THE ENVIRONMENT PARTNERSHIP



EDEN PROJECT NORTH

MORECAMBE, LANCASHIRE

WINTER BIRD SURVEY

TEP
Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

Tel: 01925 844004
Email: tep@tep.uk.com
www.tep.uk.com

Offices in Warrington, Market Harborough, Gateshead, London and Cornwall

Document Title	Winter Bird Survey
Prepared for	Eden Project International
Prepared by	TEP - Warrington
Document Ref	7596.016

Author	Lausanne Jenkins
Date	August 2021
Checked	Mike Walker
Approved	Mike Walker

Amendment History					
Version	Date	Modified by	Check / Approved by	Reason(s) issue	Status

CONTENTS PAGE

1.0 Introduction 2
2.0 Method 3
3.0 Results 7
4.0 Discussion and Conclusion 24

TABLES PAGE

Table 1: Sources of Ecological Information 3
Table 2: Statutory Designated Wildlife Sites within 10km of the Site 3
Table 3: Survey Compartments 4
Table 4. Target species for winter bird survey. 5
Table 5. Weather scale 6
Table 6. Visibility scale. 6
Table 7: Morecambe Bay and Duddon Estuary SPA Qualifying Features (Article 4.1) 8
Table 8: Morecambe Bay and Duddon Estuary SPA Qualifying Features (Article 4.2) 9
Table 9: Counts of Little Egret Recorded on the Ground during the Winter Bird Survey. 13
Table 10: Counts of Shelduck Recorded on the Ground during the Winter Bird Survey. 13
Table 11: Counts of Oystercatcher Recorded on the Ground during the Winter Bird Survey. 14
Table 12: Counts of Knot Recorded on the Ground during the Winter Bird Survey. 15
Table 13: Counts of Dunlin Recorded on the Ground during the Winter Bird Survey. 16
Table 14: Counts of Black-tailed Godwit Recorded on the Ground during the Winter Bird Survey. 16
Table 15: Counts of Curlew Recorded on the Ground during the Winter Bird Survey. 17
Table 16: Counts of Redshank Recorded on the Ground during the Winter Bird Survey. 17
Table 17: Counts of Turnstone Recorded on the Ground during the Winter Bird Survey. 18
Table 18: Counts of Eider Recorded on the Ground during the Winter Bird Survey. 19
Table 19: Counts of Great Crested Grebe Recorded on the Ground during the Winter Bird Survey. 20
Table 20: Counts of Red-breasted Merganser Recorded on the Ground during the Winter Bird Survey. 20
Table 21. Qualifying species recorded in numbers greater than 1% of the qualifying Morecambe Bay and Duddon Estuary SPA population within the survey area. 28

APPENDICES

APPENDIX A: International Designated Site Citations
APPENDIX B: Survey Maps and Forms
APPENDIX C: Winter Bird Data Summary Table
APPENDIX D: WeBS Data - Stone Jetty and Morecambe Promenade Sectors
APPENDIX E: Winter Bird Survey and Weather Data

DRAWINGS

G7956.025 - Winter Bird Survey Area and Compartments

1.0 Introduction

1.1 TEP is commissioned by the Eden Project to undertake winter bird assessment work for the proposed Eden Project North development at Morecambe, Lancashire (hereafter referred to as the 'site').

1.2 The site borders and is partly within the Morecambe Bay and Duddon Estuary SPA and Morecambe Bay Ramsar, which are internationally important for the populations of water birds and seabirds they support.

1.3 As part of the EIA Scoping Assessment in spring 2019, a range of existing winter bird information for the Morecambe Bay area in the vicinity of the proposed development was obtained.

1.4 TEP was later commissioned in September 2019 to undertake further winter bird survey work to inform the planning application for the proposed development. Fourteen survey visits were undertaken between 25th October 2019 and 24th April 2020.

1.5 This report provides a review of the desk based bird information and the current known levels of bird usage of the site and surrounding area identified from this, as well as the details of the method and results of the winter bird surveys undertaken by TEP during winter 2019/2020.

2.0 Method

Desk Study

2.1 Information regarding historic species records and protected sites was requested/gathered from the sources listed in Table 1. This collated data gives a useful indication of the distribution and abundance of ecological receptors at a given locale.

Table 1: Sources of Ecological Information

Source of Information	Nature of Information
Magic Map	Statutory designated wildlife sites of international importance within 10km Statutory designated wildlife sites of national importance within 5km Statutory designated wildlife sites of local importance within 2km
Lancashire Environmental Records Network	Protected species records within 2km Non-statutory designated wildlife sites of local importance within 2km
Morecambe Bay Disturbance and Access Management Report	Information on disturbance levels across Morecambe Bay
BTO Wetland Bird Survey	Core bird count data
RSPB	Detailed bird count data
Local Bird Recorders	Local bird knowledge
ArcMap10	Ordnance & Aerial survey mapping

Statutory Designated Wildlife Sites of International Importance

2.2 Table 2 outlines internationally designated sites for birds within 10km of the site.

2.3 International designated site citations and conservation objectives for each site are included at Appendix A.

Table 2: Statutory Designated Wildlife Sites within 10km of the Site

Site Name	Designation	Distance from the Site (km)	Reason for Designation
Morecambe Bay and Duddon Estuary	Special Protection Area (SPA)	Northern area of site is within the SPA	Internationally important waterbird assemblage
Morecambe Bay	Ramsar	Northern area of site is within the SPA	Internationally important waterbird assemblage

Winter Bird Survey

2.4 An inter-tidal bird survey was undertaken during each survey visit. The survey started at high tide and ran until low tide or vice versa and covered three two hour survey periods (minimum of 6 hours surveyed during each survey visit). The aim of the survey was to get complete coverage of the intertidal survey area during each state of tide (low, mid and high).

2.5 The survey area was divided into nine compartments (C1 - C9) to enable the broad location of birds present to be easily recorded and to aid with analysis. The survey base map (Drawing G7596.025) shows the compartment locations. A brief description of each compartment is provided in Table 3.

Table 3: Survey Compartments

Compartment Reference	Description
C1	Includes the Stone Jetty, including a slightly extended area at the northern tip of the Stone Jetty. The Stone Jetty is in regular use by pedestrians, with large numbers of fishermen fishing off the northern tip of the jetty.
C2	Includes an area of estuary between the boat jetty and the sea defence breakwater (Bubbles Breakwater) to the north of the old Bubbles complex. The intertidal area in this compartment contains a lot of estuarine mud with deep channels and thus is not accessed by dog walkers.
C3	Includes the proposed development site, located at the old Bubbles complex, the memorial gardens, as well as an area of inland car parking.
C4	Includes the area of estuary (Shell Bed Flat) between the breakwater to the north of the old Bubbles complex, and the next sea defence breakwater to the north east, north of Marine Road Car Park. The intertidal area has a distinct split with sand on the upper shore and estuarine mud/silt on the mid to lower shore. Dog walkers and other pedestrians only tend to access the sandy area of the shore.
C5	Includes a section of Morecambe seafront between Northumberland Street in the west and Marine Road Car Park in the east.
C6	Includes the intertidal area within 500m of compartments C4 and C5 and within 500m to the east of C2. This area is further subdivided into 0 to 250m and 250m to 500m from C4 and C5.
C7	Includes the intertidal area within 500m of compartment C2 (not including area to the east) and within 500m to the east of C1. This area is further subdivided into 0 to 250m and 250m to 500m from C1 and C2. This compartment includes an area of estuarine mud and channels. The majority of this area remains flooded apart from at low tide. The compartment also includes the thin area between the Stone Jetty and the Boat Breakwater, including the concrete area near to the RNLI building.

Compartment Reference	Description
C8	Includes the intertidal area within 500m to the north and west of C1 and west of C3. This area is further subdivided into 0 to 250m and 250m to 500m from C1 and C3. The intertidal zone in this area contains a sandier substrate, which enables dog walkers and other pedestrians to access much of this area.
C9	Includes an area of *Spartina* grassland and the sea defence structure known as the Battery Breakwater, as well as the smaller Regent road Breakwater, between the Battery and the Stone jetty, as well as surrounding intertidal habitat. The Battery Breakwater, incorporating slipways, was designed to facilitate shellfish harvesting and latterly as an officially designated water-sport access. Kite and wind-surfers usually use this area during south to south-west winds and occasionally other less-suitable directions over the high tide period. This activity is most concentrated at weekends.

2.6 There were three survey periods (high tide, medium tide and low tide) during each survey visit.

2.7 During each 2 hour period the surveyor walked along the seafront along public rights of way using binoculars and a scope to observe all habitat within the survey area, with the aim of obtaining a complete count of all primary bird species within the survey area.

Table 4. Target species for winter bird survey.

Target species	
Primary species	All waders, all wildfowl, other waterbirds, Schedule 1 raptors
Secondary species	Gull Species

2.8 All primary species using the intertidal area within the survey area were recorded. Any significant groups of primary species adjacent to the survey area, or further out to sea were also recorded.

2.9 Any significant concentrations (20+) of secondary species (gulls) were also recorded.

2.10 The survey recording form and map is provided at Appendix B. All bird locations were numbered clearly on the map, and the extent of each group of birds drawn (e.g. a line drawn around the area that the group of birds occupy). Details of the composition of each group of birds (or each single bird if not in a group) were recorded on an intertidal recording sheet. The survey area was divided into 9 compartments and the compartment that the birds were present within was recorded on the recording sheet. Where a group of birds spanned more than one compartment, or spanned the 250m/500m buffer, the numbers of birds within each of these areas was noted.

2.11 One survey map was used per 2 hour survey period, giving a total of three maps per surveyor for the survey visit, with one for each tidal state.

2.12 If significant movements of birds that had already been recorded within the same survey period occurred, this was also recorded, but it was made clear in the comments column that these birds had already been recorded elsewhere (and where). Every effort was made to avoid double-counting birds within the two hour period.

2.13 Particular attention was made when undertaking the survey to avoid causing disturbance to the birds.

2.14 Any significant disturbance events that occurred during the survey period were also recorded, including the type of disturbance (e.g. dog walker, kite surfer etc.), number of birds disturbed and observed bird reaction.

Recording the weather

2.15 The weather was recorded every hour during the survey period. When describing rainfall and survey visibility, the scales shown in Tables 5 and 6 were implemented. Wind strength was recorded using the Beaufort Wind Scale. Cloud cover was recorded on a scale of 0 to 8 with 0 representing a clear sky and 8 representing an overcast sky. Temperature was recorded in degrees Celsius.

Table 5. Weather scale

Rain Scale	Description
0	Dry
1	Spots
2	Light Shower
3	Drizzle/ Persistent Light Rain
4	Heavy Shower
5	Persistent Heavy Rain
Further categories:	
M	Mist
LS	Light snow
HS	Heavy snow

Table 6. Visibility scale.

Visibility Scale	Description
0	<100m
1	100m – 500m
2	500m – 1km
3	1-2km
4	>2km

3.0 Results

Desk Study

Statutory Designated Wildlife Sites of International Importance

Morecambe Bay and Duddon Estuary SPA

Site Description

3.1 The Morecambe Bay and Duddon Estuary SPA is on the Irish Sea coast of north-west England and covers an area of 5,023.35 ha. It is a large, sheltered estuary that comprises large areas of salt marsh and extensive intertidal sand and mudflats, with limited areas of brackish marsh, rocky shoreline and boulder clay cliffs, within a rural and industrial environment.

3.2 The intertidal flats and saltmarshes provide feeding and roosting sites for large and internationally important populations of waterfowl. During the winter, the site is of major importance for ducks and waders. The site is also important during spring and autumn migration periods, particularly for wader populations moving along the west coast of Britain.

3.3 The SPA extends between Rossall Point in Lancashire and Drigg Dunes in Cumbria. The site includes the former Morecambe Bay SPA and Duddon Estuary SPA and an extension to include the Ravenglass Estuary and intervening coast and the shallow offshore area off south west Cumbria coast. Morecambe Bay is the second largest embayment in Britain after The Wash, at over 310 km^2, and has four estuaries – the Wyre, Lune, Kent and Leven.

3.4 It contains the largest continuous area of intertidal mudflats and sandflats in the UK which supports a variety of infaunal communities including cockle beds. Morecambe Bay supports a wide range of other habitats including large areas of saltmarsh and transitional habitats as well as sand dune systems and coastal lagoons. Within the Bay there are areas of stony reef (known locally as scars or skears) which also support blue mussel beds and honeycomb worm *Sabellaria alveolata* reefs. Extensive eelgrass beds are present around Foulney Island and in the south Walney Channel, the only examples in the North West of England.

3.5 The Duddon and Ravenglass Estuaries support saltmarsh, intertidal mud and sand communities and sand dune systems with small areas of stony reef. The intermediate coast comprises extensive shingle and sand beaches. The parts of the SPA away from the coast are sandy and shallow, mostly less than 15 metres deep.

Conservation Objectives

3.6 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.

Qualifying Features

3.7 The site qualifies under Article 4.1 of the Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain population of the following species listed in Annex I in any season.

Table 7: Morecambe Bay and Duddon Estuary SPA Qualifying Features (Article 4.1)

Species	Season	Qualifying Count[1]	% Population
Whooper Swan *Cygnus cygnus*	Non-breeding	113	1% of GB population
Little Egret *Egretta garzetta*	Non-breeding	134	3.0% of GB population
European Golden Plover *Pluvialis apricaria*	Non-breeding	1,900	1.2% GB Population
Bar tailed Godwit *Limosa lapponica*	Non-breeding	3,046	8.0% GB population
Ruff *Calidris pugnax*	Non-breeding	8	1.0% GB population
Mediterranean Gull *Larus elancephalus*	Non-breeding	18	1.0% GB population
Little Tern *Sturnula albifrons*	Breeding	84	2.2% GB population
Sandwich Tern *Sterna sandvicensis*	Breeding	1,608	5.7% GB population
Common tern *Sterna hirundo*	Breeding	570	2.0% GB population

[1] Qualifying Count from Morecambe Bay and Duddon Estuary SPA Citation

3.8 The site qualifies under Article 4.2 of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season.

Table 8: Morecambe Bay and Duddon Estuary SPA Qualifying Features (Article 4.2)

Species	Season	Qualifying Count[1]	% Population
Pink footed Goose *Anser brachyrhynchus*	Non-breeding	15,648 ,	4.5% of biogeographic population
Shelduck *Tadorna tadorna*	Non-breeding	5,878	2.0% of biogeographic population
Northern Pintail *Anas acuta*	Non-breeding	2,498	4.2% of biogeographic population
European Oystercatcher *Haematopus ostralegus*	Non-breeding	55,888	6.8% of biogeographic population
Grey Plover *Pluvialis squatarola*	Non-breeding	2,000	1.0% of biogeographic population
Common Ringed Plover *Charadarius hiaticula*	Non-breeding	1,049	1.4% of biogeographic population
Curlew *Numenius arquata*	Non-breeding	12,209	1.5% of biogeographic population
Black-tailed Godwit *Limosa limosa*	Non-breeding	2,413	4.0% of biogeographic population
Ruddy Turnstone *Arenaria interpres*	Non-breeding	1,359	1.0% of biogeographic population
Red Knot *Calidris canutus*	Non-breeding	32,739	7.3% of biogeographic population
Sanderling *Calidris alba*	Non-breeding	3,600	3.0% of biogeographic population (1991)
Dunlin *Calidris alpina alpina*	Non-breeding	26,982	2.0% of biogeographic population
Common Redshank *Tringa tetanus*	Non-breeding	11,133	4.6% of biogeographic population
Lesser Black-backed Gull *Larus fuscus*	Non-breeding	9,450	1.7% of biogeographic population

Species	Season	Qualifying Count[1]	% Population
Lesser Black-backed Gull *Larus fuscus graellsii*	Breeding	9,720	2.7% of biogeographic population
European Herring Gull *Larus argentatus argenteus*	Breeding	20,000	1.0% of biogeographic population (1991)

[1]Data from Morecambe Bay and Duddon Estuary SPA Citation

Morecambe Bay Ramsar

3.9 Morecambe Bay was designated as a Ramsar site in October 1999. The site qualifies as a Ramsar site under the following criteria:

- **Criterion 4:** The site is a staging area for migratory wildfowl including important numbers of passage ringed plover;
- **Criterion 5:** Internationally important waterbird assemblage (greater than 20,000 birds); and
- **Criterion 6:** Over winter the site supports internationally important populations of: bar-tailed godwit, curlew, dunlin, grey plover, knot, oystercatcher, pink-footed goose, pintail, redshank, shelduck and turnstone.

Sources of Information

3.10 A wide range of bird survey data is available for the Morecambe coastline including the survey area. Bird data has been obtained from a variety of sources to determine bird usage of this area. The sources consulted and the data provided are as follows:

- Morecambe Bay Disturbance and Access Management Report;
- WeBS data - 5 year summaries for Morecambe Promenade and Stone Jetty areas (larger areas);
- RSPB – two count areas; and
- Localised WeBS Counts –High tide counts for the two breakwater locations to the west of the Eden site, including the Battery Breakwater and the West End Breakwater.

3.11 The peak counts of each qualifying bird species for the Morecambe Bay and Duddon Estuary SPA and the Morecambe Bay Ramsar that have been recorded within each of the above surveys/studies are presented within Appendix C.

3.12 Further detail regarding each of these sources of information is provided below.

Morecambe Bay Disturbance Study

3.13 The Morecambe Bay Bird Disturbance and Access Management Report (Liley *et al*, 2015) analysed disturbance levels across the Morecambe Bay. As part of this, three winter bird survey visits were made from a survey location at the base of the breakwater at the edge of the Bubbles complex (i.e. close to the proposed Eden Project site).

3.14 Low numbers of birds were seen within the area of interest, including maximum counts of 10 black-tailed godwit, 5 curlew, 60 knot, 88 oystercatcher, 74 redshank, 3 turnstone, 20 shelduck and a single red-breasted merganser and cormorant. Only the count of redshank approached 1% of the SPA or Ramsar qualifying population (0.7% SPA, 0.8% Ramsar).

WeBS data - Morecambe Promenade and Stone Jetty areas

3.15 Two Wetland Bird Survey (WeBS) core count sectors are located close to the project site; 'Morecambe Promenade' (located between the Stone Jetty at the northwest corner of the proposed site and Scalestones Point, located approximately 2.8km north east of the site) and 'Stone Jetty' (located between the jetty at the western edge of the site and Heysham Port, located 5.6km south west). The 5-yr synopsis data for these two sectors is presented at Appendix D.

3.16 Core count data was obtained from WeBS for both of these sectors for the period 2012/13 – 2016/17. Species for which the 5 year peak mean was greater than 1% of the qualifying counts for either the Morecambe Bay and Duddon Estuary SPA or Morecambe Bay Ramsar site include the following:

- Little egret;
- Oystercatcher;
- Ringed plover;
- Knot;
- Black-tailed godwit;
- Redshank;
- Turnstone;
- Cormorant;
- Great crested grebe; and
- Red-breasted merganser.

RSPB data - Morecambe Promenade and Stone Jetty areas

3.17 Detailed WeBS count data have been obtained from the RSPB, for the following WeBS count areas for the last 10 years:

- Reduced Stone Jetty count area - extends from 500m to the west of the Stone Jetty, up to boat jetty immediately to the east of the Stone Jetty,
- Promenade - area between the boat jetty and Scalestones Point to the east.

3.18 These counts have been undertaken at spring tides at the rate of two counts per month. Peak counts from the last two survey years of data have been provided within Appendix C.

Additional WeBS counts

3.19 In addition to the data obtained from the RSPB above, WeBS counts have been obtained for the following individual reduced WeBS survey areas (which are now combined by WeBS to form the overall 'Stone Jetty' sector):

- Wooden Jetty
- Heysham Harbour
- Heysham Heliport
- Heysham Village Bay and Fields
- Sunnyslopes Breakwater
- Grosvenor Breakwater
- Battery Breakwater
- West End Breakwater

3.20 Of relevance to the Eden assessment are the Battery Breakwater area (located approximately 900m west of application site) and the West End Breakwater area (located approximately 700m west of the application site). The 5 year peak means for each of the qualifying species in these two count areas are provided in Appendix C.

3.21 The additional count areas are useful for providing additional background information on usage of the known large roosts at Heysham.

Local Bird Recorders

3.22 In addition to the data available described above, a number of ornithologists (including Pete Marsh and Jean Roberts) have watched and monitored this area over a number of years and have a large amount of knowledge regarding birds that use the survey area and much wider area used by the same birds (such as the important Heysham heliport roost site). They are also well aware of a range of factors that influence the locations that the birds use (including human disturbance, tide and weather). These ornithologists have provided a wide range of knowledge and input.

Winter Bird Survey

3.23 Fourteen winter bird survey visits were completed between October 2019 and April 2020. Survey visit numbers and dates are listed below and the raw survey data, as well as the weather data is included in Appendix E.

- Visit 1: 25th October 2019
- Visit 2: 31st October 2019
- Visit 3: 15th November 2019
- Visit 4: 23rd November 2019
- Visit 5: 2nd December 2019
- Visit 6: 23rd December 2019
- Visit 7: 24th January 2020
- Visit 8: 31st January 2020
- Visit 9: 14th February 2020
- Visit 10: 22nd February 2020
- Visit 11: 9th March 2020
- Visit 12: 30th March 2020

- Visit 13: 16th April 2020
- Visit 14: 24th April 2020

3.24 Results for qualifying and assemblage features of the Morecambe Bay and Duddon Estuary SPA and Morecambe Bay Ramsar recorded on the ground during the winter bird survey are detailed below in Tables 9 to 20.

Little Egret

3.25 Little egret were recorded on the ground within the survey area during four survey visits.

3.26 Little egret were not recorded within 500m of the site.

3.27 The survey area peak count of seven little egret was recorded during survey visit 1 on 25th October 2019 with all birds noted loafing in C9 at high tide.

Table 9: Counts of Little Egret Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site														
Peak Count 250-500m from the site														
Survey Area Peak Count	**7 (HT)**			**2 (MT)**	**1 (MT)**				**1 (LT)**					

LT - Low Tide, MT = Mid Tide, HT = High Tide

Shelduck

3.28 Shelduck were recorded on the ground within the survey area during 12 survey visits with a peak count of 46 birds noted at mid tide on 23rd November 2019.

3.29 Shelduck were recorded within 250m of the site during nine survey visits, with a peak count of 29 birds noted at high tide on 23rd November 2019.

3.30 Shelduck were recorded 250-500m from the site during ten survey visits, with a peak count of 17 birds noted on 2nd December 2019.

Table 10: Counts of Shelduck Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site		1 (LT)	4 (MT)	29 (HT)	23 (HT)	5 (MT)	13 (HT, MT)	6 (MT)				2 (LT, MT)	1 (MT, HT)	
Peak Count 250-500m from the site	1 (LT)	1 (MT)	2 (HT)	11 (LT)	17 (LT)	2 (LT)		3 (MT)				3 (MT, HT)	1 (HT)	2 (LT)
Survey Area Peak Count	**2 (LT)**	**1 (LT, MT)**	**20 (LT)**	**46 (MT)**	**30 (MT)**	**8 (MT)**	**13 (HT, MT)**	**15 (LT)**	**3 (LT)**			**14 (LT)**	**2 (HT)**	**2 (LT)**

LT - Low Tide, MT = Mid Tide, HT = High Tide

Oystercatcher

3.31 Oystercatcher were recorded on the ground within the survey area during all survey visits with a peak count of 2,058 birds noted at high tide on 23rd November 2019.

3.32 Oystercatcher were recorded within 250m of the site during all survey visits, with a peak count of 1,495 birds noted at high tide on 23rd November 2019.

3.33 Oystercatcher were recorded 250-500m from the site during all survey visits, with a peak count of 1,312 birds noted at high tide on 24th January 2019.

3.34 Peak counts within 250m of the site only exceeded 1% of the SPA population on one occasion (visit 5) and within 250-500m of the site on two occasions (visits 5 and 7).

Table 11: Counts of Oystercatcher Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site	12 (MT)	23 (HT)	120 (HT)	25 (HT)	945 (HT)	13 (MT)	61 (HT)	33 (HT)	323 (HT)	117 (HT)	173 (MT)	420 (MT)	270 (MT, HT)	326 (HT)
Peak Count 250-500m from the site	105 (LT)	124 (MT)	188 (LT)	44 (LT)	990 (HT)	15 (LT)	1,312 (MT)	28 (MT)	434 (MT)	18 (MT)	128 (MT)	294 (LT)	(325 HT)	319 (LT)
Survey Area Peak Count	**310 (HT)**	**1,108 (LT)**	**709 (LT)**	**2,058 (HT)**	**1,560 (HT)**	**33 (LT)**	**1,355 (MT)**	**1,563 (MT)**	**1,923 (LT)**	**117 (HT)**	**190 (LT)**	**971 (LT)**	**637 (HT)**	**730 (LT)**

LT - Low Tide, MT = Mid Tide, HT = High Tide

Grey Plover

3.35 An individual grey plover was recorded during survey visit 13 on 16th April 2020. The bird was noted feeding within 250m of the site in C4 and C6 during the mid and high tide survey periods.

Knot

3.36 Knot were recorded on the ground within the survey area during 13 survey visits with a peak count of 7,227 birds noted at mid tide on 2nd December 2019.

3.37 Knot were recorded within 250m of the site during six survey visits, with a peak count of 7,223 birds noted at high tide on 2nd December 2019.

3.38 Knot were recorded 250-500m from the site during five survey visits, with a peak count of 7,200 birds noted at high tide on 2nd December 2019.

Table 12: Counts of Knot Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site	36 (LT)				7,223 (HT)		1,000 (MT)	31 (MT)		7 (HT)			1 (MT, HT)	
Peak Count 250-500m from the site		130 (MT)			7,200 (HT)		1,500 (MT)	31 (MT)		1 (HT, LT)				
Survey Area Peak Count	**36 (LT)**	**1,869 (LT)**	**800 (LT)**	**4,200 (HT)**	**7,227 (MT)**	**4 (MT, LT)**	**2,500 (MT)**	**1,073 (MT)**	**1,006 (LT)**	**7 (HT)**	**8 (LT)**	**5 (LT)**	**1 (MT, HT)**	

LT - Low Tide, MT = Mid Tide, HT = High Tide

Dunlin

3.39 Dunlin were recorded on the ground within the survey area during six survey visits with a peak count of 120 birds noted at low tide on 31st October 2019.

3.40 Dunlin were recorded within 250m of the site during four survey visits, with a peak count of 70 birds noted at mid tide on 16th April 2020.

3.41 Dunlin were recorded 250-500m from the site during one survey visit, with a peak count of 70 birds noted at mid tide on 16th April 2020.

Table 13: Counts of Dunlin Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site				7 (HT)					11 (HT)	1 (HT)			70 (MT)	
Peak Count 250-500m from the site													70 (MT)	
Survey Area Peak Count		**120 (LT)**		**9 (HT)**	**3 (HT)**				**11 (HT)**	**1 (HT)**			**70 (MT)**	

LT - Low Tide, MT = Mid Tide, HT = High Tide

Black-tailed Godwit

3.42 Black-tailed godwit were recorded on the ground within the survey area during four survey visits with a peak count of 56 birds noted at low tide on 30th March 2020.

3.43 Black-tailed godwit were recorded within 250m of the site during two survey visits, with a peak count of five birds noted at mid and high tide on 16th April 2020.

3.44 Black-tailed godwit were not recorded 250-500m from the site during the winter bird survey.

Table 14: Counts of Black-tailed Godwit Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site	2 (LT)												5 (MT, HT)	
Peak Count 250-500m from the site														
Survey Area Peak Count	**2 (LT)**						**4 (MT)**					**56 (LT)**	**5 (MT, HT)**	

LT - Low Tide, MT = Mid Tide, HT = High Tide

Curlew

3.45 Curlew were recorded on the ground within the survey area during all survey visits with a peak count of 232 birds noted at high tide on 24th January 2020.

3.46 Curlew were recorded within 250m of the site during 13 survey visits, with a peak count of 17 birds noted at high tide on 2nd December 2019.

3.47 Curlew were recorded 250-500m from the site during 13 survey visits, with a peak count of 72 birds noted at mid tide on 24th January 2020.

Table 15: Counts of Curlew Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site	3 (MT)	4 (MT)	4 (MT, HT)	10 (HT)	17 (HT)	6 (MT, LT)	5 (HT)	4 (MT)	7 (LT)	3 (LT)	5 (MT)	2 (LT, MT)	2 (HT)	
Peak Count 250-500m from the site	1 (LT)	4 (LT)	8 (LT)	7 (MT)	3 (LT)	4 (LT)	72 (MT)	6 (LT)	21 (MT)	2 (MT)	6 (LT)	26 (MT)		1 (MT, LT)
Survey Area Peak Count	**6 (MT)**	**51 (MT)**	**33 (LT)**	**178 (HT)**	**37 (HT)**	**15 (LT)**	**232 (HT)**	**24 (LT)**	**29 (MT)**	**11 (LT)**	**8 (LT)**	**47 (HT)**	**5 (LT)**	**2 (LT)**

LT - Low Tide, MT = Mid Tide, HT = High Tide

Redshank

3.48 Redshank were recorded on the ground within the survey area during 13 survey visits with a peak count of 381 birds noted at high tide on 24th January 2020.

3.49 Redshank were recorded within 250m of the site during 13 survey visits, with a peak count of 108 birds noted at high tide on 2nd December 2019.

3.50 Redshank were recorded 250-500m from the site during nine survey visits, with a peak count of 47 birds noted at mid tide on 2nd December 2019.

Table 16: Counts of Redshank Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site	55 (HT)	33 (HT)	49 (MT)	57 (MT)	108 (HT)	67 (HT)	98 (HT)	24 (HT)	33 (HT)	12 (HT)	17 (MT)	51 (HT)	20 (MT)	

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count 250-500m from the site	10 (HT)	11 (MT)	17 (LT)	31 (LT)	47 (HT)		24 (MT)	7 (MT)			3 (LT)	3 (LT)		
Survey Area Peak Count	**127 (HT)**	**59 (MT)**	**228 (MT)**	**357 (HT)**	**276 (HT)**	**71 (HT)**	**381 (HT)**	**59 (HT)**	**68 (HT)**	**12 (HT)**	**21 (LT)**	**51 (LT, HT)**	**39 (MT)**	

LT - Low Tide, MT = Mid Tide, HT = High Tide

Turnstone

3.51 Turnstone were recorded on the ground within the survey area during 10 survey visits with a peak count of 112 birds noted at high tide on 9th March 2020.

3.52 Turnstone were recorded within 250m of the site during 10 survey visits, with a peak count of 112 birds noted at high tide on 9th March 2020.

3.53 Turnstone were recorded 250-500m from the site during two survey visits, with a peak count of 15 birds noted at mid tide on 31st October 2019.

Table 17: Counts of Turnstone Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site	41 (HT)	35 (LT)	20 (MT)	34 (HT)		79 (HT)	7 (HT)	4 (HT)	17 (HT)	54 (HT)	112 (HT)			
Peak Count 250-500m from the site		15 (MT)	12 (LT)											
Survey Area Peak Count	**41 (HT)**	**42 (LT)**	**20 (MT)**	**34 (HT)**		**96 (HT)**	**7 (HT)**	**4 (HT)**	**17 (HT)**	**54 (HT)**	**112 (HT)**			

LT - Low Tide, MT = Mid Tide, HT = High Tide

Cormorant

Two cormorant were recorded loafing in C6 during survey visit 13 on 16th April 2020 at low tide. An individual cormorant was also recorded in C7 between 250m and 500m from the site during the high tide survey period on the same date.

Eider

3.54 Eider were recorded on the ground within the survey area during six survey visits with a peak count of 142 birds noted at mid tide on 30th March 2020.

3.55 Eider were not recorded within 250m of the site.

3.56 Eider were recorded 250-500m from the site during four survey visits, with a peak count of 73 birds noted at mid tide on 30th March 2020.

Table 18: Counts of Eider Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site														
Peak Count 250-500m from the site											7 (MT)	73 (MT)	18 (LT)	31 (LT)
Survey Area Peak Count								**16 (MT)**	**10 (MT)**		**17 (MT)**	**142 (MT)**	**115 (LT)**	**47 (LT)**

LT - Low Tide, MT = Mid Tide, HT = High Tide

Goldeneye

3.57 An individual goldeneye was recorded roosting in C8 during survey visit 8 on 31st January 2020 at mid tide. Goldeneye were not recorded within 500m of the site.

Great Crested Grebe

3.58 Great crested grebe were recorded on the ground within the survey area during 11 survey visits with a peak count of seven birds noted at low tide on 23rd November 2019 and mid tide on 14th February 2020.

3.59 Great crested grebe were recorded within 250m of the site during five survey visits with a peak count of 2 birds noted at high tide on 31st January 2020.

3.60 Great crested grebe were recorded 250-500m from the site during eight survey visits, with a peak count of seven birds noted at mid tide on 14th February 2020.

Table 19: Counts of Great Crested Grebe Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site	1 (MT)	1 (HT)		1 (MT)		1 (HT)		2 (HT)						
Peak Count 250-500m from the site	2 (HT, LT)	3 (HT)	2 (HT)	6 (LT)	3 (MT, HT)			1 (LT)	7 (MT)		1 (MT)			
Survey Area Peak Count	**3 (MT)**	**7 (MT)**	**5 (HT)**	**7 (LT)**	**3 (MT, HT)**	**1 (HT)**		**3 (LT)**	**7 (MT)**		**1 (MT)**		**2 (LT)**	**1 (HT)**

LT - Low Tide, MT = Mid Tide, HT = High Tide

Red-breasted Merganser

3.61 Red-breasted merganser were recorded on the ground within the survey area during eight survey visits with a peak count of seven birds noted at mid tide on 2nd December 2019.

3.62 Red-breasted merganser were recorded within 250m of the site during three survey visits with a peak count of 2 birds noted at high tide on 23rd December 2020.

3.63 Red-breasted merganser were recorded 250-500m from the site during five survey visits, with a peak count of four birds noted at high tide on 2nd December 2019.

Table 20: Counts of Red-breasted Merganser Recorded on the Ground during the Winter Bird Survey.

Survey Compartment	Visit Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Peak Count within 250m of the site						2 (HT)		1 (LT)		1 (HT)				
Peak Count 250-500m from the site				2 (LT)	4 (HT)				3 (HT)	3 (MT)	3 (LT)			
Survey Area Peak Count				**2 (LT)**	**7 (MT)**	**2 (HT)**		**1 (LT, HT)**	**3 (HT)**	**3 (MT)**	**3 (LT)**	**4 (MT)**		

LT - Low Tide, MT = Mid Tide, HT = High Tide

Other Non-SPA/Ramsar Bird Species

3.64 Only very low numbers of other bird species that are not qualifying species or assemblage species for the Morecambe Bay and Duddon Estuary SPA or Morecambe Bay Ramsar were recorded during the winter bird survey. These included very low numbers of common gull, great black-backed gull, heron and mute swan.

Bird Activity by Compartment

Compartment C1

3.65 Low numbers of waders were recorded occasionally foraging on the mudflats, channels and flood defences at the edge of this compartment at low and mid tide. Species include curlew (peak count: 1), oystercatcher (peak count: 6), redshank (peak count: 12), and turnstone (peak count: 12).

3.66 A single great crested grebe was recorded at high tide on the water at the edge of this compartment.

Compartment C2

3.67 This area was used at low and mid-tide by low numbers of curlew (peak count: 4), oystercatcher (peak count: 8), redshank (peak count: 11) and shelduck (peak count: 10).

3.68 Some disturbance was noted from pedestrians on the footpath at the northern perimeter of the Bubbles complex on the birds using the closest parts of the intertidal area when the advancing tide brought the birds close in.

3.69 The breakwater structure was recorded to be used as a high tide roost by moderate numbers of curlew (peak count: 4), dunlin (peak count: 1), knot (peak count: 7), oystercatcher (peak count: 320), redshank (peak count: 54) and turnstone (peak count: 112). No disturbance of roosting birds at this breakwater was observed during the winter bird survey.

Compartment C3

3.70 No primary species were recorded to use this area.

Compartment C4

3.71 This compartment was recorded to be used by feeding waders at low and mid tide with peak counts of 5 bar-tailed godwit, 5 curlew, 62 knot, 420 oystercatcher and 60 redshank. Five shelduck were also observed to roost in this area at low and mid tide. Two great crested grebe were observed on the water feeding at high tide.

Compartment C5

3.72 A single curlew and two oystercatcher were observed feeding at the edge of this area on one occasion at low tide.

Compartment C6

3.73 This area was used for feeding at low tide by up to 90 oystercatcher, 35 redshank and 6 shelduck.

3.74 This area was recorded to be regularly used by feeding waders at low tide. In particular, a band of more stony substrate present at the eastern end of this area was recorded to be used by large numbers of feeding waders at low tide, including peak counts of 120 dunlin, 1,850 knot and 975 oystercatcher on 31st October. These birds were observed to fly further west of the survey area as the tide came in.

3.75 Other species recorded in this area included curlew (peak count: 21) and redshank (peak count: 12).

Compartment C7

3.76 35 turnstone were observed feeding near to the Stone Jetty within this area on one occasion. Otherwise only low usage of this area by waders was observed, with larger numbers of gulls present (peak count of 268 herring gull and 30 black-headed gull).

3.77 Feeding redshank (30 individuals) were observed on one occasion to be funnelled in to the area between the Stone Jetty and the boat Breakwater on the advancing tide.

3.78 A peak count of 6 great crested grebe were observed just within 250m of the northern tip of the Stone Jetty, feeding on the water at high tide.

Compartment C8

3.79 Approximately 500m from Morecambe Seafront, within 250m of the northern end of the Stone Jetty, birds were recorded to roost at low tide (187 oystercatcher) and feed at mid tide (950 knot, 165 oystercatcher) close to the waterline. Within 500m from the Stone Jetty 276 oystercatcher were observed to roost near to the waterline and 45 curlew were observed feeding.

Compartment C9

3.80 The area of *Spartina* grassland, although adjacent to the busy disturbed seafront, was recorded to be used as a roost by 290 redshank, 1,500 oystercatcher and 3 little egret. The Breakwater to the east was observed to be used as a roost by 147 redshank.

3.81 A proportion of the redshank that feed within the wider area are known to roost here during most tides with the rest going to the sunny slopes or Heysham heliport (P.Marsh, pers comms).

Disturbance

3.82 During the survey work a large amount of disturbance was observed within the survey area. This was recorded to result in some reactions of birds, including birds taking to flight. Dogs and dog walkers were observed to account for the large majority of disturbance incidences where behavioural responses were observed from the birds, with knot and redshank observed to be disturbed by dogs or dog walkers on 7 occasions and oystercatcher observed to be disturbed on 8 occasions. Other sources of disturbance recorded included predators (peregrine) and a fishing boat. The most common observed response to disturbance by dogs and dog walkers was to be flushed and fly for up to 500m before resuming their activity. Birds were recorded to completely leave the survey area during approximately a third of disturbance events (35%) involving dogs where a disturbance response was observed. Some dog walkers were observed to cause much more disturbance than others, such as a greyhound in a high visibility jacket that repeatedly ran out to the birds during the late November visit.

3.83 Walkers and dog walkers were also recorded to deliberately flush birds (generally using dogs) in order to photograph the resulting flying flock, or 'murmuration'.

3.84 The Battery Breakwater, incorporating slipways, was designed to facilitate shellfish harvesting and is as an officially designated water-sport access. Many kite and wind-surfers are known to use this location during south to south-west winds and occasionally other less-suitable directions over the high tide period. This activity is most concentrated at weekends.

3.85 The Battery Breakwater used to be free of dog and dog-walker disturbance but a sand-bar on the outer north side has been in existence and growing during the 5-year period allowing a gradually increasing suitable surface area for dog-walkers accessing via the nearby slipway. Up to the end of winter 2018/9, this was an isolated exercising area but as the muddy *Spartina* has succeeded to saltmarsh along the northern edge of the Breakwater, this has enabled a suitable ‘dog corridor’ from the upper foreshore to the sand-bar. It has coincided with a northerly extension of the *Spartina* boundary, so the late incoming/early dropping feeding area for redshank and other species has not decreased in overall size.

3.86 The smaller Regent road/West End Breakwater has no public access and is not friendly to pedestrian access due to the silty/muddy substrates along both sides. The outer section is far enough away from the upper beach to support a wader roost, although space is often limited by the large numbers of gulls using the rocks, especially during late summer/autumn. However, this Breakwater is disturbed regularly by kite and wind-surfers, especially in south westerly winds. When disturbed from this location, redshank are known to relocate to Sunny Slopes Breakwater or Heysham Heliport, depending on whether the tide/wind is favourable for roosting on Sunny Slopes Breakwater.

4.0 Discussion and Conclusion

SPA and Ramsar Bird Species

4.1 The bird species that have been recorded in numbers greater than 1% of the qualifying Morecambe Bay and Duddon Estuary SPA or Morecambe Bay Ramsar population within the survey area are detailed in Table 21.

Little Egret

4.2 The winter bird survey peak count of seven little egret recorded on 25th October 2019 is equivalent to 5.2% of the Morecambe Bay and Duddon Estuary SPA qualifying population.

4.3 Little egret were not recorded within 500m of the site, with all records during the 2019/2020 winter bird survey noted in C9, in excess of 500m from the site.

Oystercatcher

4.4 The winter bird survey peak count of 2,058 oystercatcher on 23rd November 2019 is equivalent to 3.7% of the Morecambe Bay and Duddon Estuary SPA qualifying population and 4.3% of the Morecambe Bay Ramsar population.

4.5 The peak count of 945 oystercatcher recorded within 250m of the site during the winter bird survey is equivalent to 1.7% of the Morecambe Bay and Duddon Estuary SPA qualifying population and 1.8% of the Morecambe Bay Ramsar population.

4.6 Within 250-500m from the site, the peak count of 990 oystercatcher is equivalent to 2.0% of the Morecambe Bay and Duddon Estuary SPA qualifying population and 2.1% of the Morecambe Bay Ramsar population.

4.7 The numbers of oystercatcher recorded during 2019/2020 have exceeded the highest peak count obtained from desk based data for the survey area. Large numbers of birds have been recorded roosting on the Spartina in Compartment C9 (between the Battery and Regent Road), more than 500m from the site. On one occasion 920 individuals were recorded to be flushed repeatedly by dogs (along with a large flock of knot) until they eventually relocated within 250m of the Stone Jetty. Some of these birds remained in this location to roost.

Knot

4.8 The winter bird survey peak count of 7,227 knot on 2nd December 2019 is equivalent to 22.1% of the Morecambe Bay and Duddon Estuary SPA qualifying population and 24.5% of the Morecambe Bay Ramsar population. The vast majority of these birds were recorded within 250m of the site.

4.9 2019 was a particularly productive for breeding year for knot in Greenland. Netting showed extremely high proportions of juveniles arriving at UK shores, with large numbers arriving at Morecambe Bay. It is possible therefore that the knot recorded during the 2019/2020 winter bird survey comprised a large proportion of juvenile birds.

4.10 In winter 2019/20, a significant number of Knot fed on the skears between Heysham Head and the Battery. The roosting birds on the lower tides included variable numbers remaining between the Battery and Regent Road, including 4,200 recorded during survey visit 3 and 7,200 recorded during survey visit 4 on 2nd December 2019. This was the first time since the breakwaters were constructed that there has been a significant roost between the Battery and Regent Road Breakwaters (P.Marsh, Pers Comms).

4.11 The remaining knot in the wider area roosted on the Heysham Heliport. The roost count at Heysham Heliport in December 2019 was of 10,300 knot, which likely includes the birds observed within the winter bird survey area.

4.12 The extent of spartina between the Battery and Regent Road (West End) Breakwater within Compartment C9 acts as a barrier to the large majority of dog walkers, however this could change if a substrate-friendly corridor to the short was to be available from the end of the Battery Breakwater via the sand-bar. Similarly, deep indented channels alongside the south side of the Stone jetty discourage mass access from the upper shore between Regent Road Breakwater and the stone jetty. The outer mudflats/spartina edge between the Battery and Regent Road (West End) Breakwater have been regularly used by roosting oystercatcher, curlew and redshank, likely due to the lack of disturbance in these locations.

4.13 The peak count of 7,227 knot recorded during early December were observed roosting more than 500m from the site, but were flushed on two consecutive occasions by dogs until they relocated on the exposed estuary within 250m of the Stone Jetty, before soon being flushed by a peregrine and heading to the usual roosting locations to the south west (likely to be Heysham Heliport).

Black-tailed Godwit

4.14 The winter bird survey peak count of 56 black-tailed godwit on 30th March 2020 is equivalent to 2.3% of the Morecambe Bay and Duddon Estuary SPA qualifying population. This peak count is slightly higher than the 5-year peak mean for the Morecambe Promenade WeBS sector, located to the north of the Stone Jetty (41 individuals).

4.15 Very low numbers of black-tailed godwit were infrequently recorded within 500m of the site, with a peak count of five birds noted within 250m of the site on 16th April 2020, which is 0.2% of the Morecambe Bay and Duddon Estuary SPA qualifying population. This is similar to usage of nearby areas by this species recorded in desk based records.

Curlew

4.16 The winter bird survey peak count of 232 curlew on 24th January 2020 is equivalent to 1.9% of the Morecambe Bay and Duddon Estuary SPA qualifying population and 1.7% of the Morecambe Bay Ramsar population. The numbers of curlew recorded within the survey area during the winter bird survey largely exceeded the 5-year peak means for the WeBS sectors that cover this area, however the numbers within 500m of the site were similar to those recorded in desk based records.

4.17 The peak count of 17 curlew recorded within 250m of the site during the winter bird survey is equivalent to 0.1% of the Morecambe Bay and Duddon Estuary SPA and Morecambe Bay Ramsar population.

4.18 Within 250-500m from the site, the peak count of 72 curlew is equivalent to 0.5% of the Morecambe Bay and Duddon Estuary SPA and Morecambe Bay Ramsar population.

Redshank

4.19 The winter bird survey peak count of 381 redshank on 24th January 2020 is equivalent to 3.4% of the Morecambe Bay and Duddon Estuary SPA qualifying population and 6% of the Morecambe Bay Ramsar population. Numbers of redshank recorded during the winter bird survey were similar to those recorded in the various desk based records obtained.

4.20 The peak count of 108 redshank recorded within 250m of the site during the winter bird survey is equivalent to 1.0% of the Morecambe Bay and Duddon Estuary SPA and 1.7% of the Morecambe Bay Ramsar population.

4.21 Within 250-500m from the site, the peak count of 47 redshank is equivalent to 0.4% of the Morecambe Bay and Duddon Estuary SPA and 0.7% of the Morecambe Bay Ramsar population.

Turnstone

4.22 The winter bird survey peak count of 112 turnstone on 9th March 2020 is equivalent to 8.2% of the Morecambe Bay and Duddon Estuary SPA qualifying population and 7.1% of the Morecambe Bay Ramsar population. All birds were noted within 250m of the site. 112 turnstone using the Bubbles Breakwater to the north of the site far exceeds the numbers previously recorded at this location during the winter bird surveys undertaken for the Disturbance Study (Liley et al., 2015), although the count does not exceed that for the RSPB Morecambe Promenade sector (157 individuals).

4.23 The count of 112 individuals at the Bubbles Breakwater was unusually high, with turnstone only recorded in this location on two other visits, in much lower numbers on both occasions.

Eider

4.24 The winter bird survey peak count of 142 eider on 31st January 2020 is equivalent to 2.2% of the Morecambe Bay Ramsar population. On the survey visit 73 eider were recorded within 250-500m from the site, equivalent to 1.1% of the Morecambe Bay Ramsar population. Eider were not recorded within 250m of the site during the winter bird survey.

4.25 In recent years eider have been recorded in large numbers feeding on the mussel beds near to Heysham and passing through the survey area (to the north of the Stone Jetty). This included a peak count of 954 eider recorded by the RSPB between 2017 and 2019 within the Morecambe Promenade survey area.

4.26 Eider were not recorded during the 2019/2020 winter bird survey until 31st January 2020. This is consistent with observations of the wider area down to Heysham (P Marsh, pers comms).

Other factors influencing Previous Bird Records

Influence of tide heights

4.27 The section between the Battery Breakwater and the Stone Jetty is known to be used as a significant roost on neap or lower spring tides (e.g. the early November survey visit, which had an 8.7m tide), however this not reflected in spring tide Webs figures, due to the timing of the visits.

Species dynamics

4.28 The WeBS counts are highly variable for the Battery and Regent Road Breakwater areas due to the large influence from kite and wind surfers during the count periods.

Overall Conclusions

4.29 The existing data is extensive and covers many survey years, with a wealth of knowledge available regarding this area from local recorders who have studied this area for more than 20 years. However it is recognised that this is a highly dynamic environment and the bird usage, particularly during the 2019/2020 winter bird survey season is markedly different from previous years, mainly due to the much greater usage of the surrounding area by large numbers of knot, (particularly between Battery and Regent Road Breakwater) and the absence of eider for much of the survey period.

4.30 The greater usage of the area between Battery and Regent Road Breakwater has also been observed for a number of other species, including oystercatcher and curlew.

4.31 The usage of this area by significant aggregations of SPA/Ramsar bird species is certainly of interest, but due to the location of the aggregations (usually between 500m and 1km from the nearest part of the site area) it is highly unlikely that these locations would be affected by noise or visual disturbance during the construction period, particularly due to the disturbance already present along the Morecambe Bay promenade. Far fewer birds have been recorded within 500m of the site where disturbance impacts could potentially occur. Potential disturbance impacts will be fully considered within a Habitats Regulations Assessment.

4.32 Recreational disturbance is already likely to be strongly influencing the locations of roosting birds, alongside a range of factors such as tide heights and wind direction.

4.33 Previous bird count data from a variety of sources as well as a large amount of local knowledge from surveyors who have monitored this area for many years strongly suggests that usage of the survey area by birds during late spring to late summer months is very low. Bird usage tends to be confined to just some numbers of immature herring gull around the Regent Road area in late summer and low numbers of oystercatcher further south at the Heysham Heliport roost.

Table 21. Qualifying species recorded in numbers greater than 1% of the qualifying Morecambe Bay and Duddon Estuary SPA population within the survey area.

Qualifying Species	Morecambe Bay and Duddon Estuary SPA Qualifying Population	Morecambe Bay Ramsar Qualifying Population	Stone Jetty RSPB Peak Count 2017 - 2019	M. Prom RSPB Peak Count 2017 - 2019	Battery Breakwater Counts 5-yr peak mean 2014/15 – 2018/19	West End Breakwater 5-yr peak mean 2014/15 – 2018/19	TEP Study 2019/2020 (entire Survey Area)	TEP Study 2019/2020 (within 250m of the site)	TEP Study 2019/2020 (250-500m from the site)
Little Egret	134 (2009/10 - 2013/14)	N/A	1 (0.7% S)	**6 (4.5%S)**	0	0	**7 (5.2%S)**	0	0
Black-tailed Godwit	2,413 (2009/10 - 2013/14)	N/A	0	**41 (1.7% S)**	13 (0.5% S)	0	**56 (2.3% S)**	5 (0.2% S)	0
Curlew	12,209 (2009/10 - 2013/14)	13,620 (1991/92 - 1995/96)	42 (0.3% S R)	20 (0.2%S, 0.1%R)	36 (0.3% S R)	19 (0.1% S R)	**232 (1.9%S, 1.7% R)**	17 (0.1% S R)	72 (0.5%S R)
Knot	32,739 (2009/10 - 2013/14)	29,426 (1991/92 - 1995/96	1 (<0.1% S R)	161 (0.5% S R)	69 (0.2% S R)	43 (0.1% S R)	**7,227 (22.1%S, 24.5%R)**	**7,223 (22.1%S, 24.5%R)**	**7,200 (22.0%S, 24.5%R)**
Lapwing	N/A	17,669 (1991/92 - 1996/96)	0	**254 (1.4%R)**	3 (<0.1% R)	0	0	0	0

Qualifying Species	Morecambe Bay and Duddon Estuary SPA Qualifying Population	Morecambe Bay Ramsar Qualifying Population	Stone Jetty RSPB Peak Count 2017 - 2019	M. Prom RSPB Peak Count 2017 - 2019	Battery Breakwater Counts 5-yr peak mean 2014/15 – 2018/19	West End Breakwater 5-yr peak mean 2014/15 – 2018/19	TEP Study 2019/2020 (entire Survey Area)	TEP Study 2019/2020 (within 250m of the site)	TEP Study 2019/2020 (250-500m from the site)
Oystercatcher	55,888 (2009/10 - 2013/12)	47,572 (1991/92 - 1995/96)	43 (<0.1% S R)	**754 (1.3%S , 1.6%R)**	**1,100 (2%S, 2.3%R)**	221 (0.3%S, 0.5%R)	**2,058 (3.7%S, 4.3%R)**	**945 (1.7%S , 1.8%R)**	**990 (2.0%S, 2.1%R)**
Redshank	11,133 (2009/10 - 2013/14)	6,336 (1991/92 - 1995/96)	**127 (1.1%S, 2.0%R)**	**667 (6%S, 10.5%R)**	**226 (2%S, 3.6%R)**	**220 (2%S, 3.5%R)**	**381 (3.4% S, 6% R)**	**108 (1%S , 1.7%R)**	47 (0.4%S, 0.7%R)
Ringed Plover	1,049 (2009/10 - 2013/14)	693 (1991/92 - 1995/96)	**80 (7.6%S, 11.5%R)**	**207 (19.7%S, 29.9%R)**	0	1 (<0.1S, 0.1R)	0	0	0
Turnstone	1,359 (2009/10 - 2013/14)	1,583 (1991/92 - 1995/96)	**37 (2.7%S, 2.3%R)**	**157 (11.5%S, 9.9%R)**	0	0	**112 (8.2%S, 7.1%R)**	**112 (8.2%S, 7.1%R)**	**15 (1.1%S,** 0.9%R**)**
Eider	N/A	6,400 (1991/92 - 1995/96)	**600 (9.4%R)**	**954 (14.9%R)**	**61** (0.9%R)	0	142 (2.2%R)	0	73 (1.1%R)

Qualifying Species	Morecambe Bay and Duddon Estuary SPA Qualifying Population	Morecambe Bay Ramsar Qualifying Population	Stone Jetty RSPB Peak Count 2017 - 2019	M. Prom RSPB Peak Count 2017 - 2019	Battery Breakwater Counts 5-yr peak mean 2014/15 – 2018/19	West End Breakwater 5-yr peak mean 2014/15 – 2018/19	TEP Study 2019/2020 (entire Survey Area)	TEP Study 2019/2020 (within 250m of the site)	TEP Study 2019/2020 (250-500m from the site)
Great Crested Grebe	N/A	318 (1991/92 - 1995/96)	2 (0.6%[R])	**28 (8.8%[R])**	0	0	**7 (2.2%[R])**	2 (0.6%[R])	**7 (2.2%[R])**
Red Breasted Merganser	N/A	292 (1991/92 - 1995/96)	**9 (3.1%[R])**	**21 (7.2%[R])**	0	0	**7 (2.4%[R])**	**2** (0.7%[R])	**4** (1.4%[R])

[S] = Proportion of Morecambe Bay and Duddon Estuary qualifying SPA population

[R] = Proportion of Morecambe Bay Ramsar population

APPENDIX A: International Designated Site Citations

European Site Conservation Objectives for Morecambe Bay & Duddon Estuary Special Protection Area
Site Code: UK9020326

With regard to this SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features'), 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.**

This document should be read in conjunction with the accompanying Conservation Advice document which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features

A026 *Egretta garzetta*; Little egret (Non-breeding)
A038 *Cygnus cygnus*; Whooper swan (Non-breeding)
A040 *Anser brachyrhynchus*; Pink-footed goose (Non-breeding)
A048 *Tadorna tadorna*; Common shelduck (Non-breeding)
A054 *Anas acuta*; Northern pintail (Non-breeding)
A130 *Haematopus ostralegus*; Eurasian oystercatcher (Non-breeding)
A137 *Charadrius hiaticula*; Ringed plover (Non-breeding)
A140 *Pluvialis apricaria*; European golden plover (Non-breeding)
A141 *Pluvialis squatarola*; Grey plover (Non-breeding)
A143 *Calidris canutus*; Red knot (Non-breeding)
A144 *Calidris alba*; Sanderling (Non-breeding)
A149 *Calidris alpina alpina*; Dunlin (Non-breeding)

Contd/

A151 *Philomachus pugnax*; Ruff (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)
A169 *Arenaria interpres*; Ruddy turnstone (Non-breeding)
A176 *Larus melanocephalus*; Mediterranean gull (Non-breeding)
A183 *Larus fuscus*; Lesser black-backed gull (Non-breeding)
A183 *Larus fuscus*; Lesser black-backed gull (Breeding)
A184 *Larus argentatus*; Herring gull (Breeding)
A191 *Sterna sandvicensis*; Sandwich tern (Breeding)
A193 *Sterna hirundo*; Common tern (Breeding)
A195 *Sterna albifrons*; Little tern (Breeding)
Waterbird assemblage
Seabird assemblage

This is a European Marine Site

This SPA is a part of the Morecambe Bay European Marine Site ('EMS'). These Conservation Objectives should be used in conjunction with the Conservation Advice document for the EMS. Natural England's formal Conservation Advice for European Marine Sites can be found via GOV.UK.

This is a new combined site

This SPA replaces two individual sites – Morecambe Bay SPA (UK9005081) and Duddon Estuary SPA (UK9005031).

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations'). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives, and the accompanying Supplementary Advice (where this is available), will also provide a framework to inform the management of the European Site and the prevention of deterioration of habitats and significant disturbance of its qualifying features

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA).

Where these objectives are being met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

Publication date: 21 February 2019 (version 6). This document updates and replaces an earlier version dated 7 December 2017 to reflect the consolidation of the Habitats Regulations in 2017.

Morecambe Bay and Duddon Estuary Site Citation

EC Directive 79/409 on the Conservation of Wild Birds

Special Protection Area (SPA)

Name: *Morecambe Bay and Duddon Estuary Special Protection Area*

Counties/Unitary Authorities: *Cumbria, Lancashire*

Boundary of the SPA:

The landward boundary of the SPA includes all of the intertidal and terrestrial areas covered by the former Morecambe Bay SPA and Duddon Estuary SPA. It includes areas of adjoining terrestrial coastal habitat at North and South Walney and at Haverigg Point on the Duddon Estuary and the lagoons at South Walney; Cavendish Dock, Barrow and Hodbarrow, Haverigg.

Where the landward boundary extends from Kirksanton Haws to Drigg Dunes, including the Ravenglass Estuary and the west side of Walney Island, it follows Mean High Water.

From Rossall Point to a defined point in central Morecambe Bay (54° 5.732' N 3° 1.325' W) the seaward boundary follows Mean Low Water. From central Morecambe Bay the seaward boundary runs offshore around Walney Island and along the south west Cumbria Coast, reaching a maximum of 8 km offshore opposite Kirksanton Haws, meeting the coast again at Drigg Dunes.

Morecambe Bay and Duddon Estuary SPA supersedes the original Morecambe Bay SPA and Duddon Estuary SPA.

Size of SPA: The SPA covers an area of 66,899.97 ha.

Site description:

The SPA extends between Rossall Point in Lancashire and Drigg Dunes in Cumbria. The site includes the former Morecambe Bay SPA and Duddon Estuary SPA and an extension to include the Ravenglass Estuary and intervening coast and the shallow offshore area off south west Cumbria coast.

Morecambe Bay is the second largest embayment in Britain after The Wash, at over 310 km^2, and has four estuaries – the Wyre, Lune, Kent and Leven. It contains the largest continuous area of intertidal mudflats and sandflats in the UK which supports a variety of infaunal communities including cockle beds. Morecambe Bay supports a wide range of other habitats including large areas of saltmarsh and transitional habitats as well as sand dune systems and coastal lagoons. Within the Bay there are areas of stony reef (known locally as scars or skears) which also support blue mussel beds and honeycomb worm *Sabellaria alveolata* reefs. Extensive eelgrass beds are present around Foulney Island and in the south Walney Channel, the only examples in the North West of England.

The Duddon and Ravenglass Estuaries support saltmarsh, intertidal mud and sand communities and sand dune systems with small areas of stony reef. The intermediate coast comprises extensive shingle and sand beaches.

The parts of the SPA away from the coast are sandy and shallow, mostly less than 15 metres deep.

Qualifying species:

SPA site selection guidelines have been applied to the most up to date information for the site. However, this contemporary data reveals that some species are no longer present in qualifying

numbers (either through declines or because the relevant threshold has increased). It is not clear whether anthropogenic influences have affected the populations at the site. Defra policy indicates that in these circumstances the feature should be retained until such time as the reasons for the reduction in population can be established. Natural England therefore considers that these species should be retained on the citation, and the level of ambition set out in the conservation objectives for these species maintained, until such time as we have evidence to support the conclusion that declines are a result of natural processes and that the SPA is no longer suitable for these species.

The site qualifies under **Article 4.1** of the Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

Species	Season	Count (Period)	% of population
Whooper swan *Cygnus Cygnus*	Non-breeding	113 individuals (2009/10 – 2013/14)[1]	1.0% of GB population
Little egret *Egretta garzetta*	Non-breeding	134 individuals (2009/10 – 2013/14)[1]	3.0% of GB population
European golden plover *Pluvialis apricaria*	Non-breeding	1,900 individuals (Morecambe Bay SPA citation value 1991)[2]	1.0% of GB population (1991)
Bar-tailed Godwit *Limosa lapponica*	Non-breeding	3,046 individuals (2009/10 – 2013/14)[1]	8.0% of GB population
Ruff *Calidris pugnax*	Non-breeding	8 individuals (2009/10 – 2013/14)[1]	1.0% of GB population
Mediterranean gull *Larus melancephalus*	Non-breeding	18 individuals (2009/10 – 2013/14)[1]	1.0% of GB population
Little tern *Sternula albifrons*	Breeding	84 individuals (2010 – 2014)[3]	2.2% of GB population
Sandwich tern *Sterna sandvicensis*	Breeding	1,608 individuals (1988 - 1992)[4]	5.7% of GB population (1992)
Common tern *Sterna hirundo*	Breeding	570 individuals (Morecambe Bay SPA citation value 1991)[5]	2.0% of GB population (1991)

The site qualifies under **Article 4.2** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

Species	Season	Count (Period)	% of population
Pink-footed goose *Anser brachyrhynchus*	Non-breeding	15,648 individuals (2009/10 – 2013/14)[6]	4.5% of biogeographic population
Common shelduck *Tadorna tadorna*	Non-breeding	5,878 individuals (2009/10 – 2013/14)[1]	2.0% of biogeographic population
Northern Pintail *Anas acuta*	Non-breeding	2,498 individuals (2009/10 – 2013/14)[1]	4.2% of biogeographic population
Eurasian oystercatcher *Haematopus ostralegus*	Non-breeding	55,888 individuals (2009/10 – 2013/14)[1]	6.8% of biogeographic population
Grey plover *Pluvialis squatarola*	Non-breeding	2,000 individuals (Morecambe Bay SPA citation value 1991)[7]	1.0% of biogeographic population (1991)

[1] Data from Wetland Bird Survey
[2] Current five year peak mean (2009/10 – 2013/14) = 3,494 (0.9% GB population)
[3] Data from RSPB
[4] Summed data from SMP relating to period of original classification for Morecambe Bay SPA and Duddon Estuary SPA (1988 – 1992). Current five year peak mean (2010-2014) = 40 pairs (0.4% GB population).
[5] Current five year peak mean (2010-2014) = 47 pairs (0.5% GB population).
[6] Data from Wetland Bird Survey and Icelandic-breeding Goose Census.
[7] Current five year peak mean (2009/10 – 2013/14) = 1,013 (0.4% biogeographic population).

Species	Season	Count (Period)	% of population
Common ringed plover *Charadrius hiaticula*	Non-breeding	1,049 individuals (2009/10 – 2013/14)[1]	1.4% of biogeographic population
Eurasian curlew *Numenius arquata*	Non-breeding	12,209 individuals (2009/10 – 2013/14)[1]	1.5% of biogeographic population
Black-tailed godwit *Limosa limosa*	Non-breeding	2,413 individuals (2009/10 – 2013/14)[1]	4.0% of biogeographic population
Ruddy turnstone *Arenaria interpres*	Non-breeding	1,359 individuals (2009/10 – 2013/14)[1]	1.0% of biogeographic population
Red knot *Calidris canutus*	Non-breeding	32,739 individuals (2009/10 – 2013/14)[1]	7.3% of biogeographic population
Sanderling *Calidris alba*	Non-breeding	3,600 individuals (Morecambe Bay SPA citation value 1991)[8]	3.0% of biogeographic population (1991)
Dunlin *Calidris alpina alpina*	Non-breeding	26,982 individuals (2009/10 – 2013/14)[1]	2.0% of biogeographic population
Common redshank *Tringa totanus*	Non-breeding	11,133 individuals (2009/10 – 2013/14)[1]	4.6% of biogeographic population
Lesser black-backed gull *Larus fuscus*	Non-breeding	9,450 individuals (2009/10 – 2013/14)[1]	1.7% of biogeographic population
Lesser black-backed gull *Larus fuscus graellsii*	Breeding	9,720 individuals (2011-2015)[9]	2.7% of biogeographic population
European herring gull *Larus argentatus argenteus*	Breeding	20,000 individuals (Morecambe Bay SPA citation value 1991)[10]	1.0% of biogeographic population (1991)

Assemblage qualification:

The site qualifies under **Article 4.2** of the Directive (2009/147/EC) as it used regularly by over 20,000 seabirds in any season:

At time of the 1997 citation of Morecambe Bay SPA, the area supported 40,672 individual seabirds including: herring gulls, lesser black-backed gulls, sandwich terns, common terns, and little terns.

The site qualifies under **Article 4.2** of the Directive (2009/147/EC) as it used regularly by over 20,000 waterbirds in any season:

During the period 2009/10 – 2013/14, the site held a five year peak mean value of 266,751 individual birds. The main components of the assemblage include all of the qualifying features listed above, as well as an additional 19 species present in numbers exceeding 1% of the GB total and / or exceeding 2,000 individuals: great white egret, Eurasian spoonbill, light-bellied brent goose (Nearctic origin), Eurasian wigeon, Eurasian teal, green-winged teal, mallard, ring-necked duck, common eider (non-breeding), common goldeneye, red-breasted merganser, great cormorant, northern lapwing, little stint, spotted redshank, common greenshank, black-headed gull, common (mew) gull and European herring gull (non-breeding).

Principal bird data sources:

Colony counts from JNCC Seabird Monitoring Programme and contributed by colony managers: RSPB (Hodbarrow) and Cumbria Wildlife Trust (Morecambe Bay). Non-breeding bird data from Wetland Bird Survey (WeBS) and WWT's Icelandic-breeding Goose Census ([11]Mitchell 2014).

[8] Current five year peak mean (2009/10 – 2013/14) = 849 (0.7% biogeographic population).
[9] Data from Seabird Monitoring Programme database, RSPB and Cumbria Wildlife Trust
[10] Current five year peak mean (2011-2015) = 3,192 individuals (0.5% biogeographic population).
[11] Mitchell, C. (2014). Status and distribution of Icelandic-breeding geese: results of the 2013 international census. Wildfowl & Wetlands Trust Report, Slimbridge. 20pp.

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 04 October 1996

3. Country:

UK (England)

4. Name of the Ramsar site:

Morecambe Bay

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □;
ii**) an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* □;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

54 07 19 N 02 57 21 W

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Morecambe

Morecambe Bay is located within the counties of Cumbria and Lancashire in north-west England

Administrative region: Cumbria; Lancashire

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 37404.6

Min. -3
Max. 8
Mean 0

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Morecambe Bay lies between the coasts of South Cumbria and Lancashire, and represents the largest continuous intertidal area in Britain. Morecambe Bay comprises the estuaries of five rivers and the accretion of mudflats behind Walney Island. The area is of intertidal mud and sandflats, with associated saltmarshes, shingle beaches and other coastal habitats. It is a component in the chain of west coast estuaries of outstanding importance for passage and overwintering waterfowl (supporting the third-largest number of wintering waterfowl in Britain), and breeding waterfowl, gulls and terns.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

4, 5, 6

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 4

The site is a staging area for migratory waterfowl including internationally important numbers of passage ringed plover *Charadrius hiaticula*.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
223709 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species regularly supported during the breeding season:

Lesser black-backed gull , *Larus fuscus graellsii*, W Europe/Mediterranean/W Africa	19666 apparently occupied nests, representing an average of 13.3% of the breeding population (Seabird 2000 Census)
Herring gull , *Larus argentatus argentatus*, NW Europe and Iceland/W Europe)	10431 apparently occupied nests, representing an average of 2.8% of the breeding population (Seabird 2000 Census)
Sandwich tern , *Sterna (Thalasseus) sandvicensis sandvicensis*, W Europe	290 pairs, representing an average of 2.8% of the GB population (5 year mean for 1992 to 1996)

Species with peak counts in spring/autumn:

Great cormorant , *Phalacrocorax carbo carbo*, NW Europe	967 individuals, representing an average of 4.2% of the GB population (5 year peak mean 1998/9-2002/3)
Common shelduck , *Tadorna tadorna*, NW Europe	7032 individuals, representing an average of 2.3% of the population (5 year peak mean 1998/9-2002/3)
Northern pintail , *Anas acuta*, NW Europe	3743 individuals, representing an average of 6.2% of the population (5 year peak mean 1998/9-2002/3)
Common eider , *Somateria mollissima mollissima*, NW Europe	5657 individuals, representing an average of 7.7% of the GB population (5 year peak mean 1998/9-2002/3)
Eurasian oystercatcher , *Haematopus ostralegus ostralegus*, Europe & NW Africa -wintering	66577 individuals, representing an average of 6.5% of the population (5 year peak mean 1998/9-2002/3)
Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa	1041 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9-2002/3)
Grey plover , *Pluvialis squatarola*, E Atlantic/W Africa -wintering	1655 individuals, representing an average of 3.1% of the GB population (5 year peak mean 1998/9-2002/3)
Sanderling , *Calidris alba*, Eastern Atlantic	703 individuals, representing an average of 3.4% of the GB population (5 year peak mean 1998/9-2002/3 - spring peak)
Eurasian curlew , *Numenius arquata arquata*, N. a. arquata Europe (breeding)	20018 individuals, representing an average of 4.7% of the population (5 year peak mean 1998/9-2002/3)

Common redshank , *Tringa totanus totanus*,	8816 individuals, representing an average of 3.5% of the population (5 year peak mean 1998/9-2002/3)
Ruddy turnstone , *Arenaria interpres interpres*, NE Canada, Greenland/W Europe & NW Africa	1371 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9-2002/3)
Lesser black-backed gull , *Larus fuscus graellsii*,	40393 individuals, representing an average of 7.6% of the population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Great crested grebe , *Podiceps cristatus cristatus*, NW Europe	217 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9-2002/3)
Pink-footed goose , *Anser brachyrhynchus*, Greenland, Iceland/UK	3665 individuals, representing an average of 1.5% of the population (5 year peak mean 1998/9-2002/3)
Eurasian wigeon , *Anas penelope*, NW Europe	6133 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9-2002/3)
Common goldeneye , *Bucephala clangula clangula*, NW & C Europe	285 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)
Red-breasted merganser , *Mergus serrator*, NW & C Europe	327 individuals, representing an average of 3.3% of the GB population (5 year peak mean 1998/9-2002/3)
European golden plover , *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic	4073 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3)
Northern lapwing , *Vanellus vanellus*, Europe - breeding	16492 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3)
Red knot , *Calidris canutus islandica*, W & Southern Africa (wintering)	66335 individuals, representing an average of 14.7% of the population (5 year peak mean 1998/9-2002/3)
Dunlin , *Calidris alpina alpina*, W Siberia/W Europe	26416 individuals, representing an average of 1.9% of the population (5 year peak mean 1998/9-2002/3)
Bar-tailed godwit , *Limosa lapponica lapponica*, W Palearctic	4579 individuals, representing an average of 3.8% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.
See Sections 21/22 for details of noteworthy species
Details of bird species occuring at levels of National importance are given in Section 22

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	biogenic reef, boulder, clay, cobble, gravel, limestone, mud, neutral, pebble, sand, sandstone, sedimentary, shingle
Geomorphology and landscape	coastal, enclosed coast (including embayment), estuary, floodplain, intertidal sediments (including sandflat/mudflat), island, lagoon, lowland, open coast (including bay), pools, shingle bar, subtidal rock (including rocky reefs), subtidal sediments (including sandbank/mudbank)
Nutrient status	mesotrophic
pH	circumneutral
Salinity	saline / euhaline
Soil	mainly mineral
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Blackpool, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/blackpool.html) Max. daily temperature: 12.9° C Min. daily temperature: 6.4° C Days of air frost: 40.3 Rainfall: 871.3 mm Hrs. of sunshine: 1540.3

General description of the Physical Features:

Morecambe Bay is one of the largest estuarine systems in the UK and is fed by five main river channels (the Leven, Kent, Keer, Lune and Wyre) which drain through the intertidal flats of sand and mud. Mussel *Mytilus edulis* beds and banks of shingle are present, and locally there are stony outcrops. The whole system is dynamic, with shifting channels and phases of erosion and accretion affecting the estuarine deposits and surrounding saltmarshes.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Morecambe Bay is one of the largest estuarine systems in the UK and is fed by five main river channels (the Leven, Kent, Keer, Lune and Wyre) which drain through the intertidal flats of sand and mud. Mussel *Mytilus edulis* beds and banks of shingle are present, and locally there are stony outcrops. The whole system is dynamic, with shifting channels and phases of erosion and accretion affecting the estuarine deposits and surrounding saltmarshes.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Shoreline stabilisation and dissipation of erosive forces, Sediment trapping, Flood water storage / desynchronisation of flood peaks

19. Wetland types:

Human-made wetland, Marine/coastal wetland

Code	Name	% Area
G	Tidal flats	77.7
F	Estuarine waters	13
H	Salt marshes	8.4
B	Marine beds (e.g. sea grass beds)	0.4
E	Sand / shingle shores (including dune systems)	0.3
6	Reservoirs / barrages / dams	0.2

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The main habitat types of the Morecambe Bay Ramsar site are: Intertidal mudflats and sandflats, saltmarsh, shingle, rocky scars, sand dunes.

A large shallow estuary, with extensive intertidal mudflats, saltmarshes, subtidal sediments and rocky shorelines.

There are small areas of eelgrass *Zostera* beds and vegetated shingle. There is also the presence of the honeycomb worm *Sabellaria alveolata*.

The saltmarshes are traditionally heavily grazed and provide important wildfowl habitat.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

None reported

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Black-headed gull , *Larus ridibundus*, N & C Europe	1620 apparently occupied nests, representing an average of 1.2% of the GB population (Seabird 2000 Census)

Species with peak counts in spring/autumn:

Ruff , *Philomachus pugnax*, Europe/W Africa	33 individuals, representing an average of 4.7% of the GB population (5 year peak mean 1998/9-2002/3)

Whimbrel , *Numenius phaeopus*, Europe/Western Africa	226 individuals, representing an average of 7.5% of the GB population (5 year peak mean 1998/9-2002/3 - spring peak)
Spotted redshank , *Tringa erythropus*, Europe/W Africa	8 individuals, representing an average of 5.8% of the GB population (5 year peak mean 1998/9-2002/3)
Common greenshank , *Tringa nebularia*, Europe/W Africa	79 individuals, representing an average of 13.2% of the GB population (5 year peak mean 1998/9-2002/3)
Black-headed gull , *Larus ridibundus*, N & C Europe	19907 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Eurasian teal , *Anas crecca*, NW Europe	2363 individuals, representing an average of 1.2% of the GB population (5 year peak mean 1998/9-2002/3)
Black-tailed godwit , *Limosa limosa islandica*, Iceland/W Europe	218 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3)

Species Information

None reported

---

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Aquatic vegetation (e.g. reeds, willows, seaweed)
Archaeological/historical site
Environmental education/ interpretation
Fisheries production
Livestock grazing
Non-consumptive recreation
Scientific research
Sport fishing
Sport hunting
Subsistence fishing
Tourism
Traditional cultural
Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
National/Crown Estate	+	+
Private	+	+

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Collection of non-timber natural products: commercial	+	
Commercial forestry		+
Fishing: commercial	+	+
Fishing: recreational/sport	+	
Fishing: subsistence	+	
Marine/saltwater aquaculture	+	
Gathering of shellfish	+	
Shell collection	+	
Bait collection	+	
Arable agriculture (unspecified)		+
Shifting arable agriculture		+
Permanent arable agriculture		+
Grazing (unspecified)	+	+
Permanent pastoral agriculture	+	+
Hunting: recreational/sport	+	+
Industrial water supply	+	
Industry	+	+
Sewage treatment/disposal	+	+
Harbour/port	+	+
Flood control	+	+
Mineral exploration (excl. hydrocarbons)		+
Oil/gas exploration		+
Oil/gas production		+
Transport route	+	+
Domestic water supply		+
Urban development		+
Non-urbanised settlements		+

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
No factors reported	NA				

For category 2 factors only. What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Is the site subject to adverse ecological change? NO

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
National Nature Reserve (NNR)	+	+
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	+
Site management statement/plan implemented	+	
Area of Outstanding National Beauty (AONB)	+	+
Special Area of Conservation (SAC)	+	

b) Describe any other current management practices:
The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.

Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.

Habitat.

Baseline habitat review/survey being completed by English Nature for European Marine Site Management Scheme.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

None reported

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities.

Angling, wildfowling, bait collection, walking, watersports (including sailing, windsurfing) and birdwatching.

Facilities provided.

There are interpretative facilities at South Walney, Foulney and Leighton Moss reserves, and in the nearby town of Morecambe.

Seasonality.

Wildfowling occurs from1 September to 20 February.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

Anon. (1996) *Morecambe Bay strategy*. Morecambe Bay Project, Kendal

Barne, JH, Robson, CF, Kaznowska, SS, Doody, JP & Davidson, NC (eds.) (1996) *Coasts and seas of the United Kingdom. Region 13. Northern Irish Sea: Colwyn Bay to Stranraer, including the Isle of Man*. Joint Nature Conservation Committee, Peterborough. (Coastal Directories Series.)

Buck, AL (ed.) (1993) *An inventory of UK estuaries. Volume 3. North-west Britain*. Joint Nature Conservation Committee, Peterborough

Burd, F (1989) *The saltmarsh survey of Great Britain. An inventory of British saltmarshes*. Nature Conservancy Council, Peterborough (Research & Survey in Nature Conservation, No. 17)

Corlett, J & others (1972) The ecology of Morecambe Bay. *Journal of Applied Ecology*, **9**, 153-234

Covey, R (1998) *Marine Nature Conservation Review Sector 11. Liverpool Bay and the Solway Firth: area summaries*. Joint Nature Conservation Committee, Peterborough (Coasts and seas of the United Kingdom. MNCR series)

Cranswick, PA, Waters, RJ, Musgrove, AJ & Pollitt, MS (1997) *The Wetland Bird Survey 1995–96: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge

Davison, D (n.d.) *Morecambe Bay. The secrets of the sands*. Morecambe Bay Project, Kendal?

Dean, T (1990) *The natural history of Walney Island*. Faust, Burnley

Gray, LC (1980) *Environmental bibliography of north-west England (vice-counties 59, 60, 69 and 70) 1850–1979*. University of Lancaster Library, Lancaster (Library Occasional Paper, No. 10)

May, VJ & Hansom, JD (eds.) (2003) *Coastal geomorphology of Great Britain*. Joint Nature Conservation Committee, Peterborough (Geological Conservation Review Series, No. 28)

McLeod, CR, Yeo, M, Brown, AE, Burn, AJ, Hopkins, JJ & Way, SF (eds.) (2004) *The Habitats Directive: selection of Special Areas of Conservation in the UK*. 2nd edn. Joint Nature Conservation Committee, Peterborough. www.jncc.gov.uk/SACselection

Mills, DJL (1998) Chapter 11. Liverpool Bay to the Solway (Rhôs-on-Sea to the Mull of Galloway) (MNCR Sector 11). In: *Benthic marine ecosystems of Great Britain and the north-east Atlantic*, ed. by K. Hiscock, 315-338. Joint Nature Conservation Committee, Peterborough. (Coasts and Seas of the United Kingdom. MNCR series)

Musgrove, AJ, Pollitt, MS, Hall, C, Hearn, RD, Holloway, SJ, Marshall, PE, Robinson, JA & Cranswick, PA (2001) *The Wetland Bird Survey 1999–2000: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge. www.wwt.org.uk/publications/default.asp?PubID=14

Parkes, K (1976) Walney. In: *Bird observatories in Britain and Ireland*, ed. by R. Durman, 251-259. Poyser, London

Ratcliffe, DA (ed.) (1977) *A Nature Conservation Review. The selection of biological sites of national importance to nature conservation in Britain*. Cambridge University Press (for the Natural Environment Research Council and the Nature Conservancy Council), Cambridge (2 vols.)

Robinson, NA & Pringle, AW (eds.) (1987) *Morecambe Bay: an appraisal of present knowledge*. Centre for North West Regional Studies/ Morecambe Bay Study Group, Lancaster

Sotheran, I & Walton, R (1997) Broadscale mapping of Morecambe Bay. *English Nature Research Reports*, No. **232**

Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 vols.) www.jncc.gov.uk/UKSPA/default.htm

Taylor, PM & Parker, JG (eds.) (1993) *The coast of north Wales & north west England. An environmental appraisal*. Hamilton Oil Company Ltd., London

Weighell, AJ, Donnelly, AP & Calder, K (eds.) (2000) *Directory of the Celtic coasts and seas*. Joint Nature Conservation Committee, Peterborough

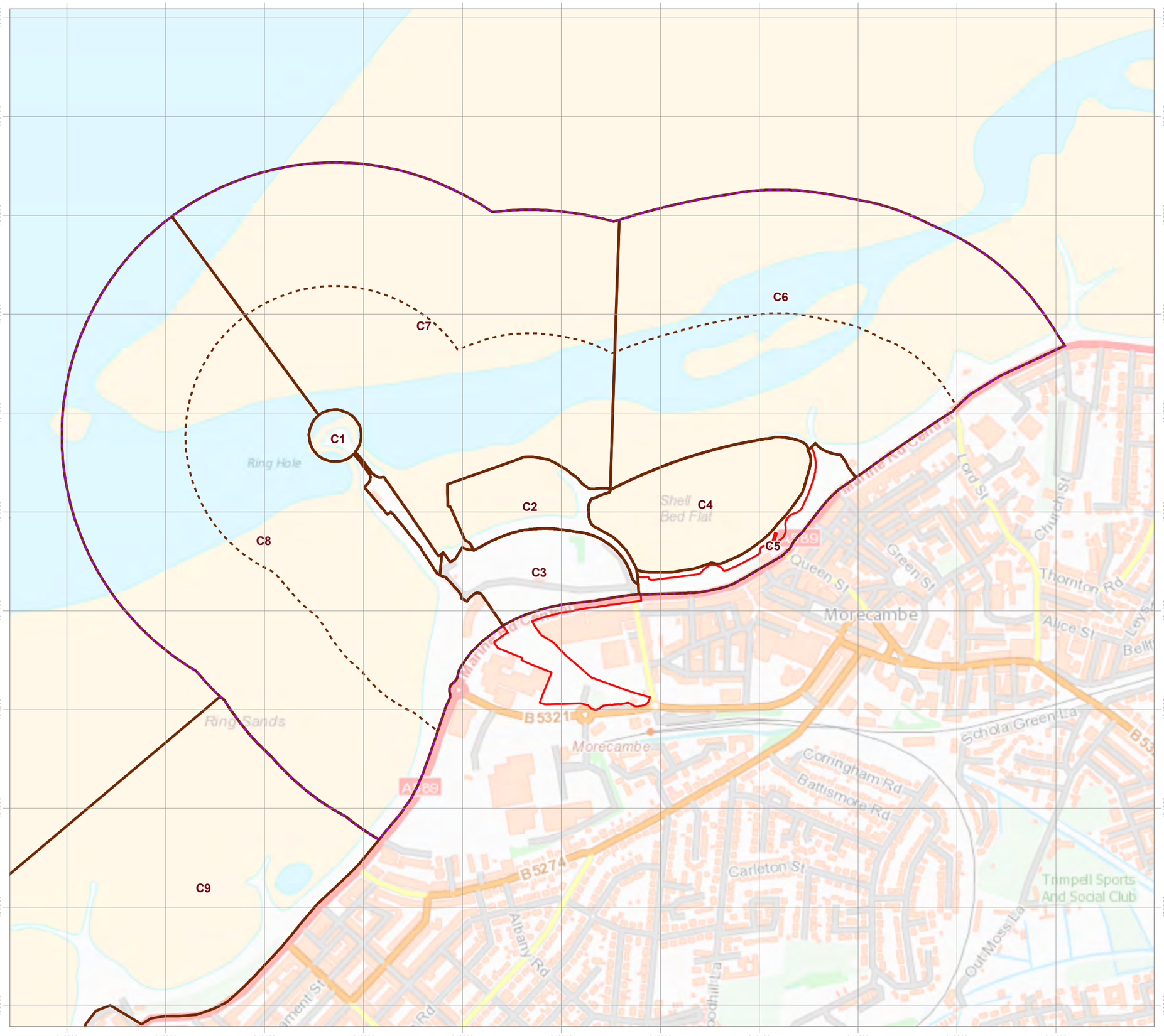
Wilson, J (1973) Wader populations of Morecambe Bay, Lancashire. *Bird Study*, **20**, 9-23

Wilson, J (n.d. [~1989]) *Leighton Moss and Morecambe Bay Reserve. The first twenty-five years 1964–1988*. Royal Society for the Protection of Birds

---

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

APPENDIX B: Survey Maps and Forms



KEY

- Site Boundary
- Compartment and compartment number
- Winter Birds Survey Compartments - 250m buffer
- Winter Birds Survey Compartments - 500m buffer

Species List:

Visit		
Surveyor		
Date		
Time Start		
Time Finish		
Weather Conditions	**Start**	**Finish**
Temperature		
Wind Speed - Beaufort (0 - 5)		
Wind Direction (W → E)		
Rainfall (0 - 5)		
Cloud Cover (0 - 8)		
Visibilty (0 - 4)		

Rev	Description	Drawn	Approved	Date

TEP THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

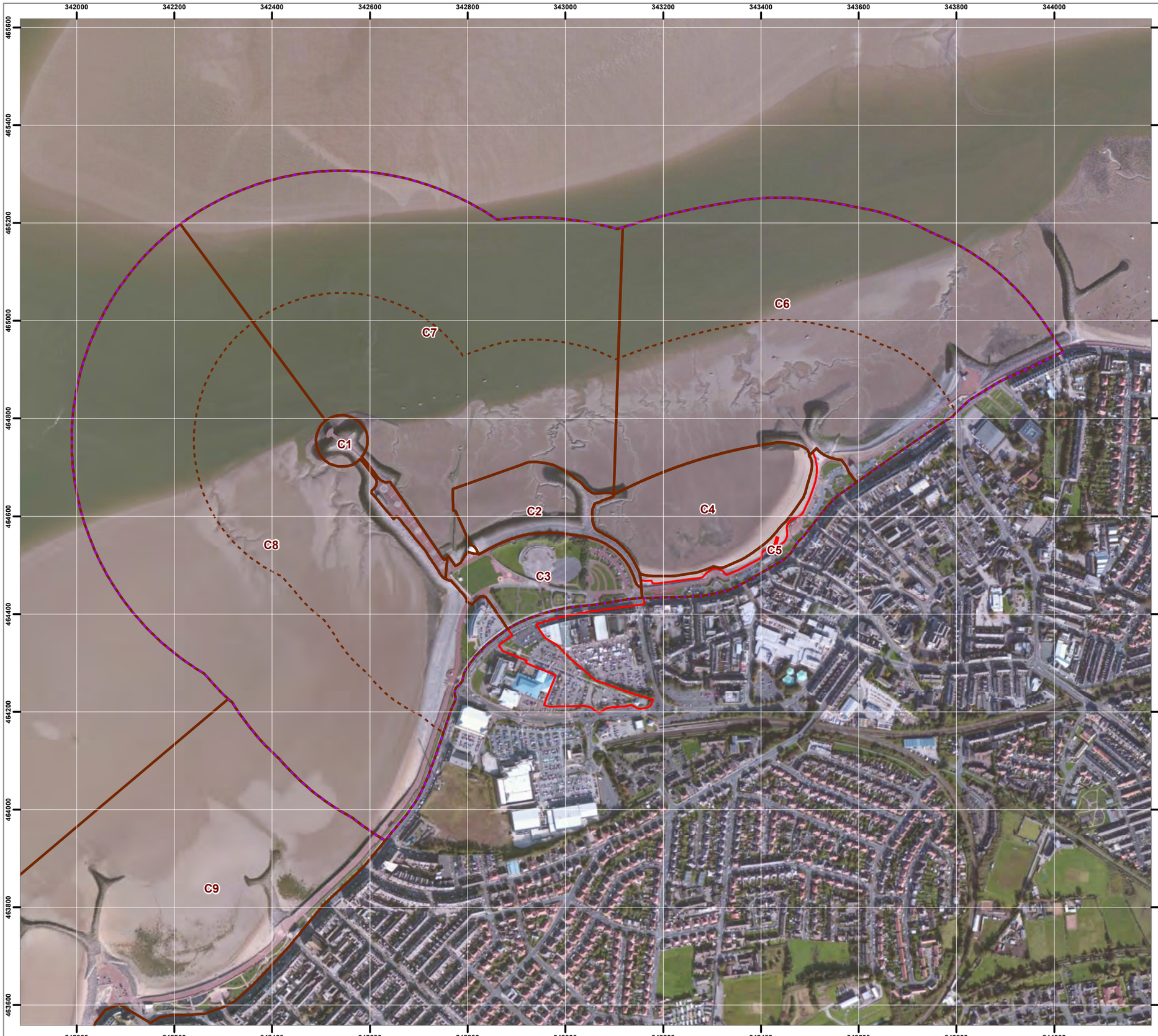
Project
Eden Porject North, Morecambe

Title
Survey Basemap

Drawing Number
G7596.###.

Drawn	Checked	Approved	Scale	Date
SA	MK	MW	1:7,790 @ A3	24/01/2020

Metres
0 50 100 200 300 400 500



KEY

- Site Boundary
- Compartment and compartment number
- Winter Birds Survey Compartments - 250m buffer
- Winter Birds Survey Compartments - 500m buffer

Species List:

Visit		
Surveyor		
Date		
Time Start		
Time Finish		
Weather Conditions	**Start**	**Finish**
Temperature		
Wind Speed - Beaufort (0 - 5)		
Wind Direction (W → E)		
Rainfall (0 - 5)		
Cloud Cover (0 - 8)		
Visibilty (0 - 4)		

Rev	Description	Drawn	Approved	Date

Metres
0 50 100 200 300 400 500

TEP | THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Eden Porject North, Morecambe

Title
Survey Basemap

Drawing Number
G7596.###.

Drawn	Checked	Approved	Scale	Date
SA	MK	MW	1:7,790 @ A3	24/01/2020

INTERTIDAL BIRD SURVEY - field recording sheet						
Project Name:		**Surveyor Name:**				
Date:		**Time Period & State of Tide:**				
Weather (start)	Temp =	Rain =	Visibility = /4	Cloud = /8	Wind Dir. =	Wind Force. =
Weather (finish)	Temp. =	Rain =	Visibility = /4	Cloud = /8	Wind Dir. =	Wind Force. =

Behaviour codes: FE = feeding; RO = Roosting; LO = Loafing; AL = Alarming; FLY = flying thru survey area without landing; FLU = Flushed due to disturbance event.

Disturbance source: DOG = Dog walker/dog; VEH = vehicle; AIR = low flying aircraft; PRED = Predator/ Disturbance Response

Disturbance response: IV = Increased vigilance; SW = Swam, walked from original location; LR = Flushed but stayed within the 500m buffer; LEFT = Flushed and appeared to travel beyond 500m buffer; NR = No response

Species Peak Counts	**1**	**2**	**3**
	4	**5**	**6**

Registration No.	**Time**	**Species**	**Bird count**	**Compartment No.**	**Behaviour**	**Disturbance and Response**

Cont. side 2						
Registration No.	**Time**	**Species**	**Bird count**	**Compartment No.**	**Behaviour**	**Disturbance and Response**
COMMENTS						

APPENDIX C: Winter Bird Data Summary Table

Species	SPA		Ramsar		Overall WeBS Counts (12/13 – 16/17)			Stone Jetty Large Sector	Morecambe Promenade Sector	Disturbance Study (Liley et al., 2015)	Stone Jetty RSPB	M. Prom RSPB	Battery Groyne	West End Groyne	**TEP Study 2019/20**
	Qual?	Qual count	Qual?	Qual count	M. Bay WeBS	Dud. Estuary WeBS	Comb M. Bay & Dud. Estuary WeBS	5-yr peak mean	5-yr peak mean	Morecambe Sea Front Peak Counts (base of breakwater at Shell Bed Flat)	Peak Count 2017 - 2019	Peak Count 2017 - 2019	5-yr peak mean 2014/15 – 2018/19	5-yr peak mean 2014/15 – 2018/19	Peak Count (Oct – Apr) **Overall Study Area**
Little Egret	Y	134	N	-	202	30	232	**4 (3% S)**	**2 (1.5% S)**	0	1 (0.7% S)	**6 (4.5% S)**	0	0	**7 (5.2% S)**
Whooper swan	Y	113	N	-	175	24	199	0	0	0	0	0	0	0	0
Pink-footed Goose	Y	15,648	Y	2,475	25,490	1,746	27,236	0	0	0	0	0	0	0	0
Shelduck	Y	5,878	Y	6,372	4,228	551	4,779	0	28 (0.5% S, 0.4% R)	20 (0.3% S, R)	19 (0.3% S, R)	53 (0.9% S, 0.8 %R)	0	0	46 (0.8%S, 0.7% R)
Pintail	Y	2,498	Y	2,804	941	1,441	2,382	0	0	0	0	0	0	0	0
Oystercatcher	Y	55,888	Y	47,572	40,437	5,496	45,933	**7,362 (13.2% S, 15.4% R)**	**895 (1.6% S, 1.9% R)**	88 (0.2% S, 0.2% R)	43 (<0.1% S R)	**754 (1.3% S , 1.6% R)**	**1,100 (2% S , 2.3% R)**	221 (0.4% S, 0.5% R)	**2,058 (3.7% S, 4.3% R)**
Ringed plover	Y	1,049	Y	693	1,153	233	1,386	**45 (4.3% S , 6.5% R)**	**38 (3.7% S , 5.5% R)**	0	**80 (7.6% S, 11.5% R)**	**207 (19.7% S, 29.9% R)**	0	1 (<0.1% S , 0.1% R)	0
Golden plover	Y	1,900	Y	4,097	3,604	292	3,896	0	0	0	0	0	0	0	0
Grey plover	Y	2,000	Y	1,813	842	205	1,047	4 (0.2% S R)	0	0	0	0	0	0	1 (<0.1% S R)
Knot	Y	32,739	Y	29,426	20,085	1,998	22,083	**2,299 (7% S, 7.8% R)**	204 (0.6% S, 0.7% R)	60 (0.2% S R)	1 (<0.1% S R)	161 (0.5% S R)	69 (0.2% S R)	43 (0.1% S R)	**7,227 (22.1% S, 24.5% R)**
Lapwing	N	-	Y	17,669	18,440	576	19,016	25 (0.1% R)	35 (0.2% R)	0	0	**254 (1.4 % R)**	3 (<0.1% R)	0	0
Sanderling	Y	3,600	Y	2,466	919	582	1,501	0	0	0	0	0	0	0	0
Dunlin	Y	26,982	Y	52,671	17,761	6,145	23,906	75 (0.3% S , 0.1% R)	111 (0.4% S , 0.2% R)	0	1 (<0.1% S R)	174 (0.6% S, 0.3% S)	18 (<0.1% S R)	2 (<0.1% S R)	120 (0.4% S, 0.2% S)
Ruff	Y	8	N	-	9	0	9	0	0	0	0	0	0	0	0

Black-tailed godwit	Y	2,413	N	-	2,798	17	2,815	0	**41 (1.7% S)**	10 (0.4% S)	0	13 (0.5% S)	13 (0.5% S)	0	**56 (2.3% S)**
Bar-tailed godwit	Y	3,046	Y	2,611	2,449	35	2,484	0	1 (<0.1% S R)	0	0	21 (0.7% S, 0.8% R)	0	0	0
Curlew	Y	22,209	Y	13,620	11,193	1,069	12,262	42 (0.4% S, 0.3% R)	20 (0.2% S, 0.1% R)	5 (<0.1% S R)	17 (<0.1% S , 0.1% R)	72 (0.3% S, 0.5% S)	36 (0.3% S R)	19 (<0.1% S R)	**232 (1.9% S, 1.7% R)**
Redshank	Y	11,133	Y	6,336	8,411	1,219	9,630	**790 (7.1% S, 12.5% R)**	**315 (2.8% S, 5 % R)**	74 (0.7% S, 1.2% R)	**127 (1.1% S, 2% R)**	**667 (6% S, 10.5% R)**	**226 (2% S, 3.6% S)**	**220 (2% S, 3.5% R)**	**381 (3.4% S, 6% R)**
Turnstone	Y	1,359	Y	1,583	1,194	129	1,323	**185 (13.6% S, 11.7% R)**	**95 (7% S , 6% R)**	3 (0.2% S R)	**37 (2.7% S, 2.3% R)**	**157 (11.5% S, 9.9% R)**	0	0	**112 (8.2% S , 7.1% R)**
Cormorant	N	-	Y	879	1,024	170	1,194	**90 (10.2% R)**	8 (0.9% R)	1 (0.1% R)	2 (0.2% R)	7 (0.8% R)	5 (0.6% R)	1 (0.1% R)	2 (0.2% R)
Eider	N	-	Y	6,400	5,331	367	5,698	1 (<0.1% R)	46 (0.7% R)	0	**600 (9.4% R)**	**954 (14.9% R)**	61 (0.9 R)	0	**142 (2.2% R)**
Goldeneye	N	-	Y	445	126	46	172	0	2 (0.4% R)	0	1 (0.2% R)	0	0	0	1 (0.2% R)
Wigeon	N	-	Y	5,838	8,477	616	9,093	0	10 (0.2% R)	0	0	53 (0.9% R)	0	0	0
Great crested grebe	N	-	Y	318	80	7	87	2 (0.6% R)	**6 (1.9% R)**	0	2 (0.6% R)	**28 (8.8% R)**	0	0	**7 (2.2% R)**
Red breasted merganser	N	-	Y	292	132	178	310	1 (0.3% R)	**11 (3.8% R)**	1 (0.3% R)	**9 (3.1% R)**	**21 (7.2% R)**	0	0	**7 (2.4% R)**

S = Proportion of Morecambe Bay and Duddon Estuary qualifying SPA population

R = Proportion of Morecambe Bay Ramsar population

APPENDIX D: WeBS Data - Stone Jetty and Morecambe Promenade Sectors

WeBS
The Wetland Bird Survey

Five year summary for Stone Jetty

Table1: Total Counts - All Species Combined.

Peak monthly total = maximum of the sum of the counts of all species within each month.
Seasonal peaks = sum of the maximum counts of for each species within each Season.

Year	Peak Monthly Total		Autumn Peak	Winter Peak	Spring Peak
12/13	9970	(DEC)	6521	10835	2654
13/14	11151	(DEC)	5006	12417	504
14/15	7950	(JAN)	4395	8548	2248
15/16	10260	(FEB)	2901	12470	4080
16/17	8799	(FEB)	7622	9484	4053
MEAN		9626	5289	10751	2708

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Stone Jetty

Table2: Five-year average monthly counts of each species.

Figure in parentheses give number of complete and incomplete counts upon which the average is based.
Incomplete counts are excluded from calculations where, if included, they would depress the mean.

Species	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Eider	0(1,.)	0(4,.)	0(4,1)	2(3,.)	0(5,.)	0(4,1)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	1(2,.)	0(1,.)
Common Scoter	0(1,.)	0(4,.)	0(4,1)	0(3,.)	0(5,.)	0(4,1)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Red-breasted Merganser	0(1,.)	1(4,.)	0(4,1)	0(3,.)	0(5,.)	1(4,1)	1(5,.)	0(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Red-throated Diver	0(1,.)	0(4,.)	0(4,1)	0(3,.)	1(5,.)	0(4,1)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Great Crested Grebe	0(1,.)	0(4,.)	0(4,1)	0(3,.)	0(5,.)	0(4,1)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	3(2,.)	0(1,.)
Cormorant	23(1,.)	48(4,.)	89(4,1)	76(3,.)	39(5,.)	35(4,1)	46(5,.)	49(5,.)	47(5,.)	29(5,.)	20(2,.)	5(1,.)
Shag	0(1,.)	0(4,.)	0(4,1)	0(3,.)	0(5,.)	0(4,1)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Little Egret	0(1,.)	0(4,.)	1(4,1)	2(3,.)	1(5,.)	0(4,1)	0(5,.)	0(5,.)	0(5,.)	4(5,.)	0(2,.)	0(1,.)
Grey Heron	0(1,.)	0(4,.)	1(4,1)	0(3,.)	1(5,.)	0(4,1)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Oystercatcher	0(1,.)	724(4,.)	1666(4,1)	4579(3,.)	4726(5,.)	6725(4,1)	4254(5,.)	4904(5,.)	2465(5,.)	1023(5,.)	995(2,.)	1150(1,.)
Ringed Plover	0(1,.)	3(4,.)	18(4,1)	25(3,.)	24(5,.)	27(4,1)	33(5,.)	33(5,.)	14(5,.)	0(5,.)	1(2,.)	0(1,.)
Grey Plover	0(1,.)	0(4,.)	2(4,1)	4(3,.)	0(5,.)	0(4,1)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Lapwing	0(1,.)	2(4,.)	3(4,1)	21(3,.)	3(5,.)	8(4,1)	2(5,.)	8(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Knot	0(1,.)	0(4,.)	0(4,1)	0(3,.)	135(5,.)	685(4,1)	287(5,.)	2147(5,.)	810(5,.)	580(5,.)	0(2,.)	0(1,.)
Purple Sandpiper	0(1,.)	0(4,.)	0(4,1)	0(3,.)	0(5,.)	0(4,1)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Dunlin	0(1,.)	2(4,.)	0(4,1)	1(3,.)	17(5,.)	42(4,1)	34(5,.)	61(5,.)	19(5,.)	0(5,.)	0(2,.)	0(1,.)
Jack Snipe	0(1,.)	0(4,.)	0(4,1)	0(3,.)	0(5,.)	1(4,1)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Snipe	0(1,.)	0(4,.)	0(4,1)	0(3,.)	0(5,.)	4(4,1)	13(5,.)	8(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Curlew	0(1,.)	2(4,.)	1(4,1)	2(3,.)	0(5,.)	10(4,1)	4(5,.)	30(5,.)	12(5,.)	7(5,.)	2(2,.)	0(1,.)
Redshank	0(1,.)	103(4,.)	288(4,1)	473(3,.)	682(5,.)	656(4,1)	515(5,.)	625(5,.)	603(5,.)	220(5,.)	1(2,.)	0(1,.)
Turnstone	12(1,.)	21(4,.)	148(4,1)	52(3,.)	53(5,.)	63(4,1)	47(5,.)	43(5,.)	40(5,.)	152(5,.)	68(2,.)	0(1,.)
Kittiwake	0(1,.)	0(4,.)	0(4,1)	0(3,.)	0(5,.)	0(4,1)	1(5,.)	3(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Black-headed Gull	0(1,.)	153(4,.)	254(4,1)	200(3,.)	181(5,.)	234(4,1)	236(5,.)	220(5,.)	77(5,.)	36(5,.)	0(2,.)	9(1,.)
Mediterranean Gull	0(1,.)	0(4,.)	2(4,1)	2(3,.)	1(5,.)	2(4,1)	2(5,.)	1(5,.)	1(5,.)	0(5,.)	0(2,.)	0(1,.)
Common Gull	0(1,.)	1(4,.)	2(4,1)	3(3,.)	0(5,.)	1(4,1)	1(5,.)	0(5,.)	0(5,.)	0(5,.)	0(2,.)	0(1,.)
Lesser Black-backed Gull	44(1,.)	70(4,.)	39(4,1)	41(3,.)	20(5,.)	18(4,1)	20(5,.)	17(5,.)	69(5,.)	52(5,.)	104(2,.)	36(1,.)
Herring Gull	78(1,.)	374(4,.)	500(4,1)	81(3,.)	108(5,.)	94(4,1)	113(5,.)	110(5,.)	88(5,.)	159(5,.)	818(2,.)	602(1,.)
Great Black-backed Gull	17(1,.)	17(4,.)	8(4,1)	18(3,.)	15(5,.)	23(4,1)	18(5,.)	19(5,.)	9(5,.)	7(5,.)	12(2,.)	13(1,.)

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Stone Jetty

Table3: Five-year peak monthly counts of each species.

The value reported represents the highest count obtained over the five-year period during the month in question and the species in question.

Species	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Eider	0	0	0	5	0	0	0	0	0	0	2	0
Common Scoter	0	0	0	0	1	0	0	0	0	0	0	0
Red-breasted Merganser	0	2	0	0	2	4	3	0	0	0	0	0
Red-throated Diver	0	0	0	0	3	0	0	1	1	0	0	0
Great Crested Grebe	0	0	0	0	2	1	1	1	0	0	6	0
Cormorant	23	109	102	89	56	71	61	96	94	54	22	5
Shag	0	0	0	1	0	1	1	0	0	0	0	0
Little Egret	0	0	5	5	3	0	0	0	0	18	0	0
Grey Heron	0	0	2	1	3	1	0	0	0	0	0	0
Oystercatcher	0	1736	3221	5506	6986	8660	6880	6964	3839	2410	1175	1150
Ringed Plover	0	12	54	48	47	43	42	48	30	1	2	0
Grey Plover	0	0	8	12	0	0	0	0	0	0	0	0
Lapwing	0	5	13	42	14	21	6	30	0	0	0	0
Knot	0	0	1	0	650	2470	791	6306	3219	2420	0	0
Purple Sandpiper	0	0	0	0	1	0	1	0	1	1	0	0
Dunlin	0	6	1	2	45	70	76	129	42	0	0	0
Jack Snipe	0	0	0	0	0	4	0	0	0	0	0	0
Snipe	0	0	0	0	0	14	64	42	0	0	0	0
Curlew	0	6	2	3	2	36	13	103	21	32	3	0
Redshank	0	187	421	806	835	860	725	861	944	434	2	0
Turnstone	12	45	261	83	120	94	73	76	85	187	75	0
Kittiwake	0	0	0	0	0	0	5	11	0	0	0	0
Black-headed Gull	0	273	513	310	262	297	465	391	200	178	0	9
Mediterranean Gull	0	0	5	2	3	3	3	2	2	0	0	0
Common Gull	0	4	5	7	1	2	4	2	1	0	0	0
Lesser Black-backed Gull	44	86	54	62	47	25	60	26	113	103	128	36
Herring Gull	78	572	1092	150	248	138	184	148	122	244	1280	602
Great Black-backed Gull	17	30	20	33	28	39	21	37	13	15	13	13

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Stone Jetty

Table4a: Five-year autumn peak counts, and month in which this was recorded, of each species.

The value reported represents the highest count obtained between July and October for the year in question and the species in question
Where a count is enclosed by parentheses this indicates that it was considered incomplete
i.e. those parts of the site not visited typically holds at least 25% of the species in question.
Incomplete counts are excluded from calculation where, if included, they would depress the mean.
When all counts are considered to be incomplete the maximum replaces the mean.

Species	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	Mean of Peaks
Eider	5 (OCT)	1 (OCT)	0	0	0	1
Red-breasted Merganser	0	2 (AUG)	0	0	0	0
Cormorant	68 (SEP)	82 (SEP)	(82) (SEP)	109 (AUG)	102 (SEP)	90
Shag	0	1 (OCT)	0	0	0	0
Little Egret	0	0	0	0	5 (SEP)	1
Grey Heron	0	0	0	0	2 (SEP)	0
Oystercatcher	5506 (OCT)	3221 (SEP)	(2200) (SEP)	2000 (SEP)	5320 (OCT)	4012
Ringed Plover	54 (SEP)	14 (OCT)	0	1 (AUG)	48 (OCT)	23
Grey Plover	12 (OCT)	0	0	0	8 (SEP)	4
Lapwing	13 (SEP)	22 (OCT)	4 (AUG)	5 (AUG)	42 (OCT)	17
Knot	1 (SEP)	0	0	0	0	0
Dunlin	0	0	6 (AUG)	0	2 (OCT)	2
Curlew	2 (OCT)	0	6 (AUG)	0	3 (OCT)	2
Redshank	260 (SEP)	610 (OCT)	(376) (SEP)	158 (AUG)	806 (OCT)	459
Turnstone	261 (SEP)	176 (SEP)	(5) (SEP)	45 (AUG)	110 (SEP)	148
Black-headed Gull	102 (SEP)	382 (SEP)	(513) (SEP)	251 (AUG)	310 (OCT)	312
Mediterranean Gull	2 (OCT)	5 (SEP)	0	0	1 (OCT)	2
Common Gull	1 (OCT)	7 (OCT)	(5) (SEP)	4 (AUG)	4 (SEP)	4
Lesser Black-backed Gull	22 (OCT)	79 (AUG)	86 (AUG)	45 (AUG)	71 (AUG)	61
Herring Gull	206 (SEP)	390 (SEP)	(1092) (SEP)	263 (AUG)	755 (SEP)	541
Great Black-backed Gull	6 (OCT)	14 (OCT)	(20) (SEP)	20 (AUG)	33 (OCT)	19

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Stone Jetty

Table4b: Five-year winter peak counts, and month in which this was recorded, of each species.

The value reported represents the highest count obtained between November and March for the winter in question and the species in question
Where a count is enclosed by parentheses this indicates that it was considered incomplete
i.e. those parts of the site not visited typically holds at least 25% of the species in question.
Incomplete counts are excluded from calculation where, if included, they would depress the mean.
When all counts are considered to be incomplete the maximum replaces the mean.

Species	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	Mean Peak
Common Scoter	0	1 (NOV)	0	0	0	0
Red-breasted Merganser	0	4 (DEC)	0	0	0	1
Red-throated Diver	0	3 (NOV)	0	0	0	1
Great Crested Grebe	0	2 (NOV)	0	1 (JAN)	1 (DEC)	1
Cormorant	45 (FEB)	45 (JAN)	72 (FEB)	60 (MAR)	96 (FEB)	64
Shag	0	0	1 (DEC)	0	0	0
Little Egret	0	0	0	0	3 (NOV)	1
Grey Heron	0	0	1 (DEC)	0	3 (NOV)	1
Oystercatcher	8660 (DEC)	7582 (DEC)	6240 (JAN)	(4620) (DEC)	6964 (FEB)	7362
Ringed Plover	43 (NOV)	27 (JAN)	47 (NOV)	48 (FEB)	42 (JAN)	41
Lapwing	30 (FEB)	6 (FEB)	6 (JAN)	(9) (DEC)	21 (DEC)	16
Knot	262 (JAN)	3509 (FEB)	730 (MAR)	6306 (FEB)	690 (FEB)	2299
Purple Sandpiper	1 (JAN)	1 (NOV)	1 (NOV)	0	0	1
Dunlin	129 (FEB)	42 (FEB)	76 (JAN)	56 (FEB)	70 (DEC)	75
Jack Snipe	0	0	0	0	4 (DEC)	1
Snipe	0	0	0	0	64 (JAN)	13
Curlew	32 (FEB)	36 (DEC)	2 (DEC)	103 (FEB)	9 (FEB)	36
Redshank	861 (FEB)	590 (NOV)	835 (NOV)	700 (MAR)	944 (MAR)	786
Turnstone	120 (NOV)	91 (DEC)	51 (FEB)	85 (MAR)	52 (NOV)	80
Kittiwake	1 (FEB)	11 (FEB)	0	1 (FEB)	0	3
Black-headed Gull	465 (JAN)	263 (FEB)	297 (DEC)	178 (JAN)	120 (DEC)	265
Mediterranean Gull	3 (DEC)	3 (NOV)	2 (JAN)	2 (MAR)	1 (NOV)	2
Common Gull	4 (JAN)	0	0	1 (NOV)	2 (DEC)	1
Lesser Black-backed Gull	65 (MAR)	69 (MAR)	25 (DEC)	77 (MAR)	113 (MAR)	70
Herring Gull	93 (MAR)	107 (FEB)	143 (JAN)	184 (JAN)	248 (NOV)	155
Great Black-backed Gull	21 (JAN)	25 (FEB)	19 (NOV)	(39) (DEC)	37 (FEB)	28

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Stone Jetty

Table4c: Five-year spring peak counts, and month in which this was recorded, of each species.

The value reported represents the highest count obtained between April and June for the year in question and the species in question
Where a count is enclosed by parentheses this indicates that it was considered incomplete
i.e. those parts of the site not visited typically holds at least 25% of the species in question.
Incomplete counts are excluded from calculation where, if included, they would depress the mean.
When all counts are considered to be incomplete the maximum replaces the mean.

Species	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	Mean Peak
Eider	2 (MAY)	0	0	0	0	0
Great Crested Grebe	6 (MAY)	0	0	0	0	1
Cormorant	24 (APR)	0	17 (APR)	49 (APR)	54 (APR)	29
Little Egret	0	0	0	0	18 (APR)	4
Oystercatcher	815 (MAY)	0	1210 (APR)	1101 (APR)	2410 (APR)	1107
Ringed Plover	2 (MAY)	0	0	0	0	0
Knot	0	0	0	2420 (APR)	480 (APR)	580
Purple Sandpiper	0	0	1 (APR)	0	0	0
Curlew	3 (MAY)	0	2 (APR)	0	32 (APR)	7
Redshank	282 (APR)	225 (APR)	0	160 (APR)	434 (APR)	220
Turnstone	147 (APR)	122 (APR)	187 (APR)	170 (APR)	132 (APR)	152
Black-headed Gull	0	0	178 (APR)	0	0	36
Lesser Black-backed Gull	80 (MAY)	103 (APR)	36 (JUN)	15 (APR)	128 (MAY)	72
Herring Gull	1280 (MAY)	54 (APR)	602 (JUN)	156 (APR)	355 (MAY)	489
Great Black-backed Gull	13 (MAY)	0	15 (APR)	9 (APR)	10 (MAY)	9

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Stone Jetty

Table4d: Five-year annual peak counts, and month in which this was recorded, of each species.

The value reported represents the highest count obtained between July and June for the year in question and the species in question
Where a count is enclosed by parentheses this indicates that it was considered incomplete
i.e. those parts of the site not visited typically holds at least 25% of the species in question.
Incomplete counts are excluded from calculation where, if included, they would depress the mean.
When all counts are considered to be incomplete the maximum replaces the mean.

Species	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	Mean Peak
Eider	5 (OCT)	1 (OCT)	0	0	0	1
Common Scoter	0	1 (NOV)	0	0	0	0
Red-breasted Merganser	0	4 (DEC)	0	0	0	1
Red-throated Diver	0	3 (NOV)	0	0	0	1
Great Crested Grebe	6 (MAY)	2 (NOV)	0	1 (JAN)	1 (DEC)	2
Cormorant	68 (SEP)	82 (SEP)	(82) (SEP)	109 (AUG)	102 (SEP)	90
Shag	0	1 (OCT)	1 (DEC)	0	0	0
Little Egret	0	0	0	0	18 (APR)	4
Grey Heron	0	0	1 (DEC)	0	3 (NOV)	1
Oystercatcher	8660 (DEC)	7582 (DEC)	6240 (JAN)	(4620) (DEC)	6964 (FEB)	7362
Ringed Plover	54 (SEP)	27 (JAN)	47 (NOV)	48 (FEB)	48 (OCT)	45
Grey Plover	12 (OCT)	0	0	0	8 (SEP)	4
Lapwing	30 (FEB)	22 (OCT)	6 (JAN)	(9) (DEC)	42 (OCT)	25
Knot	262 (JAN)	3509 (FEB)	730 (MAR)	6306 (FEB)	690 (FEB)	2299
Purple Sandpiper	1 (JAN)	1 (NOV)	1 (APR)	0	0	1
Dunlin	129 (FEB)	42 (FEB)	76 (JAN)	56 (FEB)	70 (DEC)	75
Jack Snipe	0	0	0	0	4 (DEC)	1
Snipe	0	0	0	0	64 (JAN)	13
Curlew	32 (FEB)	36 (DEC)	6 (AUG)	103 (FEB)	32 (APR)	42
Redshank	861 (FEB)	610 (OCT)	835 (NOV)	700 (MAR)	944 (MAR)	790
Turnstone	261 (SEP)	176 (SEP)	187 (APR)	170 (APR)	132 (APR)	185
Kittiwake	1 (FEB)	11 (FEB)	0	1 (FEB)	0	3
Black-headed Gull	465 (JAN)	382 (SEP)	(513) (SEP)	251 (AUG)	310 (OCT)	384
Mediterranean Gull	3 (DEC)	5 (SEP)	2 (JAN)	2 (MAR)	1 (OCT)	3
Common Gull	4 (JAN)	7 (OCT)	(5) (SEP)	4 (AUG)	4 (SEP)	5
Lesser Black-backed Gull	80 (MAY)	103 (APR)	86 (AUG)	77 (MAR)	128 (MAY)	95
Herring Gull	1280 (MAY)	390 (SEP)	(1092) (SEP)	263 (AUG)	755 (SEP)	756
Great Black-backed Gull	21 (JAN)	25 (FEB)	(20) (SEP)	(39) (DEC)	37 (FEB)	31

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Stone Jetty

Table5: National and International importance of the site for each species.

Figures given indicate the percentage of the relevant threshold level in operation during 2016/2017 represented by the five-winter mean of peak counts for the species in question
e.g. 50% would indicate that the five-winter mean of peak counts is half the threshold level. It follows that values of 100% or higher indicate nationally or internationally important numbers of a given species occur on the site.
Where a count is enclosed by parentheses this indicates that it was considered incomplete (i.e. those parts of the site not visited typically hold at least 25% of the species in question).
(an asterisk indicates that a 50-bird minimum (typically used for designation) has been used rather than 1% of National population)

Species	Autumn peak cf National Threshold	Winter peak cf National Threshold	Spring peak cf National Threshold	Annual peak cf National Threshold	Autumn peak cf International Threshold	Winter peak cf International Threshold	Spring peak cf International Threshold	Annual peak cf International Threshold
Eider	0%	N/A	0%	0%	0%	N/A	0%	0%
Red-breasted Merganser	0%	1%	N/A	1%	0%	0%	N/A	0%
Red-throated Diver	N/A	1%	N/A	1%	N/A	0%	N/A	0%
Great Crested Grebe	N/A	1%	1%	1%	N/A	0%	0%	0%
Cormorant	26%	18%	8%	26%	8%	5%	2%	8%
Little Egret	*2%	*2%	*8%	*8%	0%	0%	0%	0%
Grey Heron	0%	0%	N/A	0%	0%	0%	N/A	0%
Oystercatcher	125%	230%	35%	230%	49%	90%	14%	90%
Ringed Plover	7%	12%	0%	13%	3%	6%	0%	6%
Grey Plover	1%	N/A	N/A	1%	0%	N/A	N/A	0%
Lapwing	0%	0%	N/A	0%	0%	0%	N/A	0%
Knot	0%	72%	18%	72%	0%	51%	13%	51%

Species	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks
Eider	1		0	1
Red-breasted Merganser	0	1		1
Red-throated Diver		1		1
Great Crested Grebe		1	1	2
Cormorant	90	64	29	90
Little Egret	1	1	4	4
Grey Heron	0	1		1
Oystercatcher	4012	7362	1107	7362
Ringed Plover	23	41	0	45
Grey Plover	4			4
Lapwing	17	16		25
Knot	0	2299	580	2299

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee, in association with the Wildfowl and Wetlands Trust, with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Stone Jetty

Table5: National and International importance of the site for each species.

Figures given indicate the percentage of the relevant threshold level in operation during 2016/2017 represented by the five-winter mean of peak counts for the species in question
e.g. 50% would indicate that the five-winter mean of peak counts is half the threshold level. It follows that values of 100% or higher indicate nationally or internationally important numbers of a given species occur on the site.
Where a count is enclosed by parentheses this indicates that it was considered incomplete (i.e. those parts of the site not visited typically hold at least 25% of the species in question).
(an asterisk indicates that a 50-bird minimum (typically used for designation) has been used rather than 1% of National population)

Species	Autumn peak cf National Threshold	Winter peak cf National Threshold	Spring peak cf National Threshold	Annual peak cf National Threshold	Autumn peak cf International Threshold	Winter peak cf International Threshold	Spring peak cf International Threshold	Annual peak cf International Threshold
Purple Sandpiper	N/A	1%	0%	1%	N/A	0%	0%	0%
Dunlin	0%	2%	N/A	2%	0%	1%	N/A	1%
Jack Snipe	N/A	0%	N/A	0%	N/A	0%	N/A	0%
Snipe	N/A	0%	N/A	0%	N/A	0%	N/A	0%
Curlew	0%	3%	1%	3%	0%	0%	0%	1%
Redshank	38%	66%	18%	66%	19%	33%	9%	33%
Turnstone	31%	17%	32%	39%	11%	6%	11%	13%
Kittiwake	N/A	*6%	N/A	*6%	N/A	0%	N/A	0%
Black-headed Gull	1%	1%	0%	2%	2%	1%	0%	2%
Mediterranean Gull	*4%	*4%	N/A	*6%	0%	0%	N/A	0%
Common Gull	0%	0%	N/A	0%	0%	0%	N/A	0%
Lesser Black-backed Gull	5%	6%	6%	8%	1%	1%	1%	1%

Species	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks
Purple Sandpiper		1	0	1
Dunlin	2	75		75
Jack Snipe		1		1
Snipe		13		13
Curlew	2	36	7	42
Redshank	459	786	220	790
Turnstone	148	80	152	185
Kittiwake		3		3
Black-headed Gull	312	265	36	384
Mediterranean Gull	2	2		3
Common Gull	4	1		5
Lesser Black-backed Gull	61	70	72	95

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee, in association with the Wildfowl and Wetlands Trust, with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Stone Jetty

Table5: National and International importance of the site for each species.

Figures given indicate the percentage of the relevant threshold level in operation during 2016/2017 represented by the five-winter mean of peak counts for the species in question
e.g. 50% would indicate that the five-winter mean of peak counts is half the threshold level. It follows that values of 100% or higher indicate nationally or internationally important numbers of a given species occur on the site.
Where a count is enclosed by parentheses this indicates that it was considered incomplete (i.e. those parts of the site not visited typically hold at least 25% of the species in question).
(an asterisk indicates that a 50-bird minimum (typically used for designation) has been used rather than 1% of National population)

Species	Autumn peak cf National Threshold	Winter peak cf National Threshold	Spring peak cf National Threshold	Annual peak cf National Threshold	Autumn peak cf International Threshold	Winter peak cf International Threshold	Spring peak cf International Threshold	Annual peak cf International Threshold
Herring Gull	7%	2%	7%	10%	5%	2%	5%	7%
Great Black-backed Gull	3%	4%	1%	4%	0%	1%	0%	1%

Species	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks
Herring Gull	541	155	489	756
Great Black-backed Gull	19	28	9	31

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee, in association with the Wildfowl and Wetlands Trust, with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table1: Total Counts - All Species Combined.

Peak monthly total = maximum of the sum of the counts of all species within each month.
Seasonal peaks = sum of the maximum counts of for each species within each Season.

Year	Peak Monthly Total		Autumn Peak	Winter Peak	Spring Peak
12/13	1756	(DEC)	957	2534	519
13/14	1519	(JAN)	1403	2023	57
14/15	1875	(FEB)	1180	2011	243
15/16	835	(FEB)	943	1135	205
16/17	1310	(DEC)	1518	1623	854
MEAN		1459	1200	1865	376

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table2: Five-year average monthly counts of each species.

Figure in parentheses give number of complete and incomplete counts upon which the average is based.
Incomplete counts are excluded from calculations where, if included, they would depress the mean.

Species	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Mute Swan	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Pink-footed Goose	0(4,.)	0(5,.)	0(5,.)	0(5,.)	48(5,.)	0(5,.)	7(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Shelduck	0(4,.)	0(5,.)	0(5,.)	10(5,.)	5(5,.)	10(5,.)	10(5,.)	27(5,.)	9(4,.)	8(5,.)	2(5,.)	0(5,.)
Wigeon	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	4(5,.)	8(5,.)	3(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Teal	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Scaup	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Eider	21(4,.)	8(5,.)	11(5,.)	12(5,.)	4(5,.)	3(5,.)	6(5,.)	10(5,.)	16(4,.)	20(5,.)	14(5,.)	17(5,.)
Common Scoter	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	1(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Goldeneye	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	1(5,.)	1(5,.)	1(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Red-breasted Merganser	0(4,.)	0(5,.)	0(5,.)	6(5,.)	4(5,.)	9(5,.)	2(5,.)	2(5,.)	2(4,.)	4(5,.)	1(5,.)	0(5,.)
Great Crested Grebe	1(4,.)	0(5,.)	0(5,.)	2(5,.)	2(5,.)	2(5,.)	3(5,.)	3(5,.)	0(4,.)	0(5,.)	1(5,.)	0(5,.)
Cormorant	3(4,.)	3(5,.)	4(5,.)	3(5,.)	2(5,.)	2(5,.)	4(5,.)	1(5,.)	1(4,.)	1(5,.)	1(5,.)	1(5,.)
Shag	0(4,.)	1(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Little Egret	0(4,.)	0(5,.)	1(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Grey Heron	0(4,.)	0(5,.)	0(5,.)	1(5,.)	0(5,.)	2(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Oystercatcher	21(4,.)	110(5,.)	224(5,.)	183(5,.)	348(5,.)	735(5,.)	601(5,.)	629(5,.)	355(4,.)	27(5,.)	4(5,.)	2(5,.)
Ringed Plover	0(4,.)	1(5,.)	0(5,.)	8(5,.)	0(5,.)	19(5,.)	8(5,.)	1(5,.)	0(4,.)	0(5,.)	31(5,.)	0(5,.)
Lapwing	0(4,.)	0(5,.)	0(5,.)	2(5,.)	27(5,.)	16(5,.)	7(5,.)	3(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Knot	0(4,.)	0(5,.)	0(5,.)	7(5,.)	0(5,.)	176(5,.)	6(5,.)	80(5,.)	4(4,.)	0(5,.)	0(5,.)	0(5,.)
Dunlin	0(4,.)	2(5,.)	0(5,.)	3(5,.)	0(5,.)	51(5,.)	7(5,.)	5(5,.)	2(4,.)	1(5,.)	62(5,.)	0(5,.)
Black-tailed Godwit	0(4,.)	0(5,.)	0(5,.)	0(5,.)	1(5,.)	0(5,.)	0(5,.)	6(5,.)	0(4,.)	34(5,.)	0(5,.)	0(5,.)
Bar-tailed Godwit	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	1(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Whimbrel	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	2(5,.)	0(5,.)
Curlew	0(4,.)	0(5,.)	3(5,.)	7(5,.)	5(5,.)	11(5,.)	10(5,.)	20(5,.)	14(4,.)	5(5,.)	1(5,.)	0(5,.)
Common Sandpiper	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Spotted Redshank	0(4,.)	3(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Greenshank	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Redshank	22(4,.)	138(5,.)	238(5,.)	205(5,.)	82(5,.)	124(5,.)	153(5,.)	90(5,.)	70(4,.)	40(5,.)	0(5,.)	0(5,.)
Turnstone	0(4,.)	10(5,.)	48(5,.)	51(5,.)	54(5,.)	51(5,.)	40(5,.)	39(5,.)	29(4,.)	0(5,.)	0(5,.)	0(5,.)
Black-headed Gull	74(4,.)	168(5,.)	256(5,.)	192(5,.)	53(5,.)	77(5,.)	73(5,.)	116(5,.)	48(4,.)	3(5,.)	4(5,.)	19(5,.)
Mediterranean Gull	0(4,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(5,.)	0(4,.)	0(5,.)	0(5,.)	0(5,.)
Common Gull	0(4,.)	0(5,.)	1(5,.)	1(5,.)	1(5,.)	2(5,.)	1(5,.)	2(5,.)	1(4,.)	0(5,.)	0(5,.)	3(5,.)
Lesser Black-backed Gull	21(4,.)	12(5,.)	51(5,.)	13(5,.)	3(5,.)	4(5,.)	7(5,.)	15(5,.)	10(4,.)	6(5,.)	12(5,.)	5(5,.)

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table2: Five-year average monthly counts of each species.

Figure in parentheses give number of complete and incomplete counts upon which the average is based.
Incomplete counts are excluded from calculations where, if included, they would depress the mean.

Species	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Herring Gull	34(4,.)	39(5,.)	44(5,.)	56(5,.)	24(5,.)	29(5,.)	19(5,.)	37(5,.)	11(4,.)	12(5,.)	36(5,.)	72(5,.)
Great Black-backed Gull	2(4,.)	1(5,.)	1(5,.)	3(5,.)	2(5,.)	2(5,.)	2(5,.)	3(5,.)	2(4,.)	1(5,.)	1(5,.)	2(5,.)

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table3: Five-year peak monthly counts of each species.

The value reported represents the highest count obtained over the five-year period during the month in question and the species in question.

Species	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Mute Swan	0	0	0	0	0	2	0	0	0	0	0	2
Pink-footed Goose	0	0	0	0	240	0	37	0	0	0	0	0
Shelduck	0	0	0	26	12	27	29	52	20	31	5	0
Wigeon	0	0	0	0	0	15	42	10	0	0	0	0
Teal	0	0	0	0	0	0	1	0	0	0	0	0
Scaup	0	0	0	0	0	0	0	1	0	0	0	0
Eider	32	18	32	29	10	8	15	46	39	89	31	34
Common Scoter	0	0	0	0	0	0	3	0	0	0	0	0
Goldeneye	0	0	0	0	2	5	4	6	0	0	0	0
Red-breasted Merganser	0	1	0	14	9	16	5	6	6	5	3	0
Great Crested Grebe	2	1	1	6	3	4	10	9	0	1	2	0
Cormorant	6	4	7	7	6	4	14	3	2	2	2	2
Shag	0	3	0	0	0	0	0	0	0	0	0	0
Little Egret	0	0	6	1	1	0	0	0	1	1	1	0
Grey Heron	0	1	0	1	0	4	1	2	0	0	1	0
Oystercatcher	78	333	393	481	910	1237	951	991	692	89	13	8
Ringed Plover	0	5	0	35	0	66	41	5	0	0	157	0
Lapwing	0	0	0	12	105	81	16	15	0	0	0	1
Knot	0	0	0	36	0	588	22	390	14	1	0	0
Dunlin	1	12	0	10	0	92	33	18	6	4	274	0
Black-tailed Godwit	0	0	0	0	6	1	0	22	0	172	0	0
Bar-tailed Godwit	0	0	0	0	0	0	0	5	0	2	0	0
Whimbrel	0	0	0	0	0	0	0	0	0	1	9	0
Curlew	0	0	7	17	9	20	17	47	25	19	3	0
Common Sandpiper	0	0	1	0	0	0	1	0	0	0	0	0
Spotted Redshank	0	13	0	0	0	0	0	0	0	0	0	0
Greenshank	0	0	0	2	0	0	0	0	0	0	0	0
Redshank	85	359	353	340	200	199	272	153	95	139	0	0
Turnstone	0	20	67	99	137	119	63	74	46	1	0	0
Black-headed Gull	155	284	409	247	200	162	147	247	89	7	12	46
Mediterranean Gull	0	0	0	1	0	0	0	1	0	0	0	0
Common Gull	1	0	3	5	2	4	2	4	3	0	2	13
Lesser Black-backed Gull	36	33	226	28	6	11	12	30	26	11	24	18

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table3: Five-year peak monthly counts of each species.

The value reported represents the highest count obtained over the five-year period during the month in question and the species in question.

Species	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Herring Gull	84	101	64	95	48	54	42	89	16	27	76	156
Great Black-backed Gull	4	4	2	7	3	4	6	4	4	4	2	9

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table4a: Five-year autumn peak counts, and month in which this was recorded, of each species.

The value reported represents the highest count obtained between July and October for the year in question and the species in question
Where a count is enclosed by parentheses this indicates that it was considered incomplete
i.e. those parts of the site not visited typically holds at least 25% of the species in question.
Incomplete counts are excluded from calculation where, if included, they would depress the mean.
When all counts are considered to be incomplete the maximum replaces the mean.

Species	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	Mean of Peaks
Shelduck	26 (OCT)	0	14 (OCT)	0	9 (OCT)	10
Eider	29 (OCT)	32 (SEP)	6 (SEP)	32 (JUL)	29 (OCT)	26
Red-breasted Merganser	14 (OCT)	0	11 (OCT)	1 (AUG)	3 (OCT)	6
Great Crested Grebe	6 (OCT)	0	0	2 (OCT)	1 (AUG)	2
Cormorant	6 (JUL)	3 (AUG)	7 (SEP)	5 (SEP)	4 (OCT)	5
Shag	0	0	0	0	3 (AUG)	1
Little Egret	0	0	1 (OCT)	1 (OCT)	6 (SEP)	2
Grey Heron	1 (OCT)	1 (OCT)	0	1 (AUG)	1 (OCT)	1
Oystercatcher	43 (OCT)	393 (SEP)	273 (SEP)	131 (SEP)	481 (OCT)	264
Ringed Plover	0	0	35 (OCT)	0	6 (OCT)	8
Lapwing	12 (OCT)	0	0	0	0	2
Knot	0	0	0	0	36 (OCT)	7
Dunlin	3 (OCT)	10 (OCT)	3 (OCT)	12 (AUG)	0	6
Curlew	8 (OCT)	5 (SEP)	5 (OCT)	4 (OCT)	17 (OCT)	8
Common Sandpiper	0	0	0	0	1 (SEP)	0
Spotted Redshank	0	0	0	0	13 (AUG)	3
Greenshank	0	0	0	0	2 (OCT)	0
Redshank	359 (AUG)	353 (SEP)	340 (OCT)	312 (SEP)	212 (OCT)	315
Turnstone	85 (OCT)	67 (SEP)	59 (SEP)	99 (OCT)	55 (SEP)	73
Black-headed Gull	284 (AUG)	409 (SEP)	326 (SEP)	224 (AUG)	304 (SEP)	309
Mediterranean Gull	0	0	0	0	1 (OCT)	0
Common Gull	5 (OCT)	3 (SEP)	1 (SEP)	0	1 (OCT)	2
Lesser Black-backed Gull	22 (JUL)	36 (JUL)	33 (AUG)	23 (JUL)	226 (SEP)	68
Herring Gull	51 (OCT)	84 (JUL)	62 (SEP)	95 (OCT)	101 (AUG)	79
Great Black-backed Gull	3 (AUG)	7 (OCT)	4 (JUL)	1 (SEP)	6 (OCT)	4

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table4b: Five-year winter peak counts, and month in which this was recorded, of each species.

The value reported represents the highest count obtained between November and March for the winter in question and the species in question
Where a count is enclosed by parentheses this indicates that it was considered incomplete
i.e. those parts of the site not visited typically holds at least 25% of the species in question.
Incomplete counts are excluded from calculation where, if included, they would depress the mean.
When all counts are considered to be incomplete the maximum replaces the mean.

Species	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	Mean Peak
Mute Swan	0	2 (DEC)	0	0	0	0
Pink-footed Goose	240 (NOV)	0	0	0	0	48
Shelduck	35 (FEB)	21 (JAN)	31 (FEB)	2 (DEC)	52 (FEB)	28
Wigeon	0	42 (JAN)	0	2 (DEC)	7 (FEB)	10
Teal	0	0	0	0	1 (JAN)	0
Scaup	1 (FEB)	0	0	0	0	0
Eider	10 (NOV)	15 (JAN)	46 (FEB)	3 (JAN)	21 (MAR)	19
Common Scoter	0	0	0	0	3 (JAN)	1
Goldeneye	5 (DEC)	6 (FEB)	0	0	1 (DEC)	2
Red-breasted Merganser	7 (NOV)	5 (DEC)	12 (DEC)	7 (DEC)	16 (DEC)	9
Great Crested Grebe	10 (JAN)	9 (FEB)	3 (NOV)	3 (DEC)	4 (DEC)	6
Cormorant	3 (JAN)	6 (NOV)	4 (DEC)	1 (NOV)	14 (JAN)	6
Little Egret	0	1 (MAR)	1 (NOV)	0	0	0
Grey Heron	1 (DEC)	0	2 (FEB)	3 (DEC)	4 (DEC)	2
Oystercatcher	910 (NOV)	1237 (DEC)	991 (FEB)	634 (FEB)	702 (JAN)	895
Ringed Plover	0	0	30 (DEC)	0	66 (DEC)	19
Lapwing	0	13 (JAN)	30 (NOV)	15 (FEB)	105 (NOV)	33
Knot	588 (DEC)	4 (JAN)	390 (FEB)	3 (MAR)	14 (DEC)	200
Dunlin	84 (DEC)	33 (JAN)	74 (DEC)	92 (DEC)	4 (DEC)	57
Black-tailed Godwit	1 (DEC)	6 (NOV)	22 (FEB)	0	7 (FEB)	7
Bar-tailed Godwit	0	0	0	0	5 (FEB)	1
Curlew	19 (FEB)	18 (FEB)	9 (MAR)	9 (FEB)	47 (FEB)	20
Common Sandpiper	0	0	0	0	1 (JAN)	0
Redshank	164 (DEC)	272 (JAN)	153 (FEB)	174 (JAN)	199 (DEC)	192
Turnstone	100 (DEC)	63 (JAN)	74 (FEB)	41 (MAR)	137 (NOV)	83
Black-headed Gull	247 (FEB)	200 (NOV)	97 (FEB)	59 (MAR)	148 (FEB)	150
Mediterranean Gull	1 (FEB)	0	0	0	0	0
Common Gull	2 (DEC)	3 (FEB)	2 (DEC)	0	4 (DEC)	2
Lesser Black-backed Gull	13 (FEB)	18 (FEB)	7 (FEB)	30 (FEB)	12 (JAN)	16

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table4b: Five-year winter peak counts, and month in which this was recorded, of each species.

The value reported represents the highest count obtained between November and March for the winter in question and the species in question
Where a count is enclosed by parentheses this indicates that it was considered incomplete
i.e. those parts of the site not visited typically holds at least 25% of the species in question.
Incomplete counts are excluded from calculation where, if included, they would depress the mean.
When all counts are considered to be incomplete the maximum replaces the mean.

Species	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	Mean Peak
Herring Gull	89 (FEB)	45 (DEC)	29 (FEB)	54 (DEC)	43 (FEB)	52
Great Black-backed Gull	4 (DEC)	4 (FEB)	4 (DEC)	3 (NOV)	6 (JAN)	4

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table4c: Five-year spring peak counts, and month in which this was recorded, of each species.

The value reported represents the highest count obtained between April and June for the year in question and the species in question
Where a count is enclosed by parentheses this indicates that it was considered incomplete
i.e. those parts of the site not visited typically holds at least 25% of the species in question.
Incomplete counts are excluded from calculation where, if included, they would depress the mean.
When all counts are considered to be incomplete the maximum replaces the mean.

Species	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	Mean Peak
Mute Swan	0	0	0	0	2 (JUN)	0
Shelduck	31 (APR)	1 (MAY)	4 (MAY)	0	9 (APR)	9
Eider	32 (JUN)	4 (APR)	34 (JUN)	9 (MAY)	89 (APR)	34
Red-breasted Merganser	4 (APR)	4 (APR)	2 (MAY)	5 (APR)	5 (APR)	4
Great Crested Grebe	2 (MAY)	1 (APR)	1 (MAY)	0	0	1
Cormorant	2 (JUN)	2 (APR)	2 (MAY)	1 (APR)	1 (APR)	2
Little Egret	0	0	0	1 (APR)	1 (MAY)	0
Grey Heron	0	0	0	0	1 (MAY)	0
Oystercatcher	30 (APR)	18 (APR)	3 (MAY)	0	89 (APR)	28
Ringed Plover	0	0	0	0	157 (MAY)	31
Lapwing	0	0	0	0	1 (JUN)	0
Knot	0	0	0	0	1 (APR)	0
Dunlin	38 (MAY)	0	0	0	274 (MAY)	62
Black-tailed Godwit	172 (APR)	0	0	0	0	34
Bar-tailed Godwit	2 (APR)	0	0	0	0	0
Whimbrel	9 (MAY)	1 (APR)	0	0	2 (MAY)	2
Curlew	8 (APR)	0	0	0	19 (APR)	5
Redshank	139 (APR)	0	2 (APR)	12 (APR)	49 (APR)	40
Turnstone	0	0	0	0	1 (APR)	0
Black-headed Gull	9 (JUN)	14 (JUN)	26 (JUN)	4 (APR)	46 (JUN)	20
Common Gull	0	0	0	13 (JUN)	4 (JUN)	3
Lesser Black-backed Gull	24 (MAY)	2 (JUN)	11 (APR)	23 (MAY)	18 (JUN)	16
Herring Gull	16 (APR)	10 (JUN)	156 (JUN)	135 (JUN)	76 (MAY)	79
Great Black-backed Gull	1 (JUN)	0	2 (MAY)	2 (MAY)	9 (JUN)	3

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table4d: Five-year annual peak counts, and month in which this was recorded, of each species.

The value reported represents the highest count obtained between July and June for the year in question and the species in question
Where a count is enclosed by parentheses this indicates that it was considered incomplete
i.e. those parts of the site not visited typically holds at least 25% of the species in question.
Incomplete counts are excluded from calculation where, if included, they would depress the mean.
When all counts are considered to be incomplete the maximum replaces the mean.

Species	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	Mean Peak
Mute Swan	0	2 (DEC)	0	0	2 (JUN)	1
Pink-footed Goose	240 (NOV)	0	0	0	0	48
Shelduck	35 (FEB)	21 (JAN)	31 (FEB)	2 (DEC)	52 (FEB)	28
Wigeon	0	42 (JAN)	0	2 (DEC)	7 (FEB)	10
Teal	0	0	0	0	1 (JAN)	0
Scaup	1 (FEB)	0	0	0	0	0
Eider	32 (JUN)	32 (SEP)	46 (FEB)	32 (JUL)	89 (APR)	46
Common Scoter	0	0	0	0	3 (JAN)	1
Goldeneye	5 (DEC)	6 (FEB)	0	0	1 (DEC)	2
Red-breasted Merganser	14 (OCT)	5 (DEC)	12 (DEC)	7 (DEC)	16 (DEC)	11
Great Crested Grebe	10 (JAN)	9 (FEB)	3 (NOV)	3 (DEC)	4 (DEC)	6
Cormorant	6 (JUL)	6 (NOV)	7 (SEP)	5 (SEP)	14 (JAN)	8
Shag	0	0	0	0	3 (AUG)	1
Little Egret	0	1 (MAR)	1 (OCT)	1 (OCT)	6 (SEP)	2
Grey Heron	1 (OCT)	1 (OCT)	2 (FEB)	3 (DEC)	4 (DEC)	2
Oystercatcher	910 (NOV)	1237 (DEC)	991 (FEB)	634 (FEB)	702 (JAN)	895
Ringed Plover	0	0	35 (OCT)	0	157 (MAY)	38
Lapwing	12 (OCT)	13 (JAN)	30 (NOV)	15 (FEB)	105 (NOV)	35
Knot	588 (DEC)	4 (JAN)	390 (FEB)	3 (MAR)	36 (OCT)	204
Dunlin	84 (DEC)	33 (JAN)	74 (DEC)	92 (DEC)	274 (MAY)	111
Black-tailed Godwit	172 (APR)	6 (NOV)	22 (FEB)	0	7 (FEB)	41
Bar-tailed Godwit	2 (APR)	0	0	0	5 (FEB)	1
Whimbrel	9 (MAY)	1 (APR)	0	0	2 (MAY)	2
Curlew	19 (FEB)	18 (FEB)	9 (MAR)	9 (FEB)	47 (FEB)	20
Common Sandpiper	0	0	0	0	1 (SEP)	0
Spotted Redshank	0	0	0	0	13 (AUG)	3
Greenshank	0	0	0	0	2 (OCT)	0
Redshank	359 (AUG)	353 (SEP)	340 (OCT)	312 (SEP)	212 (OCT)	315
Turnstone	100 (DEC)	67 (SEP)	74 (FEB)	99 (OCT)	137 (NOV)	95
Black-headed Gull	284 (AUG)	409 (SEP)	326 (SEP)	224 (AUG)	304 (SEP)	309
Mediterranean Gull	1 (FEB)	0	0	0	1 (OCT)	0

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table4d: Five-year annual peak counts, and month in which this was recorded, of each species.

The value reported represents the highest count obtained between July and June for the year in question and the species in question
Where a count is enclosed by parentheses this indicates that it was considered incomplete
i.e. those parts of the site not visited typically holds at least 25% of the species in question.
Incomplete counts are excluded from calculation where, if included, they would depress the mean.
When all counts are considered to be incomplete the maximum replaces the mean.

Species	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	Mean Peak
Common Gull	5 (OCT)	3 (SEP)	2 (DEC)	13 (JUN)	4 (JUN)	5
Lesser Black-backed Gull	24 (MAY)	36 (JUL)	33 (AUG)	30 (FEB)	226 (SEP)	70
Herring Gull	89 (FEB)	84 (JUL)	156 (JUN)	135 (JUN)	101 (AUG)	113
Great Black-backed Gull	4 (DEC)	7 (OCT)	4 (JUL)	3 (NOV)	9 (JUN)	5

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology,
the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee,
in association with the Wildfowl and Wetlands Trust,
with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table5: National and International importance of the site for each species.

Figures given indicate the percentage of the relevant threshold level in operation during 2016/2017 represented by the five-winter mean of peak counts for the species in question
e.g. 50% would indicate that the five-winter mean of peak counts is half the threshold level. It follows that values of 100% or higher indicate nationally or internationally important numbers of a given species occur on the site.
Where a count is enclosed by parentheses this indicates that it was considered incomplete (i.e. those parts of the site not visited typically hold at least 25% of the species in question).
(an asterisk indicates that a 50-bird minimum (typically used for designation) has been used rather than 1% of National population)

Species	Autumn peak cf National Threshold	Winter peak cf National Threshold	Spring peak cf National Threshold	Annual peak cf National Threshold	Autumn peak cf International Threshold	Winter peak cf International Threshold	Spring peak cf International Threshold	Annual peak cf International Threshold
Pink-footed Goose	N/A	1%	N/A	1%	N/A	1%	N/A	1%
Shelduck	2%	5%	1%	5%	0%	1%	0%	1%
Wigeon	N/A	0%	N/A	0%	N/A	0%	N/A	0%
Eider	5%	3%	6%	8%	0%	0%	0%	0%
Common Scoter	N/A	0%	N/A	0%	N/A	0%	N/A	0%
Goldeneye	N/A	1%	N/A	1%	N/A	0%	N/A	0%
Red-breasted Merganser	7%	11%	5%	13%	0%	1%	0%	1%
Great Crested Grebe	1%	3%	1%	3%	0%	0%	0%	0%
Cormorant	1%	2%	1%	2%	0%	1%	0%	1%
Shag	0%	N/A	N/A	0%	0%	N/A	N/A	0%
Little Egret	*4%	*0%	*0%	*4%	0%	0%	0%	0%
Grey Heron	0%	0%	0%	0%	0%	0%	0%	0%

Species	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks
Pink-footed Goose		48		48
Shelduck	10	28	9	28
Wigeon		10		10
Eider	26	19	34	46
Common Scoter		1		1
Goldeneye		2		2
Red-breasted Merganser	6	9	4	11
Great Crested Grebe	2	6	1	6
Cormorant	5	6	2	8
Shag	1			1
Little Egret	2	0	0	2
Grey Heron	1	2	0	2

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee, in association with the Wildfowl and Wetlands Trust, with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table5: National and International importance of the site for each species.

Figures given indicate the percentage of the relevant threshold level in operation during 2016/2017 represented by the five-winter mean of peak counts for the species in question
e.g. 50% would indicate that the five-winter mean of peak counts is half the threshold level. It follows that values of 100% or higher indicate nationally or internationally important numbers of a given species occur on the site.
Where a count is enclosed by parentheses this indicates that it was considered incomplete (i.e. those parts of the site not visited typically hold at least 25% of the species in question).
(an asterisk indicates that a 50-bird minimum (typically used for designation) has been used rather than 1% of National population)

Species	Autumn peak cf National Threshold	Winter peak cf National Threshold	Spring peak cf National Threshold	Annual peak cf National Threshold	Autumn peak cf International Threshold	Winter peak cf International Threshold	Spring peak cf International Threshold	Annual peak cf International Threshold
Oystercatcher	8%	28%	1%	28%	3%	11%	0%	11%
Ringed Plover	2%	6%	9%	11%	1%	3%	4%	5%
Lapwing	0%	1%	0%	1%	0%	0%	0%	0%
Knot	0%	6%	0%	6%	0%	4%	0%	5%
Dunlin	0%	2%	2%	3%	0%	0%	0%	1%
Black-tailed Godwit	N/A	2%	8%	10%	N/A	1%	6%	7%
Bar-tailed Godwit	N/A	0%	0%	0%	N/A	0%	0%	0%
Whimbrel	N/A	N/A	*4%	*4%	N/A	N/A	0%	0%
Curlew	1%	1%	0%	1%	0%	0%	0%	0%
Spotted Redshank	*6%	N/A	N/A	*6%	0%	N/A	N/A	0%
Redshank	26%	16%	3%	26%	13%	8%	2%	13%
Turnstone	15%	17%	0%	20%	5%	6%	0%	7%

Species	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks
Oystercatcher	264	895	28	895
Ringed Plover	8	19	31	38
Lapwing	2	33	0	35
Knot	7	200	0	204
Dunlin	6	57	62	111
Black-tailed Godwit		7	34	41
Bar-tailed Godwit		1	0	1
Whimbrel			2	2
Curlew	8	20	5	20
Spotted Redshank	3			3
Redshank	315	192	40	315
Turnstone	73	83	0	95

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee, in association with the Wildfowl and Wetlands Trust, with fieldwork conducted by volunteers.

WeBS
The Wetland Bird Survey

Five year summary for Morecambe Promenade

Table5: National and International importance of the site for each species.

Figures given indicate the percentage of the relevant threshold level in operation during 2016/2017 represented by the five-winter mean of peak counts for the species in question
e.g. 50% would indicate that the five-winter mean of peak counts is half the threshold level. It follows that values of 100% or higher indicate nationally or internationally important numbers of a given species occur on the site.
Where a count is enclosed by parentheses this indicates that it was considered incomplete (i.e. those parts of the site not visited typically hold at least 25% of the species in question).
(an asterisk indicates that a 50-bird minimum (typically used for designation) has been used rather than 1% of National population)

Species	Autumn peak cf National Threshold	Winter peak cf National Threshold	Spring peak cf National Threshold	Annual peak cf National Threshold	Autumn peak cf International Threshold	Winter peak cf International Threshold	Spring peak cf International Threshold	Annual peak cf International Threshold
Black-headed Gull	1%	1%	0%	1%	2%	1%	0%	2%
Common Gull	0%	0%	0%	0%	0%	0%	0%	0%
Lesser Black-backed Gull	6%	1%	1%	6%	1%	0%	0%	1%
Herring Gull	1%	1%	1%	2%	1%	1%	1%	1%
Great Black-backed Gull	1%	1%	0%	1%	0%	0%	0%	0%

Species	Autumn 5yr mean of peaks	Winter 5yr mean of peaks	Spring 5yr mean of peaks	Annual 5yr mean of peaks
Black-headed Gull	309	150	20	309
Common Gull	2	2	3	5
Lesser Black-backed Gull	68	16	16	70
Herring Gull	79	52	79	113
Great Black-backed Gull	4	4	3	5

Data provided by the British Trust for Ornithology on behalf of The Wetland Bird Survey.
These tabulations are based exclusively on data collected as part of the monthly Core Counts.
For some species (e.g. wintering geese) data collected by other surveys may be more appropriate for the purpose of site assessment.
Missing or unexpectedly low counts for gulls and terns should be treated with caution - counting these groups is optional and determination of count effort not always possible.

The Wetland Bird Survey is a partnership jointly funded by the British Trust for Ornithology, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee, in association with the Wildfowl and Wetlands Trust, with fieldwork conducted by volunteers.

APPENDIX E: Winter Bird Survey and Weather Data

Date	Visit	Survey Period	Tidal State	Reg No.	Time	Species	Bird Count	Compartment No.	Behaviour	Disturbance / Response	Comments	Within 250m of new red line	250-500m of new red line	Outside of Buffer	Roosting/ Feeding Area
25/10/2019	1	09:20-11:20	High	1	09:20	OC	310	C9	RO					YES	Area 2
25/10/2019	1	09:20-11:20	High	1	09:20	RK	60	C9	FE					YES	Area 2
25/10/2019	1	09:20-11:20	High	1	09:25	ET	5	C9	LO					YES	
25/10/2019	1	09:20-11:20	High	2	09:25	ET	2	C9	LO					YES	
25/10/2019	1	09:20-11:20	High	1	09:45	CU	2	C9	RO					YES	
25/10/2019	1	09:20-11:20	High	3	10:05	TT	41	C2	RO			YES			
25/10/2019	1	09:20-11:20	High	3	10:05	RK	18	C2	RO			YES			
25/10/2019	1	09:20-11:20	High	4	10:13	BH	30	C7	FE				YES		
25/10/2019	1	09:20-11:20	High	4	10:13	GB	2	C7	FE	Fishing Boat			YES		
25/10/2019	1	09:20-11:20	High	4	10:23	HG	268	C7	FE				YES		Area 13
25/10/2019	1	09:20-11:20	High	5	10:25	GG	1	C1	FE				YES		
25/10/2019	1	09:20-11:20	High	6	10:30	CA	2	C10	FLY					YES	
25/10/2019	1	09:20-11:20	High	7	10:40	RK	7	C8	FE				YES		
25/10/2019	1	09:20-11:20	High	5	10:40	RC	4	C1	FE				YES		
25/10/2019	1	09:20-11:20	High	3	10:45	CU	1	C2	RO			YES			
25/10/2019	1	09:20-11:20	High	8	10:50	RK	37	C2	RO			YES			
25/10/2019	1	09:20-11:20	High	9	11:15	RK	5	C6	RO/FE		approx 10% of birds in 250-500m		YES		
25/10/2019	1	09:20-11:20	High	9	11:15	OC	1	C6	FLY		approx 10% of birds in 250-500m		YES		
25/10/2019	1	09:20-11:20	High	10	11:20	GG	1	C6	FE				YES		
25/10/2019	1	11:50-13:50	Mid	1	11:53	OC	2	C8	FE				YES		
25/10/2019	1	11:50-13:50	Mid	2	11:53	RK	6	C8	FE					YES	
25/10/2019	1	11:50-13:50	Mid	2	11:53	OC	5	C8	FE					YES	
25/10/2019	1	11:50-13:50	Mid	2	11:53	CU	1	C8	FE					YES	
25/10/2019	1	11:50-13:50	Mid	3	11:59	OC	270	C9	RO					YES	Area 2
25/10/2019	1	11:50-13:50	Mid	3	11:59	ET	3	C9	RO					YES	
25/10/2019	1	11:50-13:50	Mid	4	12:20	RK	3	C4	FE			YES			
25/10/2019	1	11:50-13:50	Mid	4	12:20	OC	2	C2	FE			YES			
25/10/2019	1	11:50-13:50	Mid	4	12:20	CU	1	C2	FE			YES			
25/10/2019	1	11:50-13:50	Mid	5	12:20	RK	1	C7	FE			YES			
25/10/2019	1	11:50-13:50	Mid	6	12:25	GG	1	outside survey area	FE					YES	
25/10/2019	1	11:50-13:50	Mid	7	12:30	GB	1	C8	FE				YES		
25/10/2019	1	11:50-13:50	Mid	8	12:35	OC	10	outside survey area	FE					YES	
25/10/2019	1	11:50-13:50	Mid	9	12:45	RK	15	C4	FE			YES			
25/10/2019	1	11:50-13:50	Mid	9	12:45	OC	9	C4	FE			YES			
25/10/2019	1	11:50-13:50	Mid	9	12:45	CU	1	C4	FE			YES			
25/10/2019	1	11:50-13:50	Mid	10	12:45	KN	15	C4	FE			YES			
25/10/2019	1	11:50-13:50	Mid	11	12:55	RK	2	C4	FE				YES		
25/10/2019	1	11:50-13:50	Mid	11	12:55	OC	2	C4	FE				YES		
25/10/2019	1	11:50-13:50	Mid	12	13:00	RK	3	C6			90% within 250m, 10% 250-500m	YES			
25/10/2019	1	11:50-13:50	Mid	12	13:00	CU	1	C6			90% within 250m, 10% 250-500m	YES			
25/10/2019	1	11:50-13:50	Mid	12	13:00	GG	1	C6			90% within 250m, 10% 250-500m	YES			
25/10/2019	1	11:50-13:50	Mid	13	13:15	RK	7	C4	FE			YES			
25/10/2019	1	11:50-13:50	Mid	13	13:15	OC	1	C4	FE			YES			
25/10/2019	1	11:50-13:50	Mid	14	13:25	RK	6	C9	FE					YES	
25/10/2019	1	11:50-13:50	Mid	14	13:25	OC	2	C9	FE					YES	
25/10/2019	1	11:50-13:50	Mid	14	13:25	GG	1	C9	FE					YES	
25/10/2019	1	11:50-13:50	Mid	15	13:30	CU	2	C8	FE						
25/10/2019	1	11:50-13:50	Mid	15	13:30	GG	1	C2	FE						
25/10/2019	1	14:20-16:20	Low	1	14:25	RK	3	C2	FE			YES			
25/10/2019	1	14:20-16:20	Low	1	14:25	OC	2	C2	FE			YES			
25/10/2019	1	14:20-16:20	Low	1	14:25	CU	1	C2	FE			YES			
25/10/2019	1	14:20-16:20	Low	2	14:35	CU	1	C1	FE				YES		
25/10/2019	1	14:20-16:20	Low	3	14:35	RK	1	C8	FE			YES			
25/10/2019	1	14:20-16:20	Low	4	14:35	OC	1	C8	FE			YES			
25/10/2019	1	14:20-16:20	Low	2	14:46	OC	2	C1	FE				YES		
25/10/2019	1	14:20-16:20	Low	2	14:46	RK	1	C1	FE				YES		
25/10/2019	1	14:20-16:20	Low	6	14:50	TT	60	C8	FLYING NORTH				YES		
25/10/2019	1	14:20-16:20	Low	5	14:50	GG	1	C8	FE				YES		
25/10/2019	1	14:20-16:20	Low	7	15:00	GG	1	C8	FE				YES		
25/10/2019	1	14:20-16:20	Low	8	15:20	KN	18	C4	FE	SURVEYOR LR		YES			
25/10/2019	1	14:20-16:20	Low	9	15:20	KN	18	C4	FE	SURVEYOR LR		YES			
25/10/2019	1	14:20-16:20	Low	10	15:20	OC	5	C4	FE			YES			
25/10/2019	1	14:20-16:20	Low	10	15:20	BW	2	C4	FE			YES			
25/10/2019	1	14:20-16:20	Low	10	15:20	CU	1	C4	FE			YES			
25/10/2019	1	14:20-16:20	Low	11	15:25	OC	99	C4	FE				YES		Area 10
25/10/2019	1	14:20-16:20	Low	10	15:25	RK	5	C4	FE			YES			

25/10/2019	1	14:20-16:20	Low	12	15:25	OC	3	C6	FE				YES		
25/10/2019	1	14:20-16:20	Low	12	15:25	SU	1	C6	FE				YES		
25/10/2019	1	14:20-16:20	Low	13	15:40	RK	9	C6	FE		10% of birds are within 250-500m		YES		
25/10/2019	1	14:20-16:20	Low	13	15:40	SU	1	C6	LO		10% of birds are within 250-500m		YES		
25/10/2019	1	14:20-16:20	Low	14	15:45	RK	10	C6	FE					YES	
25/10/2019	1	14:20-16:20	Low	13	15:45	OC	2	C6	FE		10% of birds are within 250-500m		YES		
25/10/2019	1	14:20-16:20	Low	13	15:45	OC	2	C6	FE		10% of birds are within 250-500m		YES		
25/10/2019	1	14:20-16:20	Low	15	16:00	OC	6	C9	FE					YES	
31/10/2019	2	07:40-09:40	Low	4	07:40	KN	1200	C6	FE					YES	Area 5
31/10/2019	2	07:40-09:40	Low	2	07:40	KN	650	C6	FE					YES	Area 5
31/10/2019	2	07:40-09:40	Low	2	07:40	OC	500	C6	FE					YES	Area 5
31/10/2019	2	07:40-09:40	Low	4	07:40	OC	380	C6	FE					YES	Area 5
31/10/2019	2	07:40-09:40	Low	2	07:40	DN	120	C6	FE					YES	Area 5
31/10/2019	2	07:40-09:40	Low	1	07:40	OC	95	C6	FE					YES	Area 5
31/10/2019	2	07:40-09:40	Low	2	07:40	RK	8	C6	FE					YES	
31/10/2019	2	07:40-09:40	Low	4	07:40	RK	4	C6	FE					YES	
31/10/2019	2	07:40-09:40	Low	3	07:40	CU	2	C6	FE					YES	
31/10/2019	2	07:40-09:40	Low	3	07:40	OC	1	C6	FE					YES	
31/10/2019	2	07:40-09:40	Low	5	07:52	PG	60	C6	FLY					YES	
31/10/2019	2	07:40-09:40	Low	6	08:04	OC	17	C6						YES	
31/10/2019	2	07:40-09:40	Low	6	08:04	KN	7	C6						YES	
31/10/2019	2	07:40-09:40	Low	6	08:04	RK	5	C6						YES	
31/10/2019	2	07:40-09:40	Low	8	08:10	OC	90	C6	FE					YES	Area 5
31/10/2019	2	07:40-09:40	Low	8	08:10	RK	35	C6	FE					YES	
31/10/2019	2	07:40-09:40	Low	7	08:10	RK	1	C6	FE					YES	
31/10/2019	2	07:40-09:40	Low	10	08:35	SU	1	C4	RO			YES			
31/10/2019	2	07:40-09:40	Low	11	08:35	CU	1	C4	FE			YES			
31/10/2019	2	07:40-09:40	Low	9	08:35	OC	1	C4	FE			YES			
31/10/2019	2	07:40-09:40	Low	12	08:49	RK	1	C2	FE			YES			
31/10/2019	2	07:40-09:40	Low	13	09:00	TT	42	C8	FE					YES	
31/10/2019	2	07:40-09:40	Low	13	09:00	OC	23	C8	FE					YES	
31/10/2019	2	07:40-09:40	Low	13	09:00	KN	12	C8	FE					YES	
31/10/2019	2	07:40-09:40	Low	15	09:00	CU	3	C8	FE		20% of birds within 250-500m		YES		
31/10/2019	2	07:40-09:40	Low	13	09:00	CU	2	C8	FE					YES	
31/10/2019	2	07:40-09:40	Low	14	09:00	GG	1	C8	FE					YES	
31/10/2019	2	07:40-09:40	Low	16	09:00	RK	1	C8	FE			YES			
31/10/2019	2	07:40-09:40	Low	15	09:00	OC	1	C8	FE		20% of birds within 250-500m		YES		
31/10/2019	2	07:40-09:40	Low	17	09:15	PG	140	C8	FLY				YES		
31/10/2019	2	07:40-09:40	Low	18	09:21	OC	28	C8	FLY				YES		
31/10/2019	2	07:40-09:40	Low	18	09:21	CU	1	C8	FE				YES		
31/10/2019	2	07:40-09:40	Low	13	09:21	CA	1	C8						YES	
31/10/2019	2	07:40-09:40	Low	20	09:29	TT	35	C7			Flew in from Reg 13	YES			
31/10/2019	2	09:50-11:50	Mid	3	09:50	RK	6	C6	FE					YES	
31/10/2019	2	09:50-11:50	Mid	4	09:50	RK	4	C6	FE					YES	
31/10/2019	2	09:50-11:50	Mid	1	09:50	RK	3	C6	FE					YES	
31/10/2019	2	09:50-11:50	Mid	2	09:50	RK	3	C6	FE					YES	
31/10/2019	2	09:50-11:50	Mid	4	09:50	CU	1	C6	FE					YES	
31/10/2019	2	09:50-11:50	Mid	3	09:50	OC	1	C6	FE					YES	
31/10/2019	2	09:50-11:50	Mid	4	09:50	OC	1	C6	FE					YES	
31/10/2019	2	09:50-11:50	Mid	6	10:00	TT	9	C6	FE				YES		
31/10/2019	2	09:50-11:50	Mid	6	10:00	OC	3	C6	FE				YES		
31/10/2019	2	09:50-11:50	Mid	5	10:00	RK	1	C6	FE				YES		
31/10/2019	2	09:50-11:50	Mid	12	10:18	RK	10	C6	FE					YES	
31/10/2019	2	09:50-11:50	Mid	7	10:18	OC	9	C6	FE				YES		
31/10/2019	2	09:50-11:50	Mid	7	10:18	RK	8	C6	FE				YES		
31/10/2019	2	09:50-11:50	Mid	9	10:18	RK	8	C4	FE			YES			
31/10/2019	2	09:50-11:50	Mid	8	10:18	TT	8	C7	FE			YES			
31/10/2019	2	09:50-11:50	Mid	7	10:18	TT	6	C6	FE				YES		
31/10/2019	2	09:50-11:50	Mid	9	10:18	CU	2	C4	FE			YES			
31/10/2019	2	09:50-11:50	Mid	10	10:18	RK	2	C4	FE		50% within 250m, 50% 250-500m	YES	YES		
31/10/2019	2	09:50-11:50	Mid	10	10:18	OC	2	C4	FE		50% within 250m, 50% 250-500m	YES	YES		
31/10/2019	2	09:50-11:50	Mid	11	10:18	OC	2	C6	FE					YES	
31/10/2019	2	09:50-11:50	Mid	7	10:18	SU	1	C6	LO				YES		
31/10/2019	2	09:50-11:50	Mid	12	10:18	CU	1	C6	FE					YES	
31/10/2019	2	09:50-11:50	Mid	16	10:28	RK	8	C2	FE			YES			
31/10/2019	2	09:50-11:50	Mid	15	10:28	OC	8	C2	FE			YES			
31/10/2019	2	09:50-11:50	Mid	15	10:28	RK	3	C2	FE			YES			
31/10/2019	2	09:50-11:50	Mid	13	10:28	RK	2	C4	FE		50% within 250m, 50% 250-500m	YES	YES		
31/10/2019	2	09:50-11:50	Mid	13	10:28	OC	2	C4	FE		50% within 250m, 50% 250-500m	YES	YES		

31/10/2019	2	09:50-11:50	Mid	14	10:28	RK	1	C2	FE			YES			
31/10/2019	2	09:50-11:50	Mid	17	10:44	OC	6	C2	RO			YES			
31/10/2019	2	09:50-11:50	Mid	17	10:44	CU	1	C2	RO			YES			
31/10/2019	2	09:50-11:50	Mid	17	10:54	TT	11	C2	RO			YES			
31/10/2019	2	09:50-11:50	Mid	20	10:55	KN	130	C8	FE				YES		Area 3
31/10/2019	2	09:50-11:50	Mid	20	10:55	OC	110	C8	FE				YES		Area 3
31/10/2019	2	09:50-11:50	Mid	19	10:55	CU	45	C8	FE					YES	
31/10/2019	2	09:50-11:50	Mid	18	10:55	GG	1	C8	FE				YES		
31/10/2019	2	09:50-11:50	Mid	22	11:05	CU	1	C8	FE			YES			
31/10/2019	2	09:50-11:50	Mid	21	11:05	OC	1	C8	FE			YES			
31/10/2019	2	09:50-11:50	Mid	23	11:10	GG	6	C7	FE					YES	
31/10/2019	2	09:50-11:50	Mid	24	11:17	RK	30	C7	FE		Same birds as 14-16 pushed by tide	YES			
31/10/2019	2	11:50-13:50	High	2	12:00	GG	2	C6	LO/FE					YES	
31/10/2019	2	11:50-13:50	High	1	12:00	GG	1	C4	LO/FE				YES		
31/10/2019	2	11:50-13:50	High	3	12:15	OC	11	C2	RO			YES			
31/10/2019	2	11:50-13:50	High	4	12:15	CA	1	C2	RO			YES			
31/10/2019	2	11:50-13:50	High	5	12:25	RK	33	C2	RO			YES			
31/10/2019	2	11:50-13:50	High	5	12:25	TT	24	C2	RO			YES			
31/10/2019	2	11:50-13:50	High	5	12:25	OC	12	C2	RO			YES			
31/10/2019	2	11:50-13:50	High	6	12:34	CA	1	C2	FE			YES			
31/10/2019	2	11:50-13:50	High	7	12:34	GG	1	C2	FE			YES			
31/10/2019	2	11:50-13:50	High	8	12:43	GG	1	C8	FE				YES		
31/10/2019	2	11:50-13:50	High	9	12:45	GG	1	C7	FE				YES		
31/10/2019	2	11:50-13:50	High	10	13:37	TT	58	outside survey area	RO					YES	Area 16
31/10/2019	2	11:50-13:50	High	10	13:37	OC	55	outside survey area	RO					YES	Area 16
31/10/2019	2	11:50-13:50	High	10	13:37	RK	49	outside survey area	RO					YES	
31/10/2019	2	11:50-13:50	High	10	13:37	CU	10	outside survey area	RO					YES	
31/10/2019	2	11:50-13:50	High	10	13:37	DN	10	outside survey area	RO					YES	
15/11/2019	3	07:30-10:00	Low	1	07:46	OC	266	C6	FE/LO					YES	Area 5
15/11/2019	3	07:30-10:00	Low	1	07:46	CU	21	C6	FE					YES	
15/11/2019	3	07:30-10:00	Low	2	07:50	OC	240	C6	FE					YES	Area 11
15/11/2019	3	07:30-10:00	Low	3	07:55	CU	1	C6	FE					YES	
15/11/2019	3	07:30-10:00	Low	4	08:03	SU	6	C6	FE					YES	
15/11/2019	3	07:30-10:00	Low	3	08:03	OC	2	C6	FE					YES	
15/11/2019	3	07:30-10:00	Low	3	08:04	SU	11	C6	FE					YES	
15/11/2019	3	07:30-10:00	Low	1	08:05	KN	800	C6	FE					YES	Area 5
15/11/2019	3	07:30-10:00	Low	5	08:30	CU	2	C4	FE			YES			
15/11/2019	3	07:30-10:00	Low	6	08:40	OC	2	C5	FE					YES	
15/11/2019	3	07:30-10:00	Low	5	08:40	OC	2	C4	FE			YES			
15/11/2019	3	07:30-10:00	Low	6	08:40	CU	1	C5	FE					YES	
15/11/2019	3	07:30-10:00	Low	7	09:10	SU	3	C2	FE			YES			
15/11/2019	3	07:30-10:00	Low	8	09:10	RK	1	C2	FE			YES			
15/11/2019	3	07:30-10:00	Low	9	09:28	CU	1	C7	FE				YES		
15/11/2019	3	07:30-10:00	Low	9	09:28	RK	1	C7	FE				YES		
15/11/2019	3	07:30-10:00	Low	10	09:30	OC	9	C7	FE			YES			
15/11/2019	3	07:30-10:00	Low	13	09:35	TT	10	C7	FE				YES		
15/11/2019	3	07:30-10:00	Low	12	09:35	OC	9	C7	FLY				YES		
15/11/2019	3	07:30-10:00	Low	11	09:35	OC	1	C7	FE/FLY				YES		
15/11/2019	3	07:30-10:00	Low	14	09:38	RK	11	C8	FE				YES		
15/11/2019	3	07:30-10:00	Low	14	09:38	TT	2	C8	FE				YES		
15/11/2019	3	07:30-10:00	Low	15	09:40	OC	187	C8	RO				YES		Area 3
15/11/2019	3	07:30-10:00	Low	16	09:40	CU	4	C8	FE/FLY				YES		
15/11/2019	3	07:30-10:00	Low	17	09:40	RK	1	C8	FE				YES		
15/11/2019	3	07:30-10:00	Low	18	09:45	CU	3	C8	FE				YES		
15/11/2019	3	07:30-10:00	Low	18	09:45	RK	1	C8	FE				YES		
15/11/2019	3	07:30-10:00	Low	19	09:50	RK	3	C8	FE				YES		
15/11/2019	3	07:30-10:00	Low	20	09:55	RK	30	C9	RO					YES	
15/11/2019	3	07:30-10:00	Low	20	09:56	RK	42	C9	RO					YES	
15/11/2019	3	07:30-10:00	Low	20	09:56	RK	35	C9	RO					YES	
15/11/2019	3	07:30-10:00	Low	21	09:58	RK	2	C9	FE					YES	
15/11/2019	3	10:00-12:00	Mid	2	10:00	RK	2	C9	LANDED					YES	
15/11/2019	3	10:00-12:00	Mid	1	10:00	CU	1	C9	FE	DOG NR				YES	
15/11/2019	3	10:00-12:00	Mid	3	10:10	RK	90	C9	RO					YES	Area 2
15/11/2019	3	10:00-12:00	Mid	3	10:20	RK	142	C9	FE					YES	Area 2
15/11/2019	3	10:00-12:00	Mid	4	10:25	RK	27	C9	RO	DOG LEFT				YES	
15/11/2019	3	10:00-12:00	Mid	5	10:25	RK	5	C9	FE					YES	

15/11/2019	3	10:00-12:00	Mid	6	10:30	RK	3	C8	FE				YES		
15/11/2019	3	10:00-12:00	Mid	7	10:40	OC	276	C8	RO		50% of birds within 250-500m		YES		Area 3
15/11/2019	3	10:00-12:00	Mid	8	10:45	RK	3	C8	FE			YES			
15/11/2019	3	10:00-12:00	Mid	8	10:45	CU	1	C8	FE			YES			
15/11/2019	3	10:00-12:00	Mid	8	10:46	RK	3	C8	FE	DOG LEFT		YES			
15/11/2019	3	10:00-12:00	Mid	9	10:50	RK	4	C8	FE			YES			
15/11/2019	3	10:00-12:00	Mid	9	10:50	CU	1	C8	FE			YES			
15/11/2019	3	10:00-12:00	Mid	10	11:20	OC	22	C2	RO			YES			
15/11/2019	3	10:00-12:00	Mid	10	11:20	TT	13	C2	RO			YES			
15/11/2019	3	10:00-12:00	Mid	10	11:20	RK	8	C2	RO			YES			
15/11/2019	3	10:00-12:00	Mid	10	11:20	CU	2	C2	RO			YES			
15/11/2019	3	10:00-12:00	Mid	11	11:30	RK	34	C2	RO			YES			
15/11/2019	3	10:00-12:00	Mid	11	11:30	TT	7	C2	RO			YES			
15/11/2019	3	10:00-12:00	Mid	11	11:30	OC	5	C2	RO			YES			
15/11/2019	3	10:00-12:00	Mid	11	11:30	SU	4	C2	RO/FE			YES			
15/11/2019	3	10:00-12:00	Mid	13	11:55	RK	6	outside survey area	RO					YES	
15/11/2019	3	10:00-12:00	Mid	13	11:55	CU	4	outside survey area	RO					YES	
15/11/2019	3	10:00-12:00	Mid	12	11:55	SU	2	C6	LO					YES	
15/11/2019	3	10:00-12:00	Mid	13	11:55	DN	2	outside survey area	RO					YES	
15/11/2019	3	10:00-12:00	Mid	13	11:55	OC	1	outside survey area	RO					YES	
15/11/2019	3	10:00-12:00	Mid	14	12:00	GG	2	C6	FE					YES	
15/11/2019	3	12:00-14:00	High	1	12:05	RK	6	outside survey area	RO					YES	
15/11/2019	3	12:00-14:00	High	1	12:05	CU	3	outside survey area	RO					YES	
15/11/2019	3	12:00-14:00	High	1	12:05	DN	2	outside survey area	RO					YES	
15/11/2019	3	12:00-14:00	High	2	12:05	SU	2	outside survey area	LO					YES	
15/11/2019	3	12:00-14:00	High	3	12:10	GG	3	C6	LO FE					YES	
15/11/2019	3	12:00-14:00	High	4	12:20	GG	2	C4	FE				YES		
15/11/2019	3	12:00-14:00	High	5	12:25	OC	120	C2	RO			YES			Area 8
15/11/2019	3	12:00-14:00	High	5	12:25	CU	4	C2	RO			YES			
15/11/2019	3	12:00-14:00	High	4	12:26	SU	2	C4	LO				YES		
15/11/2019	3	12:00-14:00	High	5	12:45	TT	12	C2	RO			YES			
15/11/2019	3	12:00-14:00	High	5	12:45	RK	6	C2	RO			YES			
15/11/2019	3	12:00-14:00	High	6	12:45	RK	6	C2	RO			YES			
15/11/2019	3	12:00-14:00	High	6	12:45	TT	2	C2	RO			YES			
15/11/2019	3	12:00-14:00	High	7	13:10	RK	160	C9	RO FE					YES	Area 2
15/11/2019	3	12:00-14:00	High	8	13:15	RK	38	C9	RO					YES	
15/11/2019	3	12:00-14:00	High	8	13:15	OC	11	C9	RO					YES	
15/11/2019	3	12:00-14:00	High	9	13:25	OC	9	C9	FE					YES	
23/11/2019	4	08:18- 10:18	High	1	08:18	SU	4	C6	RO					YES	
23/11/2019	4	08:18- 10:18	High	2	08:18	OC	1	C4	RO				YES		
23/11/2019	4	08:18- 10:18	High	3	08:25	SU	14	C4	LO			YES			
23/11/2019	4	08:18- 10:18	High	5	08:30	KN	4200	C9	RO					YES	Area 2
23/11/2019	4	08:18- 10:18	High	5	08:30	OC	1500	C9	RO					YES	Area 2
23/11/2019	4	08:18- 10:18	High	4	08:30	OC	520	C9	RO					YES	Area 2
23/11/2019	4	08:18- 10:18	High	7	08:30	RK	290	C9	RO		May be an undercount due to height of Spartina			YES	Area 2
23/11/2019	4	08:18- 10:18	High	5	08:30	CU	168	C9	RO		Unprecendented count for this location			YES	Area 2
23/11/2019	4	08:18- 10:18	High	4	08:30	CU	10	C9	RO					YES	
23/11/2019	4	08:18- 10:18	High	7	08:30	DN	2	C9	RO					YES	
23/11/2019	4	08:18- 10:18	High	6	08:30	SU	1	C9	LO					YES	
23/11/2019	4	08:18- 10:18	High	8	08:30	ET	1	C9	RO					YES	
23/11/2019	4	08:18- 10:18	High	9	08:40	RK	24	C9	RO					YES	
23/11/2019	4	08:18- 10:18	High	10	08:40	OC	1	C9	RO					YES	
23/11/2019	4	08:18- 10:18	High	11	08:45	RK	31	C4	RO			YES			
23/11/2019	4	08:18- 10:18	High	11	08:45	CU	2	C4	RO			YES			
23/11/2019	4	08:18- 10:18	High	12	08:48	TT	34	C2	RO			YES			
23/11/2019	4	08:18- 10:18	High	13	08:48	BH	28	C2	RO			YES			
23/11/2019	4	08:18- 10:18	High	12	08:48	OC	21	C2	RO			YES			
23/11/2019	4	08:18- 10:18	High	12	08:48	DN	7	C2	RO			YES			
23/11/2019	4	08:18- 10:18	High	13	08:48	HG	5	C2	RO			YES			
23/11/2019	4	08:18- 10:18	High	12	08:48	CU	1	C2	RO			YES			
23/11/2019	4	08:18- 10:18	High	13	08:48	LB	1	C2	RO			YES			
23/11/2019	4	08:18- 10:18	High	14	08:50	BH	30	C8	RO				YES		
23/11/2019	4	08:18- 10:18	High	14	08:50	HG	25	C8	RO				YES		
23/11/2019	4	08:18- 10:18	High	15	08:52	GG	1	C7	FE				YES		
23/11/2019	4	08:18- 10:18	High	17	08:57	CU	7	C8	RO			YES			
23/11/2019	4	08:18- 10:18	High	17	08:57	OC	5	C8	RO			YES			
23/11/2019	4	08:18- 10:18	High	16	08:57	RK	2	C8	FE				YES		
23/11/2019	4	08:18- 10:18	High	18	08:58	KN	4200	C9	FLU	DOG LEFT				YES	
23/11/2019	4	08:18- 10:18	High	18	08:58	OC	1500	C9	FLU	DOG LEFT				YES	

23/11/2019	4	08:18- 10:18	High	18	08:58	CU	168	C9	FLU	DOG LEFT				YES	
23/11/2019	4	08:18- 10:18	High	19	09:15	OC	34	C9	FLY		Origin unknown			YES	
23/11/2019	4	08:18- 10:18	High	20	09:20	OC	8	C6/C7/C8	FLY				YES		
23/11/2019	4	08:18- 10:18	High	21	09:25	RK	262	C9	FE					YES	Area 2
23/11/2019	4	08:18- 10:18	High	22	09:27	KN	3900	C9	RO		Flew back in, Already counted			YES	Area 2
23/11/2019	4	08:18- 10:18	High	23	09:35	RK	22	C9	FE					YES	
23/11/2019	4	08:18- 10:18	High	24	09:40	OC	11	C6/C7/C8	FLY				YES		
23/11/2019	4	08:18- 10:18	High	25	09:45	RK	12	C4	FE			YES			
23/11/2019	4	08:18- 10:18	High	26	09:50	SU	15	C7	FE			YES		FE2	
23/11/2019	4	08:18- 10:18	High	27	09:55	SU	8	C6	FE				YES		
23/11/2019	4	08:18- 10:18	High	31	10:05	HG	36	C6	LO					YES	
23/11/2019	4	08:18- 10:18	High	30	10:05	OC	11	C6	FE					YES	
23/11/2019	4	08:18- 10:18	High	28	10:05	RK	4	C6	FE					YES	
23/11/2019	4	08:18- 10:18	High	29	10:05	CU	2	C6	FE					YES	
23/11/2019	4	08:18- 10:18	High	32	10:08	OC	14	C6/C7/C8	FLY				YES		
23/11/2019	4	10:18 - 12:18	Mid	1	10:18	OC	77	C9	RO					YES	Area 7
23/11/2019	4	10:18 - 12:18	Mid	2	10:18	RK	53	C9	FE					YES	Area 15
23/11/2019	4	10:18 - 12:18	Mid	2	10:18	BH	45	C9	LO					YES	
23/11/2019	4	10:18 - 12:18	Mid	3	10:18	CU	6	C8	LO				YES		
23/11/2019	4	10:18 - 12:18	Mid	1	10:18	ET	1	C9	RO					YES	
23/11/2019	4	10:18 - 12:18	Mid	4	10:20	OC	55	Outside	RO					YES	Area 3
23/11/2019	4	10:18 - 12:18	Mid	4	10:25	KN	3900	Outside	RO					YES	Area 3
23/11/2019	4	10:18 - 12:18	Mid	5	10:28	OC	465	C9	RO					YES	Area 4
23/11/2019	4	10:18 - 12:18	Mid	6	10:29	CU	20	C8	RO					YES	
23/11/2019	4	10:18 - 12:18	Mid	7	10:30	RK	2	C8	FLY					YES	
23/11/2019	4	10:18 - 12:18	Mid	8	10:31	RK	15	C8	FE			YES			
23/11/2019	4	10:18 - 12:18	Mid	9	10:35	RK	5	C9	FLU	DOG LEFT				YES	
23/11/2019	4	10:18 - 12:18	Mid	9	10:35	ET	1	C9	FLU	DOG LEFT				YES	
23/11/2019	4	10:18 - 12:18	Mid	10	10:38	RK	40	C9	RO					YES	
23/11/2019	4	10:18 - 12:18	Mid	10	10:38	RK	20	C9	FE					YES	
23/11/2019	4	10:18 - 12:18	Mid	11	10:40	RK	12	C8	FE				YES		
23/11/2019	4	10:18 - 12:18	Mid	13	10:50	RK	49	C4	FE		70% within 250m, 30% between 250-500m	YES	YES		
23/11/2019	4	10:18 - 12:18	Mid	15	10:50	HG	26	C2	RO			YES			
23/11/2019	4	10:18 - 12:18	Mid	15	10:50	BH	24	C2	RO			YES			
23/11/2019	4	10:18 - 12:18	Mid	13	10:50	OC	21	C4	FE		70% within 250m, 30% between 250-500m	YES	YES		
23/11/2019	4	10:18 - 12:18	Mid	12	10:50	SU	20	C4	FE		50% within 250m, 50% between 250-500m	YES	YES		
23/11/2019	4	10:18 - 12:18	Mid	16	10:50	RK	5	C2	FE			YES			
23/11/2019	4	10:18 - 12:18	Mid	16	10:50	OC	4	C2	FE			YES			
23/11/2019	4	10:18 - 12:18	Mid	15	10:50	RK	2	C2	FE			YES			
23/11/2019	4	10:18 - 12:18	Mid	13	10:50	CU	1	C4	FE		70% within 250m, 30% between 250-500m	YES	YES		
23/11/2019	4	10:18 - 12:18	Mid	15	10:50	LB	1	C2	RO			YES			
23/11/2019	4	10:18 - 12:18	Mid	15	10:50	GB	1	C2	RO			YES			
23/11/2019	4	10:18 - 12:18	Mid	15	10:50	CU	1	C2	FE			YES			
23/11/2019	4	10:18 - 12:18	Mid	15	10:50	SU	1	C2	FE			YES			
23/11/2019	4	10:18 - 12:18	Mid	14	10:50	OC	1	C4	RO			YES			
23/11/2019	4	10:18 - 12:18	Mid	15	10:50	OC	1	C2	RO			YES			
23/11/2019	4	10:18 - 12:18	Mid	17	10:53	HG	26	C2	RO			YES			
23/11/2019	4	10:18 - 12:18	Mid	17	10:53	GB	2	C2	RO			YES			
23/11/2019	4	10:18 - 12:18	Mid	18	10:59	RK	1	C8	FE				YES		
23/11/2019	4	10:18 - 12:18	Mid	19	11:00	RK	1	C7	FE			YES			
23/11/2019	4	10:18 - 12:18	Mid	20	11:05	GG	1	C7	FE			YES			
23/11/2019	4	10:18 - 12:18	Mid	21	11:15	SU	22	C6	FE					YES	
23/11/2019	4	10:18 - 12:18	Mid	21	11:15	RK	2	C6	FE					YES	
23/11/2019	4	10:18 - 12:18	Mid	21	13:42	RK	5	C6	FE					YES	
23/11/2019	4	10:18 - 12:18	Mid	22	11:15	HG	93	C6	LO					YES	
23/11/2019	4	10:18 - 12:18	Mid	22	11:15	BH	21	C6	LO					YES	
23/11/2019	4	10:18 - 12:18	Mid	22	11:15	GB	4	C6	LO					YES	
23/11/2019	4	12:18 - 14:18	Low	22	13:42	SU	7	C6	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	23	11:20	RK	14	C6	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	23	11:20	CU	1	C6	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	23	11:20	OC	1	C6	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	26	11:25	KN	3700	Outside		DOG LEFT				YES	
23/11/2019	4	12:18 - 14:18	Low	26	11:25	KN	20	C1	FLU FLY	DOG LEFT				YES	
23/11/2019	4	12:18 - 14:18	Low	26	13:50	RK	2	C6	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	27	11:30	OC	25	C7	FLY				YES		
23/11/2019	4	12:18 - 14:18	Low	27	13:52	OC	21	C6	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	27	13:52	RK	13	C6	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	31	11:45	OC	30	C7	FLY				YES		
23/11/2019	4	12:18 - 14:18	Low	32	11:48	KN	25	C7	FLY				YES		

23/11/2019	4	12:18 - 14:18	Low	33	11:53	OC	22	C7	FLY				YES		
23/11/2019	4	12:18 - 14:18	Low	34	11:58	KN	1200	C7	FLY				YES		
23/11/2019	4	12:18 - 14:18	Low	35	12:00	GG	3	C7	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	36	12:15	HG	26	C2		DOG LR		YES			
23/11/2019	4	12:18 - 14:18	Low	36	12:15	GB	2	C2		DOG LR		YES			
23/11/2019	4	12:18 - 14:18	Low	1	12:18	CU	1	C8	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	2	12:20	RK	1	C9	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	3	12:45	RK	1	C8	RO				YES		
23/11/2019	4	12:18 - 14:18	Low	5	13:00	OC	2	C7	FLY					YES	
23/11/2019	4	12:18 - 14:18	Low	4	13:00	RK	1	C8	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	6	13:05	OC	6	C7	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	7	13:05	CU	1	C2	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	8	13:07	CU	4	C6	FE			YES			
23/11/2019	4	12:18 - 14:18	Low	9	13:12	HG	24	C2	RO					YES	
23/11/2019	4	12:18 - 14:18	Low	10	13:15	OC	3	C2	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	11	13:16	RK	1	C2	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	12	13:17	SU	1	C2	LO			YES			
23/11/2019	4	12:18 - 14:18	Low	13	13:20	SU	10	C2	FE			YES			
23/11/2019	4	12:18 - 14:18	Low	14	13:22	GG	1	C6	FE						
23/11/2019	4	12:18 - 14:18	Low	15	13:25	OC	9	C7	FLY						
23/11/2019	4	12:18 - 14:18	Low	16	13:26	RK	2	C2	FE			YES			
23/11/2019	4	12:18 - 14:18	Low	17	13:30	RK	14	C4	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	18	13:30	OC	12	C4	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	19	13:31	SU	5	C4	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	19	13:31	OC	4	C4	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	19	13:31	CU	2	C4	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	20	13:35	OC	6	C4	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	23	13:42	KN	3	C6	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	23	13:42	OC	2	C6	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	24	11:20	RK	2	C4	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	24	13:45	RK	3	C6	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	24	13:45	CU	1	C6	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	24	13:45	OC	1	C6	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	25	11:20	SU	3	C4	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	25	13:50	SU	6	C6	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	28	11:35	OC	13	C7	FLY				YES		
23/11/2019	4	12:18 - 14:18	Low	28	14:00	GG	3	C6	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	28	14:00	RM	2	C6	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	29	11:37	OC	29	C7	FLY				YES		
23/11/2019	4	12:18 - 14:18	Low	29	14:02	GG	3	C7	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	30	11:40	OC	59	C7	FLY					YES	
23/11/2019	4	12:18 - 14:18	Low	30	14:05	OC	31	C6	LO					YES	
23/11/2019	4	12:18 - 14:18	Low	30	14:05	RK	3	C6	FE					YES	
23/11/2019	4	12:18 - 14:18	Low	31	14:05	GG	1	C7	FE				YES		
23/11/2019	4	12:18 - 14:18	Low	32	14:15	HG	22	C6	FE				YES		
02/12/2019	5	09:05 - 11:05	Low	1	09:05	SU	3	C6	LO						
02/12/2019	5	09:05 - 11:05	Low	1	09:05	RK	14	C6	LO						
02/12/2019	5	09:05 - 11:05	Low	1	09:05	OC	170	C6	RO						Area 5
02/12/2019	5	09:05 - 11:05	Low	1	09:05	KN	240	C6	FE						Area 5
02/12/2019	5	09:05 - 11:05	Low	1	09:05	CU	1	C6	FE						
02/12/2019	5	09:05 - 11:05	Low	2	09:10	RK	7	C6	FE					YES	
02/12/2019	5	09:05 - 11:05	Low	3	09:15	KN	125	C6	FLY-FE					YES	Area 5
02/12/2019	5	09:05 - 11:05	Low	4	09:20	OC	25	C6	LO					YES	
02/12/2019	5	09:05 - 11:05	Low	5	09:20	H	1	C6	FE					YES	
02/12/2019	5	09:05 - 11:05	Low	5	09:20	HG	20	C6	LO					YES	
02/12/2019	5	09:05 - 11:05	Low	5	09:20	RK	4	C6	FE					YES	
02/12/2019	5	09:05 - 11:05	Low	6	09:25	CU	1	C6	FE					YES	
02/12/2019	5	09:05 - 11:05	Low	7	09:30	KN	100	C6	FLY					YES	
02/12/2019	5	09:05 - 11:05	Low	8	09:40	SU	2	C6	FE					YES	
02/12/2019	5	09:05 - 11:05	Low	9	09:40	CU	2	C6	FE					YES	
02/12/2019	5	09:05 - 11:05	Low	10	09:50	SU	17	C4	FE				YES		
02/12/2019	5	09:05 - 11:05	Low	11	09:55	SU	4	C6	FE			YES			
02/12/2019	5	09:05 - 11:05	Low	12	10:05	OC	20	C6	FE				YES		
02/12/2019	5	09:05 - 11:05	Low	12	10:05	CU	3	C6	FE				YES		
02/12/2019	5	09:05 - 11:05	Low	13	10:10	SU	3	C2	FE			YES			
02/12/2019	5	09:05 - 11:05	Low	14	10:10	OC	3	C7	FE			YES			
02/12/2019	5	09:05 - 11:05	Low	15	10:12	KN	200	C3	FLY					YES	
02/12/2019	5	09:05 - 11:05	Low	15	10:12	OC	15	C4	FE					YES	
02/12/2019	5	09:05 - 11:05	Low	15	10:12	RK	58	C4	FE					YES	Area 12

02/12/2019	5	09:05 - 11:05	Low	15	10:12	KN	50	C4	FE					YES	Area 12
02/12/2019	5	09:05 - 11:05	Low	16	10:25	HG	18	C9	LO					YES	
02/12/2019	5	09:05 - 11:05	Low	16	10:25	BH	7	C9	LO					YES	
02/12/2019	5	09:05 - 11:05	Low	17	10:50	RK	1	C6	FE				YES		
02/12/2019	5	09:05 - 11:05	Low	18	11:00	RK	2	C4	FE			YES			
02/12/2019	5	11:05 - 13:05	Mid	1	11:05	RK	1	C9	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	2	11:10	RK	1	C9	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	3	11:15	RK	1	C9	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	4	11:20	RK	1	C9	RO					YES	
02/12/2019	5	11:05 - 13:05	Mid	5	11:22	RK	1	C8	FE				YES		
02/12/2019	5	11:05 - 13:05	Mid	6	11:23	RK	1	C8	FE				YES		
02/12/2019	5	11:05 - 13:05	Mid	7	11:25	OC	5	C7	RO			YES			
02/12/2019	5	11:05 - 13:05	Mid	8	11:25	OC	1	C7	FE			YES			
02/12/2019	5	11:05 - 13:05	Mid	9	11:28	RK	2	C2	FE			YES			
02/12/2019	5	11:05 - 13:05	Mid	9	11:28	CU	1	C2	FE			YES			
02/12/2019	5	11:05 - 13:05	Mid	10	11:29	SU	5	C2	FE			YES			
02/12/2019	5	11:05 - 13:05	Mid	10	11:29	RK	1	C2	FE			YES			
02/12/2019	5	11:05 - 13:05	Mid	11	11:40	RK	30	C4	FE	Birds spread out over all muddy area - 60% within 250m, 40% be		YES	YES		
02/12/2019	5	11:05 - 13:05	Mid	11	11:40	KN	20	C4	FE	Birds spread out over all muddy area - 60% within 250m, 40% be		YES	YES		
02/12/2019	5	11:05 - 13:05	Mid	11	11:40	OC	16	C4	FE	Birds spread out over all muddy area - 60% within 250m, 40% be		YES	YES		
02/12/2019	5	11:05 - 13:05	Mid	11	11:40	SU	17	C4	FE	Birds spread out over all muddy area - 60% within 250m, 40% be		YES	YES		
02/12/2019	5	11:05 - 13:05	Mid	11	11:40	CU	1	C4	FE	Birds spread out over all muddy area - 60% within 250m, 40% be		YES	YES		
02/12/2019	5	11:05 - 13:05	Mid	11	11:40	KN	2	C4	FE	Birds spread out over all muddy area - 60% within 250m, 40% be		YES	YES		
02/12/2019	5	11:05 - 13:05	Mid	12	11:55	SU	5	C6	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	12	11:55	OC	2	C6	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	13	12:00	RK	10	C6	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	13	12:00	SU	3	C6	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	14	12:00	RK	1	C6	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	15	12:05	RK	6	C6	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	16	12:05	OC	2	C6	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	17	12:05	KN	5	C6	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	18	12:05	CU	1	C6	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	19	12:07	OC	2	C6	FLY					YES	
02/12/2019	5	11:05 - 13:05	Mid	20	12:08	OC	14	C6	FLY	Fly from between 250-500m to outside of the buffer			YES	YES	
02/12/2019	5	11:05 - 13:05	Mid	21	12:20	RK	2	C9	FLY-FE		Landed on saltmarsh			YES	
02/12/2019	5	11:05 - 13:05	Mid	22	12:20	RM	7	C8	FE		Flying in from skeer to feed			YES	
02/12/2019	5	11:05 - 13:05	Mid	23	12:24	ET	1	C9	FE		Flying in from skeer to feed			YES	
02/12/2019	5	11:05 - 13:05	Mid	24	12:25	OC	14	C8	FLY				YES		
02/12/2019	5	11:05 - 13:05	Mid	25	12:27	OC	350	C8	RO		Flying in from skeer to feed			YES	Area 3
02/12/2019	5	11:05 - 13:05	Mid	26	12:28	RK	1	C8	FE		Flying in from skeer to feed			YES	
02/12/2019	5	11:05 - 13:05	Mid	27	12:33	RK	1	C8	FE		Flying in from skeer to feed			YES	
02/12/2019	5	11:05 - 13:05	Mid	28	12:37	RK	3	C8	FE					YES	
02/12/2019	5	11:05 - 13:05	Mid	29	12:39	TT	18	C8	FLY					YES	
02/12/2019	5	11:05 - 13:05	Mid	30	12:40	RK	8	C8	FE		Flying in from skeer to feed covered			YES	
02/12/2019	5	11:05 - 13:05	Mid	31	12:42	KN	7200	C8	RO					YES	Area 3
02/12/2019	5	11:05 - 13:05	Mid	32	12:43	RK	20	C8	FE		Flying in to feed as skeer covered by tide			YES	
02/12/2019	5	11:05 - 13:05	Mid	33	12:48	TT	10	C8	FLY					YES	
02/12/2019	5	11:05 - 13:05	Mid	34	12:55	HG	31	C7	RO			YES			
02/12/2019	5	11:05 - 13:05	Mid	34	12:55	GB	4	C7	RO			YES			
02/12/2019	5	11:05 - 13:05	Mid	34	12:55	LB	1	C7	RO			YES			
02/12/2019	5	11:05 - 13:05	Mid	35	12:57	RK	1	C8	FE				YES		
02/12/2019	5	11:05 - 13:05	Mid	36	12:58	GG	1	C8	FE				YES		
02/12/2019	5	11:05 - 13:05	Mid	37	12:59	GG	1	C8	FE				YES		
02/12/2019	5	11:05 - 13:05	Mid	38	13:00	GG	1	C7	FE				YES		
02/12/2019	5	13:05 - 15:05	High	1	13:05	RK	2	C6	FE					YES	
02/12/2019	5	13:05 - 15:05	High	2	13:10	SU	5	C6	FE					YES	
02/12/2019	5	13:05 - 15:05	High	3	13:10	OC	4	C6	FE					YES	
02/12/2019	5	13:05 - 15:05	High	3	13:10	RK	11	C6	FE					YES	
02/12/2019	5	13:05 - 15:05	High	3	13:10	CU	1	C6	FE					YES	
02/12/2019	5	13:05 - 15:05	High	4	13:14	OC	4	C6	FLY					YES	
02/12/2019	5	13:05 - 15:05	High	5	13:15	KN	20	C4	FE			YES			
02/12/2019	5	13:05 - 15:05	High	6	13:15	RK	17	C4	FE				YES		
02/12/2019	5	13:05 - 15:05	High	7	13:15	OC	9	C4	FE			YES			
02/12/2019	5	13:05 - 15:05	High	8	13:18	SU	18	C4	FE			YES			
02/12/2019	5	13:05 - 15:05	High	9	13:18	OC	9	C4	FE			YES			
02/12/2019	5	13:05 - 15:05	High	9	13:18	RK	33	C4	FE			YES			
02/12/2019	5	13:05 - 15:05	High	10	13:25	OC	4	C2	RO			YES			
02/12/2019	5	13:05 - 15:05	High	10	13:25	CU	1	C2	RO			YES			
02/12/2019	5	13:05 - 15:05	High	11	13:25	SU	5	C2	FE			YES			

02/12/2019	5	13:05 - 15:05	High	12	13:25	HG	41	C7	RO			YES			
02/12/2019	5	13:05 - 15:05	High	12	13:25	GB	8	C7	RO			YES			
02/12/2019	5	13:05 - 15:05	High	13	13:30	RK	18	C2	FE			YES			
02/12/2019	5	13:05 - 15:05	High	14	13:30	CU	1	C7	FE			YES			
02/12/2019	5	13:05 - 15:05	High	14	13:30	RK	1	C7	FE			YES			
02/12/2019	5	13:05 - 15:05	High	14	13:30	OC	3	C7	FE			YES			
02/12/2019	5	13:05 - 15:05	High	15	13:31	RK	1	C8	FE			YES			
02/12/2019	5	13:05 - 15:05	High	16	13:32	GG	1	C8	FE				YES		
02/12/2019	5	13:05 - 15:05	High	17	13:35	OC	620	C8	RO				YES		Area 4
02/12/2019	5	13:05 - 15:05	High	18	13:35	RK	31	C9	FE					YES	
02/12/2019	5	13:05 - 15:05	High	18	13:35	DN	3	C9	FE					YES	
02/12/2019	5	13:05 - 15:05	High	18	13:35	KN	7200	C9	RO					YES	Area 4
02/12/2019	5	13:05 - 15:05	High	18	13:35	OC	920	C9	RO					YES	Area 4
02/12/2019	5	13:05 - 15:05	High	18	13:35	CU	18	C9	RO					YES	
02/12/2019	5	13:05 - 15:05	High	19	13:40	RK	11	C8	FE					YES	
02/12/2019	5	13:05 - 15:05	High	20	13:45	BH	36	C9	RO					YES	
02/12/2019	5	13:05 - 15:05	High	20	13:45	HG	5	C9	RO					YES	
02/12/2019	5	13:05 - 15:05	High	21	13:45	RM	4	C8	RO				YES		
02/12/2019	5	13:05 - 15:05	High	22	13:45	GG	2	C8	FE				YES		
02/12/2019	5	13:05 - 15:05	High	23	13:46	KN	7200	C9	DOG	FLU				YES	
02/12/2019	5	13:05 - 15:05	High	23	13:46	OC	920	C9	DOG	FLU				YES	
02/12/2019	5	13:05 - 15:05	High	24	13:50	KN	7200	C8	DOG	FLU				YES	
02/12/2019	5	13:05 - 15:05	High	24	13:50	OC	920	C8	DOG	FLU				YES	
02/12/2019	5	13:05 - 15:05	High	25	13:52	KN	7200	C8	DOG	FLU			YES		
02/12/2019	5	13:05 - 15:05	High	25	13:52	OC	920	C8	DOG	FLU			YES		
02/12/2019	5	13:05 - 15:05	High	26	13:53	KN	7200	C8	DOG	FLU LR		YES			
02/12/2019	5	13:05 - 15:05	High	26	13:53	OC	920	C8	DOG	FLU LR		YES			
02/12/2019	5	13:05 - 15:05	High	27	13:59	RK	14	C8	DOG	FLU LR	flew from between 250-500m to within 250m	YES	YES		
02/12/2019	5	13:05 - 15:05	High	28	14:05	BH	33	C8	RO					YES	
02/12/2019	5	13:05 - 15:05	High	28	14:05	HG	5	C8	RO					YES	
02/12/2019	5	13:05 - 15:05	High	29	14:05	RK	60	C9	FLU	relanded				YES	
02/12/2019	5	13:05 - 15:05	High	30	14:10	HG	18	C9	RO					YES	
02/12/2019	5	13:05 - 15:05	High	30	14:10	BH	14	C9	RO					YES	
02/12/2019	5	13:05 - 15:05	High	31	14:12	RK	16	C9	FE					YES	
02/12/2019	5	13:05 - 15:05	High	32	14:13	RK	1	C9	FE					YES	
02/12/2019	5	13:05 - 15:05	High	33	14:13	RK	3	C9	FE					YES	
02/12/2019	5	13:05 - 15:05	High	34	14:15	RK	16	C8	FE				YES		
02/12/2019	5	13:05 - 15:05	High	35	14:20	RK	41	C8	FE			YES			
02/12/2019	5	13:05 - 15:05	High	35	14:20	KN	3	C8	FE			YES			
02/12/2019	5	13:05 - 15:05	High	36	14:25	CU	8	C8	RO			YES			
02/12/2019	5	13:05 - 15:05	High	36	14:25	OC	550	C8	RO			YES			Area 1
02/12/2019	5	13:05 - 15:05	High	36	14:25	KN	7200	C8	RO			YES			Area 1
02/12/2019	5	13:05 - 15:05	High	37	14:40	OC	9	C4	RO			YES			
02/12/2019	5	13:05 - 15:05	High	38	15:01	KN	7200	C8	RO	PRED FLU LEFT		YES			Area 1
02/12/2019	5	13:05 - 15:05	High	38	15:05	OC	550	C8	RO			YES			Area 1
02/12/2019	5	13:05 - 15:05	High	38	15:05	CU	8	C8	RO			YES			
23/12/2019	6	09:10 - 11:10	High	1	09:15	RK	36	Outside	RO					YES	
23/12/2019	6	09:10 - 11:10	High	1	09:15	DN	22	Outside	RO					YES	
23/12/2019	6	09:10 - 11:10	High	1	09:15	TT	27	Outside	RO					YES	
23/12/2019	6	09:10 - 11:10	High	1	09:15	SU	1	Outside	RO					YES	
23/12/2019	6	09:10 - 11:10	High	2	09:37	TT	17	C6	RO					YES	
23/12/2019	6	09:10 - 11:10	High	2	09:37	RK	3	C6	RO					YES	
23/12/2019	6	09:10 - 11:10	High	3	09:50	RK	67	C2	RO			YES			Area 8
23/12/2019	6	09:10 - 11:10	High	3	09:50	TT	73	C2	RO			YES			Area 8
23/12/2019	6	09:10 - 11:10	High	4	09:55	GG	1	C4	LO FE			YES			
23/12/2019	6	09:10 - 11:10	High	4	09:55	SU	2	C4	LO			YES			
23/12/2019	6	09:10 - 11:10	High	3	09:55	SU	2	C2	RO			YES			
23/12/2019	6	09:10 - 11:10	High	3	09:55	OC	6	C2	RO			YES			
23/12/2019	6	09:10 - 11:10	High	3	09:55	CU	1	C2	RO			YES			
23/12/2019	6	09:10 - 11:10	High	5	10:08	RM	2	C7	LO			YES			
23/12/2019	6	09:10 - 11:10	High	6	10:14	TT	6	C7	FE			YES			
23/12/2019	6	09:10 - 11:10	High	7	10:45	CU	1	C9	FE		WIND SURFERS IMMEDIATELY NORTH OF C9			YES	
23/12/2019	6	09:10 - 11:10	High	8	10:57	RK	1	C9	RO	DOG NR	WIND SURFERS IMMEDIATELY NORTH OF C9			YES	
23/12/2019	6	09:10 - 11:10	High	9	11:02	E	3	C9	FLY					YES	
23/12/2019	6	09:10 - 11:10	High	10	11:05	OC	10	C9	FLY					YES	
23/12/2019	6	11:10 - 13:10	Mid	1	11:25	RK	2	C9	RO					YES	
23/12/2019	6	11:10 - 13:10	Mid	2	11:30	CU	3	C9	RO					YES	
23/12/2019	6	11:10 - 13:10	Mid	3	11:40	CU	1	C9	FE					YES	
23/12/2019	6	11:10 - 13:10	Mid	4	11:40	KN	60	C8	FLY				YES		

23/12/2019	6	11:10 - 13:10	Mid	5	11:41	SU	1	C8	FE				YES		
23/12/2019	6	11:10 - 13:10	Mid	5	11:41	CU	1	C8	FE				YES		
23/12/2019	6	11:10 - 13:10	Mid	6	11:44	OC	20	C8	FLY				YES		
23/12/2019	6	11:10 - 13:10	Mid	6	11:49	OC	30	C8	FLY				YES		
23/12/2019	6	11:10 - 13:10	Mid	7	11:53	RK	1	C8	FE			YES			
23/12/2019	6	11:10 - 13:10	Mid	7	11:53	CU	1	C8	FE			YES			
23/12/2019	6	11:10 - 13:10	Mid	8	11:57	KN	20	C8-C7	FLY				YES		
23/12/2019	6	11:10 - 13:10	Mid	9	12:00	OC	110	C7-C8	FLY				YES		
23/12/2019	6	11:10 - 13:10	Mid	10	12:00	OC	1	C1	RO				YES		
23/12/2019	6	11:10 - 13:10	Mid	11	12:08	OC	2	C7	FE			YES			
23/12/2019	6	11:10 - 13:10	Mid	11	12:08	CU	2	C7	FE			YES			
23/12/2019	6	11:10 - 13:10	Mid	12	12:14	CU	1	C2	FE			YES			
23/12/2019	6	11:10 - 13:10	Mid	12	12:14	OC	1	C2	FE			YES			
23/12/2019	6	11:10 - 13:10	Mid	13	12:15	OC	18	C7	FLY			YES			
23/12/2019	6	11:10 - 13:10	Mid	14	12:16	RK	4	C2	RO			YES			
23/12/2019	6	11:10 - 13:10	Mid	14	12:16	LB	1	C2	FE			YES			
23/12/2019	6	11:10 - 13:10	Mid	15	12:18	RK	10	C4	RO			YES			
23/12/2019	6	11:10 - 13:10	Mid	16	12:21	RK	18	C4	FE			YES			
23/12/2019	6	11:10 - 13:10	Mid	16	12:21	SU	5	C4	RO			YES			
23/12/2019	6	11:10 - 13:10	Mid	17	12:22	OC	20	C4	FE		50% of birds within 250m, 50% between 250-500r	YES	YES		
23/12/2019	6	11:10 - 13:10	Mid	17	12:22	CU	2	C4	FE			YES	YES		
23/12/2019	6	11:10 - 13:10	Mid	18	12:40	KN	200	C6	FLY				YES		
23/12/2019	6	11:10 - 13:10	Mid	19	12:57	KN	4	C6	FE					YES	
23/12/2019	6	11:10 - 13:10	Mid	19	12:57	OC	6	C6	FE					YES	
23/12/2019	6	11:10 - 13:10	Mid	19	12:57	CU	2	C6	FE					YES	
23/12/2019	6	11:10 - 13:10	Mid	20	13:04	OC	5	C6	FLY					YES	
23/12/2019	6	11:10 - 13:10	Mid	21	13:06	CU	1	C6	FE					YES	
23/12/2019	6	11:10 - 13:10	Mid	21	13:06	SU	2	C6	FE					YES	
23/12/2019	6	13:10 - 15:10	Low	1	13:12	CU	3	C6	FE					YES	
23/12/2019	6	13:10 - 15:10	Low	1	13:12	SU	2	C6	FE					YES	
23/12/2019	6	13:10 - 15:10	Low	2	13:14	OC	75	C6	FLY					YES	
23/12/2019	6	13:10 - 15:10	Low	3	13:19	KN	4	C6	FE					YES	
23/12/2019	6	13:10 - 15:10	Low	3	13:19	OC	13	C6	FE					YES	
23/12/2019	6	13:10 - 15:10	Low	3	13:19	CU	3	C6	FE					YES	
23/12/2019	6	13:10 - 15:10	Low	4	13:32	OC	11	C4	FE		30% within 250m, 70% between 250-500m	YES	YES		
23/12/2019	6	13:10 - 15:10	Low	4	13:32	CU	5	C4	FE		30% within 250m, 70% between 250-500m	YES	YES		
23/12/2019	6	13:10 - 15:10	Low	4	13:32	SU	2	C4	FE		30% within 250m, 70% between 250-500m	YES	YES		
23/12/2019	6	13:10 - 15:10	Low	5	13:39	RK	9	C4	RO			YES			
23/12/2019	6	13:10 - 15:10	Low	6	13:46	CU	2	C2	FE			YES			
23/12/2019	6	13:10 - 15:10	Low	6	13:46	SU	1	C2	FE			YES			
23/12/2019	6	13:10 - 15:10	Low	7	13:56	OC	7	C7	FE				YES		
23/12/2019	6	13:10 - 15:10	Low	8	13:56	CU	2	C7	FE			YES			
23/12/2019	6	13:10 - 15:10	Low	8	13:56	OC	2	C7	FE			YES			
23/12/2019	6	13:10 - 15:10	Low	8	13:56	SU	2	C7	FE			YES			
23/12/2019	6	13:10 - 15:10	Low	9	13:59	OC	5	C7 - C8	FLY		Anglers in C8 west of C1		YES		
23/12/2019	6	13:10 - 15:10	Low	10	14:41	OC	190	Outside	FE					YES	Area 6
23/12/2019	6	13:10 - 15:10	Low	10	14:41	KN	3000	Outside	FE					YES	Area 6
23/12/2019	6	13:10 - 15:10	Low	10	14:41	CU	4	Outside	FE					YES	
23/12/2019	6	13:10 - 15:10	Low	10	14:45	RM	1	Outside	LO					YES	
24/01/2020	7	08:00 - 10:00	Mid	1	08:00	HG	16	C8	LO		90% within 250m, 10% 250-500m	YES	YES		
24/01/2020	7	08:00 - 10:00	Mid	1	08:00	BH	9	C8	LO		90% within 250m, 10% 250-500m	YES	YES		
24/01/2020	7	08:00 - 10:00	Mid	2	08:00	CU	1	C8	FE				YES		
24/01/2020	7	08:00 - 10:00	Mid	3	08:05	KN	950	C8	FE				YES		Area 3
24/01/2020	7	08:00 - 10:00	Mid	4	08:05	OC	420	C8	FE LO				YES		Area 3
24/01/2020	7	08:00 - 10:00	Mid	5	08:07	OC	1270	C8	LO				YES		
24/01/2020	7	08:00 - 10:00	Mid	6	08:07	KN	2500	C8	LO		40% within 250m, 60% between 250-500m	YES	YES		
24/01/2020	7	08:00 - 10:00	Mid	7	08:14	CU	2	C6	FE					YES	
24/01/2020	7	08:00 - 10:00	Mid	8	08:14	CU	1	C6	FE					YES	
24/01/2020	7	08:00 - 10:00	Mid	9	08:14	OC	22	C6	LO					YES	
24/01/2020	7	08:00 - 10:00	Mid	9	08:14	BW	2	C6	LO		Icelandic BW			YES	
24/01/2020	7	08:00 - 10:00	Mid	10	08:17	RK	3	C4	FE				YES		
24/01/2020	7	08:00 - 10:00	Mid	11	08:17	CU	1	C6	FE				YES		
24/01/2020	7	08:00 - 10:00	Mid	12	08:17	OC	17	C6	LO					YES	
24/01/2020	7	08:00 - 10:00	Mid	12	08:17	CU	4	C6	LO					YES	
24/01/2020	7	08:00 - 10:00	Mid	12	08:17	BW	2	C6	LO		Icelandic BW			YES	
24/01/2020	7	08:00 - 10:00	Mid	13	08:17	CU	1	C6	FE					YES	
24/01/2020	7	08:00 - 10:00	Mid	14	08:17	OC	4	C6	FE					YES	
24/01/2020	7	08:00 - 10:00	Mid	15	08:17	RK	2	C6	FE				YES		
24/01/2020	7	08:00 - 10:00	Mid	16	08:20	SU	13	C7	FE			YES			

24/01/2020	7	08:00 - 10:00	Mid	17	08:20	OC	32	C7	LO				YES		
24/01/2020	7	08:00 - 10:00	Mid	18	08:20	CU	2	C7	FE				YES		
24/01/2020	7	08:00 - 10:00	Mid	19	08:20	OC	1	C7	FE				YES		
24/01/2020	7	08:00 - 10:00	Mid	20	08:20	OC	9	C7	FE				YES		
24/01/2020	7	08:00 - 10:00	Mid	21	08:20	HG	310	C7	FE			YES			
24/01/2020	7	08:00 - 10:00	Mid	21	08:20	LB	4	C7	FE			YES			
24/01/2020	7	08:00 - 10:00	Mid	21	08:20	GB	9	C7	FE			YES			
24/01/2020	7	08:00 - 10:00	Mid	21	08:20	BH	17	C7	FE			YES			
24/01/2020	7	08:00 - 10:00	Mid	22	08:40	OC	520	C9 - Outside	LO					YES	
24/01/2020	7	08:00 - 10:00	Mid	22	08:40	CU	4	C9 - Outside	LO					YES	
24/01/2020	7	08:00 - 10:00	Mid	22	08:40	RK	6	C9 - Outside	LO					YES	
24/01/2020	7	10:00 - 12:00	High	1	10:00	RK	45	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	1	10:00	HG	15	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	1	10:00	OC	26	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	1	10:00	BH	13	C4	RO			YES			
24/01/2020	7	10:00 - 12:00	High	2	10:00	SU	13	C2	FE		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	3	10:05	TT	7	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	3	10:05	RK	9	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	3	10:05	GB	3	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	3	10:05	HG	6	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	3	10:05	OC	13	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	3	10:05	CU	2	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	4	10:10	RK	95	C9	FE					YES	Area 14
24/01/2020	7	10:00 - 12:00	High	5	10:10	CU	87	C9	LO					YES	
24/01/2020	7	10:00 - 12:00	High	6	10:20	OC	670	C9	LO					YES	
24/01/2020	7	10:00 - 12:00	High	6	10:20	CU	230	C9	LO					YES	
24/01/2020	7	10:00 - 12:00	High	6	10:20	KN	270	C9	LO					YES	
24/01/2020	7	10:00 - 12:00	High	6	10:20	RK	63	C9	LO					YES	
24/01/2020	7	10:00 - 12:00	High	6	10:20	HG	18	C9	LO					YES	
24/01/2020	7	10:00 - 12:00	High	7	10:34	RK	147	C9	RO		On groyne			YES	Area 14
24/01/2020	7	10:00 - 12:00	High	7	10:34	CU	21	C9	RO		On groyne			YES	
24/01/2020	7	10:00 - 12:00	High	7	10:34	HG	16	C9	RO		On groyne			YES	
24/01/2020	7	10:00 - 12:00	High	7	10:34	BH	13	C9	RO		On groyne			YES	
24/01/2020	7	10:00 - 12:00	High	8	10:41	CU	38	C9	RO		On groyne			YES	
24/01/2020	7	10:00 - 12:00	High	9	10:45	OC	185	C9	RO		On groyne			YES	Area 7
24/01/2020	7	10:00 - 12:00	High	9	10:45	CU	2	C9	RO		On groyne			YES	
24/01/2020	7	10:00 - 12:00	High	10	11:25	OC	140	C9	RO		On groyne			YES	Area 7
24/01/2020	7	10:00 - 12:00	High	10	11:25	CU	4	C9	RO		On groyne			YES	
24/01/2020	7	10:00 - 12:00	High	11	11:25	RK	145	C9	RO		On groyne			YES	Area 14
24/01/2020	7	10:00 - 12:00	High	11	11:25	CU	51	C9	RO		On groyne			YES	Area 14
24/01/2020	7	10:00 - 12:00	High	11	11:25	OC	125	C9	RO		On groyne			YES	Area 14
24/01/2020	7	10:00 - 12:00	High	11	11:25	HG	35	C9	RO		On groyne			YES	
24/01/2020	7	10:00 - 12:00	High	11	11:25	LB	2	C9	RO		On groyne			YES	
24/01/2020	7	10:00 - 12:00	High	11	11:25	BH	21	C9	RO		On groyne			YES	
24/01/2020	7	10:00 - 12:00	High	12	11:27	OC	2	C9	RO					YES	
24/01/2020	7	10:00 - 12:00	High	13	11:50	RK	44	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	13	11:50	TT	7	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	13	11:50	HG	73	C2	RO		On groyne	YES			Area 8
24/01/2020	7	10:00 - 12:00	High	13	11:50	BH	32	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	13	11:50	LB	1	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	13	11:50	OC	61	C2	RO		On groyne	YES			Area 8
24/01/2020	7	10:00 - 12:00	High	13	11:50	CU	3	C2	RO		On groyne	YES			
24/01/2020	7	10:00 - 12:00	High	14	11:50	SU	13	C7	LO		On water	YES			
24/01/2020	7	12:00 - 14:00	Mid	1	12:02	BH	30	C9	LO					YES	
24/01/2020	7	12:00 - 14:00	Mid	2	12:10	RK	146	C9	FE					YES	Area 2
24/01/2020	7	12:00 - 14:00	Mid	3	12:10	CU	52	C9	LO FE					YES	Area 2
24/01/2020	7	12:00 - 14:00	Mid	2	12:10	OC	256	C9	LO					YES	
24/01/2020	7	12:00 - 14:00	Mid	3	12:10	RK	4	C9	FE					YES	
24/01/2020	7	12:00 - 14:00	Mid	3	12:10	BH	38	C9	LO					YES	
24/01/2020	7	12:00 - 14:00	Mid	3	12:10	HG	21	C9	LO					YES	
24/01/2020	7	12:00 - 14:00	Mid	4	12:27	RK	61	C8	FE	DOG AL FL	40% between 250-500m, 60% outside buffer		YES	YES	Area 4
24/01/2020	7	12:00 - 14:00	Mid	4	12:27	OC	220	C8	LO RO		40% between 250-500m, 60% outside buffer		YES	YES	Area 4
24/01/2020	7	12:00 - 14:00	Mid	4	12:27	CU	42	C8	FE LO		40% between 250-500m, 60% outside buffer		YES	YES	
24/01/2020	7	12:00 - 14:00	Mid	4	12:27	BH	86	C8	FE		40% between 250-500m, 60% outside buffer		YES	YES	Area 4
24/01/2020	7	12:00 - 14:00	Mid	4	12:27	HG	32	C8	FE LO		40% between 250-500m, 60% outside buffer		YES	YES	
24/01/2020	7	12:00 - 14:00	Mid	5	12:28	RK	12	C9	FE					YES	
24/01/2020	7	12:00 - 14:00	Mid	6	12:35	RK	71	C9	FE					YES	Area 4
24/01/2020	7	12:00 - 14:00	Mid	7	12:45	RK	21	C9	FE					YES	
24/01/2020	7	12:00 - 14:00	Mid	8	12:51	RK	2	C9	FE					YES	

24/01/2020	7	12:00 - 14:00	Mid	9	12:53	OC	24	C4	LO		50% within 250m, 50% between 250-500m	YES	YES		
24/01/2020	7	12:00 - 14:00	Mid	10	12:53	CU	2	C4	FE		50% within 250m, 50% between 250-500m	YES	YES		
24/01/2020	7	12:00 - 14:00	Mid	11	12:53	SU	9	C4	FE			YES			
24/01/2020	7	12:00 - 14:00	Mid	12	12:53	BH	26	C4	LO		50% within 250m, 50% between 250-500m	YES	YES		
24/01/2020	7	12:00 - 14:00	Mid	12	12:53	HG	6	C4	LO		50% within 250m, 50% between 250-500m	YES	YES		
24/01/2020	7	12:00 - 14:00	Mid	13	12:57	SU	4	C2	LO			YES			
24/01/2020	7	12:00 - 14:00	Mid	14	12:57	BH	32	C2	FE			YES			
24/01/2020	7	12:00 - 14:00	Mid	14	12:57	HG	292	C2	FE			YES			
24/01/2020	7	12:00 - 14:00	Mid	14	12:57	RK	3	C2	FE			YES			
24/01/2020	7	12:00 - 14:00	Mid	14	12:57	GB	7	C2	E			YES			
24/01/2020	7	12:00 - 14:00	Mid	15	12:57	LB	1	C2	LO			YES			
24/01/2020	7	12:00 - 14:00	Mid	15	12:57	OC	2	C2	FE			YES			
24/01/2020	7	12:00 - 14:00	Mid	15	12:57	CU	1	C2	FE			YES			
31/01/2020	8	11:27-13:27	Mid	1	11:50	OC	1500	C9	FE LO					YES	Area 7
31/01/2020	8	11:27-13:27	Mid	1	11:50	KN	1000	C9	FE					YES	Area 7
31/01/2020	8	11:27-13:27	Mid	1	11:50	RK	15	C9	FE					YES	
31/01/2020	8	11:27-13:27	Mid	1	11:50	CU	8	C8	FE					YES	
31/01/2020	8	11:27-13:27	Mid	2	12:10	CU	8	C8	FE				YES		
31/01/2020	8	11:27-13:27	Mid	2	12:10	OC	2	C8	FE				YES		
31/01/2020	8	11:27-13:27	Mid	2	12:10	RK	1	C8	FE				YES		
31/01/2020	8	11:27-13:27	Mid	3	12:20	GN	1	C8	RO					YES	
31/01/2020	8	11:27-13:27	Mid	3	12:20	GG	2	C8	LO					YES	
31/01/2020	8	11:27-13:27	Mid	4	12:30	E	16	C7	RO LO					YES	
31/01/2020	8	11:27-13:27	Mid	5	12:30	RK	1	C1	FE				YES		
31/01/2020	8	11:27-13:27	Mid	6	12:37	RK	5	C7	FE			YES			
31/01/2020	8	11:27-13:27	Mid	6	12:37	CU	4	C2	FE			YES			
31/01/2020	8	11:27-13:27	Mid	6	12:37	OC	7	C2	FE LO			YES			
31/01/2020	8	11:27-13:27	Mid	6	12:37	SU	2	C2	FE LO			YES			
31/01/2020	8	11:27-13:27	Mid	6	12:37	TT	1	C2	FE			YES			
31/01/2020	8	11:27-13:27	Mid	7	12:48	OC	52	C4	FE		50% within 250m, 50% between 250-500m	YES	YES		
31/01/2020	8	11:27-13:27	Mid	7	12:48	RK	10	C4	FE		50% within 250m, 50% between 250-500m	YES	YES		
31/01/2020	8	11:27-13:27	Mid	7	12:50	KN	62	C4	FE		50% within 250m, 50% between 250-500m	YES	YES		
31/01/2020	8	11:27-13:27	Mid	7	12:50	SU	7	C4	FE LO		50% within 250m, 50% between 250-500m	YES	YES		
31/01/2020	8	11:27-13:27	Mid	8	13:10	KN	11	C6	FE					YES	
31/01/2020	8	11:27-13:27	Mid	8	13:10	SU	4	C6	LO FLU	LR	TIDAL			YES	
31/01/2020	8	11:27-13:27	Mid	8	13:10	OC	2	C6	FE					YES	
31/01/2020	8	11:27-13:27	Mid	8	13:10	RK	1	C6	FE					YES	
31/01/2020	8	11:27-13:27	Mid	9	13:18	CU	1	C6	LO					YES	
31/01/2020	8	09:27-11:27	Low	1	09:27	CU	3	C6	FE					YES	
31/01/2020	8	09:27-11:27	Low	1	09:27	OC	6	C6	FE LO					YES	
31/01/2020	8	09:27-11:27	Low	1	09:30	SU	5	C6	FE					YES	
31/01/2020	8	09:27-11:27	Low	1	09:30	RK	8	C6	FE					YES	
31/01/2020	8	09:27-11:27	Low	2	09:45	SU	7	C6	FE					YES	
31/01/2020	8	09:27-11:27	Low	2	09:45	OC	5	C6	FE					YES	
31/01/2020	8	09:27-11:27	Low	2	09:45	CU	6	C6	FE					YES	
31/01/2020	8	09:27-11:27	Low	3	09:45	KN	1	C6	FLY					YES	
31/01/2020	8	09:27-11:27	Low	4	09:51	GG	2	C6	FE					YES	
31/01/2020	8	09:27-11:27	Low	5	09:53	KN	17	C6	FLY					YES	
31/01/2020	8	09:27-11:27	Low	2	10:08	KN	21	C6	FE					YES	
31/01/2020	8	09:27-11:27	Low	6	10:24	OC	33	C4	FE		60% within 250m, 40% between 250-500m	YES	YES		
31/01/2020	8	09:27-11:27	Low	6	10:24	KN	24	C4	FE		60% within 250m, 40% between 250-500m	YES	YES		
31/01/2020	8	09:27-11:27	Low	6	10:24	SU	1	C4	FE		60% within 250m, 40% between 250-500m	YES	YES		
31/01/2020	8	09:27-11:27	Low	6	10:24	CU	1	C4	FE		60% within 250m, 40% between 250-500m	YES	YES		
31/01/2020	8	09:27-11:27	Low	6	10:24	RK	11	C4	FE		60% within 250m, 40% between 250-500m	YES	YES		
31/01/2020	8	09:27-11:27	Low	7	10:30	SU	2	C2	FE			YES			
31/01/2020	8	09:27-11:27	Low	7	10:30	CU	1	C2	FE			YES			
31/01/2020	8	09:27-11:27	Low	7	10:30	RK	1	C2	FE			YES			
31/01/2020	8	09:27-11:27	Low	8	10:45	RK	2	C7	FE		30% within 250m, 60% between 250-500m, 10% outs	YES	YES	YES	
31/01/2020	8	09:27-11:27	Low	8	10:45	KN	4	C7	FE		30% within 250m, 60% between 250-500m, 10% outs	YES	YES	YES	
31/01/2020	8	09:27-11:27	Low	8	10:45	GG	1	C7	FE		30% within 250m, 60% between 250-500m, 10% outs	YES	YES	YES	
31/01/2020	8	09:27-11:27	Low	8	10:45	RM	1	C7	LO		30% within 250m, 60% between 250-500m, 10% outs	YES	YES	YES	
31/01/2020	8	09:27-11:27	Low	8	10:45	CA	1	C7	FE		30% within 250m, 60% between 250-500m, 10% outs	YES	YES	YES	
31/01/2020	8	09:27-11:27	Low	9	10:55	CU	1	C1	LO				YES		
31/01/2020	8	09:27-11:27	Low	9	10:55	OC	4	C1	FE				YES		
31/01/2020	8	09:27-11:27	Low	10	11:00	KN	60	C7	FLY				YES		
31/01/2020	8	09:27-11:27	Low	11	11:00	CU	4	C8	FE		5% within 250-500m, 95% outside		YES	YES	
31/01/2020	8	09:27-11:27	Low	11	11:00	OC	1	C8	FE		5% within 250-500m, 95% outside		YES	YES	
31/01/2020	8	09:27-11:27	Low	11	11:00	RK	2	C8	FE		5% within 250-500m, 95% outside		YES	YES	
31/01/2020	8	09:27-11:27	Low	12	11:27	OC	1500	C9	FE					YES	Area 2

31/01/2020	8	09:27-11:27	Low	12	11:27	KN	1000	C9	FE					YES	Area 2
31/01/2020	8	09:27-11:27	Low	12	11:27	CU	8	C9	FE					YES	
31/01/2020	8	13:27-15:27	High	1	13:30	RK	1	C6	FE				YES		
31/01/2020	8	13:27-15:27	High	2	13:35	OC	1	C6	FLY					YES	
31/01/2020	8	13:27-15:27	High	3	13:42	CA	1	C6	FLY					YES	
31/01/2020	8	13:27-15:27	High	4	13:45	OC	1	C6	FLY					YES	
31/01/2020	8	13:27-15:27	High	5	14:00	KN	21	C4	LO RO			YES			
31/01/2020	8	13:27-15:27	High	5	14:00	TT	4	C4	LO			YES			
31/01/2020	8	13:27-15:27	High	5	14:00	RK	24	C4	LO RO			YES			
31/01/2020	8	13:27-15:27	High	5	14:00	OC	24	C4	LO RO			YES			
31/01/2020	8	13:27-15:27	High	5	14:00	CU	2	C4	RO			YES			
31/01/2020	8	13:27-15:27	High	5	14:00	SU	4	C4	LO			YES			
31/01/2020	8	13:27-15:27	High	6	14:01	RM	1	C6	FE				YES		
31/01/2020	8	13:27-15:27	High	7	14:15	OC	9	C2	RO LO			YES			
31/01/2020	8	13:27-15:27	High	7	14:15	CU	1	C2	RO			YES			
31/01/2020	8	13:27-15:27	High	8	14:15	GG	2	C2	FE			YES			
31/01/2020	8	13:27-15:27	High	9	14:51	RK	5	C9	LO		Mainly in spartina			YES	
31/01/2020	8	13:27-15:27	High	10	15:00	RK	29	C9	FE					YES	
31/01/2020	8	13:27-15:27	High	10	15:00	OC	3	C9	FE					YES	
31/01/2020	8	13:27-15:27	High	10	15:00	CU	1	C9	FE					YES	
31/01/2020	8	13:27-15:27	High	10	15:00	BH	20	C9	LO					YES	
31/01/2020	8	13:27-15:27	High	10	15:00	KN	2	C9	LO					YES	
31/01/2020	8	13:27-15:27	High	10	15:00	HG	48	C9	LO					YES	
31/01/2020	8	13:27-15:27	High	5	15:27	HG	27	C4	LO RO			YES			
14/02/2020	9	09:00-11:00	Low	1	09:00	CU	1	C6	FE					YES	
14/02/2020	9	09:00-11:00	Low	2	09:00	CU	2	C6	FE					YES	
14/02/2020	9	09:00-11:00	Low	3	09:02	OC	450	C6	FE					YES	Area 11
14/02/2020	9	09:00-11:00	Low	4	09:03	TT	6	C6	FE					YES	
14/02/2020	9	09:00-11:00	Low	4	09:03	CU	1	C6	FE					YES	
14/02/2020	9	09:00-11:00	Low	4	09:03	OC	631	C6	FE					YES	Area 9
14/02/2020	9	09:00-11:00	Low	4	09:03	KN	46	C6	FE					YES	
14/02/2020	9	09:00-11:00	Low	4	09:03	RK	16	C6	FE					YES	
14/02/2020	9	09:00-11:00	Low	4	09:03	DN	6	C6	FE					YES	
14/02/2020	9	09:00-11:00	Low	4	09:03	HG	65	C6	FE					YES	Area 9
14/02/2020	9	09:00-11:00	Low	4	09:03	CM	3	C6	FE					YES	
14/02/2020	9	09:00-11:00	Low	5	09:04	BH	71	C6	LO					YES	
14/02/2020	9	09:00-11:00	Low	5	09:04	LB	8	C6	LO					YES	
14/02/2020	9	09:00-11:00	Low	6	09:04	SU	3	C6	FE					YES	
14/02/2020	9	09:00-11:00	Low	7	09:05	OC	45	C6	FE					YES	
14/02/2020	9	09:00-11:00	Low	8	09:06	OC	54	C6	FE		50% between 250-500m, 50% outside		YES	YES	Area 9
14/02/2020	9	09:00-11:00	Low	9	09:10	MS	1	C4	RO			YES			
14/02/2020	9	09:00-11:00	Low	10	09:20	KN	750	C8	FE					YES	Area 12
14/02/2020	9	09:00-11:00	Low	10	09:20	OC	165	C8	FE					YES	Area 12
14/02/2020	9	09:00-11:00	Low	11	09:22	CA	1	C7	FE				YES		
14/02/2020	9	09:00-11:00	Low	12	09:28	CU	6	C7	FE					YES	
14/02/2020	9	09:00-11:00	Low	13	09:32	CU	1	C2	RO			YES			
14/02/2020	9	09:00-11:00	Low	14	09:35	CU	1	C2	FE			YES			
14/02/2020	9	09:00-11:00	Low	15	09:40	ET	1	C9	FE					YES	
14/02/2020	9	09:00-11:00	Low	16	10:32	KN	210	C10	FLU	LEFT	Tide			YES	
14/02/2020	9	09:00-11:00	Low	17	10:32	CA	1	C10	RO					YES	
14/02/2020	9	09:00-11:00	Low	18	10:35	CU	7	C8	FE					YES	
14/02/2020	9	09:00-11:00	Low	19	10:37	OC	1	C7	FE			YES			
14/02/2020	9	09:00-11:00	Low	20	10:38	HG	20	C7	FE			YES			
14/02/2020	9	09:00-11:00	Low	20	10:38	LB	1	C7	LO			YES			
14/02/2020	9	09:00-11:00	Low	21	10:42	OC	6	C7	FE			YES			
14/02/2020	9	09:00-11:00	Low	21	10:42	CU	5	C7	FE			YES			
14/02/2020	9	09:00-11:00	Low	22	10:43	OC	45	C6	FE				YES		
14/02/2020	9	09:00-11:00	Low	22	10:43	CU	4	C6	FE				YES		
14/02/2020	9	09:00-11:00	Low	23	10:47	BH	23	C2	RO			YES			
14/02/2020	9	09:00-11:00	Low	23	10:47	HG	10	C2	RO			YES			
14/02/2020	9	09:00-11:00	Low	24	10:55	OC	395	C6	FE					YES	Area 11
14/02/2020	9	09:00-11:00	Low	25	10:55	OC	121	C6	FE				YES		Area 9
14/02/2020	9	09:00-11:00	Low	26	10:59	OC	10	C6	FE				YES		
14/02/2020	9	11:00-13:00	Mid	1	11:00	OC	420	C8	IZ				YES		
14/02/2020	9	11:00-13:00	Mid	2	11:02	CU	20	C8	FE				YES		
14/02/2020	9	11:00-13:00	Mid	3	11:11	E	10	C8	LO					YES	
14/02/2020	9	11:00-13:00	Mid	4	11:12	KN	150	C8	FLY		flies from between 250-500m to outside of buffer		YES	YES	
14/02/2020	9	11:00-13:00	Mid	5	11:13	CU	1	C8	FE				YES		
14/02/2020	9	11:00-13:00	Mid	6	11:14	BH	26	C9	LO					YES	

14/02/2020	9	11:00-13:00	Mid	6	11:14	HG	5	C9	LO					YES	
14/02/2020	9	11:00-13:00	Mid	7	11:16	OC	6	C1	LO				YES		
14/02/2020	9	11:00-13:00	Mid	8	11:17	OC	8	C4	FE				YES		
14/02/2020	9	11:00-13:00	Mid	9	11:18	GG	9	C8	LO				YES		
14/02/2020	9	11:00-13:00	Mid	1	11:20	OC	20	C8	FLU		Already counted		YES		
14/02/2020	9	11:00-13:00	Mid	11	11:27	MS	6	C7	RO			YES			
14/02/2020	9	11:00-13:00	Mid	12	11:33	OC	6	C4	FE				YES		
14/02/2020	9	11:00-13:00	Mid	13	11:34	OC	12	C6	LO				YES		
14/02/2020	9	11:00-13:00	Mid	14	11:35	LB	4	C4	RO			YES			
14/02/2020	9	11:00-13:00	Mid	14	11:35	HG	26	C4	RO			YES			
14/02/2020	9	11:00-13:00	Mid	14	11:35	BH	23	C4	RO			YES			
14/02/2020	9	11:00-13:00	Mid	15	11:38	OC	10	C6	FE					YES	
14/02/2020	9	11:00-13:00	Mid	16	11:39	PG	210	C6	FLY		flies from outside of buffer to within 250m of new re	YES	YES	YES	
14/02/2020	9	11:00-13:00	Mid	17	11:48	BH	65	C9	RO					YES	Area 2
14/02/2020	9	11:00-13:00	Mid	17	11:48	LB	2	C9	RO					YES	
14/02/2020	9	11:00-13:00	Mid	17	11:48	HG	26	C9	RO					YES	
14/02/2020	9	11:00-13:00	Mid	18	12:13	OC	4	C7	FLY		Already counted		YES		
14/02/2020	9	11:00-13:00	Mid	19	12:15	OC	35	C7	FLU	Tide / LR	Already counted		YES		
14/02/2020	9	11:00-13:00	Mid	20	12:20	OC	40	C6	FLU	Tide / LR	Already counted	YES			
14/02/2020	9	11:00-13:00	Mid	21	12:25	RK	1	C7	FE			YES			
14/02/2020	9	11:00-13:00	Mid	22	12:31	RK	1	C2	FE			YES			
14/02/2020	9	11:00-13:00	Mid	23	12:31	CU	1	C2	FE			YES			
14/02/2020	9	11:00-13:00	Mid	24	12:35	RK	25	C4	FE			YES			
14/02/2020	9	11:00-13:00	Mid	25	12:42	OC	5	C6	FE					YES	
14/02/2020	9	11:00-13:00	Mid	25	12:42	CU	5	C6	FE					YES	
14/02/2020	9	11:00-13:00	Mid	26	12:47	CU	2	C6	FE					YES	
14/02/2020	9	11:00-13:00	Mid	27	12:50	OC	16	C4	FE			YES			
14/02/2020	9	13:00-15:00	High	1	13:00	OC	250	C9	FE					YES	Area 2
14/02/2020	9	13:00-15:00	High	1	13:00	KN	2	C9	FE					YES	
14/02/2020	9	13:00-15:00	High	2	13:05	HG	18	C9	RO					YES	
14/02/2020	9	13:00-15:00	High	2	13:05	LB	2	C9	RO					YES	
14/02/2020	9	13:00-15:00	High	2	13:05	BH	8	C9	RO					YES	
14/02/2020	9	13:00-15:00	High	3	13:10	RK	3	C9	FE					YES	
14/02/2020	9	13:00-15:00	High	4	13:22	RK	3	C9	FE					YES	
14/02/2020	9	13:00-15:00	High	5	13:44	RK	14	C9	FE					YES	
14/02/2020	9	13:00-15:00	High	6	13:45	OC	30	C9	FLU	Tide / LEFT	Already counted			YES	
14/02/2020	9	13:00-15:00	High	7	13:50	RK	29	C9	FLU	Tide / LR	20 Already counted			YES	
14/02/2020	9	13:00-15:00	High	8	14:00	OC	57	C9	FLU	Tide / LR	Already counted			YES	
14/02/2020	9	13:00-15:00	High	9	14:05	OC	25	C9	FLU	Dog / LR	ounted - flies from outside of buffer to between 250-500m		YES	YES	
14/02/2020	9	13:00-15:00	High	10	14:05	OC	127	C9	FLU	Dog / LEFT	Already counted			YES	
14/02/2020	9	13:00-15:00	High	11	14:05	RK	6	C9	FLU	Dog / LR				YES	
14/02/2020	9	13:00-15:00	High	12	14:15	BH	6	C2	RO			YES			
14/02/2020	9	13:00-15:00	High	12	14:15	LB	2	C2	RO			YES			
14/02/2020	9	13:00-15:00	High	12	14:15	HG	16	C2	RO			YES			
14/02/2020	9	13:00-15:00	High	12	14:15	OC	3	C2	RO			YES			
14/02/2020	9	13:00-15:00	High	12	14:15	RK	33	C2	RO			YES			
14/02/2020	9	13:00-15:00	High	13	14:20	OC	320	C2	RO			YES			Area 8
14/02/2020	9	13:00-15:00	High	13	14:20	CU	1	C2	RO			YES			
14/02/2020	9	13:00-15:00	High	13	14:20	DN	11	C2	RO			YES			
14/02/2020	9	13:00-15:00	High	14	14:50	RM	3	C7	LO				YES		
14/02/2020	9	13:00-15:00	High	15	14:55	TT	17	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	1	10:46	KN	7	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	1	10:46	TT	49	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	1	10:46	RK	6	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	1	10:46	DN	1	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	2	10:47	OC	29	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	2	10:47	HG	74	C2	RO			YES			Area 8
22/02/2020	10	10:46-12:46	High	2	10:47	GB	3	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	2	10:47	BH	33	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	2	10:47	LB	1	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	3	10:50	RM	1	C4	LO			YES			
22/02/2020	10	10:46-12:46	High	4	10:52	OC	18	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	4	10:52	CU	2	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	5	11:00	TT	5	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	5	11:00	RK	6	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	5	11:00	OC	70	C2	RO			YES			Area 8
22/02/2020	10	10:46-12:46	High	5	11:00	LB	9	C2	RO			YES			
22/02/2020	10	10:46-12:46	High	6	11:46	HG	30	C9	RO					YES	
22/02/2020	10	10:46-12:46	High	6	11:46	LB	8	C9	RO					YES	

22/02/2020	10	10:46-12:46	High	7	11:48	CU	1	C9	RO					YES	
22/02/2020	10	10:46-12:46	High	8	11:49	BH	24	C9	RO					YES	
22/02/2020	10	10:46-12:46	High	8	11:49	HG	27	C9	RO					YES	
22/02/2020	10	10:46-12:46	High	9	11:55	BH	23	C4	FE		PREVIOUSLY ROOSTING ON REG.2 GROUP IN C2	YES			
22/02/2020	10	10:46-12:46	High	10	11:57	BH	10	C4	FE		PREVIOUSLY ROOSTING ON REG.2 GROUP IN C2	YES			
22/02/2020	10	10:46-12:46	High	11	11:59	HG	25	C7	RO		MOVED FROM REG. 2 AS TIDE DROPPED	YES			
22/02/2020	10	10:46-12:46	High	11	11:59	GB	2	C7	RO			YES			
22/02/2020	10	10:46-12:46	High	12	12:00	KN	1	C7	FE				YES		
22/02/2020	10	10:46-12:46	High	13	12:08	HG	40	C6	RO		Moved from reg.2			YES	
22/02/2020	10	10:46-12:46	High	13	12:08	GB	2	C6	RO					YES	
22/02/2020	10	10:46-12:46	High	13	12:08	LB	1	C6	RO					YES	
22/02/2020	10	10:46-12:46	High	14	12:09	OC	60	C2	RO		reg. 5 birds - same place	YES			Area 8
22/02/2020	10	10:46-12:46	High	14	12:09	TT	20	C2	RO		reg. 1 birds moved on tide dropped	YES			
22/02/2020	10	12:46-14:46	Mid	1	12:46	HG	30	C9	RO					YES	
22/02/2020	10	12:46-14:46	Mid	1	12:46	LB	8	C9	RO					YES	
22/02/2020	10	12:46-14:46	Mid	2	12:55	BH	23	C9	RO					YES	
22/02/2020	10	12:46-14:46	Mid	2	12:55	HG	27	C9	RO					YES	
22/02/2020	10	12:46-14:46	Mid	3	12:15	OC	13	C4	FE			YES			
22/02/2020	10	12:46-14:46	Mid	4	13:20	RK	4	C4	FE			YES			
22/02/2020	10	12:46-14:46	Mid	5	13:35	OC	4	C7	FE			YES			
22/02/2020	10	12:46-14:46	Mid	6	13:40	KN	1	C7	FE			YES			
22/02/2020	10	12:46-14:46	Mid	7	13:41	RM	1	C7	LO				YES		
22/02/2020	10	12:46-14:46	Mid	8	13:41	RM	2	C7	LO				YES		
22/02/2020	10	12:46-14:46	Mid	9	13:42	KN	5	C7	FLY				YES		
22/02/2020	10	12:46-14:46	Mid	10	13:43	OC	1	C8	FE		FLEW FROM C7 AS TIDE DROPPED	YES	YES		
22/02/2020	10	12:46-14:46	Mid	11	13:44	OC	2	C8	FE			YES			
22/02/2020	10	12:46-14:46	Mid	12	13:45	OC	3	C8	FE		FLEW FROM C7 AS TIDE DROPPED		YES		
22/02/2020	10	12:46-14:46	Mid	13	13:48	OC	10	C8	FE		FLEW FROM C7 AS TIDE DROPPED		YES		
22/02/2020	10	12:46-14:46	Mid	14	13:50	E	2	C7	FLY		flies from within 250-500m to outside of buffer		YES	YES	
22/02/2020	10	12:46-14:46	Mid	15	13:52	OC	5	C7	FLY				YES		
22/02/2020	10	12:46-14:46	Mid	16	14:10	OC	9	C6	FE					YES	
22/02/2020	10	12:46-14:46	Mid	17	14:15	CU	1	C4	FE				YES		
22/02/2020	10	12:46-14:46	Mid	18	14:16	OC	4	C4	FE				YES		
22/02/2020	10	12:46-14:46	Mid	19	14:30	CU	1	C8	FE			YES			
22/02/2020	10	12:46-14:46	Mid	20	14:40	CU	1	C8	FE				YES		
22/02/2020	10	14:46-16:46	Low	1	14:46	HG	30	C9	RO					YES	
22/02/2020	10	14:46-16:46	Low	1	14:46	LB	8	C9	RO					YES	
22/02/2020	10	14:46-16:46	Low	2	15:05	BH	32	C4	RO			YES			
22/02/2020	10	14:46-16:46	Low	2	15:05	LB	1	C4	RO			YES			
22/02/2020	10	14:46-16:46	Low	2	15:05	HG	8	C4	RO			YES			
22/02/2020	10	14:46-16:46	Low	3	15:10	OC	12	C6	FE		30% within 250m, 70% between 250-500m	YES	YES		
22/02/2020	10	14:46-16:46	Low	3	15:10	KN	2	C6	FE		30% within 250m, 70% between 250-500m	YES	YES		
22/02/2020	10	14:46-16:46	Low	3	15:10	CU	2	C6	FE		30% within 250m, 70% between 250-500m	YES	YES		
22/02/2020	10	14:46-16:46	Low	4	15:12	HG	20	C7	RO			YES			
22/02/2020	10	14:46-16:46	Low	5	15:15	CU	1	C8	FE			YES			
22/02/2020	10	14:46-16:46	Low	6	15:16	CU	12	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	7	15:17	OC	12	C6	FE					YES	
22/02/2020	10	14:46-16:46	Low	7	15:17	CU	7	C6	FE					YES	
22/02/2020	10	14:46-16:46	Low	8	15:18	E	2	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	9	15:19	OC	1	C8	FLY	LR	PROB FROM REG.3		YES		
22/02/2020	10	14:46-16:46	Low	10	15:27	OC	7	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	11	15:28	OC	6	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	12	15:39	OC	16	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	13	15:31	OC	5	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	14	15:32	TT	8	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	15	15:33	OC	22	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	16	15:34	CU	7	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	17	15:36	OC	9	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	18	15:39	OC	5	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	19	15:40	OC	5	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	20	15:41	RM	1	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	21	15:41	TT	3	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	22	15:42	OC	4	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	23	16:08	OC	4	C6	FE					YES	
22/02/2020	10	14:46-16:46	Low	24	16:09	CU	1	C6	FE					YES	
22/02/2020	10	14:46-16:46	Low	25	16:10	OC	8	C6	FLY					YES	
22/02/2020	10	14:46-16:46	Low	26	16:14	CA	1	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	27	16:20	CU	1	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	28	16:26	OC	30	C7	FLY		flew from outside of buffer to between 250-500m then back outside		YES	YES	

22/02/2020	10	14:46-16:46	Low	29	16:30	OC	3	C7	FLY	flew from outside of buffer to between 250-500m then back outside		YES	YES	
22/02/2020	10	14:46-16:46	Low	30	16:34	OC	4	C7	FLY	flew from outside of buffer to between 250-500m then back outside		YES	YES	
09/03/2020	11	10:58-12:58	High	1	10:58	BH	20	C9	RO				YES	
09/03/2020	11	10:58-12:58	High	1	10:58	LB	2	C9	RO				YES	
09/03/2020	11	10:58-12:58	High	1	10:58	HG	20	C9	RO				YES	
09/03/2020	11	10:58-12:58	High	2	11:15	OC	97	C2	RO		YES			Area 8
09/03/2020	11	10:58-12:58	High	2	11:15	CU	1	C2	RO		YES			
09/03/2020	11	10:58-12:58	High	2	11:15	TT	112	C2	RO		YES			Area 8
09/03/2020	11	10:58-12:58	High	3	11:30	OC	6	C2	RO		YES			
09/03/2020	11	10:58-12:58	High	3	11:30	HG	27	C2	RO		YES			
09/03/2020	11	10:58-12:58	High	3	11:30	BH	1	C2	RO		YES			
09/03/2020	11	10:58-12:58	High	3	11:30	RK	4	C2	RO		YES			
09/03/2020	11	10:58-12:58	High	4	11:40	OC	9	C2	RO		YES			
09/03/2020	11	10:58-12:58	High	5	12:50	RK	4	C4	FE	Already counted	YES			
09/03/2020	11	14:58-16:58	Low	1	14:58	OC	1	C6	FE				YES	
09/03/2020	11	14:58-16:58	Low	2	14:59	OC	1	C6	FE				YES	
09/03/2020	11	14:58-16:58	Low	3	15:01	TT	1	C6	FE				YES	
09/03/2020	11	14:58-16:58	Low	4	15:03	KN	8	C6	FE				YES	
09/03/2020	11	14:58-16:58	Low	5	15:04	OC	5	C6	RO				YES	
09/03/2020	11	14:58-16:58	Low	6	15:05	RK	1	C6	FE				YES	
09/03/2020	11	14:58-16:58	Low	7	15:10	RK	3	C6	FE				YES	
09/03/2020	11	14:58-16:58	Low	8	15:12	OC	10	C6	FE				YES	
09/03/2020	11	14:58-16:58	Low	9	15:15	OC	34	C6	FE	50% between 250-500m, 50% outside of buffer		YES	YES	
09/03/2020	11	14:58-16:58	Low	9	15:15	CU	1	C6	FE	50% between 250-500m, 50% outside of buffer		YES	YES	
09/03/2020	11	14:58-16:58	Low	10	15:20	CU	1	C4	FE			YES		
09/03/2020	11	14:58-16:58	Low	11	15:22	OC	17	C4	FE			YES		
09/03/2020	11	14:58-16:58	Low	12	15:30	RK	6	C4	FE		YES			
09/03/2020	11	14:58-16:58	Low	13	15:35	RK	4	C4	FE		YES			
09/03/2020	11	14:58-16:58	Low	14	15:37	CU	1	C4	FE		YES			
09/03/2020	11	14:58-16:58	Low	15	15:39	RK	1	C2	FE		YES			
09/03/2020	11	14:58-16:58	Low	16	15:39	CU	1	C2	FE		YES			
09/03/2020	11	14:58-16:58	Low	17	15:41	OC	1	C2	FE		YES			
09/03/2020	11	14:58-16:58	Low	18	15:45	RK	3	C7	FE		YES			
09/03/2020	11	14:58-16:58	Low	19	15:50	RM	2	C7	FE			YES		
09/03/2020	11	14:58-16:58	Low	20	15:52	OC	3	C6	FE			YES		
09/03/2020	11	14:58-16:58	Low	21	15:53	OC	3	C6	FLY	flew from between 250-500m to within 250m	YES	YES		
09/03/2020	11	14:58-16:58	Low	22	15:55	RK	3	C8	FE			YES		
09/03/2020	11	14:58-16:58	Low	23	15:55	CU	4	C8	FE			YES		
09/03/2020	11	14:58-16:58	Low	24	15:56	RM	1	C8	LO			YES		
09/03/2020	11	14:58-16:58	Low	26	15:57	BH	24	C8	LO				YES	
09/03/2020	11	14:58-16:58	Low	29	15:58	E	1	C8	LO				YES	
09/03/2020	11	14:58-16:58	Low	30	16:02	RM	2	C8	LO	ONE ALREADY COUNTED IN REG.24			YES	
09/03/2020	11	14:58-16:58	Low	31	16:10	RK	1	C7	FE	ALREADY COUNTED IN REG.18	YES			
09/03/2020	11	14:58-16:58	Low	32	16:12	CU	1	C7	FE	ALREADY COUNTED IN REG.16	YES			
09/03/2020	11	14:58-16:58	Low	33	16:20	OC	3	C7	FE	FROM C6 TO REG.20	YES			
09/03/2020	11	12:58-14:58	Mid	1	12:58	HG	20	C9	FE	being fed by people			YES	
09/03/2020	11	12:58-14:58	Mid	2	13:00	BH	10	C9	LO				YES	
09/03/2020	11	12:58-14:58	Mid	2	13:00	HG	12	C9	LO				YES	
09/03/2020	11	12:58-14:58	Mid	2	13:00	LB	5	C9	LO				YES	
09/03/2020	11	12:58-14:58	Mid	3	13:10	BH	26	C8	LO		YES			
09/03/2020	11	12:58-14:58	Mid	4	13:20	RK	7	C7	FE		YES			
09/03/2020	11	12:58-14:58	Mid	5	13:20	CU	2	C7	FE		YES			
09/03/2020	11	12:58-14:58	Mid	6	13:21	OC	4	C7	FE		YES			
09/03/2020	11	12:58-14:58	Mid	7	13:22	RM	1	C8	LO	floating out with the tide		YES		
09/03/2020	11	12:58-14:58	Mid	8	13:24	E	1	C8	LO	flew from between 250-500m to outside of buffer		YES	YES	
09/03/2020	11	12:58-14:58	Mid	9	13:26	CA	1	C7	FLY			YES		
09/03/2020	11	12:58-14:58	Mid	10	13:31	OC	1	C7	FLY	flew from outside of buffer to between 250-500m		YES	YES	
09/03/2020	11	12:58-14:58	Mid	11	13:32	OC	2	C7	FLY			YES		
09/03/2020	11	12:58-14:58	Mid	12	13:36	CU	2	C8	FLY	flew from between 250-500m to outside of buffer		YES	YES	
09/03/2020	11	12:58-14:58	Mid	13	13:37	E	3	C7	LO	floating out with the tide			YES	
09/03/2020	11	12:58-14:58	Mid	14	13:38	E	2	C7	LO	floating out with the tide		YES		
09/03/2020	11	12:58-14:58	Mid	15	13:39	GG	1	C7	LO	floating out with the tide		YES		
09/03/2020	11	12:58-14:58	Mid	16	13:44	E	2	C7	LO	floating out with the tide			YES	
09/03/2020	11	12:58-14:58	Mid	17	13:45	E	4	C7	LO	floating out with the tide		YES		
09/03/2020	11	12:58-14:58	Mid	18	13:50	E	5	C7	LO	floating out with the tide			YES	
09/03/2020	11	12:58-14:58	Mid	19	13:58	BH	1	C6	RO				YES	
09/03/2020	11	12:58-14:58	Mid	19	13:58	HG	22	C6	RO				YES	
09/03/2020	11	12:58-14:58	Mid	19	13:58	LB	1	C6	RO				YES	
09/03/2020	11	12:58-14:58	Mid	20	14:00	OC	5	C4	FE			YES		

09/03/2020	11	12:58-14:58	Mid	21	14:02	OC	1	C4	FE			YES			
09/03/2020	11	12:58-14:58	Mid	22	14:05	OC	136	C2	RO			YES			Area 8
09/03/2020	11	12:58-14:58	Mid	22	14:05	CU	1	C2	RO			YES			
09/03/2020	11	12:58-14:58	Mid	22	14:05	TT	5	C2	RO			YES			
09/03/2020	11	12:58-14:58	Mid	22	14:05	HG	57	C2	RO			YES			Area 8
09/03/2020	11	12:58-14:58	Mid	23	14:08	OC	17	C2	RO			YES			
09/03/2020	11	12:58-14:58	Mid	24	14:10	RK	6	C4	FE			YES			
09/03/2020	11	12:58-14:58	Mid	25	14:11	OC	15	C4	FE			YES			
09/03/2020	11	12:58-14:58	Mid	26	14:25	CU	1	C6	FE					YES	
09/03/2020	11	12:58-14:58	Mid	27	14:26	OC	3	C6	FE					YES	
09/03/2020	11	12:58-14:58	Mid	28	14:30	OC	4	C6	FE		WIDELY DISPERSED			YES	
09/03/2020	11	12:58-14:58	Mid	29	14:35	BH	30	C8	LO		26 PREVIOUSLY COUNTED IN REG.3	YES			
09/03/2020	11	12:58-14:58	Mid	30	14:37	OC	3	C1	RO				YES		
09/03/2020	11	12:58-14:58	Mid	31	14:39	RK	1	C7	FE			YES			
09/03/2020	11	12:58-14:58	Mid	32	14:40	CU	1	C2	FE			YES			
09/03/2020	11	12:58-14:58	Mid	33	14:43	OC	5	C7	FE		Previously counted in reg. 22	YES			
09/03/2020	11	12:58-14:58	Mid	34	14:45	OC	120	C6	FE		Previously counted in reg. 23		YES		Area 10
09/03/2020	11	12:58-14:58	Mid	35	14:47	CU	1	C4	FE			YES			
09/03/2020	11	12:58-14:58	Mid	36	14:52	RK	3	C7	FE			YES			
09/03/2020	11	12:58-14:58	Mid	37	14:53	CU	1	C6	FE				YES		
30/03/2020	12	10:05-12:05	Low	1	10:05	SU	3	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	2	10:07	BW	56	C6	FE					YES	Area 9
30/03/2020	12	10:05-12:05	Low	3	10:08	OC	1	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	4	10:10	OC	285	C6	FE					YES	Area 9
30/03/2020	12	10:05-12:05	Low	4	10:10	RK	40	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	4	10:10	KN	5	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	4	10:10	CU	4	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	4	10:10	HG	102	C6	FE					YES	Area 9
30/03/2020	12	10:05-12:05	Low	4	10:10	LB	2	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	5	10:14	RM	2	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	6	10:15	OC	252	C6	FE					YES	Area 11
30/03/2020	12	10:05-12:05	Low	1	10:15	RK	3	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	7	10:16	SU	9	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	8	10:16	CU	1	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	9	10:17	OC	39	C6	FE				YES		
30/03/2020	12	10:05-12:05	Low	1	10:17	CU	3	C6	FE					YES	
30/03/2020	12	10:05-12:05	Low	10	10:18	LB	45	C6	FE				YES		
30/03/2020	12	10:05-12:05	Low	11	10:19	OC	48	C7	FE				YES		
30/03/2020	12	10:05-12:05	Low	11	10:19	CU	5	C7	FE				YES		
30/03/2020	12	10:05-12:05	Low	11	10:19	RK	3	C7	FE				YES		
30/03/2020	12	10:05-12:05	Low	12	10:22	SU	1	C2	FE			YES			
30/03/2020	12	10:05-12:05	Low	13	10:25	SU	1	C2	FE			YES			
30/03/2020	12	10:05-12:05	Low	14	10:30	OC	74	C8	FE					YES	Area 12
30/03/2020	12	10:05-12:05	Low	14	10:30	E	21	C8	FE					YES	
30/03/2020	12	10:05-12:05	Low	14	10:30	RK	5	C8	FE					YES	
30/03/2020	12	10:05-12:05	Low	14	10:30	HG	23	C8	FE					YES	
30/03/2020	12	10:05-12:05	Low	14	10:30	LB	1	C8	FE					YES	
30/03/2020	12	10:05-12:05	Low	15	10:32	E	44	C8	LO					YES	
30/03/2020	12	10:05-12:05	Low	16	10:35	CU	1	C7	FE			YES			
30/03/2020	12	10:05-12:05	Low	17	10:39	CU	1	C2	FE			YES			
30/03/2020	12	10:05-12:05	Low	18	11:52	OC	153	C8	RO	74 probably from reg.14, the rest from the skeer to the west (Aldren's hedge/heysham skeer) pushed			YES		Area 3
30/03/2020	12	10:05-12:05	Low	19	11:54	E	65	C8	LO				YES		
30/03/2020	12	10:05-12:05	Low	20	11:56	OC	54	C8	RO	48 FROM REG.11			YES		Area 10
30/03/2020	12	10:05-12:05	Low	21	11:56	OC	15	C7	RO			YES			
30/03/2020	12	10:05-12:05	Low	22	11:57	OC	172	C6	FE	Arrivals fropm N+E as tide rose			YES		Area 9
30/03/2020	12	10:05-12:05	Low	1	11:57	CU	9	C6	FE					YES	
30/03/2020	12	12:05-14:05	Mid	1	12:05	SU	2	C6	FE					YES	
30/03/2020	12	12:05-14:05	Mid	2	15:05	SU	3	C6	FE					YES	
30/03/2020	12	12:05-14:05	Mid	3	10:06	SU	2	C2	FE			YES			
30/03/2020	12	12:05-14:05	Mid	4	12:07	CA	1	C7	FLY			YES			
30/03/2020	12	12:05-14:05	Mid	5	12:09	HG	25	C6	RO			YES			
30/03/2020	12	12:05-14:05	Mid	6	12:10	HG	24	C6	FLY					YES	
30/03/2020	12	12:05-14:05	Mid	6	12:10	LB	3	C6	FLY					YES	
30/03/2020	12	12:05-14:05	Mid	6	12:10	GB	2	C6	FLY					YES	
30/03/2020	12	12:05-14:05	Mid	7	12:15	SU	5	C6	FE					YES	
30/03/2020	12	12:05-14:05	Mid	8	12:25	OC	420	C6	RO			YES			Area 10
30/03/2020	12	12:05-14:05	Mid	9	12:25	OC	15	C6	RO				YES		
30/03/2020	12	12:05-14:05	Mid	10	12:25	CU	2	C6	FE			YES			
30/03/2020	12	12:05-14:05	Mid	11	12:27	HG	31	C6	RO			YES			

30/03/2020	12	12:05-14:05	Mid	11	12:27	LB	1	C6	RO			YES			
30/03/2020	12	12:05-14:05	Mid	11	12:27	GB	2	C6	RO			YES			
30/03/2020	12	12:05-14:05	Mid	12	12:27	RK	18	C6	FE			YES			
30/03/2020	12	12:05-14:05	Mid	13	12:28	E	26	C7	LO				YES		
30/03/2020	12	12:05-14:05	Mid	14	12:29	CA	1	C7	FLY				YES		
30/03/2020	12	12:05-14:05	Mid	15	12:36	E	42	C7	LO		Floating in the water with the tide		YES		
30/03/2020	12	12:05-14:05	Mid	16	12:42	E	33	C8	FE					YES	
30/03/2020	12	12:05-14:05	Mid	17	12:49	RK	1	C8	FE			YES			
30/03/2020	12	12:05-14:05	Mid	18	12:55	E	2	C7	FLY		flew from between 250-500m to outside of buffer		YES	YES	
30/03/2020	12	12:05-14:05	Mid	19	13:07	E	5	C8	LO		Floating in the water with the tide		YES		
30/03/2020	12	12:05-14:05	Mid	20	13:08	OC	2	C8	FLY				YES		
30/03/2020	12	12:05-14:05	Mid	21	13:14	SU	1	C8	FLY		flew from outside of buffer to between 250-500m		YES	YES	
30/03/2020	12	12:05-14:05	Mid	22	13:19	RM	3	C8	LO		Floating in the water with the tide			YES	
30/03/2020	12	12:05-14:05	Mid	23	13:22	RM	1	C8	LO		Floating in the water with the tide			YES	
30/03/2020	12	12:05-14:05	Mid	24	13:25	RM	1	C8	FLY					YES	
30/03/2020	12	12:05-14:05	Mid	25	13:30	E	36	C8	LO		Floating in the water with the tide			YES	
30/03/2020	12	12:05-14:05	Mid	26	13:32	RM	1	C8	LO		Floating in the water with the tide			YES	
30/03/2020	12	12:05-14:05	Mid	27	13:40	RK	5	C2	FE			YES			
30/03/2020	12	12:05-14:05	Mid	28	13:50	CU	12	C8	FE					YES	
30/03/2020	12	12:05-14:05	Mid	29	13:55	CU	26	C8	FE				YES		
30/03/2020	12	14:05-16:05	High	1	14:05	CU	42	C8	FE		50% between 250-500m, 50% outside of buffer		YES	YES	
30/03/2020	12	14:05-16:05	High	2	14:12	OC	420	C4	FE		50% within 250m, 50% between 250-500m	YES	YES		Area 10
30/03/2020	12	14:05-16:05	High	1	14:12	SU	4	C4	FE		50% between 250-500m, 50% outside of buffer		YES	YES	
30/03/2020	12	14:05-16:05	High	3	14:13	RK	6	C4	FE			YES			
30/03/2020	12	14:05-16:05	High	4	14:24	OC	10	C2	FE			YES			
30/03/2020	12	14:05-16:05	High	5	14:27	CU	1	C2	FE			YES			
30/03/2020	12	14:05-16:05	High	1	14:27	SU	1	C2	FE		50% between 250-500m, 50% outside of buffer		YES	YES	
30/03/2020	12	14:05-16:05	High	6	14:29	RK	12	C7	FE			YES			
30/03/2020	12	14:05-16:05	High	8	14:35	RK	9	C2	FE			YES			
30/03/2020	12	14:05-16:05	High	9	14:40	SU	2	C6	FE					YES	
30/03/2020	12	14:05-16:05	High	9	14:40	CU	1	C6	FE					YES	
30/03/2020	12	14:05-16:05	High	9	14:40	OC	1	C6	FE					YES	
30/03/2020	12	14:05-16:05	High	10	15:15	OC	220	C2	RO		From reg.2	YES			Area 8
30/03/2020	12	14:05-16:05	High	11	15:18	OC	45	C2	RO			YES			
30/03/2020	12	14:05-16:05	High	1	15:18	CU	3	C2	RO		50% between 250-500m, 50% outside of buffer		YES	YES	
30/03/2020	12	14:05-16:05	High	12	15:25	OC	120	C2	RO			YES			Area 8
30/03/2020	12	14:05-16:05	High	13	15:35	RK	24	C2	RO			YES			
30/03/2020	12	14:05-16:05	High	14	16:00	E	5	C6	RO					YES	
16/04/2020	13	14:00-16:00	Low	1	14:00	OC	280	C6	LO					YES	
16/04/2020	13	14:00-16:00	Low	2	14:00	CA	2	C6	LO					YES	
16/04/2020	13	14:00-16:00	Low	3	14:02	E	2	C6	LO					YES	
16/04/2020	13	14:00-16:00	Low	4	14:04	CU	2	C6	FE					YES	
16/04/2020	13	14:00-16:00	Low	5	14:08	HG	85	C6	LO					YES	
16/04/2020	13	14:00-16:00	Low	5	14:08	GB	2	C6	LO					YES	
16/04/2020	13	14:00-16:00	Low	5	14:08	LB	3	C6	LO					YES	
16/04/2020	13	14:00-16:00	Low	6	14:10	CU	3	C8	FE					YES	
16/04/2020	13	14:00-16:00	Low	7	14:20	E	95	C8	FE					YES	Area 12
16/04/2020	13	14:00-16:00	Low	8	14:25	GG	2	C6	FE					YES	
16/04/2020	13	14:00-16:00	Low	9	15:00	OC	35	C6	FLU	RISING TIDE - LR				YES	
16/04/2020	13	14:00-16:00	Low	10	15:07	OC	23	C6	FLU	RISING TIDE - LR				YES	
16/04/2020	13	14:00-16:00	Low	11	15:09	OC	10	C6	FLU	RISING TIDE - LR	0 as tide covered skeer at C8, eiders stopped feeding over bating knot and floate			YES	
16/04/2020	13	14:00-16:00	Low	12	15:12	OC	6	C6	FLU	RISING TIDE - LR	0 as tide covered skeer at C8, eiders stopped feeding over bating knot and floate			YES	
16/04/2020	13	14:00-16:00	Low	13	15:30	OC	120	C6	FLU	RISING TIDE - LR	0 as tide covered skeer at C8, eiders stopped feeding over bating knot and floate			YES	
16/04/2020	13	14:00-16:00	Low	14	15:30	OC	33	C6	FLU	RISING TIDE - LR	0 as tide covered skeer at C8, eiders stopped feeding over bating knot and floate			YES	
16/04/2020	13	14:00-16:00	Low	15	15:35	OC	10	C6	FLU	RISING TIDE - LR				YES	
16/04/2020	13	14:00-16:00	Low	16	15:54	OC	50	C6	FLU	RISING TIDE - LR	w from outside of boundary to between 250-500m		YES	YES	
16/04/2020	13	14:00-16:00	Low	17	15:50	E	12	C7	SW	RISING TIDE - LEFT	0 as tide covered skeer at C8, eiders stopped feeding over bating		YES		
16/04/2020	13	14:00-16:00	Low	18	15:56	E	6	C7	SW	RISING TIDE - LEFT	0 as tide covered skeer at C8, eiders stopped feeding over bating		YES		
16/04/2020	13	16:00-18:00	Mid	1	16:00	OC	20	C6	FLU	RISING TIDE - LR	f the count. The choppy water made it difficult to see the eiders		YES	YES	
16/04/2020	13	16:00-18:00	Mid	2	16:30	DN	70	C6	FLU	Arrived to roost at from NE	by the end of the count. The choppy water made it difficult to se		YES	YES	
16/04/2020	13	16:00-18:00	Mid	3	17:20	E	2	C6	LO	S/W of the stone jetty there was constant disturbance from socially distancing dog walkers hence no birds there				YES	
16/04/2020	13	16:00-18:00	Mid	4	17:21	RK	4	C6	FE	, black tailed godwit appeared as the tide rose but not seen to fly in. Probably hidden from view earlier as there is a very steep b				YES	
16/04/2020	13	16:00-18:00	Mid	5	17:22	RK	15	C6	FE					YES	
16/04/2020	13	16:00-18:00	Mid	4	17:22	OC	3	C6	FE					YES	
16/04/2020	13	16:00-18:00	Mid	6	17:30	DN	70	C6	FE		Dunlin was Schinzii type.	YES			Area 10
16/04/2020	13	16:00-18:00	Mid	6	17:30	GV	1	C6	FE			YES			
16/04/2020	13	16:00-18:00	Mid	6	17:30	RK	20	C6	FE			YES			
16/04/2020	13	16:00-18:00	Mid	6	17:30	KN	1	C6	FE			YES			
16/04/2020	13	16:00-18:00	Mid	6	17:30	OC	270	C6	FE			YES			Area 10

16/04/2020	13	16:00-18:00	Mid	6	17:30	BW	5	C6	FE		Icelandic type	YES				
16/04/2020	13	16:00-18:00	Mid	7	17:30	HG	25	C6	LO		25% within 250m, 75% between 250-500m	YES	YES			
16/04/2020	13	16:00-18:00	Mid	8	17:33	OC	55	C7->C6	RO	Arrived from W to join roost	lew from outside of buffer to between 250-500m		YES	YES	Area 9	
16/04/2020	13	16:00-18:00	Mid	9	17:35	CU	1	C2	FE			YES				
16/04/2020	13	16:00-18:00	Mid	10	17:39	SU	1	C4	FE			YES				
16/04/2020	13	16:00-18:00	Mid	11	17:40	DN	70	C6	FLU	RISING TIDE - LEFT	s Schinzii type. Flew from within 250m to outside	YES	YES	YES		
16/04/2020	13	16:00-18:00	Mid	12	17:49	E	3	C7	SW	RISING TIDE (covered feeding area) - LEFT			YES			
16/04/2020	13	18:00-20:00	High	1	18:00	GV	1	C4	FE	g. 1+16 gradually moved onto the groyne in C2 to rosst over the course of the next hour, no new		YES				
16/04/2020	13	18:00-20:00	High	1	18:00	OC	270	C4	FE			YES			Area 8	
16/04/2020	13	18:00-20:00	High	1	18:00	BW	5	C4	FE			YES				
16/04/2020	13	18:00-20:00	High	1	18:00	KN	1	C4	FE			YES				
16/04/2020	13	18:00-20:00	High	2	18:00	HG	25	C4	LO			YES				
16/04/2020	13	18:00-20:00	High	3	18:00	SU	1	C4	LO			YES				
16/04/2020	13	18:00-20:00	High	4	18:02	CU	1	C7	FLY		flew from between 250-500m to outside of buffer		YES	YES		
16/04/2020	13	18:00-20:00	High	5	18:03	OC	1	C7	FLY				YES			
16/04/2020	13	18:00-20:00	High	6	18:05	OC	10	C7->C4	FLY	Flew in from the west and landed at reg 1-C4. flew from between 250-		YES	YES			
16/04/2020	13	18:00-20:00	High	7	18:05	GG	1	C6	FE					YES		
16/04/2020	13	18:00-20:00	High	8	18:05	OC	25	C7->C4	FLY		Flew in from the west and landed at reg 1-C4		YES			
16/04/2020	13	18:00-20:00	High	9	18:06	OC	6	C6->C4	FLY	Flew in from the north and landed at reg 1-C4. flew from outside of b		YES	YES	YES		
16/04/2020	13	18:00-20:00	High	10	18:10	OC	10	C4->C2	RO		Floating in with the tide	YES				
16/04/2020	13	18:00-20:00	High	11	18:11	CA	1	C7	LO				YES			
16/04/2020	13	18:00-20:00	High	12	18:21	CU	1	C2	FE			YES				
16/04/2020	13	18:00-20:00	High	13	18:21	OC	1	C2	FE			YES				
16/04/2020	13	18:00-20:00	High	14	18:21	CU	1	C2	FE			YES				
16/04/2020	13	18:00-20:00	High	15	18:23	SU	1	C4	FE				YES			
16/04/2020	13	18:00-20:00	High	16	18:25	DN	4	C4	FE			YES				
16/04/2020	13	18:00-20:00	High	1	18:25	KN	1	C4	FE			YES				
16/04/2020	13	18:00-20:00	High	17	18:32	OC	325	C9	FE	Walked into the area from SW. Remained in c9 but moved nearer to the stone jetty (walking and feeding) until they reache				YES	Area 15	
16/04/2020	13	18:00-20:00	High	18	18:50	OC	60	C4->C2	RO		Moved onto groyne from shore	YES			Area 8	
16/04/2020	13	18:00-20:00	High	19	20:00	OC	325	C8	RO	e the large number of OC's in the south part of the suvrey area suggested disturbance of the subroost eg. by dog			YES		Area 4	
24/04/2020	14	13:00-15:00	High	1	13:05	HG	24	C4	RO			YES				
24/04/2020	14	13:00-15:00	High	2	13:05	HG	8	C2	RO			YES				
24/04/2020	14	13:00-15:00	High	3	13:10	OC	311	C2	RO			YES			Area 8	
24/04/2020	14	13:00-15:00	High	4	13:25	GG	1	C7	FE					YES		
24/04/2020	14	13:00-15:00	High	5	13:40	CU	4	C7	FLY					YES		
24/04/2020	14	13:00-15:00	High	6	13:56	HG	46	C4	RO		Gradually moved down beach as tide dropped off and sta	YES				
24/04/2020	14	13:00-15:00	High	7	14:15	OC	3	C4	FE			YES				
24/04/2020	14	13:00-15:00	High	8	14:23	OC	8	C4	FE			YES				
24/04/2020	14	13:00-15:00	High	9	14:25	OC	4	C4	FE			YES				
24/04/2020	14	13:00-15:00	High	10	14:40	HG	18	C9	LO					YES		
24/04/2020	14	13:00-15:00	High	11	14:52	OC	21	C9	FE					YES		
24/04/2020	14	13:00-15:00	High	12	14:55	OC	13	C9	FE					YES		
24/04/2020	14	15:00-17:00	Mid	1	15:09	HG	30	C9	LO					YES		
24/04/2020	14	15:00-17:00	Mid	1	15:09	BH	8	C9	LO					YES		
24/04/2020	14	15:00-17:00	Mid	1	15:09	LB	7	C9	LO					YES		
24/04/2020	14	15:00-17:00	Mid	2	15:10	OC	31	C9	FE					YES		
24/04/2020	14	15:00-17:00	Mid	2	15:10	OC	20	C9	LO					YES		
24/04/2020	14	15:00-17:00	Mid	3	15:12	HG	20	C9	LO					YES		
24/04/2020	14	15:00-17:00	Mid	3	15:12	GB	1	C9	LO					YES		
24/04/2020	14	15:00-17:00	Mid	4	15:20	OC	15	C4	FE			YES				
24/04/2020	14	15:00-17:00	Mid	5	15:21	HG	20	C2	RO			YES				
24/04/2020	14	15:00-17:00	Mid	6	15:24	OC	302	C2	RO			YES			Area 8	
24/04/2020	14	15:00-17:00	Mid	7	15:29	OC	4	C7	FLY		May have landed to join others feeding at reg2		YES			
24/04/2020	14	15:00-17:00	Mid	8	15:36	OC	1	C7	FLY		May have landed to join others feeding at reg2		YES			
24/04/2020	14	15:00-17:00	Mid	9	15:36	CA	1	C7	FLY					YES		
24/04/2020	14	15:00-17:00	Mid	10	15:40	CU	1	C7	FLY		High flying from inland			YES		
24/04/2020	14	15:00-17:00	Mid	11	15:42	HG	56	C4	FE		20 prob from reg3		YES		Area 10	
24/04/2020	14	15:00-17:00	Mid	12	15:44	WM	1	C7	FLY					YES		
24/04/2020	14	15:00-17:00	Mid	13	15:44	OC	1	C7	FLY					YES		
24/04/2020	14	15:00-17:00	Mid	14	15:48	OC	1	C7	FLY					YES		
24/04/2020	14	15:00-17:00	Mid	15	15:49	OC	4	C7	FLY	Left roost in C2 prob to reg2 in C8. flew from within 250m to bet		YES	YES			
24/04/2020	14	15:00-17:00	Mid	16	15:50	OC	16	C7	FLY	Left roost in C2 prob to reg2 in C8. flew from within 250m to bet		YES	YES			
24/04/2020	14	15:00-17:00	Mid	17	15:51	OC	23	C7	FLY	Left roost in C2 prob to reg2 in C8. flew from within 250m to bet		YES	YES			
24/04/2020	14	15:00-17:00	Mid	18	15:53	E	1	C7	FLOATING OUT				YES			
24/04/2020	14	15:00-17:00	Mid	19	15:55	OC	30	C7	FLY	Left roost in C2 prob to reg2 in C8. flew from within 250m to bet		YES	YES			
24/04/2020	14	15:00-17:00	Mid	20	15:56	OC	3	C6	FE					YES		
24/04/2020	14	15:00-17:00	Mid	21	15:58	E	2	C7	FLOATING OUT				YES			
24/04/2020	14	15:00-17:00	Mid	22	15:59	OC	3	C7	FLY	Left roost in C2 prob to reg2 in C8. flew from within 250m to bet		YES	YES			
24/04/2020	14	15:00-17:00	Mid	23	16:01	OC	220	C9	FLU	DOG - LEFT				YES		

24/04/2020	14	15:00-17:00	Mid	24	16:03	OC	2	C7	FLY				YES		
24/04/2020	14	15:00-17:00	Mid	25	16:05	OC	1	C7	FLY					YES	
24/04/2020	14	15:00-17:00	Mid	26	16:06	OC	15	C7	FLY				YES		
24/04/2020	14	15:00-17:00	Mid	27	16:07	HG	130	C4	LO				YES		
24/04/2020	14	15:00-17:00	Mid	27	16:07	LB	27	C4	LO				YES		
24/04/2020	14	15:00-17:00	Mid	28	16:07	CU	1	C4	FE		Flew in from the North		YES		
24/04/2020	14	15:00-17:00	Mid	29	16:08	E	15	C7	FLOATING OUT					YES	
24/04/2020	14	15:00-17:00	Mid	30	16:09	OC	21	C7	FLY				YES		
24/04/2020	14	15:00-17:00	Mid	31	16:13	OC	9	C7	FLY					YES	
24/04/2020	14	15:00-17:00	Mid	32	16:17	OC	2	C7	FLY				YES		
24/04/2020	14	15:00-17:00	Mid	33	16:21	CU	1	C7	FLY					YES	
24/04/2020	14	17:00-19:00	Low	1	17:30	OC	31	C7	FE				YES		
24/04/2020	14	17:00-19:00	Low	2	17:31	BH	55	C7	FE				YES		Area 13
24/04/2020	14	17:00-19:00	Low	2	17:31	HG	40	C7	FE				YES		
24/04/2020	14	17:00-19:00	Low	3	17:32	HG	20	C8	FE				YES		
24/04/2020	14	17:00-19:00	Low	4	17:33	OC	15	C8	FE				YES		
24/04/2020	14	17:00-19:00	Low	5	17:33	BH	41	C8	FE				YES		
24/04/2020	14	17:00-19:00	Low	6	17:34	LB	20	C7	FE				YES		
24/04/2020	14	17:00-19:00	Low	7	17:36	CU	1	C4	FE				YES		
24/04/2020	14	17:00-19:00	Low	8	17:40	OC	8	C4	FE			YES			
24/04/2020	14	17:00-19:00	Low	9	17:42	BH	20	C7	FE		Flew in fron NE to join others at reg2		YES		
24/04/2020	14	17:00-19:00	Low	10	17:43	BH	25	C8	FE		Flew in fron NE to feed			YES	
24/04/2020	14	17:00-19:00	Low	11	17:44	BH	30	C7	FE		Flew in fron NE to feed			YES	
24/04/2020	14	17:00-19:00	Low	12	17:45	BH	28	C7	FE		Flew in fron NE to feed			YES	
24/04/2020	14	17:00-19:00	Low	13	17:46	HG	9	C8	FE		Flew in fron NE to feed			YES	
24/04/2020	14	17:00-19:00	Low	14	17:46	BH	32	C7	FE		Flew in fron NE to feed			YES	
24/04/2020	14	17:00-19:00	Low	15	17:47	BH	26	C7	FE		Flew in fron NE to feed			YES	
24/04/2020	14	17:00-19:00	Low	16	17:48	BH	23	C7	FE		Flew in fron NE to feed			YES	
24/04/2020	14	17:00-19:00	Low	17	17:49	BH	38	C7	FE		Flew in fron NE to feed			YES	
24/04/2020	14	17:00-19:00	Low	18	17:50	BH	40	C8	FE		Flew in fron NE to feed			YES	
24/04/2020	14	17:00-19:00	Low	19	17:52	BH	42	C7	FLY		Left feeding are			YES	
24/04/2020	14	17:00-19:00	Low	20	17:55	BH	20	C8	FE		Flew in from N			YES	
24/04/2020	14	17:00-19:00	Low	21	17:57	BH	38	C8	FE		Flew in from N			YES	
24/04/2020	14	17:00-19:00	Low	22	17:59	OC	240	C7	FE				YES		Area 13
24/04/2020	14	17:00-19:00	Low	23	18:00	E	31	C8	FLOATING OUT				YES		
24/04/2020	14	17:00-19:00	Low	24	18:05	OC	50	C9	FLU	DOG - LR				YES	
24/04/2020	14	17:00-19:00	Low	25	18:05	HG	30	C9	FLU	DOG - LR				YES	
24/04/2020	14	17:00-19:00	Low	25	18:05	LB	7	C9	FLU	DOG - LR				YES	
24/04/2020	14	17:00-19:00	Low	25	18:05	BH	8	C9	FLU	DOG - LR				YES	
24/04/2020	14	17:00-19:00	Low	26	18:10	OC	35	C8	FE		Flew in from SW			YES	
24/04/2020	14	17:00-19:00	Low	27	18:20	OC	21	C7	FE		Flew in from NE		YES		
24/04/2020	14	17:00-19:00	Low	28	18:21	SU	2	C8	FE		Flew in from SW		YES		
24/04/2020	14	17:00-19:00	Low	29	18:30	OC	16	C6	FE		50% between 250-500m, 50% outside buffer		YES	YES	
24/04/2020	14	17:00-19:00	Low	29	18:30	BH	41	C6	FE		50% between 250-500m, 50% outside buffer		YES	YES	
24/04/2020	14	17:00-19:00	Low	29	18:30	HG	32	C6	FE		50% between 250-500m, 50% outside buffer		YES	YES	
24/04/2020	14	17:00-19:00	Low	30	18:31	OC	4	C6	FE				YES		
24/04/2020	14	17:00-19:00	Low	31	18:33	CU	1	C6	FE					YES	
24/04/2020	14	17:00-19:00	Low	32	18:40	E	16	C8	FE					YES	
24/04/2020	14	17:00-19:00	Low	33	18:50	OC	310	C7	FE		Presumably flew in from NE while checking other areas/ travelling to check other areas.		YES		Area 13
24/04/2020	14	17:00-19:00	Low	34	18:55	GB	2	C8	LO					YES	

Date	Visit	Survey Period	Surveyor	Survey Type	Time of Sunrise/Sunset	Tide Time & Height	Tidal State	Rain (start/finish)	Cloud (start/finish)	Wind Force & Direction	Visibility (start/finish)	Temperature (ºC)
25/10/2019	1	09:20-11:20	TR	Tidal	07:59/ 17:52 hrs	HT 09:45 (8.67m)	High	0	8	2 SSE	4	8
25/10/2019	1	11:50-13:50	TR	Tidal	07:59/ 17:52 hrs	HT 09:45 (8.67m)	Ebb	2/3	8	1 SSE/ 3 SSE	4	10
25/10/2019	1	14:20-16:20	TR	Tidal	07:59/ 17:52 hrs	LT 16:34 (1.93m)	Ebb/ Low	3	8	3 NE	4	7
31/10/2019	2	07:40-09:40	MW	Tidal	07:10/ 16:39 hrs	LT 07:44 (1.09m)	Low	0	1	2 SE / 1 SE	4	5
31/10/2019	2	09:50-11:50	MW	Tidal	07:10/ 16:39 hrs	LT 07:44 (1.09m)	Flow	0	1/2	3 SE / 4 SE	4	
31/10/2019	2	11:50-13:50	MW	Tidal	07:10/ 16:39 hrs	HT 13:04 (9.56m)	Flow/ High	0	4	3 SE	4	9
15/11/2019	3	07:30-10:00	LJ	Tidal	07:40/ 16:12 hrs	LT 07:11 (1.55m)	Low	0	4	4 NNE	4	5/ 7
15/11/2019	3	10:00-12:00	LJ	Tidal	07:40/ 16:12 hrs	HT: 12:37 (9.15m)	Flow	0	2/4	4 NNE	4	7/9
15/11/2019	3	12:00-14:00	LJ	Tidal	07:40/ 16:12 hrs	HT: 12:37 (9.15m)	High	0	4	4 NNE	4	9/8
23/11/2019	4	08:18- 10:18	JR	Tidal	07:54/ 16:01 hrs	HT: 08:21 (8.57m)	High	0	8	4 NE	4	9/10
23/11/2019	4	10:18- 12:18	JR	Tidal	07:54/ 16:01 hrs	HT: 08:21 (8.57m)	Ebb	2/0	8	3NE / 4NE	4	11/10
23/11/2019	4	12:18 - 14:18	JR	Tidal	07:54/ 16:01 hrs	LT: 15:07 (2.06m)	Low	0	8	4NE / 3NE	4	10
02/12/2019	5	09:05 - 11:05	JR	Tidal	08:09/ 15:52 hrs	LT: 09:13 (2.6m)	Low	0	8	1ESE/ 2ESE	4	3
02/12/2019	5	11:05 - 13:05	JR	Tidal	08:09/ 15:52 hrs	LT: 09:13 (2.6m)	Low/ Flow	0	8	1 ESE	4	3
02/12/2019	5	13:05 - 15:05	JR	Tidal	08:09/ 15:52 hrs	HT: 14:50 (8.25m)	High	0	7/8	1 ESE	4	3/7
23/12/2019	6	09:10 - 11:10	LJ	Tidal	08:29/ 15:51 hrs	HT: 08:49 (8.61m)	High	0	4/4	4/5 W	4/3	7
23/12/2019	6	11:10 - 13:10	LJ	Tidal	08:29/ 15:51 hrs	HT: 08:49 (8.61m)	Ebb	0	4/3	5 W	4	7
23/12/2019	6	13:10 - 15:10	LJ	Tidal	08:29/ 15:51 hrs	LT: 15:40 (2.00m)	Low	0	3/2	5/4 W	4	7
24/01/2020	7	08:00 - 10:00	PM	Tidal	08:11/ 16:36 hrs	LT: 05:32 (1.74m)	Flow	0	8	1 SSE	3	8
24/01/2020	7	10:00 - 12:00	PM	Tidal	08:11/ 16:36 hrs	HT: 10:59 (9.04m)	High	0	8	1 SSE	3	8
24/01/2020	7	12:00 - 14:00	PM	Tidal	08:11/ 16:36 hrs	HT: 10:59 (9.04m)	High	0	8	1 SSE	3	8
31/01/2020	8	09:27 - 11:27	BA	Tidal	08:00/ 16:49 hrs	LT: 09:27 (2.40m)	Low	5/1	8	5 SSW/ 6 SSW	3/4	9/10
31/01/2020	8	11:27 - 13:27	BA	Tidal	08:00/ 16:49 hrs	LT: 09:27 (2.40m)	Flow	4/5	8	6 SSW/ 5 SSW	4/2	10
31/01/2020	8	13:27 - 15:27	BA	Tidal	08:00/ 16:49 hrs	HT: 15:09 (8.23m)	High	5/1	8	5 SSW/ 4 SSW	4	10
14/02/2020	9	09:00 - 11:00	JR	Tidal	07:33 / 17:18 hrs	LT: 09:26 (1.37m)	Low	0	2/8	4 SE	4	4
14/02/2020	9	11:00 - 13:00	JR	Tidal	07:33 / 17:18 hrs	LT: 09:26 (1.37m)	Flow	0	8	5 SE/ 6 S	4/2	6/7
14/02/2020	9	13:00 - 15:00	JR	Tidal	07:33 / 17:18 hrs	HT: 15:02 (9.46m)	High	3/0	8	6 S/ SW 4	3/4	6/8
22/02/2020	10	10:46 - 12:46	JR	Tidal	07:15 / 17:34 hrs	HT: 10:48 (8.93m)	High	0	8	6 WSW	4	7/8
22/02/2020	10	12:46 - 14:46	JR	Tidal	07:15 / 17:34 hrs	HT: 10:48 (8.93m)	Ebb	2/0	8	6 WSW	4	8/7
22/02/2020	10	14:46 - 16:46	JR	Tidal	07:15 / 17:34 hrs	LT: 17:49 (1.65m)	Low	2/0	8	6 WSW	4	7
09/03/2020	11	10:58 - 12:58	JR	Tidal	06:38 / 18:20 hrs	HT: 10:58 (9.77m)	High	0	8	4 WSW / 5 WSW	4	8
09/03/2020	11	12:58 - 14:58	JR	Tidal	06:38 / 18:20 hrs	HT: 10:58 (9.77m)	Ebb	0/3	8	5 WSW / 4 WSW	4	8/7
09/03/2020	11	14:58 - 16:58	JR	Tidal	06:38 / 18:20 hrs	LT: 18:06 (0.68m)	Ebb	3	8	4 SSW / 4 S	4	7/6
30/03/2020	12	10:05 - 12:05	JR	Tidal	06:46 / 19:45 hrs	LT: 10:05 (2.11m)	Low	0	5/7	2 NNW / 4 NNE	4	6/8
30/03/2020	12	12:05 - 14:05	JR	Tidal	06:46 / 19:45 hrs	LT: 10:05 (2.11m)	Flow	0	6/8	3 NNE	4	8/9
30/03/2020	12	14:05 - 16:05	JR	Tidal	06:46 / 19:45 hrs	HT: 15:36 (8.18m)	High	0	6/8	3 NNE	4	8/9
16/04/2020	13	14:00 - 16:00	JR	Tidal	06:05 / 20:16 hrs	LT: 14:04 (2.73m)	Low	0	0	4 E	4	16/17
16/04/2020	13	16:00 - 18:00	JR	Tidal	06:05 / 20:16 hrs	LT: 14:04 (2.73m)	Flow	0	0	4 ENE	4	17/16
16/04/2020	13	18:00 - 20:00	JR	Tidal	06:05 / 20:16 hrs	HT: 19:49 (6.87m)	High	0	0/8	4 ENE	4	16/17
24/04/2020	14	13:00 - 15:00	JR	Tidal	05:47 / 20:31 hrs	HT: 13:03 (8.97m)	High	0	0	1 NNE/ 1 NW	4	17
24/04/2020	14	15:00 - 17:00	JR	Tidal	05:47 / 20:31 hrs	HT: 13:03 (8.97m)	Ebb	0	0	1 NW	4	17/15
24/04/2020	14	17:00 - 19:00	JR	Tidal	05:47 / 20:31 hrs	LT: 19:48 (1.22m)	Low	0	0	1 NW	4	17/15

Survey Period: dusk - survey continues for at least 30 mins after sunset; dawn - survey begins at least 30 mins before sunrise; day - before sunset, after sunrise; night - after sunset, before dawn

Tidal State: the majority of the survey period covers which of the four tidal states (each lasting 3hrs) - high, ebb, low, flow

Source Location for Information of Tide and Sunrise/Sunset: Morecambe

DRAWINGS

G7956.025 - Winter Bird Survey Area and Compartments

342000 343000 344000

465000

464000

C1 C2 C3 C4 C5 C6 C7 C8 C9

A589 Marine Road Central

Green Street

Queen Street

B5321 Central Drive

Metres
0 100 200 400

KEY

- Site boundary
- Winter birds survey compartments
- Winter birds survey compartments - 250m buffer
- Winter birds survey compartments - 500m buffer

Reproduced by permission of Ordnance Survey on behalf of Her Majesty's Stationery Office.

Contains OS data © Crown Copyright and database right 2021. All rights reserved.
Licence number 0100057890.
Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Site Map



Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Eden Project North, Morecambe

Title
Figure 9A.4 - Winter Bird Survey Area and Compartments

Drawing Number
G7596.025

Drawn	Checked	Approved	Scale	Date
SA	MK	MW	1:7,500 @ A3	23/07/2021

THE ENVIRONMENT PARTNERSHIP

HEAD OFFICE

Genesis Centre,
Birchwood Science Park,
Warrington
WA3 7BH

Tel: 01925 844004
E-mail: tep@tep.uk.com

MARKET HARBOROUGH

No. 1 The Chambers,
Bowden Business Village,
Market Harborough,
Leicestershire,
LE16 7SA

Tel: 01858 383120
E-mail: mh@tep.uk.com

GATESHEAD

Office 26, Gateshead
International Business
Centre,
Mulgrave Terrace,
Gateshead
NE8 1AN

Tel: 0191 605 3340
E-mail: gateshead@tep.uk.com

LONDON

8 Trinity Street,
London,
SE1 1DB

Tel: 020 3096 6050
E-mail: london@tep.uk.com

CORNWALL

4 Park Noweth,
Churchtown,
Cury,
Helston
Cornwall
TR12 7BW

Tel: 01326 240081
E-mail: cornwall@tep.uk.com