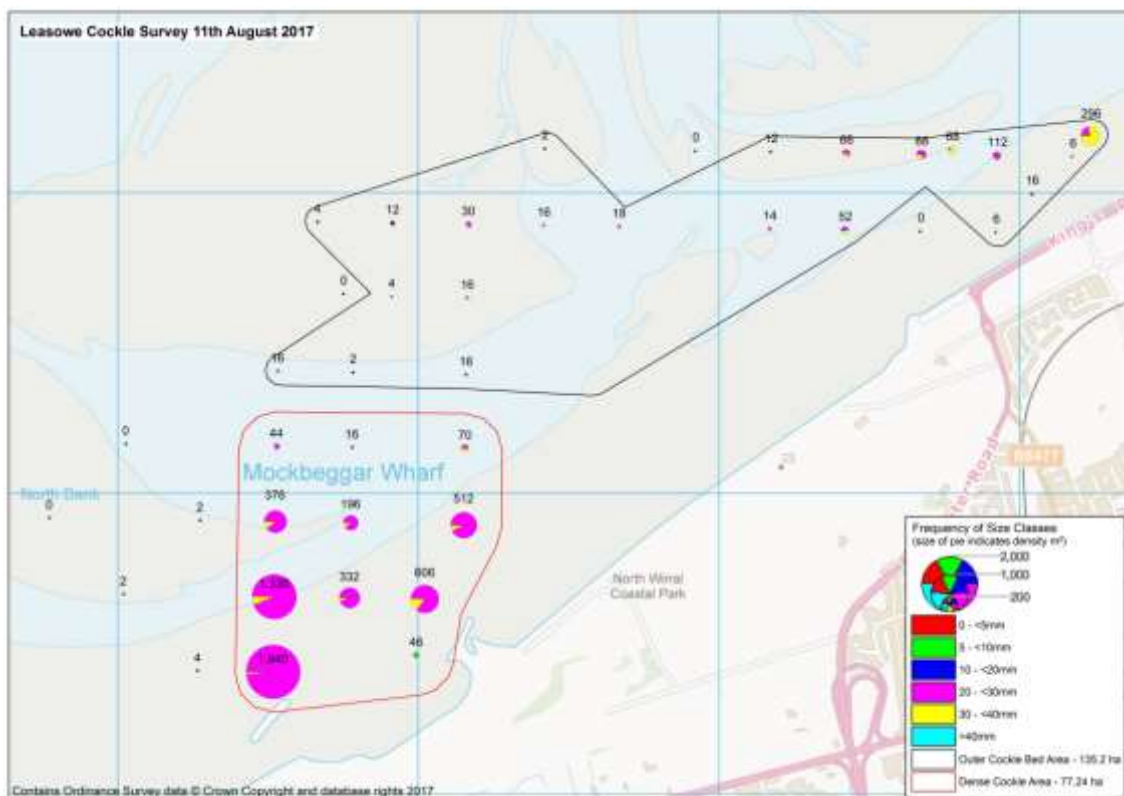
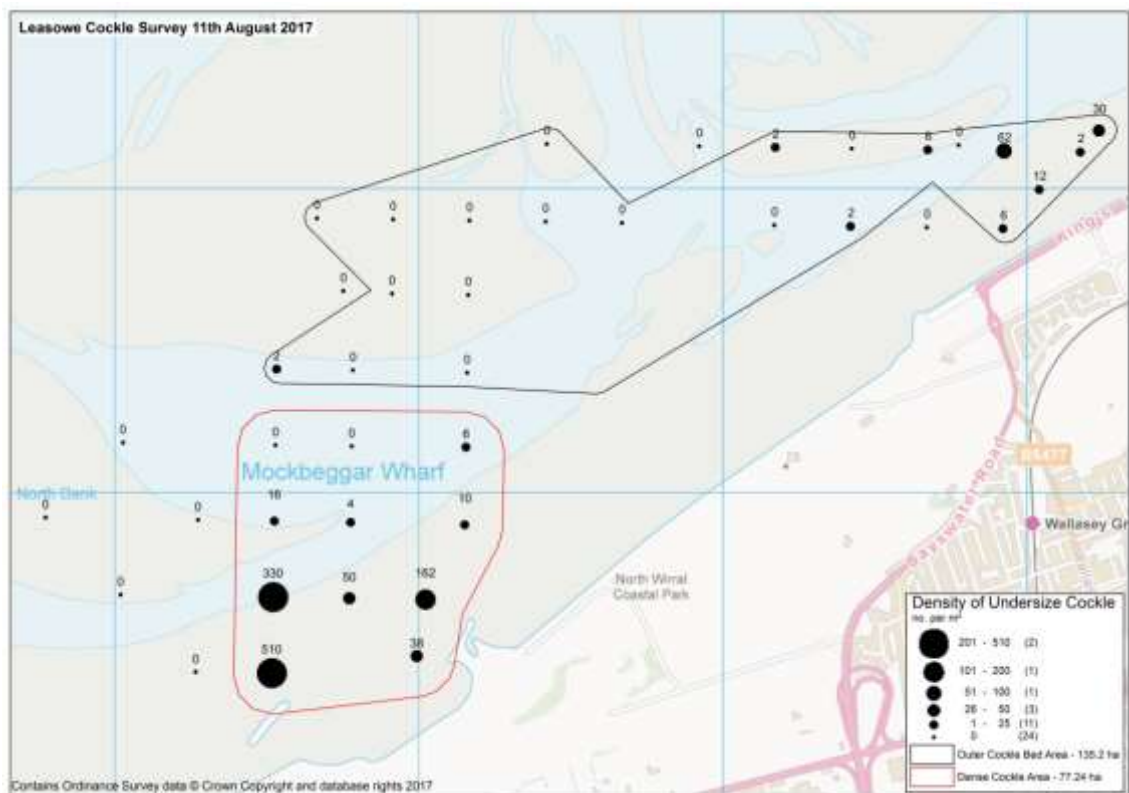
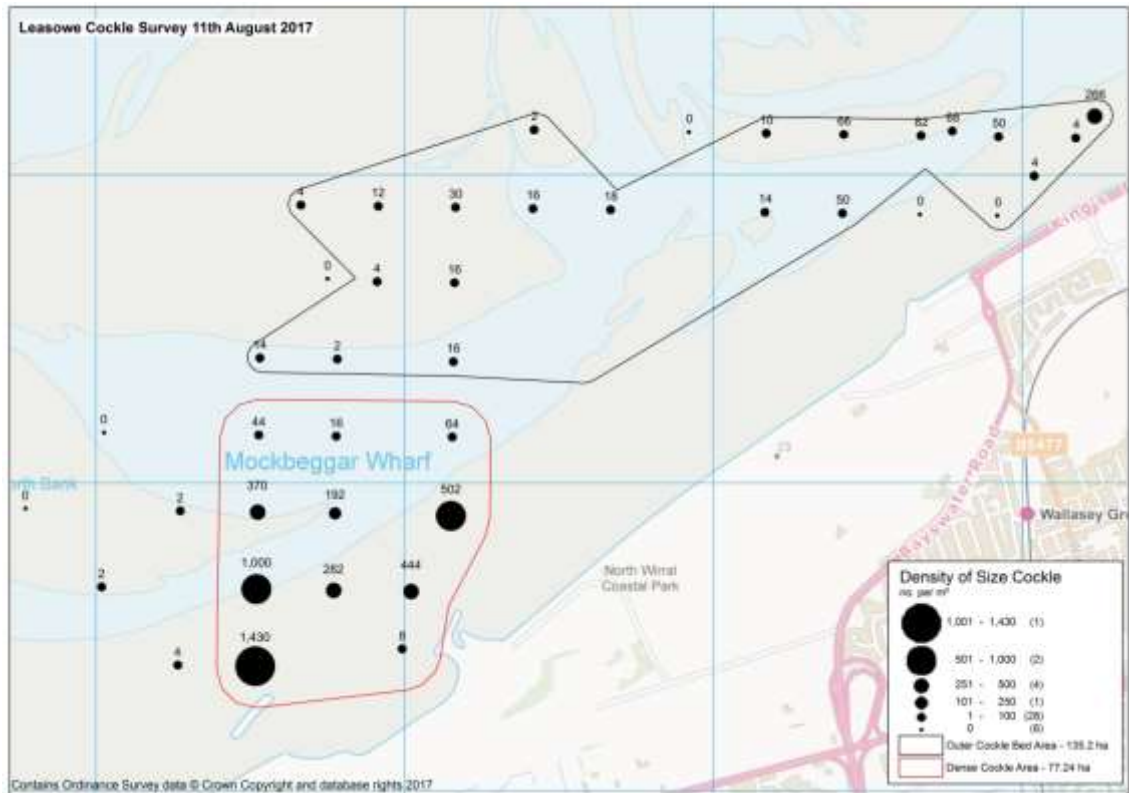


Fig. 2. Frequency of Size Classes Leasowe cockle stock 11th August 2017



Concurrent Cockle Fishery in the Dee Estuary

Natural Resources Wales manage a regular cockle fishery in the Dee under Regulating Order (2008). The Dee is thought to be a self-seeding fishery. Fifty-two Licences are in use. The fishery is open 1st July to 31st December.

The total bed estimate from April/May 2017 surveys gave 9396.48 tonnes (which incorporates estimated growth). In their HRA NRW assigned 5600 tonnes for bird food requirements, leaving a TAC of 3796 tonnes, and a daily quota of 500 kg/fisherman. Generally the fishery peters out once it has become un-economical to fish at around 39 size cockle per m².

The Proposal

The proposal is for a hand-gathered cockle fishery at Leasowe, on the North Wirral coast, to open following the end of the closed season on 1st September. The fishery will operate on most days on both tides, due to the position of the stock high on the beach.

After an initial flurry of high interest by most Byelaw 3 permit holders it is expected that effort levels will reduce to around 40 active fishermen, as there are other active cockle fisheries in other parts of the UK open concurrently. These include Pilling and Flookburgh / Leven Sands in Morecambe Bay, the Three Rivers in South Wales and the Dee Cockle Order. The Leasowe fishery holds a substantial commercial stock but fishers will only fish there if it is economically viable for them, rather than fishing closer to home. Twelve Byelaw 3 permit holders are also Dee cockle licensees, and will most likely only work the Leasowe bed on days when the Dee is closed or bad weather or tides preclude taking the boats out (it is a boat-based fishery).

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 Mersey Narrows and North Wirral Foreshore SPA and Ramsar Sites Advice package have been screened out, other than the pressures in the following table, due to the nature of the fishing activity.

Qualifying Feature and Supporting Habitats	Sub-feature	Potential pressure(s)	Sensitivity	Potential for Likely Significant Effect?	Justification and evidence
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³ Managing Natura 2000 sites: http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

H1130. Estuaries	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.
H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats	Intertidal sand and muddy sand.	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.
Intertidal mud		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.
Intertidal mudflats and sandflats communities		Litter	Sensitive	Yes	Take 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	Take to AA
SPA Features – including Ramsar	Supporting Habitats assessed above				
A048 <i>Tadorna tadorna</i> ; Common shelduck		Removal of target species (cockles)	Some species sensitive, others screened out	Yes	Species sensitive to removal of cockles:
A052 <i>Anas creca</i> ; Eurasian teal					
A054 <i>Anas acuta</i> ; Northern pintail					Eurasian oystercatcher Red knot Common scoter
A130 <i>Haematopus ostralegus</i> ; Eurasian oystercatcher					
A065 <i>Melanitta nigra</i> Common scoter (non-breeding)		Removal of non-target species	Sensitive	No	Highly selective fishery. No by-catch or discards of non-target species.
A141 <i>Pluvialis squatarola</i> ; Grey plover					
A143 <i>Calidris canutus</i> Red knot (non-breeding)					
A149 <i>Calidris alpina alpina</i> ; Dunlin		Visual disturbance	Sensitive	Yes – potential for all species	
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					
A177 <i>Hydrocoloeus minutus</i> ; Little gull (non-breeding)					
A191 <i>Sterna sandvicensis</i> ; Sandwich tern (Non breeding)					
A193 <i>Sterna hirundo</i> ; Common tern (Breeding)					
A195 <i>Sterna albifrons</i> ; Little tern (Breeding)					
A001 <i>Gavia stellata</i> Red-throated diver (non-breeding)					
Waterbird assemblage inc. Mergus serrator (red-breasted merganser) and Phalacrocorax carbo (cormorant).					

Is the potential scale or magnitude of any effect likely to be significant? ⁴	Alone	OR In-combination ⁵
	Yes Comments :	Yes Comments : These activities also occur at the site: <ul style="list-style-type: none"> • Beam trawl (whitefish) • Beam Trawl (Shrimp) • Pots and Creels • Light otter trawl • Fixed nets (gill, trammel, entangling) • Longlines • Shrimp push-net • Fyke and stakenet • Hand working (cockles – Dee Estuary) <p>In combination effects for activities other than cockle fishing in the Dee will be assessed when all initial TLSEs for a site are completed.</p>
Have NE been consulted on this LSE test? If yes, what was NE's advice?	Yes – see below	

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 SAC Features / sub-features / SPA supporting habitats

- Intertidal sand and muddy sand
- Intertidal mudflats and sandflats communities

6.1.1 Potential Impacts

- i) Litter
- ii) Removal of target species

6.1.2 Exposure

- i) 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 themselves. Items have included food and drink receptacles, cockle net bags and sacks. 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 could change the invertebrate community composition of the sandbanks.

6.2 SPA and Ramsar Features

- SPA and Ramsar birds

6.2.1 Potential Impacts

- i) Removal of target species (cockles) for Eurasian oystercatcher, Red knot, and Common Scoter.
- ii) Visual disturbance to all species within vicinity of fishery, on the saltmarsh access route and over the sandbanks.

6.2.2 Exposure

- i) Cockles form part of an important prey resource for oystercatchers, knot and Common scoter. 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.

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).

Common scoter

The following information is taken from the Liverpool Bay SPA Advice under Regulation 35(3) of The Conservation of Habitats and Species Regulations 2010 (as amended) and Advice on Operations.

Common scoters feed by diving, usually synchronously in flocks, and feed on cockles, clams, other bivalves, and a variety of other molluscs, crustaceans, and worms. Kaiser *et al.* (2002) conducted a review of the literature concerning the diet of common scoter. This revealed that in each of eight quantitative studies, the percentage value for the occurrence of molluscs in their diet exceeded 90% and that for bivalves exceeded 88%. They are, however, opportunistic in their diet and will often exploit whatever mollusc happens to be the most locally abundant, suitable prey resource.

Common scoters are present in Liverpool Bay/Bae Lerpwl from July to May, with the most significant numbers present during August to March. The observed distribution of common scoter is strongly associated with the distribution of its benthic prey species (Kaiser *et al.* 2006). Prey preference is bivalve molluscs of size < 40mm.

The over-wintering common scoter of Liverpool Bay tends to aggregate on water depth range of 2-20m and a mean depth of 10-12m (Kaiser *et al.* 2006). The most important areas of Liverpool Bay/Bae Lerpwl for the common scoter are Shell Flat to Formby (off Blackpool), Colwyn Bay and Conwy Bay (CCW, 2006).

The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. Poor winter body condition may negatively affect a bird's ability to move, forage, and survive whilst present on the SPA, and subsequently affect its ability to migrate and reproduce whilst in its summer breeding grounds. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population.

- ii) 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.

Common scoter are an extremely shy species. In a review of the sensitivity of 26 species of "seabird" to the development of offshore wind-farms, Garthe & Huppop (2004) considered that common scoter had the highest vulnerability score in relation to disturbance by ship and helicopter traffic. Kaiser *et al.* (2006) noted that large flocks of the birds were observed being put to flight at a distance of 2km from a 35m vessel, though smaller flocks were less sensitive and put to flight at a distance of 1km (Kaiser *et al.* 2006). Larger vessels would be expected to have an even greater disturbance distance (Kaiser *et al.* 2006). Kaiser *et al.*, (2006) have shown that common scoter were observed in lowest numbers or were absent from areas of Liverpool Bay/Bae Lerpwl in which anthropogenic disturbance (shipping activity) was relatively intense, even when these areas held a high prey biomass (Liverpool Bay SPA Advice under Regulation 35(3) of The Conservation of Habitats and Species Regulations 2010 (as amended) and Advice on Operations).

7 Exposure to Pressures

7.1 SAC Features

7.1.1 Litter

As discussed in the multi-agency planning meetings the local authority will work with buyers to resource and provide skip facilities for disposal of fishery rubbish. Littering levels will be monitored, and fishers encouraged to act responsibly through the Code of Conduct for Intertidal Shellfisheries (Annex 8). NWIFCA will liaise closely with local authority, buyers and Natural England for the early detection of any problems.

After an initial flurry of high interest by most Byelaw 3 permit holders it is expected that effort levels will reduce to around 40 active fishermen, as there are other active cockle fisheries in other parts of the UK open concurrently. These include Pilling and Flookburgh / Leven Sands in Morecambe Bay, the Three Rivers in South Wales and the Dee Cockle Order. The Leasowe fishery holds a substantial commercial stock but fishers will only fish there if it is economically viable for them, rather than fishing closer to home. Twelve Byelaw 3 permit holders are also Dee cockle licensees, and will most likely only work the Leasowe bed on days when the Dee is closed or bad weather or tides preclude taking the boats out (it is a boat-based fishery).

Consequently the NWIFCA is confident that littering will be minimal and controlled and that the gathering of cockles by hand from the bed at Leasowe will have no risk of adverse effect on the integrity or conservation status of the features of the Mersey Narrows and North Wirral Foreshore SPA, the Dee Estuary SAC and SPA, the Liverpool Bay SPA and the North Wirral Foreshore SSSI.

7.1.2 Removal of Target Species – community composition

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 shoreline. 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.

As a precautionary approach setting of a TAC of 2632 tonnes is proposed – see below for justification of this figure.

Consequently the NWIFCA is confident that removal of target species and changes to community composition will not differ greatly from natural variation and that by setting a TAC as a precautionary approach, the gathering of cockles by hand from the bed at Leasowe will have no risk of adverse effect on the integrity or conservation status of the features of the Mersey Narrows and North Wirral Foreshore SPA, the Dee Estuary SAC and SPA, the Liverpool Bay SPA and the North Wirral Foreshore SSSI.

7.2 SPA Features

7.2.1 Removal of Target Species – bird prey resource – oystercatcher, knot and common scoter.

The size range of the cockles on this bed is predominantly outside of the size preference for knot, and the intertidal area is outside of the important feeding areas for common scoter, which are further offshore and away from the busy shipping channels into the Mersey.

Observations provide evidence that oystercatcher are utilising the cockle resource at Leasowe (NWIFCA survey, 11th August 2017). This is not habitual as cockle stocks are highly variable on this

bed with many years of minimal stock and no recruitment. In most years there is a regular cockle stock and fishery in the Dee Estuary and oystercatcher are likely to be more reliant on this stock for feeding, along with the mussel beds in the Dee. The management of the Dee Cockle Regulating Order for 2017 has set a TAC that leaves a stock of 5600 tonnes in the Dee Estuary at the end of December 2017, which according to Natural Resources Wales (NRW), the managers of that fishery, is sufficient for the number of birds for the winter period.

Furthermore a small alternative area of undisturbed cockle ground of around 10 ha that holds a further resource of size cockles (2 – 20 per m²) lies 14.5km southwest of the main Leasowe cockle area.

There is also a stock of mussel (size range 40-42 mm) of 3000 tonnes biomass (industry estimate) in the Dee Estuary which will not be fished during the cockle fishery opening – these beds are situated at West Kirby and due south from Thurston slipway which will serve as alternative bird prey resource, along with low density cockle beds within the Dee Cockle Order area.

As a precautionary approach setting of a TAC of 2632 tonnes is proposed – see below for justification of this figure.

Consequently the NWIFCA is confident that removal of target species and changes to community composition will not differ greatly from natural variation and that by setting a TAC as a precautionary approach, the gathering of cockles by hand from the bed at Leasowe will have no risk of adverse effect on the integrity or conservation status of the features of the Mersey Narrows and North Wirral Foreshore SPA, the Dee Estuary SAC and SPA, the Liverpool Bay SPA and the North Wirral Foreshore SSSI.

7.2.2 Visual Disturbance

The fishery will open on 1st September and run until 30th April (start of closed season) unless the TAC has been reached or fishing ceases due to economic viability before then.

There are a number of birds that utilise the Leasowe and Hoylake areas, mainly for intertidal feeding. Full information on bird usage from the BTO Report (Still et al. 2014) has been used to inform this assessment, with mapping from that report provided at Annex 10.

Waders utilising the intertidal sand and mudflats for feeding and the shoreline for roosting include shelduck (neighbouring Hoylake), oystercatcher, ringed plover, grey plover, lapwing, turnstone, knot, sanderling, dunlin, redshank, bar-tailed godwit, curlew and black-headed gull and all have been considered for disturbance impacts from the fishery.

Roost sites – oystercatcher and turnstone roost sites have been identified along the shoreline at the top of the Leasowe beach particularly around the physical structures of the breakwaters; while lapwing, dunlin, black-tailed godwits and curlew on the fields behind the shoreline, and redshank roosts in both.

Low-tide feeding Distributions – a low number of teal, cormorants, ringed plover, sanderling, curlew, and high numbers of oystercatcher, grey plover, lapwing, turnstone, knot, dunlin, redshank and bar-tailed godwit are recorded feeding in the intertidal area at Leasowe.

From the 5 year mean densities it can be seen that Hoylake (neighbouring Leasowe) has higher mean densities of grey plover, knot, sanderling, dunlin, curlew and shelduck and is presumably more important to these species than Leasowe; whereas Leasowe is frequented more by oystercatcher, turnstone, redshank and black-headed gulls. This is interesting considering there was a mass recruitment of cockles to the Leasowe bed in 2009-10, with cockles of a size preference to knot.

Data from BTO report (Still et al. 2014) 5 year mean densities for Leasowe Bay

Species	1997/98 – 2001/02	2002/03 – 2006/07	2007/08 – 2011/12
Cormorant	10	11	7
Oystercatcher	608	895	922
Ringed Plover	28	56	20
Grey Plover	10	64	72
Lapwing	52	41	94
Turnstone	422	259	52
Knot	1096	2328	788
Sanderling	43	68	54
Dunlin	5238	4304	2230
Redshank	671	920	405
Bar-tailed Godwit	15	2	2
Curlew	0	0	1
Black-headed gulls	n/a	1887	1690

5 year mean densities for Hoylake

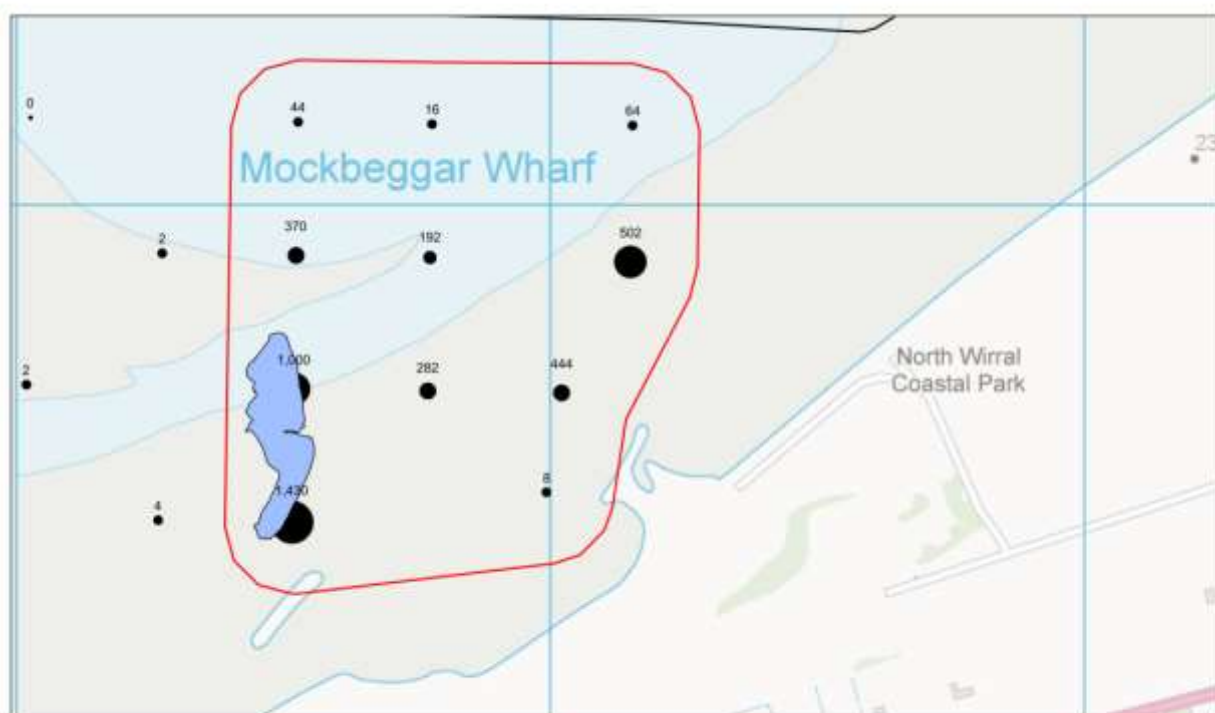
Species	1997/98 – 2001/02	2002/03 – 2006/07	2007/08 – 2011/12
Cormorant	11	35	113
Oystercatcher	501	2774	2051
Ringed Plover	76	36	31
Grey Plover	384	637	870
Lapwing	98	55	84
Turnstone	26	30	17
Knot	14000	15400	8844
Sanderling	134	268	359
Dunlin	8600	9100	4945
Redshank	311	340	213
Bar-tailed Godwit	380	290	118
Curlew	56	120	196
Black-headed gulls	218	231	94
Shelduck	20	58	185

The fishery is spatially restricted to an overall area of 202 ha in the north of the Mersey Narrows and North Wirral Foreshore SPA which constitutes 9.7% of the area of the SPA, and 0.013% of the Dee Estuary SAC. Effort is expected to be low after the first few days of the fishery being opened. The majority of the cockle is situated in the dense area around the breakwaters (off of Gunsight car park) which is in a upper level on the beach, with maximum distance from the prom of 0.75km. The outer area of less dense cockle extends out to 1.2km from the prom, with the densest areas of this area, and therefore the most likely to be fished, lying just 0.2 km from the prom.

NB. Observations on the first two days of the fishery (1st and 2nd September 2017) showed that fishing effort (50 – 60 fishers) was confined to the dense area between the breakwater and specifically to the left of channel as it ebbed. NWIFCA scientists used handheld GPS for tracking around the group of fishermen which then provided the map below showing the extent of the activity, which amounted to 2.78 ha. Close observations were made of the bird behaviour as the tide ebbed off and as fishing activity occurred. The main species present were oystercatchers and gulls. Both species lingered in the shallow waters as the tide ebbed but did not appear to be feeding. As

the fishermen started working around the edge of the channel the oystercatchers generally followed the low water line down the beach as it ebbed then returned to feed on more inshore areas. The gulls stayed close to the cockle gathering and took advantage of feeding on the cockles left on the surface after the fishers had jumboed and brought the cockles to the surface. The oystercatchers continued to feed around the fishermen but at a distance of around 30m, again clearly probing in the sand and mud, presumably for cockles. Photographic evidence of the restricted disturbance impact is provided below.

Gatherers accessed the beach from around 2 hours before low water until around 2 hours after (3m tides). When larger spring tides occur they will likely work for longer periods as the bed will ebb off sooner and flood back later. Gatherers mainly remained fishing while support workers (six) ferried to and fro with quad bikes carrying the sacks of cockles back to the designated loading area (Annex 9). There were no deviations from the most direct route to the fishing area and back to the loading area, and therefore disturbance was limited to a small area, which was also being used by dog walkers, horse-riders and families over that weekend.



Leasowe Cockle Fishery Activity 2nd September 2017.
Fifty-five cockle gatherers working in the dense area of cockles covering an area of approx. 2.78 ha.



Birds in the channel as it ebbed off – 1st September 2017



Gulls close to the cockle fishing activity - Leasowe 1st September 2017



Gulls close to the cockle fishing activity - Leasowe 1st September 2017



The full extent of the cockle fishing activity Leasowe 2nd September 2017 – total 2.78 ha.



Gulls feeding close to cockle fishing activity Leasowe 1st September 2017



Oystercatchers feeding on the sands adjacent to the cockle fishing activity in front of Gunsight car park
Leasowe 1st September 2017

The beach is regularly used by dog walkers and birds will be habituated to a certain degree to disturbance.

Observations of oystercatcher behaviour during a cockle survey on 11th August 2017, when six quad bikes were traversing the beach, showed that oystercatchers were displaced when the quads were around 20m from the birds, who then quickly re-settled back nearby and resumed feeding.

Furthermore a small alternative area of undisturbed cockle ground of around 10 ha that holds a further resource of size cockles (2 – 20 per m²) lies 14.5km southwest of the main Leasowe cockle area.

Access has been restricted by Wirral Borough Council to one route, with parking and tonning up occurring in that car park / extended field and not on the beach. Details of parking and access are given in Annex 9.

Taking these factors into account it is unlikely that visual disturbance will have a significant effect on the extent, distribution, structure or function of the features in the SPA(s).

Consequently the NWIFCA is confident that the gathering of the cockles by hand from the bed at Leasowe will have no risk of adverse effect on the integrity or conservation status of the features of the Mersey Narrows and North Wirral Foreshore SPA, the Dee Estuary SAC and SPA, the Liverpool Bay SPA and the North Wirral Foreshore SSSI.

8 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) Access to and from the fishery will be via one defined access route with tonning up occurring away from the beach (stipulation of the local authority);
- b) 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);
- c) Rigorous enforcement of the MLS;
- d) **Setting of a TAC of 2632 tonnes** which is equivalent to minimum density of 50 per m² on the dense patch;
- e) Closely monitoring the landings through:
 - i. Daily IFCO reporting of numbers fishing and estimates of quantities removed;
 - ii. Monthly landings returns from Byelaw 3 permit holders (required under byelaw);
- f) An alert to re-survey once 2408 tonnes has been removed which equates to 80% of the stock from the dense patch to assess accuracy of the calculations and provide an early indication of when the TAC is being reached.
- g) The TAC would leave an estimated 891 tonnes of size cockle and 293 tonnes of undersize cockle on the bed as a precautionary approach.
- h) The fishery will be temporarily suspended if local temperatures (as recorded by nearest Met Office data) are below 0°C for five consecutive days and remain so until temperatures reach above 0°C.

Other Measures in Place

Discussions have also been on-going with other agencies about the provision of litter disposal facilities, and NWIFCA officers and others will be on hand to monitor levels of littering and fuel spills.

It is anticipated that on the first day that the fishery is open the majority of permit holders will attend, and NWIFCA will work closely with other enforcement agencies to ensure full compliance with the conditions. After the first day, once industry realise the fishery is limited, some sectors may chose not to incur the costs of travelling and overnight accommodation for low levels of fishing, and again it is anticipated that effort will reduce.

NWIFCA enforcement officers will use intelligence and contacts with fellow enforcement agencies to pursue any suspicions of non-permitted or illegal cockling activity.

8a How the TAC has been Calculated

The precautionary approach has been integral to setting the TAC. In calculating it only the quantity of size cockle in the dense area around the breakwaters (77.24ha) has been considered:

Size cockle biomass 3007.9 tonnes with 396 per m² mean density.

Undersize cockle biomass 271.9 tonnes with 102 per m² mean density.

A minimum 50 per m² density of size cockle on the dense area has been used in setting the TAC.

The outer area of 135 ha holds cockles of both size (515.6 tonnes, 34 per m² mean density) and undersize (20.9 tonnes, 3 per m² mean density). This area will get fished, but less intensively and densities here are naturally lower here. By not including this area in the calculations this reduces the overall TAC and errs on the precautionary side by leaving a greater buffer, and less disturbed area as bird food resource.

Counting the dense area as 3008 tonnes size cockle and 400 per m² mean density:

-> minimum mean density of 50 per m² equates to 12.5% of the stock = 376 tonnes.

$3008 - 376 \text{ tonnes} = 2632 = \text{TAC}$

In order to provide confidence in the TAC and ability to recognise when it has been reached (acknowledging potential limitations in landings returns and IFCO records of landings, plus the consequence of natural mortalities / predation) an alert has been set that when the dense stock is fished down to 80 per m² ie. 20% of stock remaining = 2408 tonnes, the bed is resurveyed. This will enable officers to report on biomass and densities remaining and if necessary look to close the bed earlier.

Once the TAC has been reached calculations leave 376 tonnes size and 272 tonnes undersize in the dense area, and 515 tonnes size and 21 tonnes undersize in the outer area

which gives an overall biomass of 1184 tonnes (891 tonnes size; 293 tonnes undersize).

In reality the distribution of the cockle may be minimally different but the biomass remaining will be accurate.

Table 2: Summary of Impacts

Feature/Sub feature(s)	Conservation Objective	Potential pressure⁶ (such as abrasion, disturbance) exerted by gear type(s)⁷	Potential ecological impacts of pressure exerted by the activity/activities on the feature⁸ <i>(reference to conservation objectives)</i>	Level of exposure⁹ of feature to pressure	Mitigation measures¹⁰
Intertidal sand and muddy sand, (Estuaries, Mudflats and sandflats not covered by seawater at low tide, Large shallow inlets and bays, SPA supporting habitats)	Maintain or restore the extent, distribution structure or function of the feature.	Litter 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.	<p>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.</p> <p>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.</p> <p>With management as described, littering and removal of target species is unlikely to have a significant effect on the extent, distribution, structure or function of the features in the SAC.</p>	As detailed in 6.1.1, 6.1.2 and 7.1.1 above. As detailed in 6.1.1, 6.1.2 and 7.1.2 above.
Eurasian oystercatcher, Red knot, Common scoter	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)	Removal of food source / prey items has the potential to affect condition, productivity and survival of species.	<p>The level of exposure depends on time of year of fishery, availability of alternative food resources, stock status and level of effort.</p> <p>Size range of cockles is outside of size preference for knot. Area is outside of important feeding area for common scoter.</p>	As detailed in 6.2.1, 6.2.2 and 7.2.1 above.

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>Observations provide evidence that oystercatcher are utilising the cockle resource at Leasowe. This is not habitual as cockle stocks are highly variable. A small alternative area of undisturbed cockle ground that hold a further resource of size cockles lies 14.5km southwest of the main Leasowe cockle area. Under the Dee Cockle Regulating Order 2017 management a stock of 5600 tonnes will remain in the Dee Estuary end of December 2017.</p> <p>Further a TAC of 2632 tonnes has been set for this fishery to ensure precautionary approach and stock of mature adult and undersize cockle remains.</p> <p>With management and mitigation as described, removal of target species is as bird prey resource is unlikely to have a significant effect on the extent, distribution, structure or function of the features in the SPA(s).</p>	
<p>A048 <i>Tadorna tadorna</i>; Common shelduck (Non-breeding)</p> <p>A052 <i>Anas crecca</i>; Eurasian teal (Non-breeding)</p> <p>A054 <i>Anas acuta</i>; Northern pintail (Non-breeding)</p> <p>A130 <i>Haematopus ostralegus</i>; Eurasian oystercatcher (Non-breeding)</p> <p>A141 <i>Pluvialis squatarola</i>; Grey plover (Non-breeding)</p> <p>A143 <i>Calidris canutus</i>; Red knot (Non-breeding)</p> <p>A149 <i>Calidris alpina alpina</i>; Dunlin (Non-breeding)</p> <p>A156 <i>Limosa limosa islandica</i>; Black-tailed godwit (Non-breeding)</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 for tractors, quads and fishermen to disturb bird species that spend a proportion of their time feeding in the intertidal areas of the North Wirral Foreshore.</p> <p>The disturbance has the potential to force the species of birds to exert extra energy, and or displace them from the preferred feeding ground, breeding or roost site.</p> <p>Visual disturbance has the potential to affect condition, productivity and survival of species.</p>	<p>Not key season for Common tern.</p> <p>Fishery is spatially restricted to 202ha in north of the North Wirral Foreshore (9.7% of MNNWF SPA and 0.013% of Dee SAC). Effort is expected to be low after first few days of fishery being opened. The beach is regularly used by dog walkers and birds will be habituated to a certain degree to disturbance.</p> <p>Access is restricted to one route, and parking and tonning up will not occur on the beach.</p> <p>Taking these factors into account it is unlikely that visual disturbance will have a significant effect on the extent, distribution, structure or function of the features in the SPA(s).</p>	As detailed in 6.2.1, 6.2.2 and 7.2.2 above.

<p>A157 <i>Limosa lapponica</i>; Bar-tailed godwit (Non-breeding)</p> <p>A160 <i>Numenius arquata</i>; Eurasian curlew (Non-breeding)</p> <p>A162 <i>Tringa totanus</i>; Common redshank (Non-breeding)</p> <p>A191 <i>Sterna sandvicensis</i>; Sandwich tern (Non-breeding)</p> <p>A193 <i>Sterna hirundo</i>; Common tern (Breeding)</p> <p>A195 <i>Sterna albifrons</i>; Little tern (Breeding)</p> <p>A177. <i>Hydrocoloeus minutus</i>; Little gull (non-breeding)</p> <p>A001 <i>Gavia stellata</i> Red-throated diver (non-breeding)</p> <p>A065 <i>Melanitta nigra</i> Common scoter (non-breeding)</p> <p>Waterbird assemblage including <i>Mergus serrator</i> (red-breasted merganser) and <i>Phalacrocorax carbo</i> (cormorant).</p>					
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9. 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 Leasowe from 1st September 2017 will not have an adverse effect on the integrity of the European Site.

10. In-combination assessment¹⁴

10.1 In combination effects of cockle hand-gathering in the Dee Estuary:

NRW carry out an HRA for the Dee Cockle Order fishery and have provided survey data and information to the NWIFCA on management of that fishery for 2017. Both fisheries have taken bird food requirements and bird disturbance issues into consideration, and set TACs to ensure adequate supply of food for the overwintering waders.

There is a question over how reliant the birds are on the cockles at Leasowe, considering how variable the stocks are. There are alternative areas that will be left undisturbed in the neighbouring Dee Estuary, including the two mussel areas holding around 3000 tonnes and beds with low cockle stocks which are left unopened by NRW.

Furthermore a small alternative area of undisturbed cockle ground of around 10 ha that holds a further resource of size cockles (2 – 20 per m²) lies 14.5km southwest of the main Leasowe cockle area. As has been shown the area that the fishery occupies is around 2.78ha on the densest part of the bed, leaving around 210 ha undisturbed for the birds. There are small areas of mussel in the neighbouring Mersey Estuary which cannot be legally fished (prohibited under Shellfish Hygiene Classification). Further afield there are dense stocks of cockles in the Ribble Estuary (Penfold North) which are not being fished at the current time.

Oystercatchers are also known to predate on earthworms in terrestrial fields. The land lying inshore from the fishery holds four golf clubs and large arable tracts south of Hoylake providing an alternate resource. There are also large areas of saltmarsh in the upper reaches of the Dee Estuary containing a rich resource of invertebrates for waders.

The NWIFCA is confident that in-combination effects of both fisheries occurring concurrently will pose no risk of adverse effect on the integrity or conservation status of the features of the Mersey Narrows and North Wirral Foreshore SPA, the Dee Estuary SAC and SPA, the Liverpool Bay SPA and the North Wirral Foreshore SSSI.

- 10.2** The European Sand Yacht Championships for 2017 has been awarded to the Wirral Club at Hoylake. The event which is open to qualifying class 2, 3 and 5 sand yachts from the member countries of the International Sand Yacht Federation (FISLY) will take place on the beach at Hoylake between 24th – 29th September. Up to 100 competitors will compete in a series of races throughout the week in varying wind and beach conditions culminating in the award of the accolade of European Champion in each of the 3 sand yacht classes.

The beach at Hoylake lies an estimated 1.5km south west of the dense area of cockles on Leasowe. There is a risk of high levels of disturbance to feeding birds during the week combined sand yachting and cockle fishing.

The tides in that period are neap tides with low water ranging from 1.6m on 24th to 3.9m on 29th. From Wednesday 27th to Friday 29th low water height are all above 3m, which naturally reduces the

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

area of beach on which birds would be feeding. This could concentrate them into the upper reaches of the beaches where the activities will be occurring.

Activity levels of cockle hand-gatherers are anticipated to have reduced by the time of the Championships to around 50 per tide. The height of these tides may make it uneconomical for some fishers to travel when considering the short time the bed will be exposed for fishing, thus reducing the number further.

The fishery occupies only around 9.7% of MNNWF SPA and 0.013% of Dee SAC. In effect only around 2.78ha is being fished at the greatest intensity ie. at the opening of the fishery. The beach is regularly used by dog walkers and birds will be habituated to a certain degree to disturbance, and observations of oystercatcher and gull behaviour in past fisheries indicate that they will settle back quickly and resume feeding after initially taking flight. Indeed for some fisheries they appear to benefit as the riddling of the cockle can leave easy pickings for them if they reach the riddled out cockle before it can re-bury into the sand.

There is a question over how reliant the birds are on the cockles at Leasowe, considering how variable the stocks are. There are alternative areas that will be left undisturbed in the neighbouring Dee Estuary, including the two mussel areas holding around 3000 tonnes and beds with low cockle stocks which are left unopened by NRW.

Taking the factors above into consideration the NWIFCA is confident that in-combination effects of the fishery and the sand yachting championship occurring concurrently for six days will pose no risk of adverse effect on the integrity or conservation status of the features of the Mersey Narrows and North Wirral Foreshore SPA, the Dee Estuary SAC and SPA, the Liverpool Bay SPA and the North Wirral Foreshore SSSI.

11. Summary of consultation with Natural England

Informal consultation was carried out with Natural England who accompanied NWIFCA science officers on the stock survey on 11th August. Written advice is attached (Annex 2).

12. Integrity test

The NWIFCA concludes no adverse effect on the integrity of the European Sites providing the management and mitigation measures of the Leasowe cockle fishery are implemented and upheld.

Annex 1: Reference list

BTO Research Report No. 648. Review and analysis of changes in water-bird use of the Mersey Estuary SPA, Mersey Narrows & North Wirral Foreshore SPA and Ribble & Alt Estuaries SPA. D.A. Still, N.A., Calbrade & C.A. Holt. Report of work carried out by The British Trust for Ornithology under contract to Natural England. March 2014

The Dee Estuary European Marine Site comprising: Dee Estuary / Aber Dyfrdwy Special Area of Conservation, The Dee Estuary Special Protection Area, The Dee Estuary Ramsar Site
Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994. January 2010.

Liverpool Bay / Bae Lerpwl Special Protection Area. Advice under Regulation 35(3) of The Conservation of Habitats and Species Regulations 2010 (as amended) Version 6.5 (October 2012)

Mersey Narrows and North Wirral Foreshore Advice on Operations -

<https://designatedsites.naturalengland.org.uk/Marine/FAPMatrix.aspx?SiteCode=UK9020287&SiteName=mersey+narrows&SiteNameDisplay=Mersey+Narrows+and+North+Wirral+Foreshore+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAAarea=>

(accessed 16-08-17)

Mersey Narrows and North Wirral Foreshore SPA and Ramsar site: Supplementary advice on conserving and restoring site features

UK9020294_Liverpool_Bay_Bae_Lerpwl_SPA_Generic_SAT_Birds

UK9020294_Liverpool_Bay_Bae_Lerpwl_SPA_Advice_on_Operations

<http://www.britishlandsailing.org.uk/news.html> (accessed 18-08-17)

Annex 2: Natural England's consultation advice

Date: 30 August 2017
Our ref: 223738
Your ref: NWIFCA-MNNWF-DE-LB-COCKLE Leasowe



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

Hornbeam House
Crewe Business Park
Electra Way
Crewe
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CW1 6GU

T 0300 060 3900

BY EMAIL ONLY

Dear Mandy,

Formal Advice to NWIFCA regarding the Habitats Regulations Assessment for the hand gathered cockle fishery at Leasowe in the Mersey Narrows & North Wirral Foreshore European Marine Site, Dee Estuary European Marine site and the North Wirral Foreshore Site of Special Scientific Interest.

Thank you for your consultation on the above which was received by Natural England on 18 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 Mersey Narrows & North Wirral Foreshore Special Protection Area (SPA) and the Dee Estuary/Aber Dyfrdwy Special Area of Conservation (SAC) which are European sites. The site is also listed as Mersey Narrows & North Wirral Foreshore Ramsar site and also notified at a national level as North Wirral Foreshore Site of Special Scientific Interest (SSSI).

In considering the European site interests, 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 have¹. The [Conservation objectives](#) for each 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.

¹ 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/>



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. However, having considered the documents content, we would suggest some further detail in the following areas:

1. There should be greater clarity on the single designated access route (including GPS point) and a map showing the location of the facilities for parking, loading/unloading, tonning etc.
2. In terms of visual disturbance to birds, there needs to be further consideration in section 7.2.2 with specific reference to the type and number of vehicles that will be in use and the numbers of people that are likely to be in the area as a result of the cockling activity. We acknowledge that whilst it is impossible to predict how many fishers will be present on the beds, records of fishing effort from past fisheries on Leasowe would provide useful context, again we acknowledge there will be significant variability in numbers from fishery to fishery. While birds using the area may be somewhat habituated to low numbers of pedestrians/dog walkers, use of many quadbikes at one time is likely to have a greater disturbance impact. The assessment should also acknowledge that gatherers and vehicles will be operating much further from shore than dog-walkers would normally be. While there is mention of the disturbance to oystercatchers with reference to quadbikes, other species should be considered as the activity represents additional disturbance. It would be useful to reference the British Trust for Ornithology roost mapping and low tide feeding reports to help inform the HRA.
3. The title on page 33, Annex 7 needs amending to say North Wirral Foreshore.
4. As this fishery is intended to be open until such time as a Total Allowable Catch (TAC) is reached and will be dependent on the number of gatherers involved in the fishery, the likelihood that the fishery will continue into the over-wintering period (1st October 2017 – 31st March 2018) should also be considered more fully. Specifically, this should include a severe/cold weather ban and reference the potential for birds to move to other sites to where food resource is available. This would resolve the potential issue of birds not being able to feed at alternative sites (e.g. Ribble/Morecambe Bay) if one site suffered severe weather conditions and the other was subject to hand-gathering. A suggested form of words might be "the fishery 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".
5. For the purposes of considering in-combination effects and the concomitant Dee cockle fishery, the assessment should consider where birds might feed. It would be useful to clearly indicate potential areas of food resource outside the scope of these two fisheries and ensure that those other sources are accessible to birds. This is linked to disturbance, displacement and potential inability to feed efficiently.
6. It is noted that there is consistency between the assessment for the Leasowe cockle fishery and the Morecambe Bay cockle fishery HRA, which is beneficial.



Page 2 of 4

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7. We acknowledge that this ephemeral fishery will be subject to more formal management than previous fisheries in this area and that a TAC is likely to be set. Some clarity around how a TAC has been calculated is required as it is felt that this is a little vague and a similar methodology may be required for future fisheries at Leasowe.
8. We further acknowledge that there is currently no robust method for calculating a TAC and that both the use of the bird food model and using average densities both have significant uncertainty. However, to provide consistency with the Dee cockle fishery as per Natural Resources Wales' approach, and given the proximity of this fishery we agree it would demonstrate good practice to set a TAC for the fishery opening in order to manage expectations of the fishers and for future fisheries. Whilst the TAC is a useful indicator and could be considered an experimental tool, the core reasoning behind the HRA remains our understanding of the ecological functioning of the area for birds and how it relates to fishing. Specifically, we know that small cockles (the preferred prey for knot) will be returned, all cockles will not be removed from the site leaving a food resource, other cockle beds are located in close proximity and there are likely to be other prey species in the area which will not be affected by fishing.

With this in mind, we suggest a detailed review of the HRA and fishery will be required if the TAC of 2632 tonnes is reached, before any more fishing takes place. This review will specifically look at the accessibility of alternative feeding options and the sufficiency of food resources for birds. The TAC remains an experimental approach and is based on three independent methods of calculation.

Subject to the suggested amendments and clarifications detailed above, it is Natural England's view that through the HRA, your authority has appropriately identified those activities that are likely to have adverse effects that could potentially occur as a result of the proposal in view of the sites' conservation objectives. Natural England advises that we concur with the assessment conclusions, providing that all mitigation measures are appropriately secured in any permission given.

It is Natural England's view that any foreseeable risk, or harm to the site has been appropriately assessed; and a robust mechanism for re-assessing that risk is in place. This view is based on our current knowledge of the impacts of these fishing activities on the designated features.


WILDLIFE AND COUNTRYSIDE ACT 1981 (AS AMENDED)

No objection – no conditions requested

This application is within the North Wirral Foreshore Site of Special Scientific Interest (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

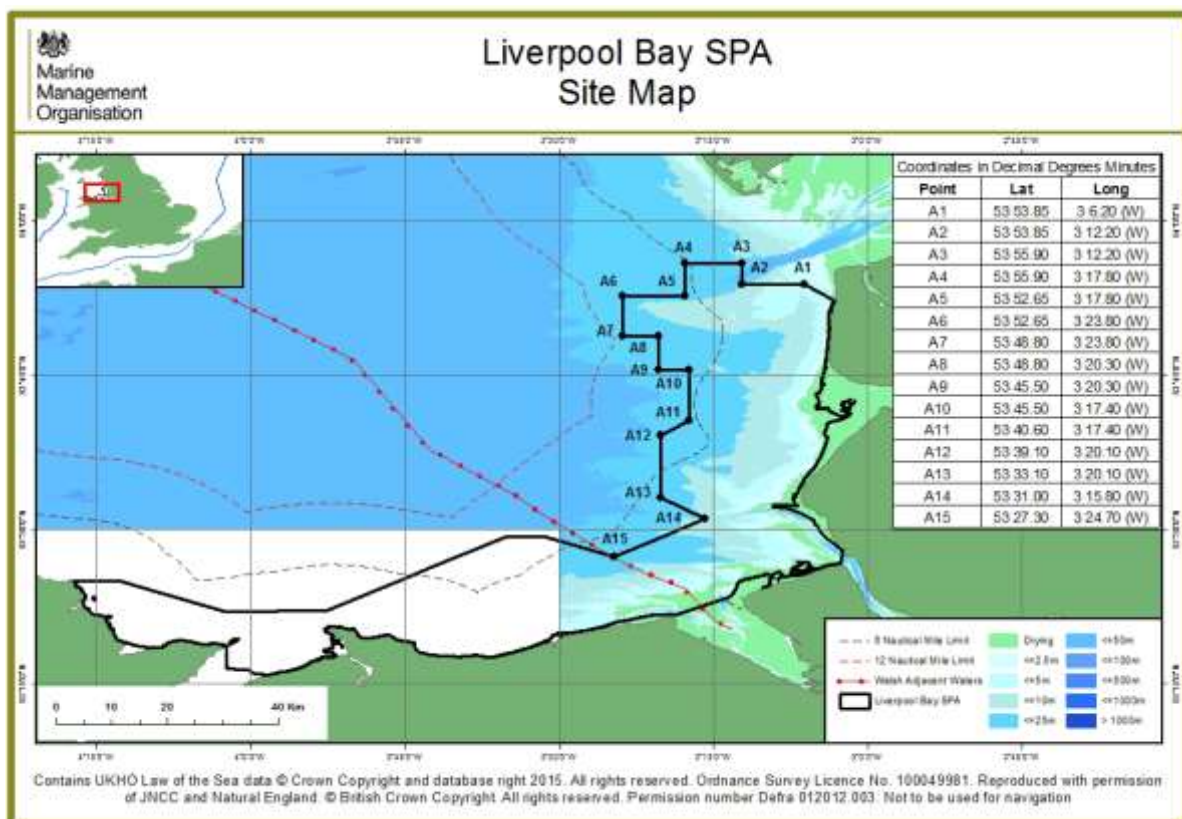


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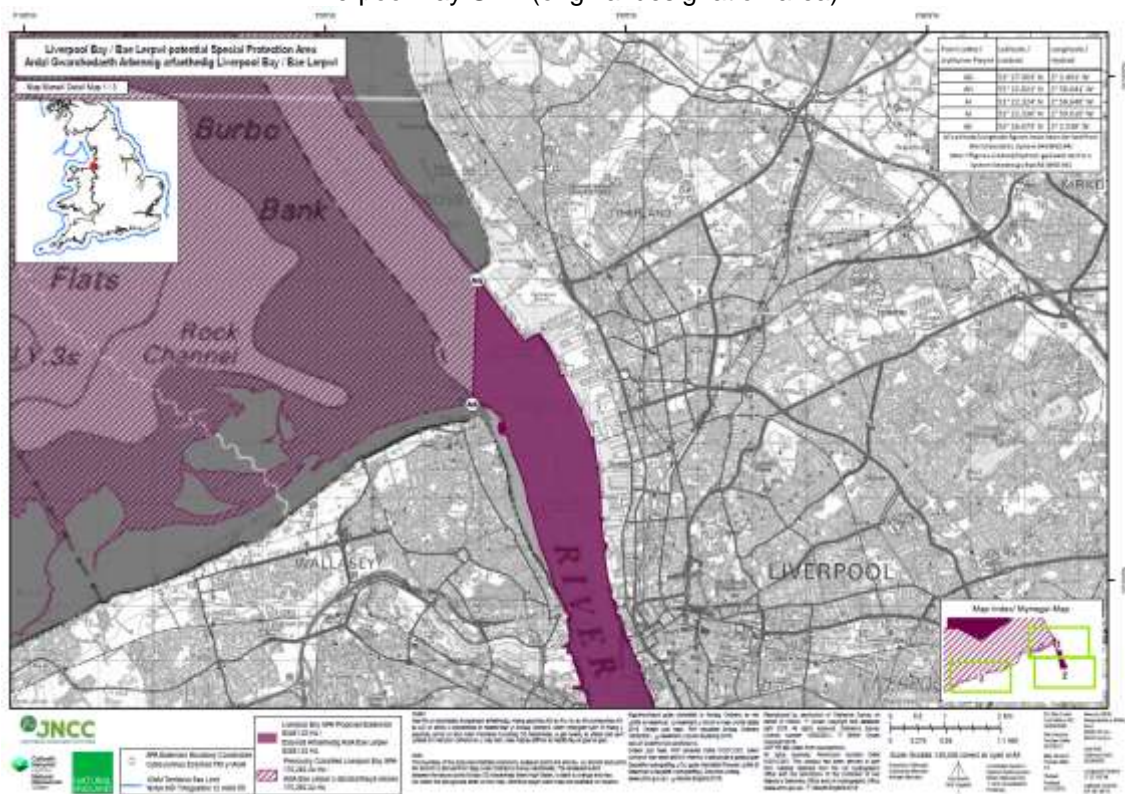
Annex 3: Site Map



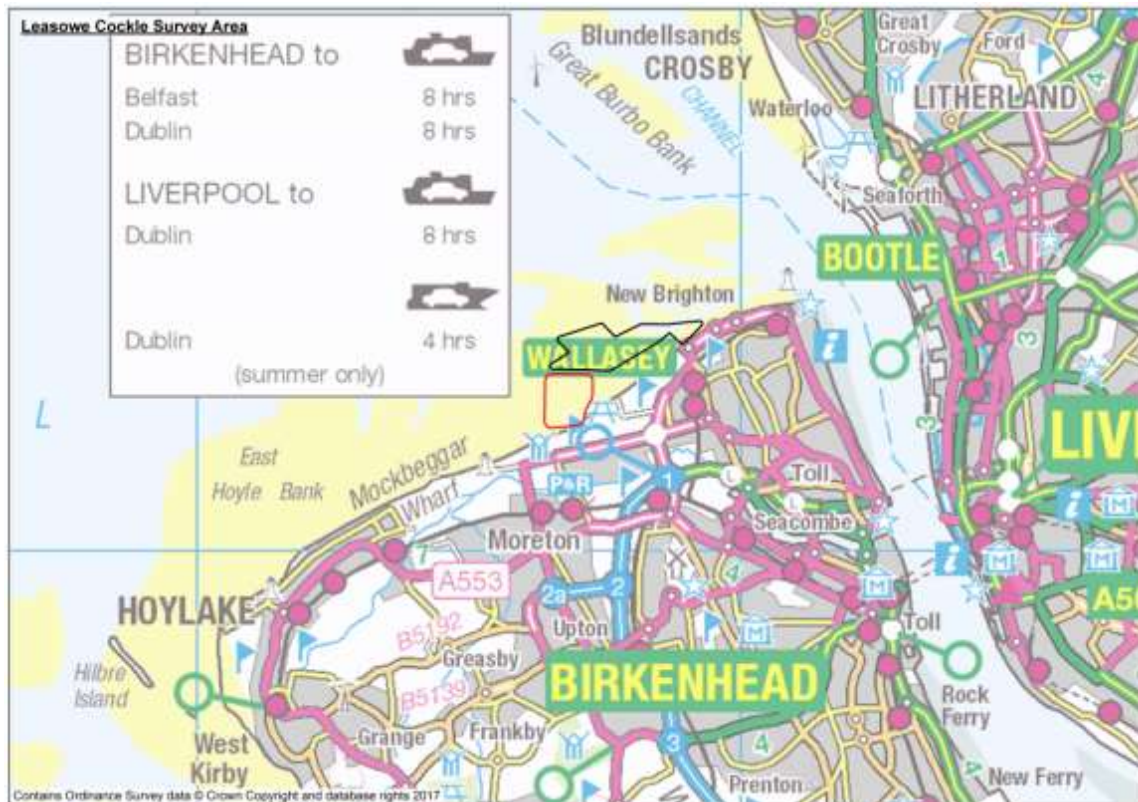
Mersey Narrows and North Wirral Foreshore SPA



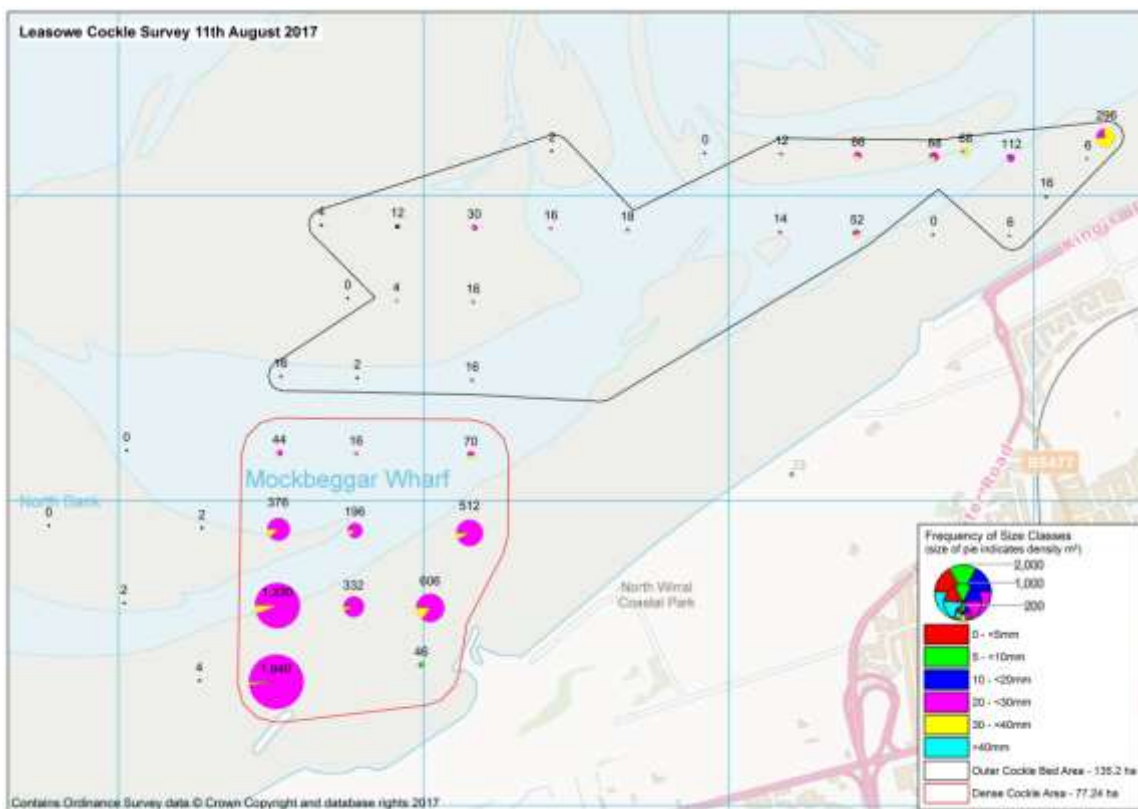
Liverpool Bay SPA (original designation area)



Annex 4: Fishing activity maps

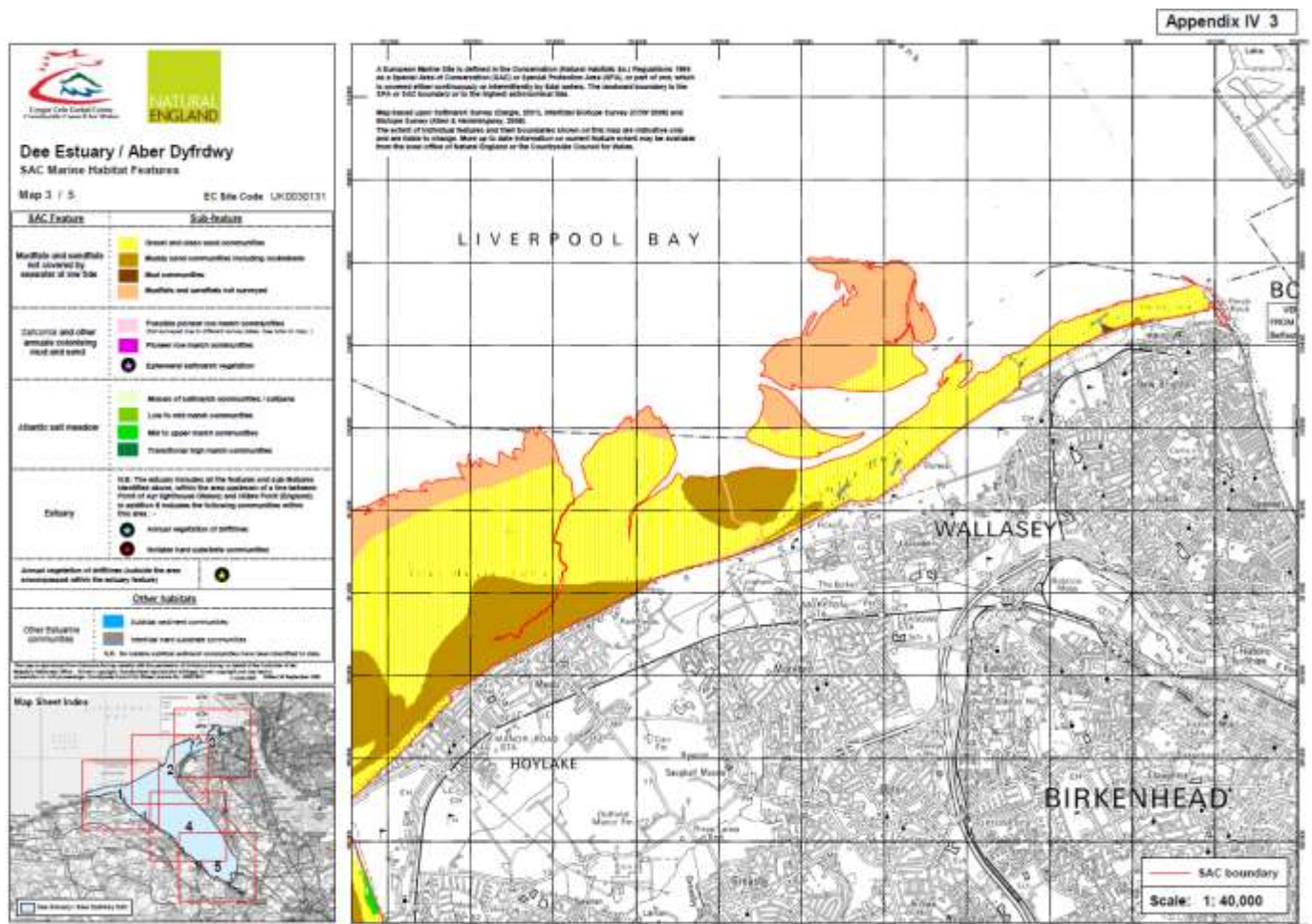


Position of Leasowe Cockle bed – red polygon indicates dense area; black polygon indicates outer less dense area



Leasowe cockle bed – survey results 11th August 2017 showing size frequency of size classes

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 North Wirral Foreshore

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

- I. "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).*

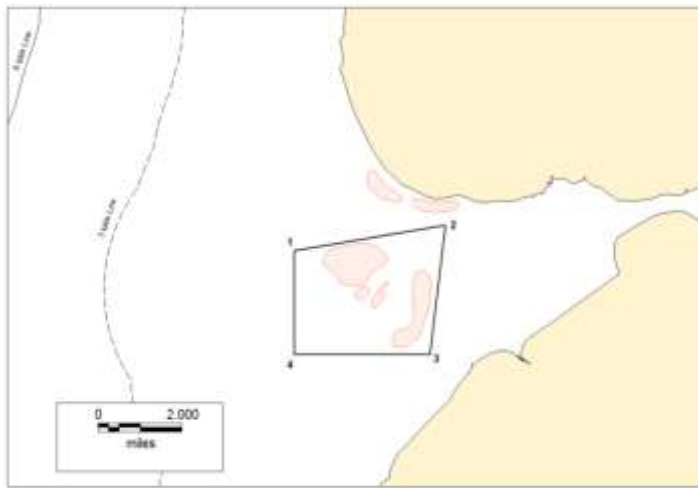


Fig 1. Ribble Commercial Fisheries Area with known historical cockle beds

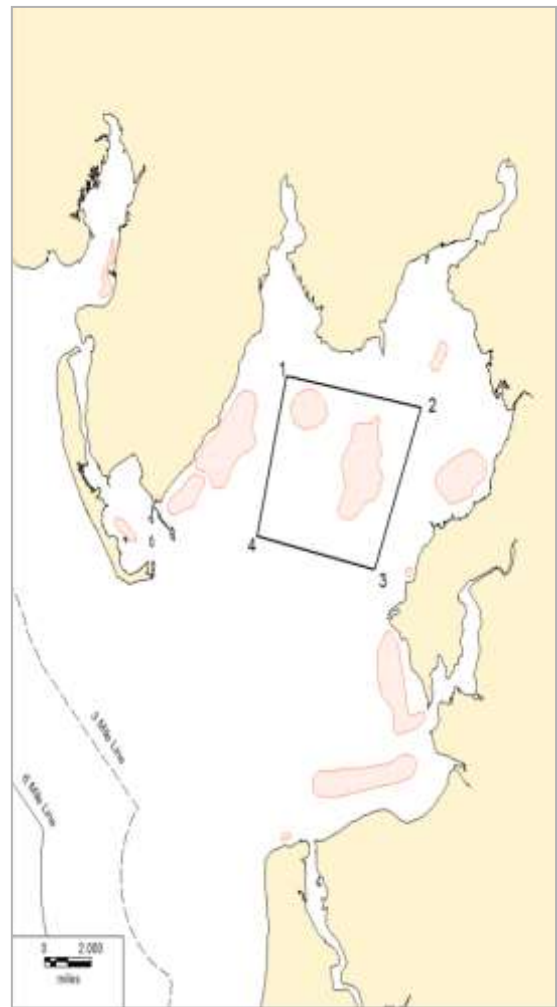


Fig 2. Morecambe Bay Commercial Fisheries Area with known historical cockle beds

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).

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 53⁰ 17.3' North, Longitude 03⁰ 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 (*Mytilus 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



North Western Inshore Fisheries and Conservation Authority

Code of Conduct for Intertidal Shellfisheries

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

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

1. Treat the foreshore with respect

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

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

2. Use vehicles on the shore carefully

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

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

3. Leave the shore as you find it

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

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

4. Have regard for wildlife

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

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

5. Fish sustainably

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

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

6. Observe other guidance & advice

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

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

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

Annex 9 – Access and Parking / Tonning-up Restrictions

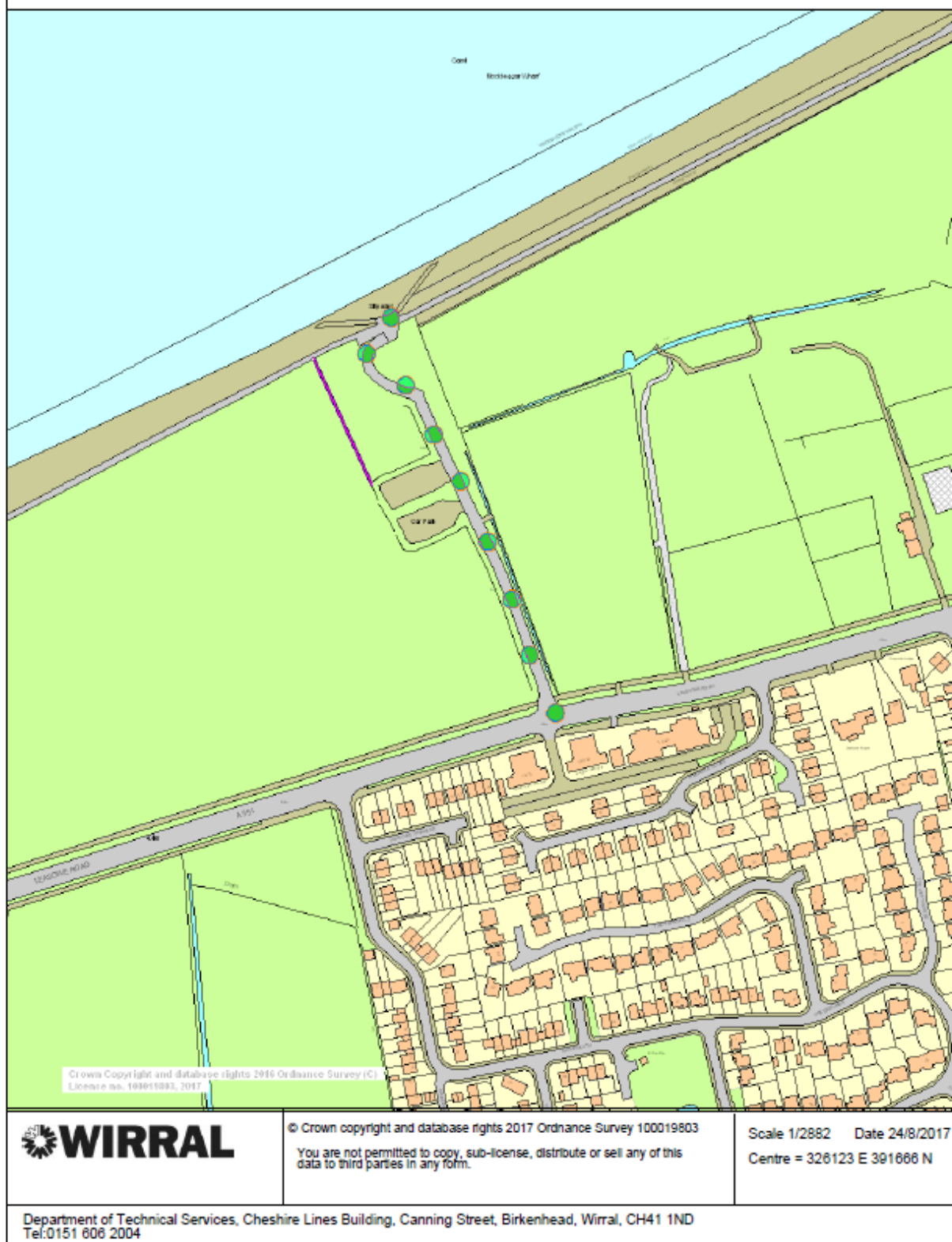
Wirral Borough Council have stipulated one access point at Moreton Embankment slipway number 7 – Grid reference SJ 261 919 from the car parking facilities provided in the existing car park and extending into the field behind it– at Grid reference SJ 262 917, and illustrated in the maps below:



Google Earth image of car parks and Moreton Embankment slipway 7 on to the beach – from the track running off the A551 – Leasowe Road.

Wirral Borough Council has issued access permits to Byelaw 3 permit holders for quad bike beach access on production of a fully completed application form, quad bike insurance documentation, towing vehicle details and fee.

Cockling Access Point



Map produced by Wirral Borough Council showing parking , tonning-up area and access route. The purple line indicates the boundary to the field parking.

Photographs taken on opening day of the fishery 1st September showign praking and tonning up areas and access slipway no. 7.









Annex 10 – BTO Review and analysis of changes in water-bird use of the Mersey Estuary SPA, Mersey Narrows & North Wirral Foreshore SPA and Ribble & Alt Estuaries SPA – Excerpt and Maps Relevant to Leasowe Cockle Fishery

APPENDIX 2 ROOST LOCATIONS BY SPECIES AT REGIONAL LEVEL

Each species map shows the distribution of roosts within and close to the boundaries of the three SPAs and whether these are Nationally Important i.e. they hold 1% or more of the British population, or Internationally Important i.e. they hold 1% or more of the West European population in the case of wildfowl, or 1% or more of the East Atlantic Flyway population in the case of waders. Maps have only been produced for waterbird species for which data could be obtained from WeBS counts, site meetings and the results of questionnaires.

- Red circles denote roosts of international importance
- Orange circles denote roosts of national importance
- Green circles denote all other roosts

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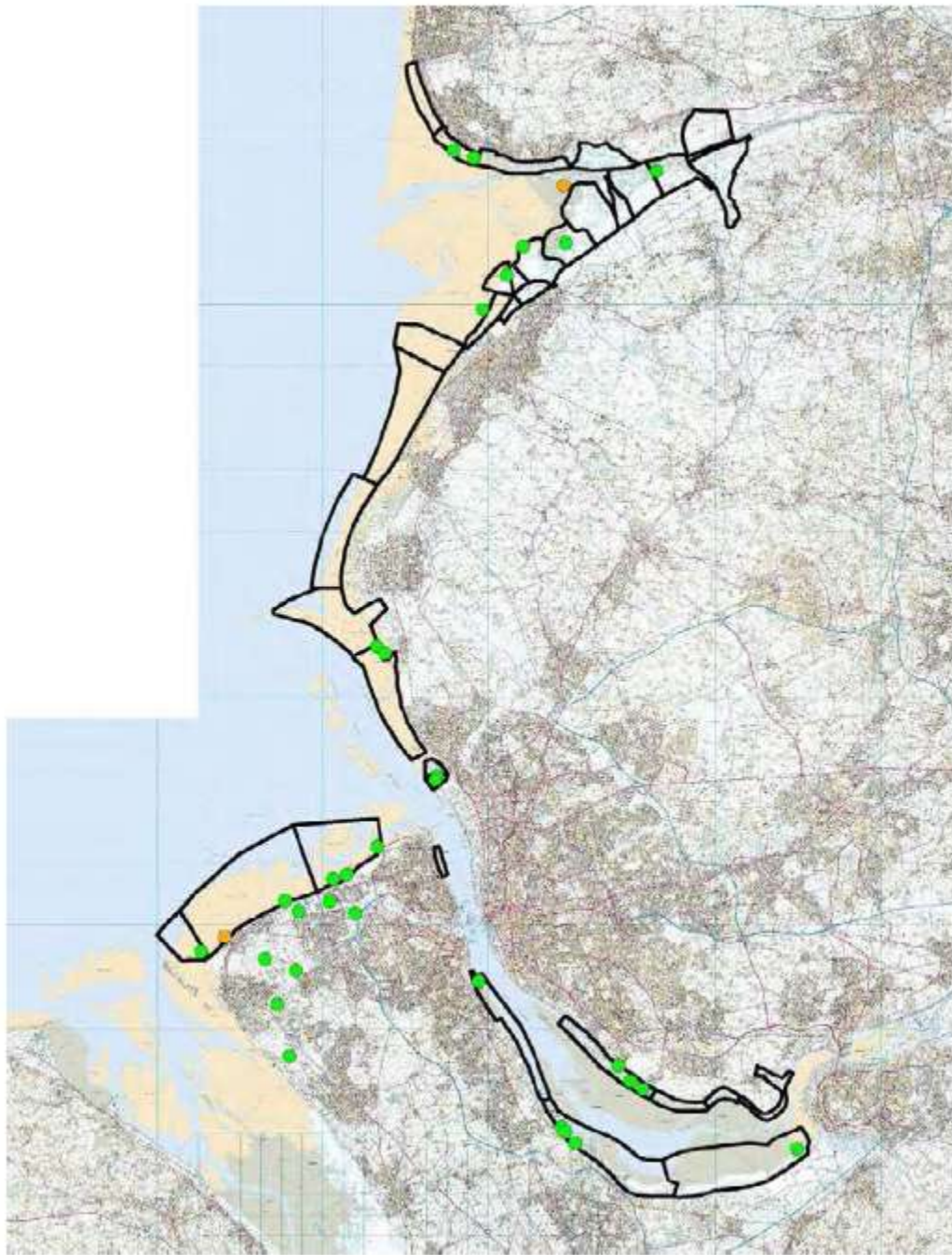


Figure A.2.9 Oystercatcher Roosts within and close to the boundaries of the Liverpool City Region SPAs

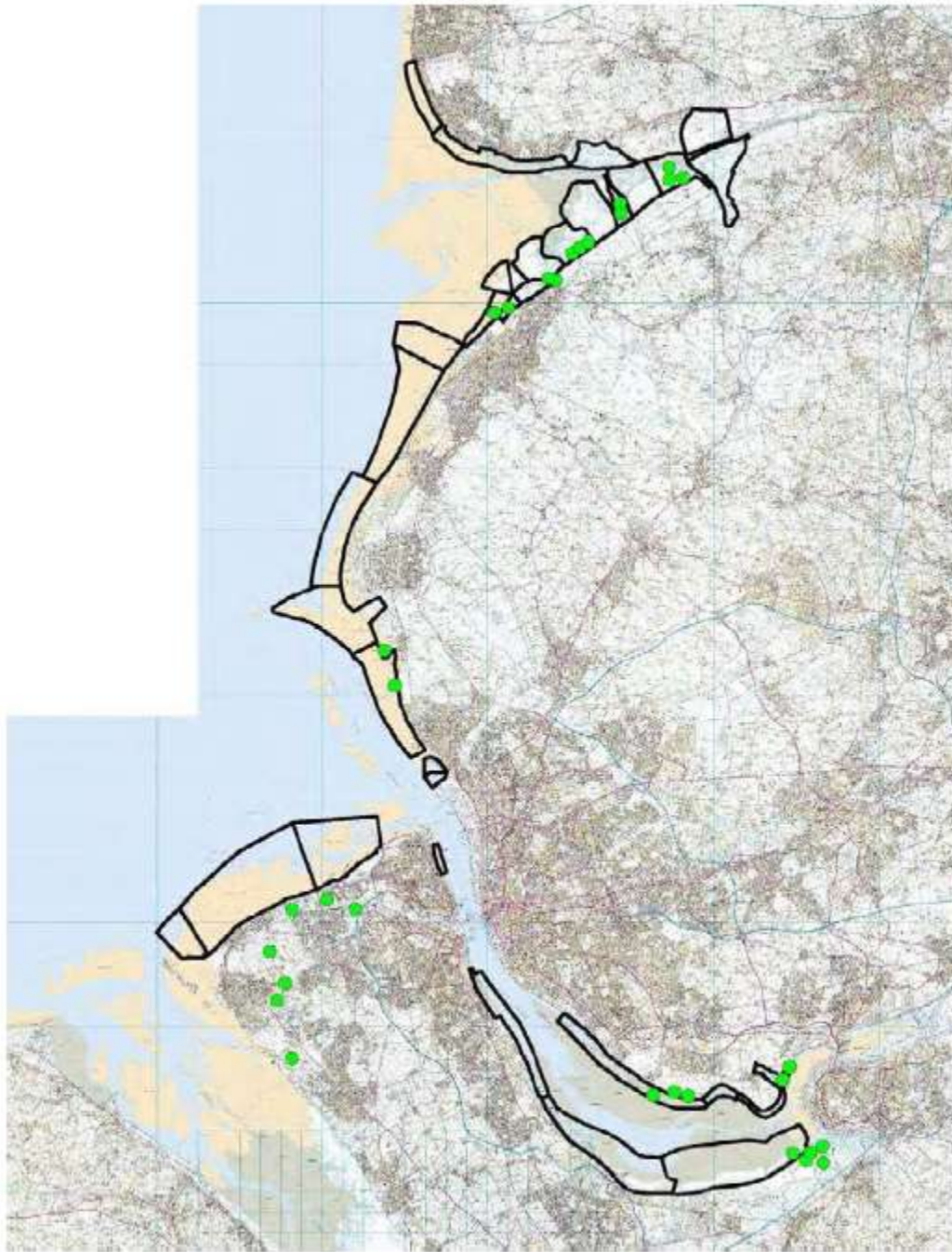


Figure A.2.13 Lapwing Roosts within and close to the boundaries of the Liverpool City Region SPAs

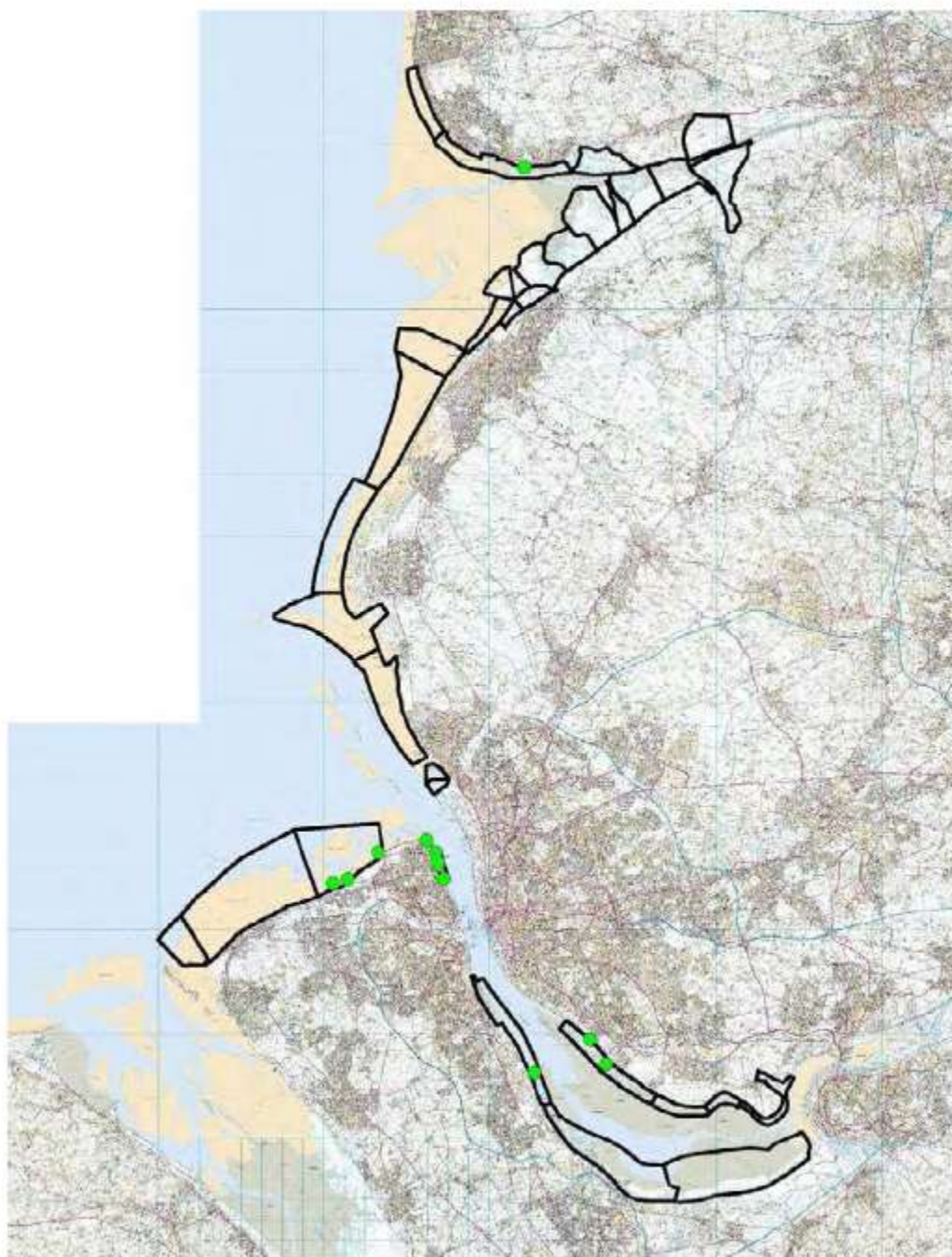


Figure A.2.14 Turnstone Roosts within and close to the boundaries of the Liverpool City Region SPAs



Figure A.2.15 Knot Roosts within and close to the boundaries of the Liverpool City Region SPAs



Figure A.2.17 Dunlin Roosts within and close to the boundaries of the Liverpool City Region SPAs



Figure A.2.18 Redshank Roosts within and close to the boundaries of the Liverpool City Region SPAs

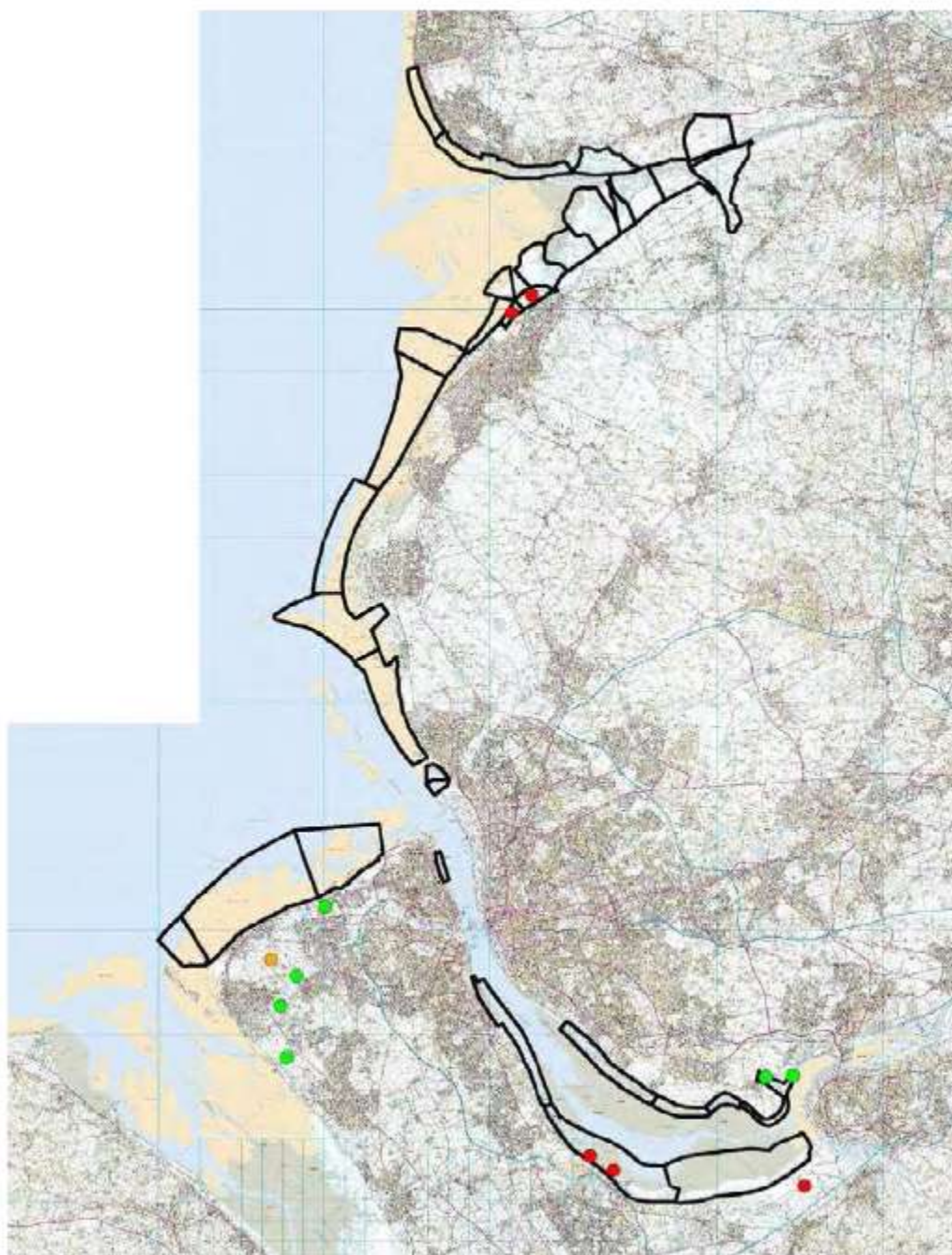


Figure A.2.19 Black-tailed Godwit Roosts within and close to the boundaries of the Liverpool City Region SPAs

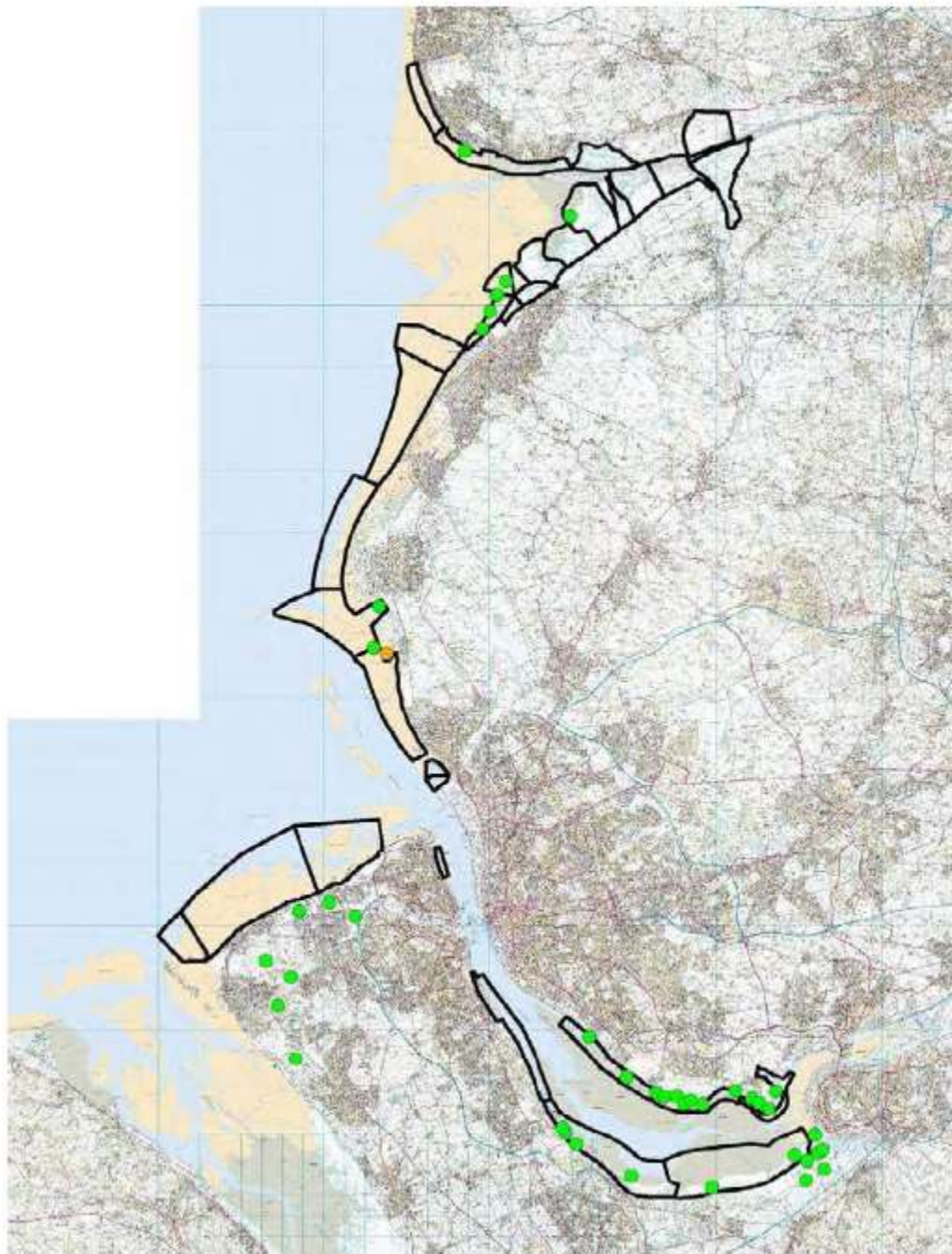


Figure A.2.21 Curlew Roosts within and close to the boundaries of the Liverpool City Region SPAs

APPENDIX 3 ROOST LOCATIONS AT SECTOR LEVEL

This appendix contains figures for waterbird species for which data was obtained through WeBS counts, site meetings and the results of questionnaires. Each map shows the areas taken up by each roost inside or near to the boundaries of the Liverpool City Region SPAs.

- Red areas denote wader roosts
- Orange areas denote wildfowl roosts
- Brown areas denote cormorant roosts

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Mersey Narrows & North Wirral Foreshore SPA

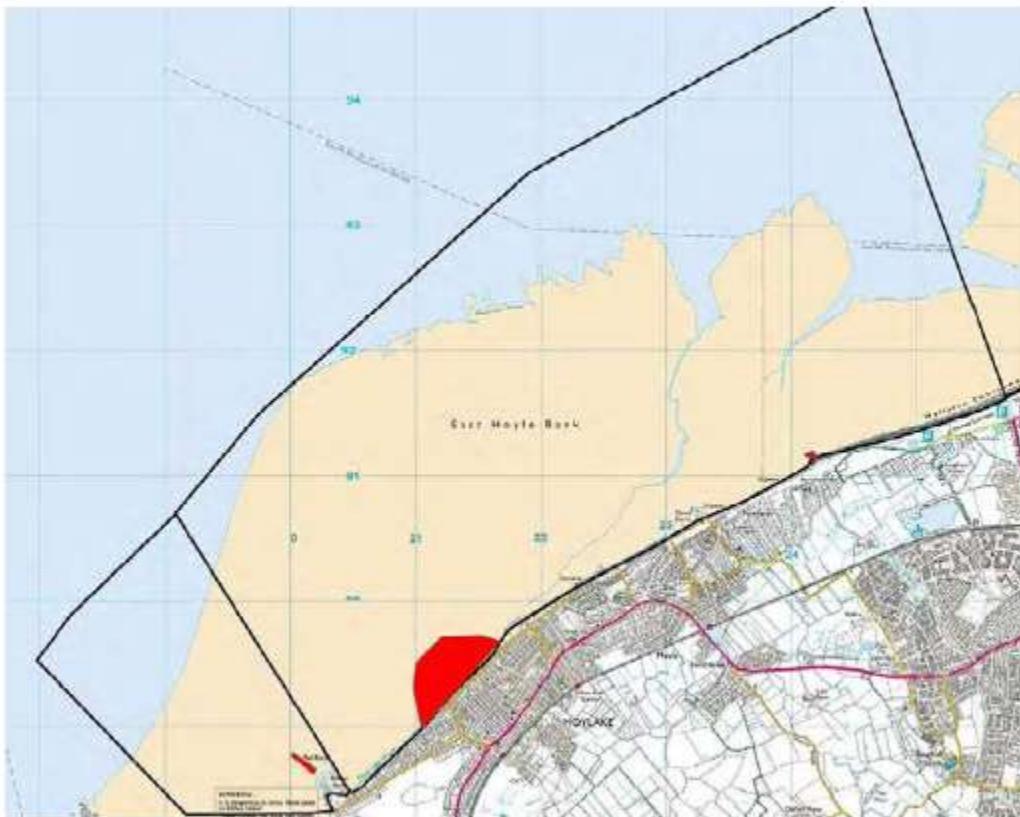


Figure A.3.6 Roost Locations: Red Rocks to Hoylake



Figure A.3.7 Roost Locations: Leasowe Bay and Islands

APPENDIX 4 LOW TIDE FEEDING DISTRIBUTIONS AND ROOST LOCATIONS

Each figure combines the roost locations shown in Appendix 1 with low tide feeding distributions for species for which low tide count data was available. Low Tide data for each estuary is as follows: Ribble – 2012/13, Alt – 2008/09, Mersey – 2012/13 and North Wirral Foreshore (as part of the Dee) – 2008/09.

- A red dot indicates the number of individuals at a low tide feeding area.
- A blue dot indicates the location of roosts.

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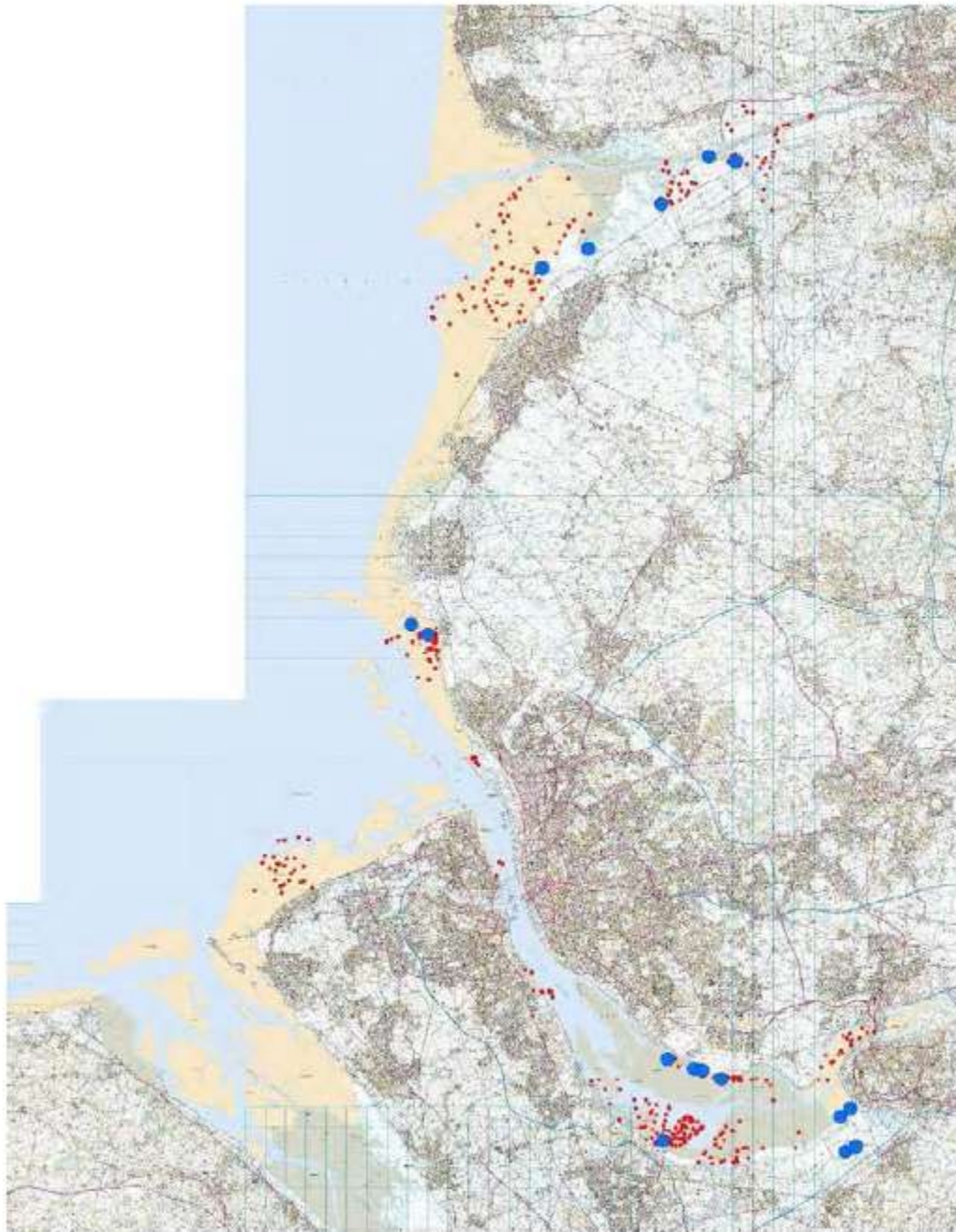


Figure A.4.2 Shelduck low tide feeding distribution (red dot = 5 birds) and roost locations (blue dots) in the Liverpool City Region.



Figure A.4.6 Cormorant low tide feeding distribution (1 red dot = 1 birds) and roost locations (blue dots) in the Liverpool City Region.

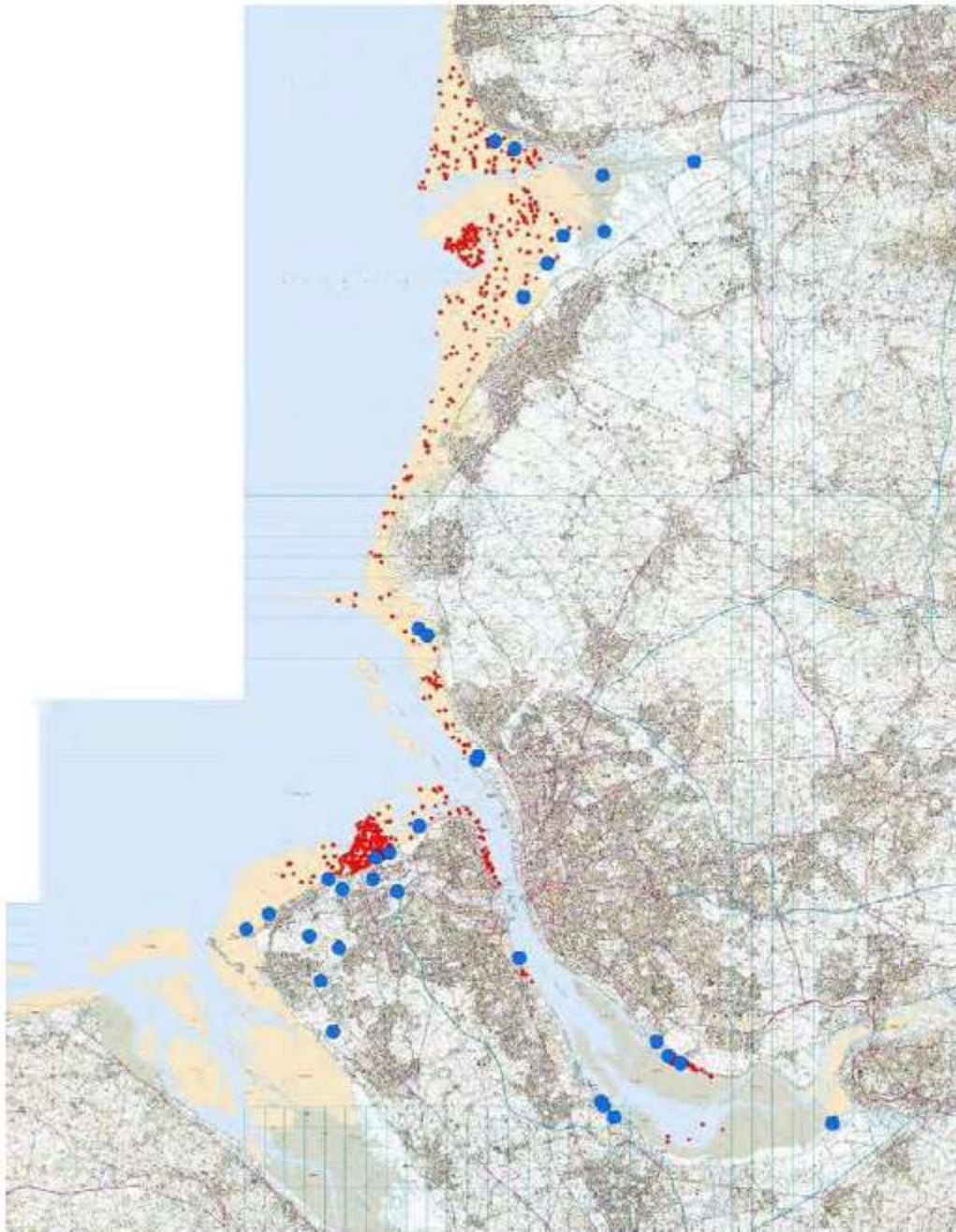


Figure A.4.7 Oystercatcher low tide feeding distribution (red dot = 10 birds) and roost locations (blue dots) in the Liverpool City Region.

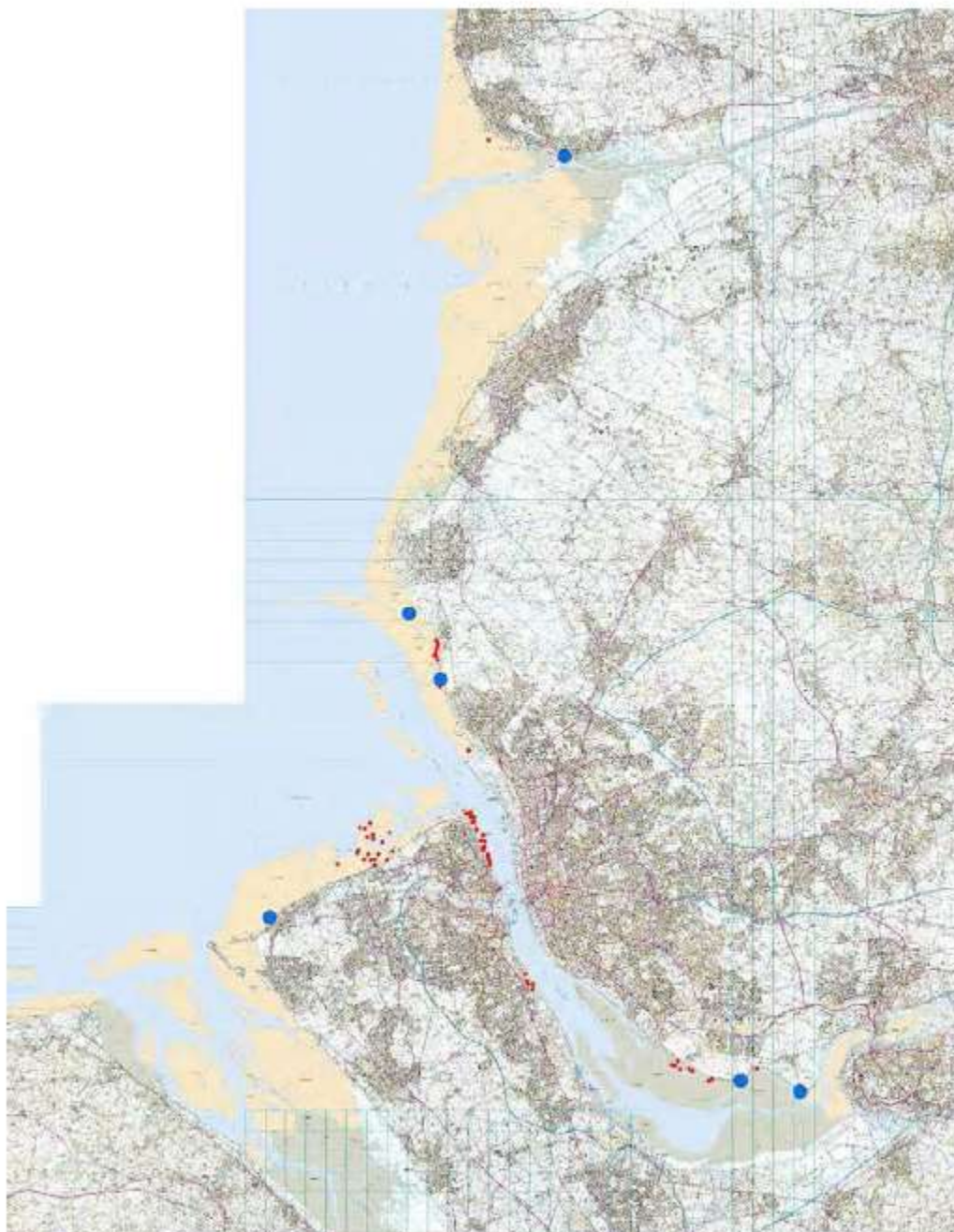


Figure A.4.8 Ringed Plover low tide feeding distribution (red dot = 1 bird) and roost locations (blue dots) in the Liverpool City Region.

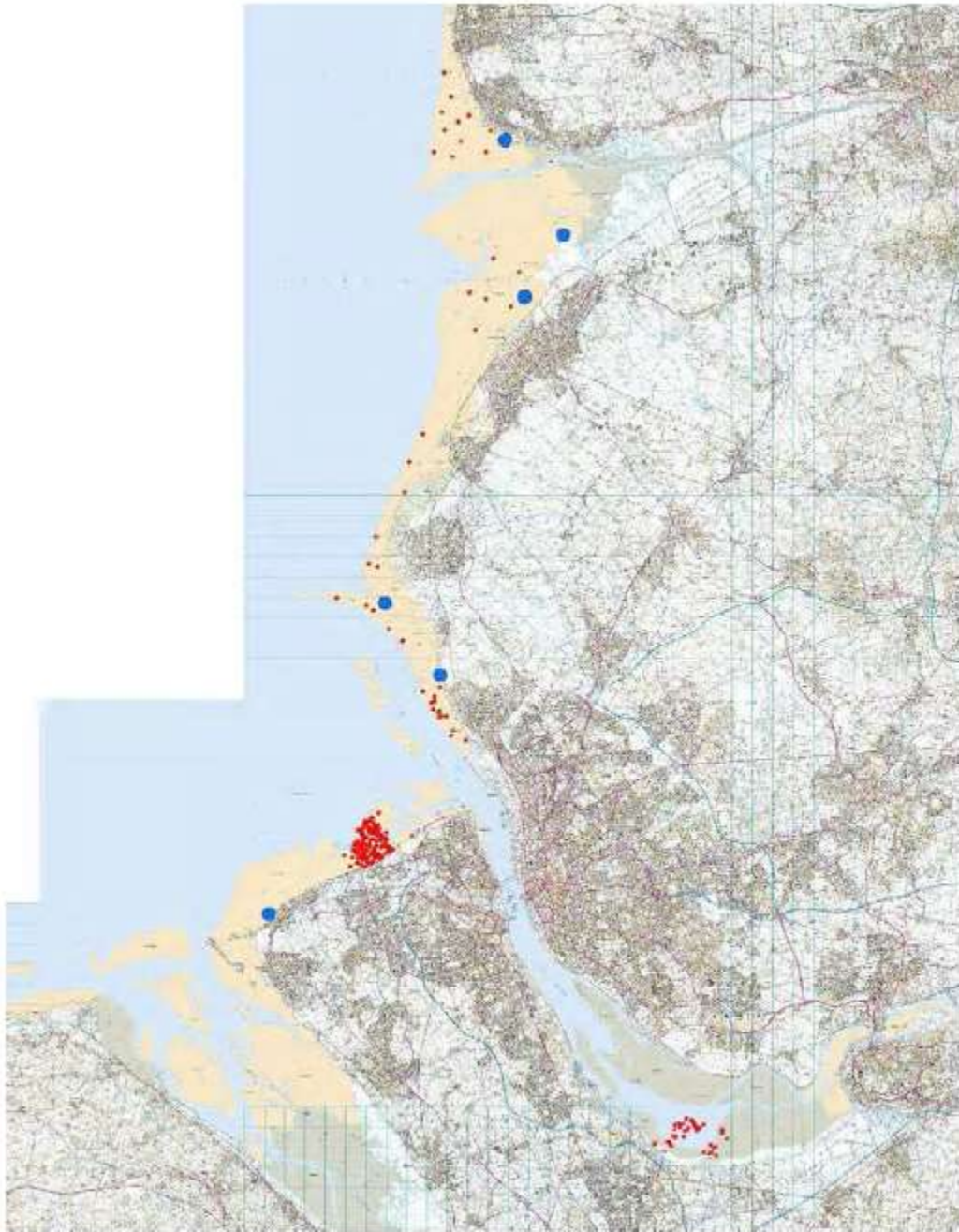


Figure A.4.9 Grey Plover low tide feeding distribution (red dot = 5 birds) and roost locations (blue dots) in the Liverpool City Region.

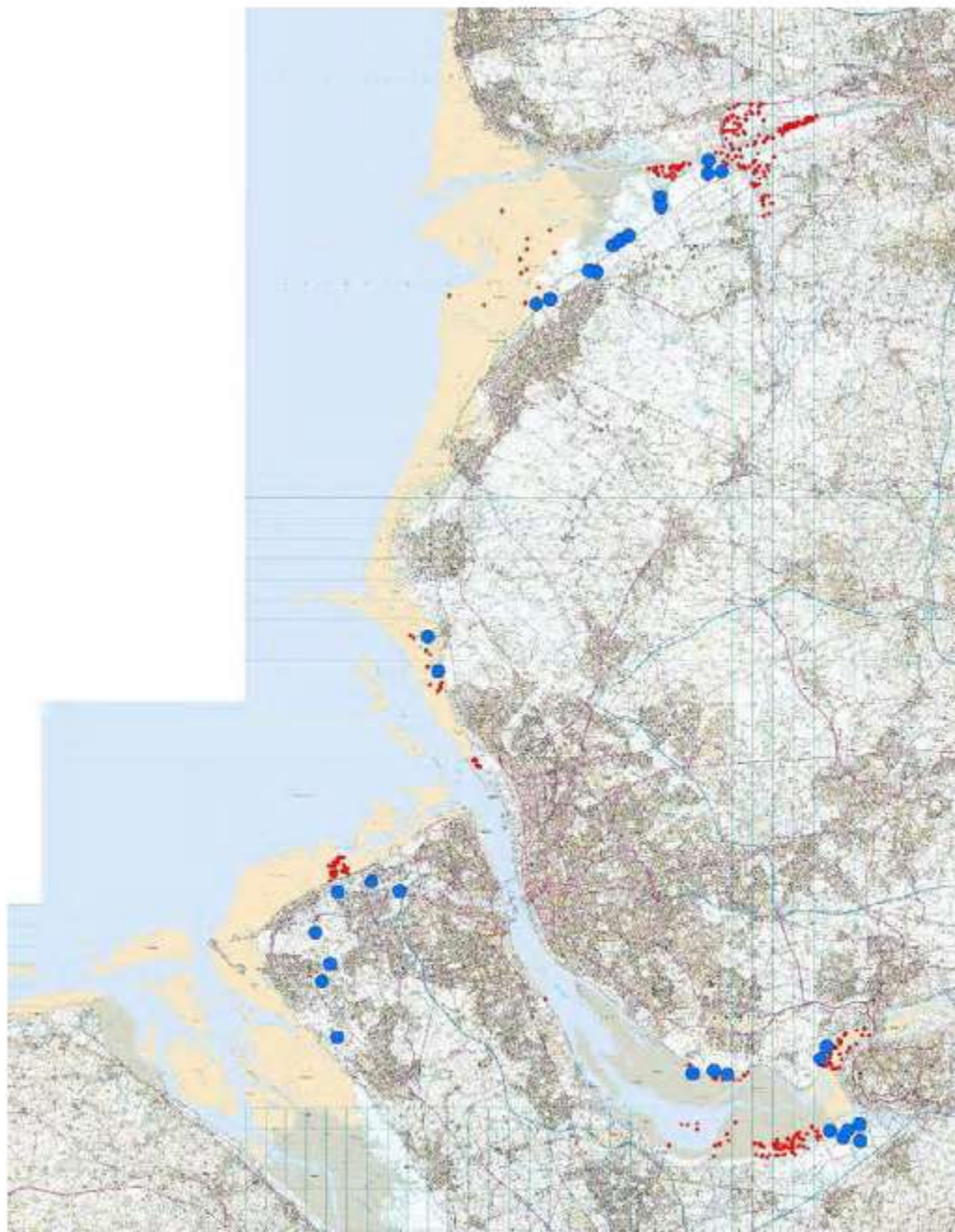


Figure A.4.11 Lapwing low tide feeding distribution (red dot = 10 birds) and roost locations (blue dots) in the Liverpool City Region.

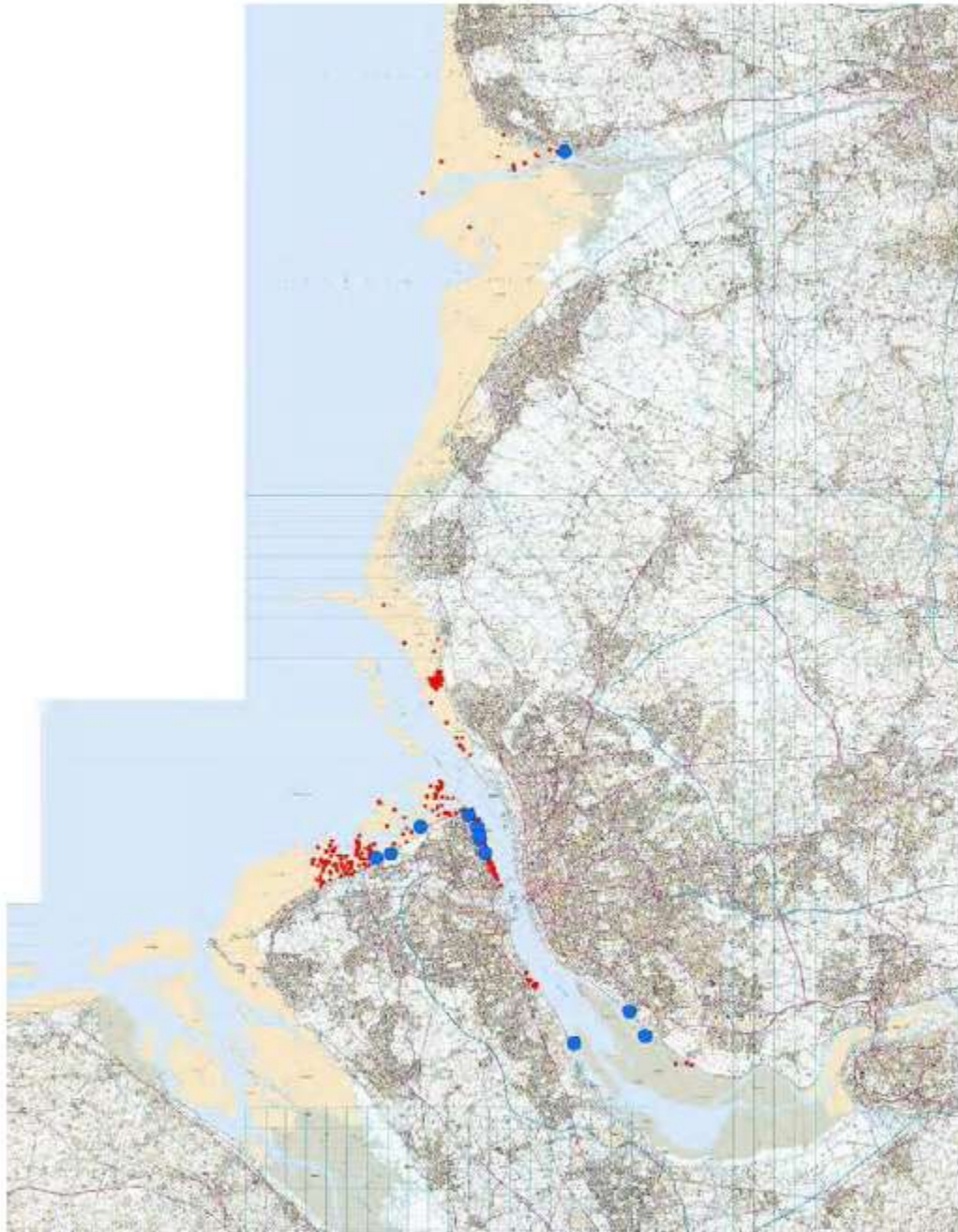


Figure A.4.12 Turnstone low tide feeding distribution (red dot = 1 bird) and roost locations (blue dots) in the Liverpool City Region.



Figure A.4.13 Knot low tide feeding distribution (red dot = 5 birds) and roost locations (blue dots) in the Liverpool City Region.

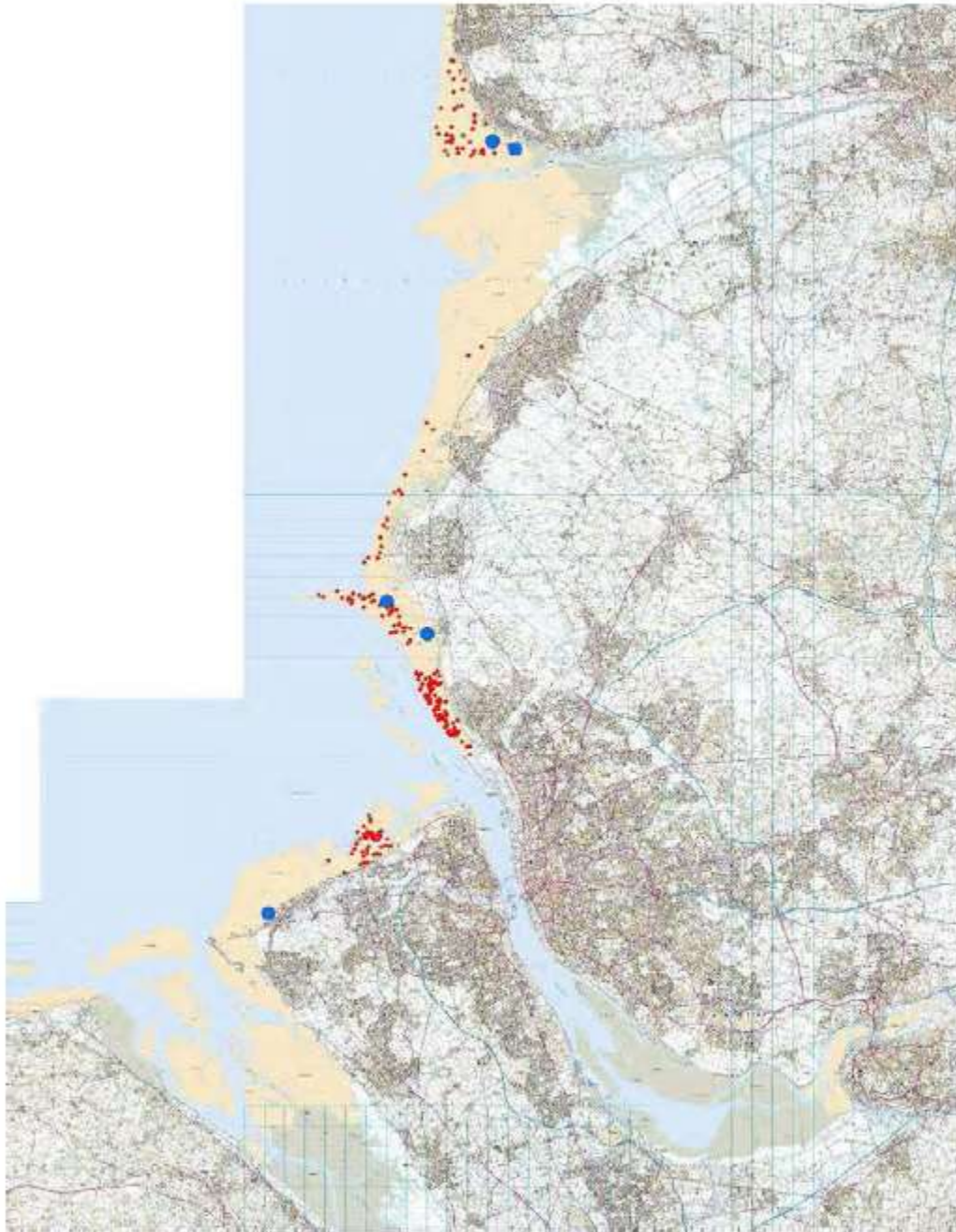


Figure A.4.14 Sanderling low tide feeding distribution (red dot = 5 birds) and roost locations (blue dots) in the Liverpool City Region.

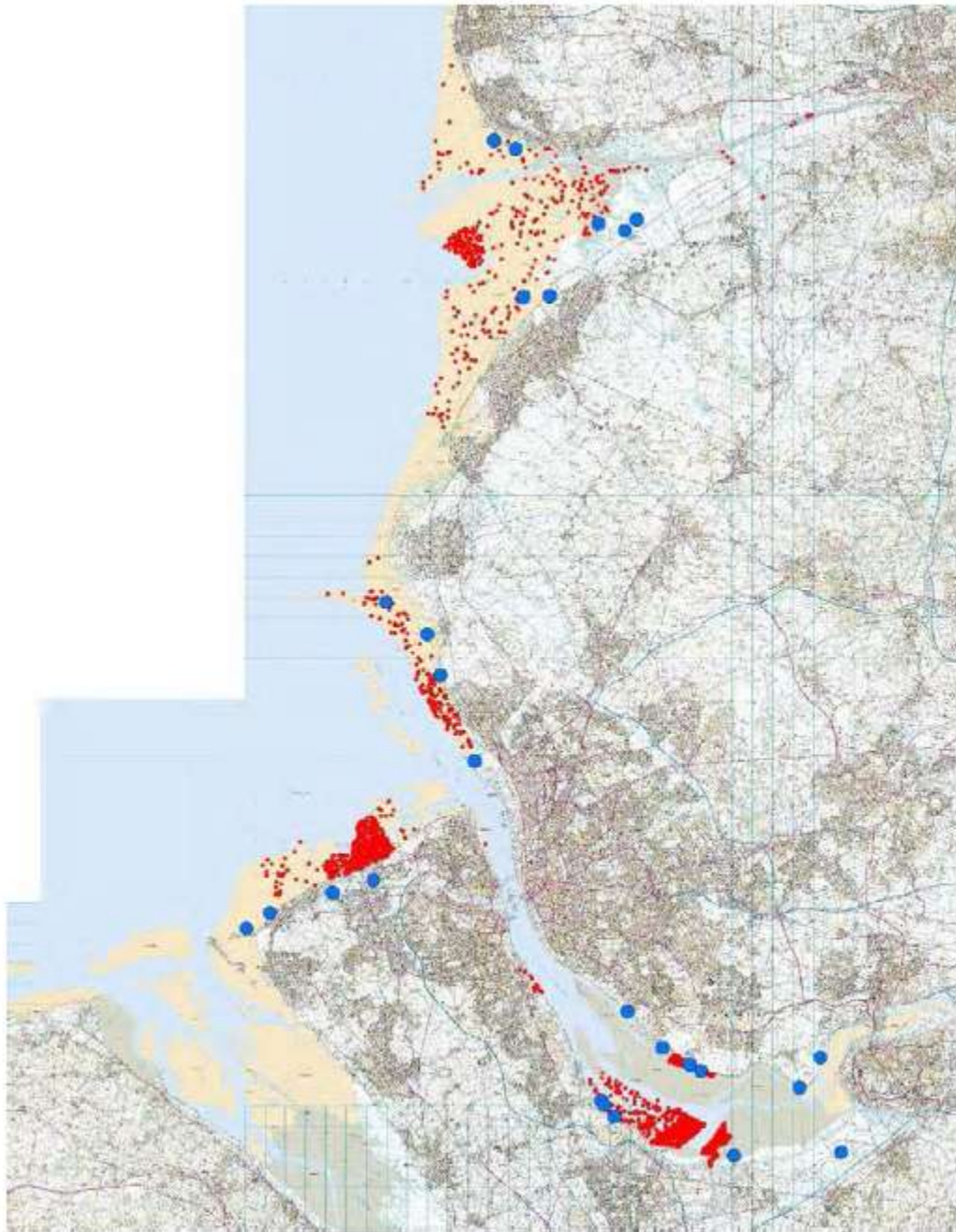


Figure A.4.15 Dunlin low tide feeding distribution (red dot = 10 birds) and roost locations (blue dots) in the Liverpool City Region.

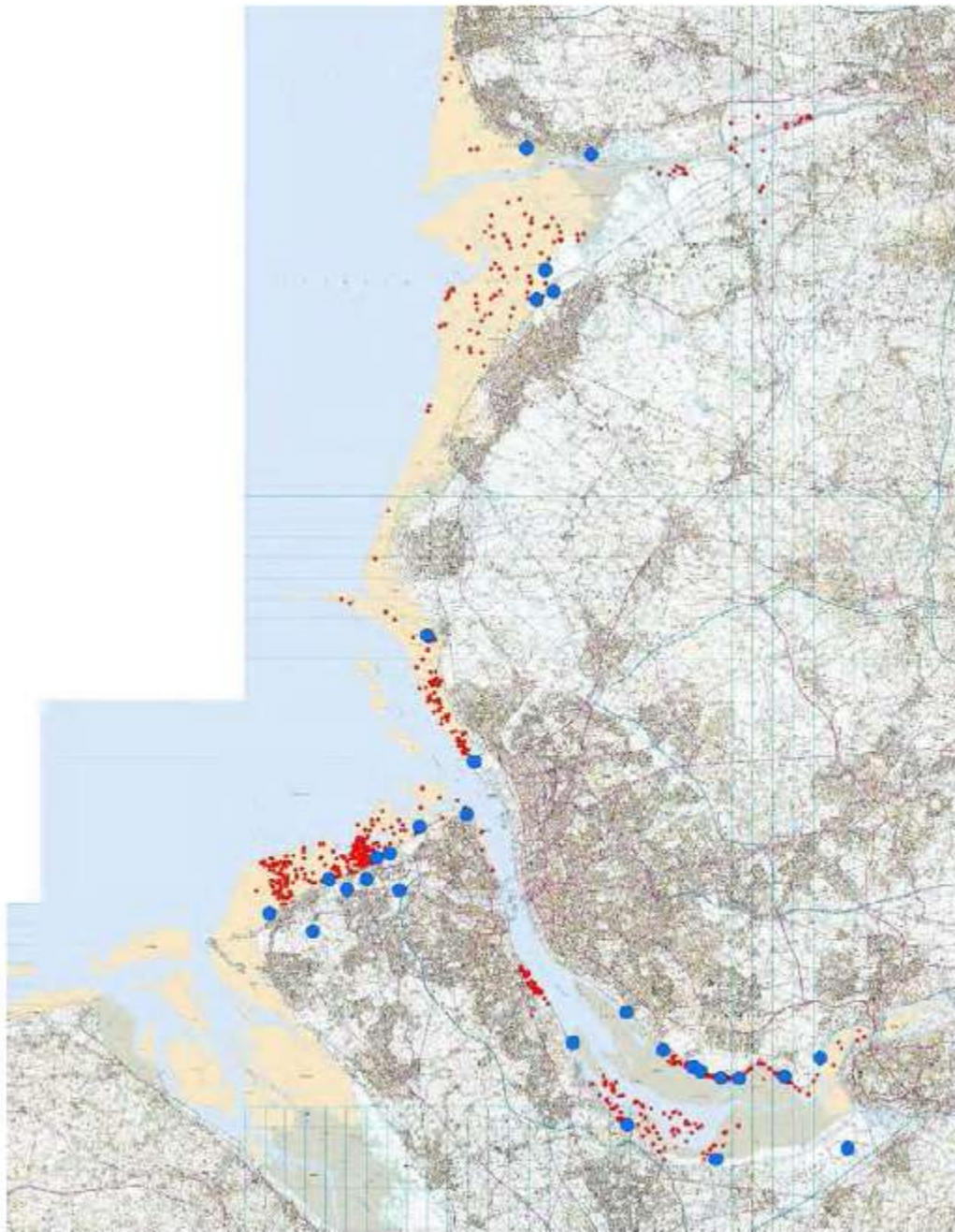


Figure A.4.16 Redshank low tide feeding distribution (red dot = 5 birds) and roost locations (blue dots) in the Liverpool City Region.



Figure A.4.18 Bar-tailed Godwit low tide feeding distribution (red dot = 10 birds) and roost locations (blue dots) in the Liverpool City Region.

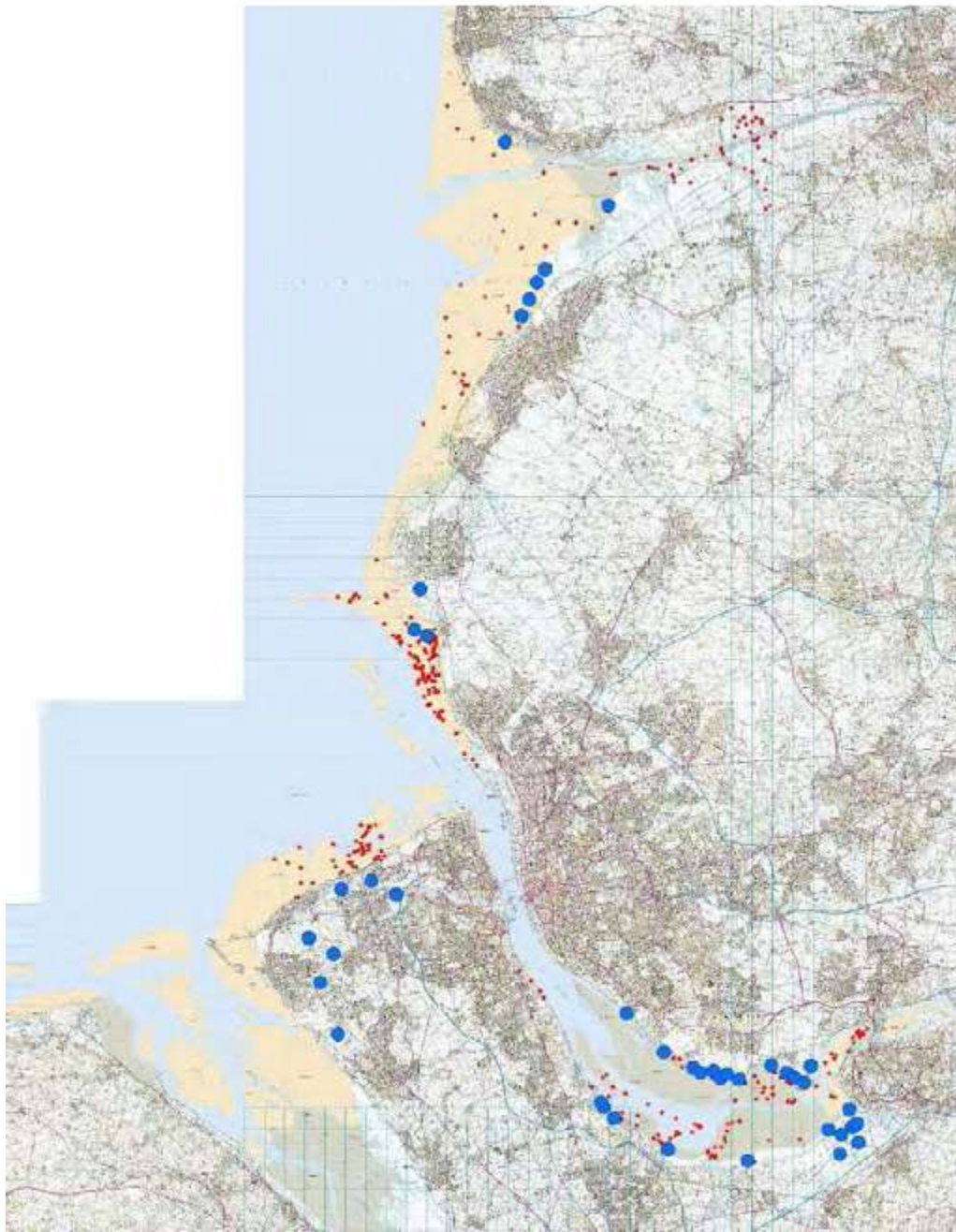


Figure A.4.19 Curlew low tide feeding distribution (red dot = 5 birds) and roost locations (blue dots) in the Liverpool City Region.

APPENDIX 5 MAPS OF FIVE YEAR MEAN DENSITIES

Each figure shows the mapped 5-year mean densities for selected species across the WeBS sectors in the Liverpool City Region SPAs. Here, peak winter density means are calculated across the following years:

- 1997/98 – 2001/02
- 2002/03 – 2006/07
- 2007/08 – 2011/12

Note, only species with available count data could be mapped.

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Figure A.5.10 5-year mean densities of Shelduck (1997/98 – 2001/02) in the Liverpool City Region



Figure A.5.11 5-year mean densities of Shelduck (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.12 5-year mean densities of Shelduck (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.25 5-year mean densities of Cormorant (1997/98 – 2001/02) in the Liverpool City Region

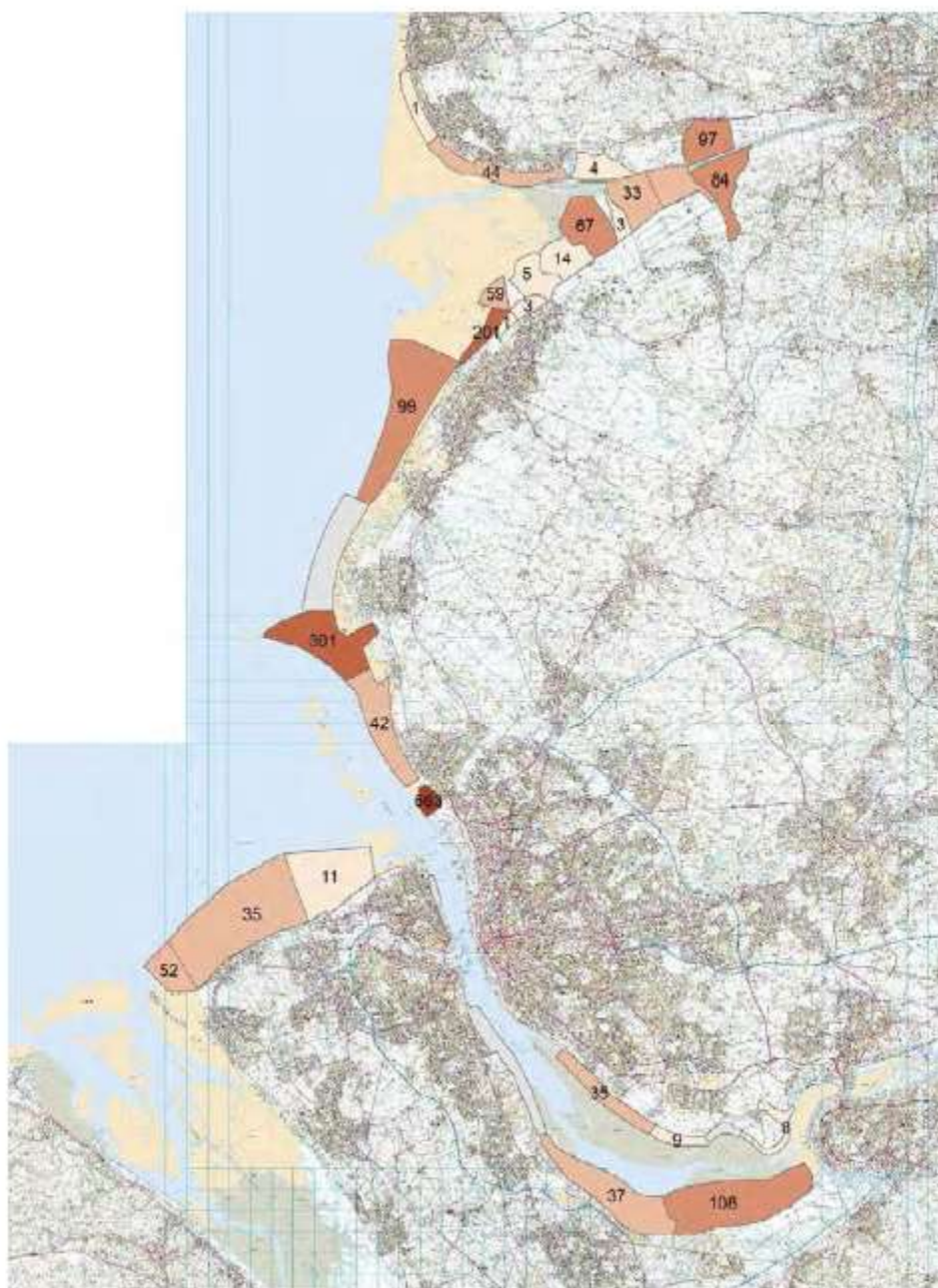


Figure A.5.26 5-year mean densities of Cormorant (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.27 5-year mean densities of Cormorant (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.28 5-year mean densities of Oystercatcher (1997/98 – 2001/02) in the Liverpool City Region



Figure A.5.29 5-year mean densities of Oystercatcher (2002/03 – 2006/07) in the Liverpool City Region

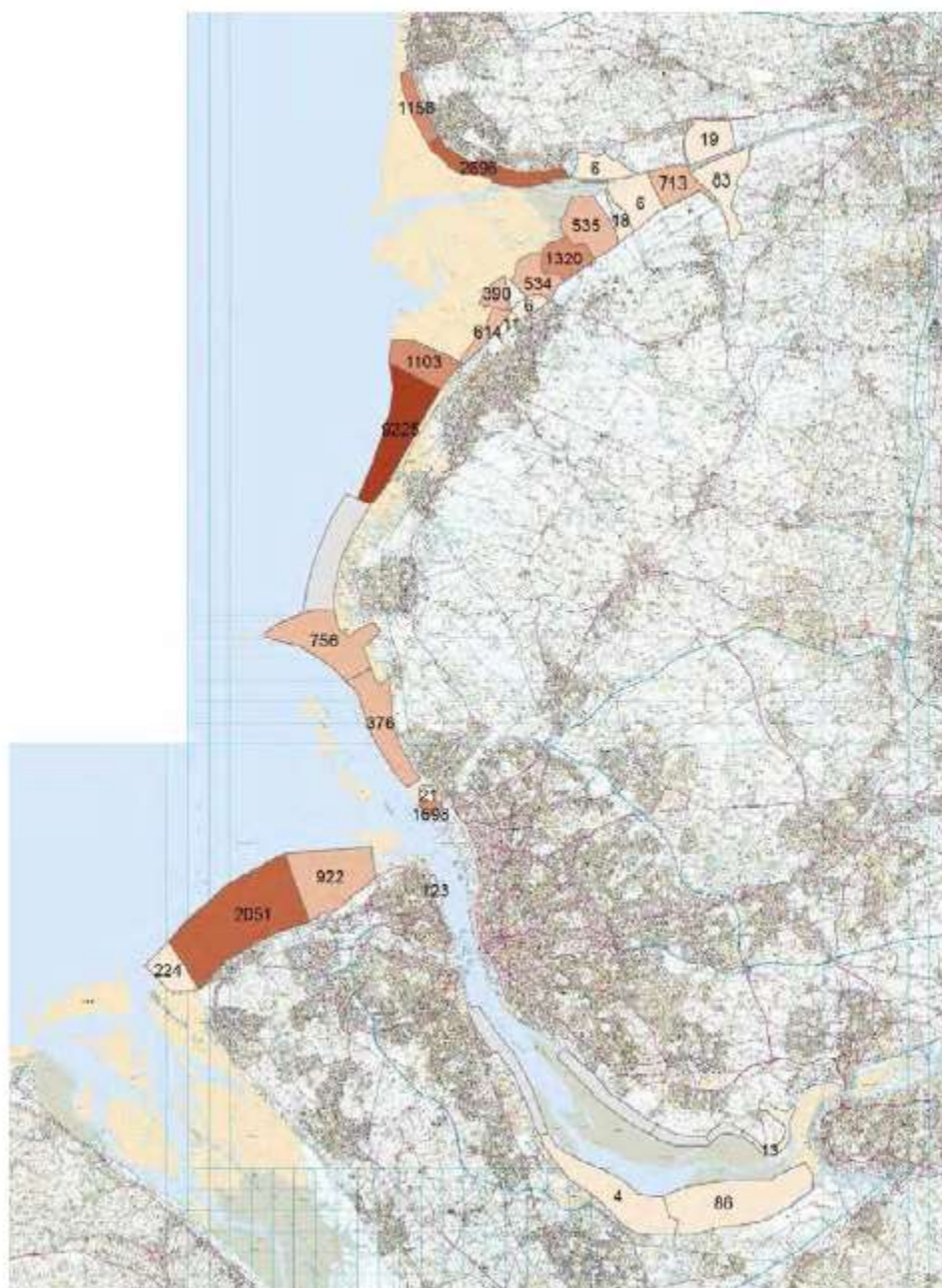


Figure A.5.30 5-year mean densities of Oystercatcher (2007/08 – 2011/12) in the Liverpool City Region







Figure A.5.33 5-year mean densities of Ringed Plover (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.34 5-year mean densities of Grey Plover (1997/98 – 2001/02) in the Liverpool City Region

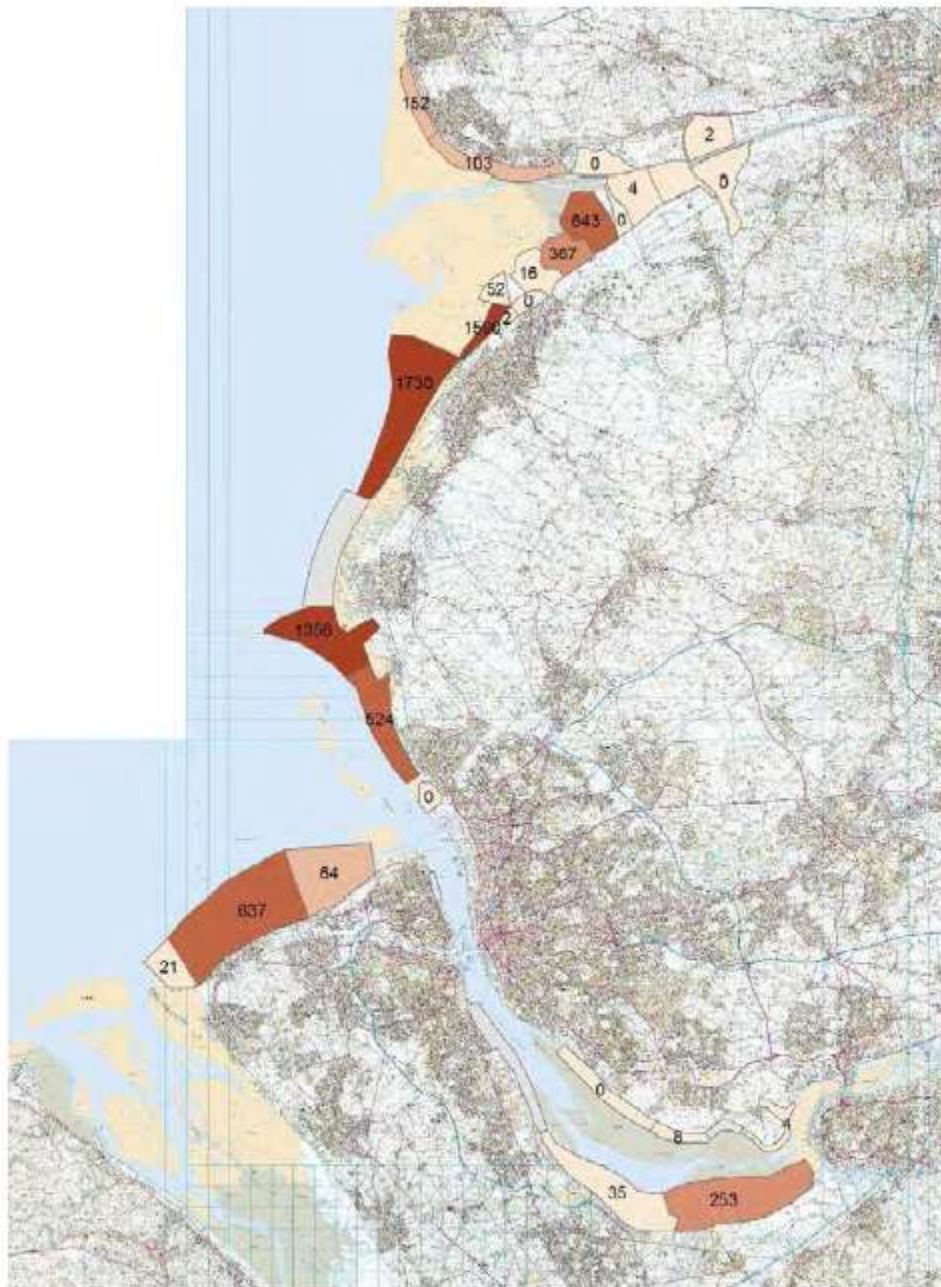


Figure A.5.35 5-year mean densities of Grey Plover (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.36 5-year mean densities of Grey Plover (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.40 5-year mean densities of Lapwing (1997/98 – 2001/02) in the Liverpool City Region



Figure A.5.41 5-year mean densities of Lapwing (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.42 5-year mean densities of Lapwing (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.43 5-year mean densities of Turnstone (1997/98 – 2001/02) in the Liverpool City Region



Figure A.5.44 5-year mean densities of Turnstone (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.45 5-year mean densities of Turnstone (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.46 5-year mean densities of Knot (1997/98 – 2001/02) in the Liverpool City Region



Figure A.5.47 5-year mean densities of Knot (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.48 5-year mean densities of Knot (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.49 5-year mean densities of Sanderling (1997/98 – 2001/02) in the Liverpool City Region



Figure A.5.50 5-year mean densities of Sanderling (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.51 5-year mean densities of Sanderling (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.52 5-year mean densities of Dunlin (1997/98 – 2001/02) in the Liverpool City Region



Figure A.5.53 5-year mean densities of Dunlin (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.54 5-year mean densities of Dunlin (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.55 5-year mean densities of Redshank (1997/98 – 2001/02) in the Liverpool City Region



Figure A.5.56 5-year mean densities of Redshank (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.57 5-year mean densities of Redshank (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.61 5-year mean densities of Bar-tailed Godwit (1997/98 – 2001/02) in the Liverpool City Region



Figure A.5.62 5-year mean densities of Bar-tailed Godwit (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.63 5-year mean densities of Bar-tailed Godwit (2007/08 – 2011/12) in the Liverpool City Region



Figure A.5.67 5-year mean densities of Black-headed Gull (1997/98 – 2001/02) in the Liverpool City Region



Figure A.5.68 5-year mean densities of Black-headed Gull (2002/03 – 2006/07) in the Liverpool City Region



Figure A.5.69 5-year mean densities of Black-headed Gull (2007/08 – 2011/12) in the Liverpool City Region