Hornsea 4

Ørsted

Hornsea Project Four: Preliminary Environmental Information Report (PEIR)

Volume 5, Annex 5.1: Offshore and Intertidal Ornithology Baseline Characterisation Technical Report

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Glossary

Term	Definition
Commitment	A term used interchangeably with mitigation. Commitments are embedded mitigation measures. Commitments are either primary (design) or tertiary (Inherent) and embedded within the assessment at the relevant point in the Environmental Impact Assessment (EIA) (e.g. at Scoping or Preliminary Environmental Information Report (PEIR)). The purpose of Commitments are to reduce and/or eliminate Likely Significant Effects (LSEs), in EIA terms.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Projects (NSIP).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Export cable corridor (ECC)	The specific corridor of seabed (seaward of Mean High Water Springs (MHWS)) and land (landward of MHWS) from the Hornsea Four array area to the Creyke Beck National Grid substation, within which the export cables will be located.
Hornsea Four	The proposed Hornsea Project Four offshore wind farm project; the term covers all elements within the DCO (i.e. both the offshore and onshore components).
Former Hornsea Zone	The former Hornsea Zone was one of nine offshore wind generation zones around the UK coast identified by The Crown Estate (TCE) during its third round of offshore wind licensing. In March 2016, the Hornsea Zone Development Agreement was terminated and project specific agreements, Agreement for Leases (AfLs), were agreed with The Crown Estate for Hornsea Project One Offshore Wind Farm, Hornsea Project Two Offshore Wind Farm, Hornsea Project Three Offshore Wind Farm and Hornsea Four. The Hornsea Zone has therefore been dissolved and is referred to throughout the PEIR Technical Report as the former Hornsea Zone.
Impact	Change that is caused by an action; for example, land clearing (action) during construction which results in habitat loss (impact).
Mean High Water Spring (MHWS)	The height of mean high water during spring tides in a year.
Mean Low Water Spring (MLWS)	The height of mean low water during spring tides in a year.
Mitigation	A term used interchangeably with Commitment(s) by the Applicant. Mitigation measures (Commitments) are embedded within the assessment at the relevant point in the EIA (e.g. at Scoping or PEIR).
Nationally Significant Infrastructure Project (NSIP)	Large scale development including power generating stations which requires development consent under the Planning Act 2008. An offshore wind farm project with a capacity of more than 100 MW constitutes an NSIP.
Statutory Nature Conservation Bodies (SNCBs)	Comprised of JNCC, Natural Resources Wales, Department of Agriculture, Environment and Rural Affairs/Northern Ireland Environment Agency,

Term	Definition
	Natural England and Scottish Natural Heritage these agencies provide advice in relation to nature conservation to government.

Acronyms

Acronym	Definition
AfL	Agreement for Lease
BDMPS	Biologically Defined Minimum Population Scale
CV	Coefficient of Variation
DCO	Development Consent Order
EIA	Environmental Impact Assessment
GSD	Ground Sample Distance
JNCC	Joint Nature Conservation Committee
MHWS	Mean High Water Spring
NE	Natural England
NSIP	Nationally Significant Infrastructure Project
PEIR	Preliminary Environmental Information Report
QA	Quality Assurance
RSPB	The Royal Society for the Protection of Birds
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
TCE	The Crown Estate
UK	United Kingdom

Units

Unit	Definition
GW	*Gigawatt (power)*
km	*Kilometre*
Km^2	*Kilometre squared*
m	*Metres*
MW	*Megawatt*

Scientific Bird Names

English Name	*Scientific Name*
Fulmar	*Fulmarus glacialis*
Gannet	*Morus bassanus*
Red-throated diver	*Gavia stellata*
Manx shearwater	*Puffinus puffinus*
Curlew	*Numenius arquata*
Lapwing	*Vanellus vanellus*
Sanderling	*Calidris alba*
Arctic skua	*Stercorarius parasiticus*
Great skua	*Stercorarius skua*
Kittiwake	*Rissa tridactyla*
Common gull	*Larus canus*
Black-headed gull	*Chroicocephalus ridibundus*
Little gull	*Hydrocoloeus minutus*
Lesser black-backed gull	*Larus fuscus*
Herring gull	*Larus argentatus*
Great black-backed gull	*Larus marinus*
Arctic tern	*Sterna paradisaea*
Common tern	*Sterna hirundo*
Sandwich tern	*Sterna sandvicensis*
Guillemot	*Uria aalge*
Razorbill	*Alca torda*
Puffin	*Fratercula arctica*
Little auk	*Alle alle*
Feral pigeon	*Columba livia domestica*
Starling	*Sturnus vulgaris*

1 Introduction

1.1 Introduction

1.1.1 Project background

1.1.1.1 Ørsted Hornsea Project Four Ltd., (hereafter the Applicant) is proposing to develop the Hornsea Project Four offshore wind farm (hereafter Hornsea Four). Hornsea Four is located approximately 65 km offshore from coastline of the East Riding of Yorkshire in the Southern North Sea with the array area covering an area of approximately 600 km2 and will be the fourth project to be developed in the former Hornsea Zone. The location of Hornsea Four is illustrated on **Figure 1**. Hornsea Four will include both offshore and onshore infrastructure including an offshore generating station (wind farm), export cables to landfall, and connection to the electricity transmission network. The Preliminary Environmental Information Report (PEIR) study area combines the search areas for the onshore and offshore infrastructure.

1.1.1.2 The Hornsea Four Agreement for Lease (AfL) area was 848 km^2 at the Scoping phase of project development. In the spirit of keeping with Hornsea Four's approach to Proportionate Environmental Impact Assessment (EIA), the project is currently giving due consideration to the size and location (within the existing AfL area) of the final project that will be taken forward to Development Consent Order (DCO) application. This consideration is captured internally as the "Developable Area Process", which includes Physical, Biological and Human constraints in refining the developable area, balancing consenting and commercial considerations with technical feasibility for construction. The combination of Hornsea Four's Proportionality in EIA and Developable Area process has resulted in a marked reduction in the AfL taken forward at the point of PEIR. (see **Figure 1**). The evolution of the AfL is detailed in **Volume 1, Chapter 3: Site Selection and Consideration of Alternatives** and **Volume 4, Annex 3.2: Selection and Refinement of the Offshore Infrastructure**. The final developable area taken forward to consent may differ from that presented in **Figure 1** due to the results of the EIA, technical considerations and stakeholder feedback.

1.1.1.3 APEM Ltd (hereafter APEM) was commissioned to undertake a study of offshore and intertidal ornithology that characterise the Hornsea Four study area (**Figure 1**), which is described in **Section 1.1.3**.

1.1.2 Aims and objectives

1.1.2.1 The aim of this report is to present the findings from offshore and intertidal ornithology data and to determine those receptors that characterise the baseline and are of relevance to the assessment of the potential impacts from Hornsea Four at the PEIR stage. Those receptors are primarily the bird species that are collectively called seabirds and shorebirds. The data used to define the baseline characterisation is from site-specific digital aerial surveys for offshore ornithology and from desk study for the intertidal ornithology (i.e. birds that are seaward of Mean High Water Springs (MHWS)).

1.1.2.2 This report presents information on offshore birds derived from 24 consecutive months of digital aerial video surveys undertaken between April 2016 to March 2018, inclusive. The

information that is presented within this report and its appendices for both the offshore and intertidal ornithology receptors includes the following:

- Summary of desk study findings from intertidal bird data;
- Details of site-specific offshore survey data, including;
  - Bird abundance and density estimates (monthly and for bio-seasons);
  - Behaviour of birds (numbers flying and sitting on the water);
  - Age classification of key seabirds; and
  - Spatial distribution maps of key seabirds (for bio-seasons).

1.1.3 Study Area

1.1.3.1 The study area for the offshore and intertidal ornithology receptors includes all the sea and coasts within the Hornsea Four array area (at PEIR), a 4 km buffer surrounding the array area, the offshore export cable corridor (ECC) and the cable landfall area. Account also must be taken of the mobility of birds, noting that for instance, birds that nest outside the study area might fly in to or across the study area to feed during the breeding season, might fly into the study area outside of the breeding season to spend the winter or might fly across the study area on migration.

1.1.3.2 For the purposes of this section a split between offshore and intertidal is required to refine the focus of the ornithological assessments. The intertidal area and related assessments consider birds using the habitat mostly between MHWS and Mean Low Water Spring (MLWS), recognising that some of these birds might nest or roost on the shore landward of MHWS. The offshore area and related assessments consider birds using the habitat seaward of MLWS within the offshore ECC out to the Hornsea Four array area and a 4 km buffer surrounding it.

1.1.3.3 The data for the study area within the Hornsea Four array area has been refined for this assessment at PEIR from a wider survey data set, which was collected through 24-month survey programme of the wider Hornsea Four AfL area. The study area for offshore and intertidal ornithology is shown in **Figure 1** and consists of the Hornsea Four array area, a 4 km buffer surrounding it, the ECC and the cable landfall area between MHWS and MLWS.

1.1.4 Bird Names

1.1.4.1 Throughout this report the bird species names that are used are those that are in common use amongst English ornithologists and this corresponds to the "British (English) vernacular name 2012" column of the list of English and scientific names prepared by the British Ornithologists' Union (BOU, 2012). The corresponding scientific names from that publication are listed in the glossary on scientific bird names at the front of this document.

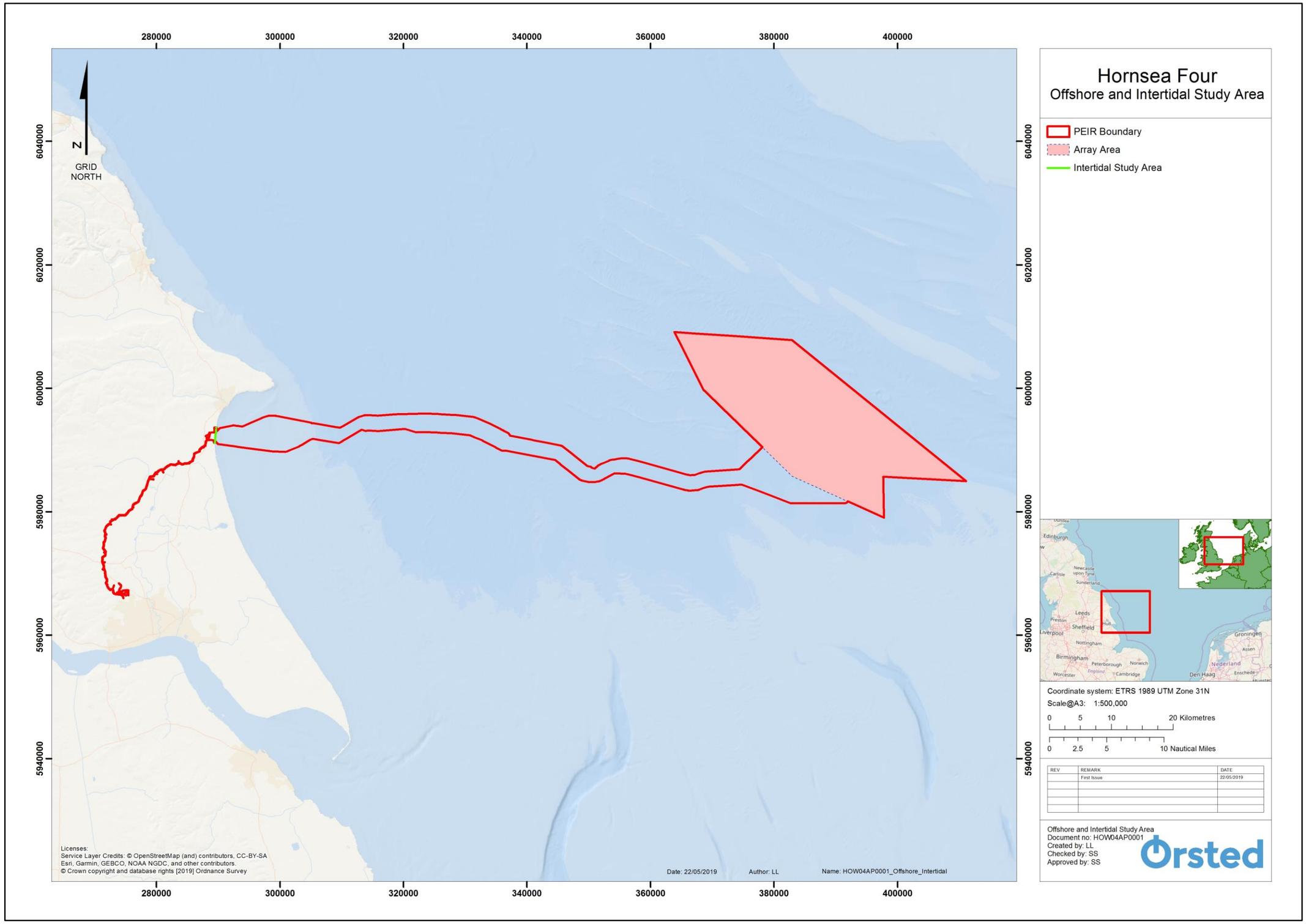

Figure 1: The Hornsea Four offshore and intertidal ornithology study area (not to scale).

2 Intertidal Ornithology

2.1 Overview

2.1.1.1 An initial desk-based review of appropriate literature and data sources was undertaken for the Scoping Report (Ørsted, 2018). The data sources listed in **Table 1**, which were identified in the Scoping Report (Ørsted, 2018), provide coverage of the study area and the wider region of interest for nearshore and intertidal bird species.

2.2 Key Desktop Data Sources

2.2.1.1 Following receipt of Scoping Opinions (PINS, 2018), the data sources detailed in **Table 1** provide species-specific information on the distribution and abundance of birds that have been used to characterise the intertidal and nearshore environment within the Hornsea Four landfall area MHWS and MLWS and in the nearshore. These data sources and reports were confirmed through the Scoping Opinion (PINS, 2018) as the most appropriate sources to use to determine the baseline for intertidal and nearshore ornithology receptors to provide an account of all the information required for the impact assessments at PEIR.

Table 1: Key sources of intertidal ornithology data for Hornsea Four.

Source	Summary	Coverage of Hornsea Four array area and ECC
British Trust for Ornithology (undated)	Co-ordinated counts of the non-estuarine shoreline (covering supratidal, intertidal and ~1 km in to coastal waters) in the winters of 1984/85, 1997/98, 2006/07 and 2015/16 originally under the title of the 'Winter Shorebird Count' and for the most recent three times under the title of 'Non-Estuarine Waterbird Survey'	Each of the four winter surveys had consistent coverage of the stretch of coast that coincides with the scoping boundary of the ECC.
National Bird Atlas 2007-11 (Balmer et al, 2013)	Results of five years of breeding season and winter surveys across the UK showing at a 10 km square scale the distribution, relative density and change over recent years for all frequently occurring bird species.	The scoping boundary of the ECC overlaps primarily with 10 km squares TA15 & TA16.
Yorkshire Bird Reports	An annual publication summarising bird sightings and survey results for Yorkshire.	Counts of birds that were considered to be notable by the Report editors are listed for the Holderness coast and specific location along it, including those within the scoping boundary of the ECC.
Dogger Bank Creyke Beck (A&B) OWF surveys (Forewind, 2013)	Bird surveys were carried out at, and within a buffer around, the OWF cable landfall on the Holderness coast.	The Dogger Bank Creyke Beck (A&B) OWF surveys overlap with the scoping boundary of the ECC.

3 Offshore Ornithology

3.1 Overview

3.1.1.1 Offshore ornithology data has been collected for multiple purposes within the southern North Sea that provide regional generic and species-specific information on the distribution, abundance, biological seasons, behaviour and characteristics of birds in the offshore environment. These data sources and additional sources identified through the Evidence Plan Process in consultation with Natural England and the RSPB.

3.2 Key Site-Specific Data Source

3.2.1.1 The species accounts presented on offshore ornithology consist of the data collected from the core programme of data collection for offshore ornithology, which comprises 24 months of site-specific digital aerial video surveys of the study area, as described in Section 1.1.3.

3.3 Aerial Video Survey Methodology

3.3.1 Approach to Surveys

3.3.1.1 A programme of high-resolution digital video aerial surveys of ornithological activity was undertaken by HiDef, which were flown monthly between April 2016 and March 2018 as detailed in Table 2 . Surveys consisted of transects set at 2.5 km apart across a survey area, which included a 4 km buffer around the Hornsea Four AfL area with the transects of relevance to this report (at PEIR) presented in Figure 2. The transects were placed approximately perpendicular to the depth contours along the coast to ensure that each transect sampled a similar range of habitats primarily relating to water depth.

3.3.1.2 Using an aircraft equipped with four cameras set to a resolution of 2 cm Ground Sample Distance (GSD), each camera sampled a strip of 125 m width, separated from the next camera by approximately 25 m, thus providing a combined sampled width of 500 m. The survey design provided for the collection of 20% coverage of the Survey Area, with 10% analysed for characterising offshore ornithology baseline for this technical report.

Table 2: Months and timings when aerial surveys were conducted at the Hornsea Four survey area.

Month	2016	2017	2018
January		(10:06 – 13:57)	(10:11 – 14:06)
February		(09:59 – 14:00)	(10:36 – 14:23)
March		(11:08 – 14:41)	(11:15 – 15:08)
April	(11:40 – 15:32)	(13:28 – 18:03)	
May	13:53-17:46	(13:53 – 18:06)	
June	*(13:53-17:46) & (14:08 – 18:04)	(14:37 – 18:18)	
July	(13:07 – 17:07)	(14:17 – 18:36)	
August	(14:25 – 18:37)	(14:31 – 18:29)	

Month	2016	2017	2018
September	(14:09 – 18:01)	(11:56 – 15:36)	
October	(09:10 – 12:38)	**(10:54 – 14:53)	
November	(09:21 – 12:53)	(10:37 – 14:19)	
December	(10:05 – 14:06)	(09:58 – 13:57)	

*; Two flights were undertaken in June 2016 to replace a survey which was missed due to poor weather in May,

**; Owing to poor weather conditions only 20 of the 24 transects were completed for the October 2017 survey.

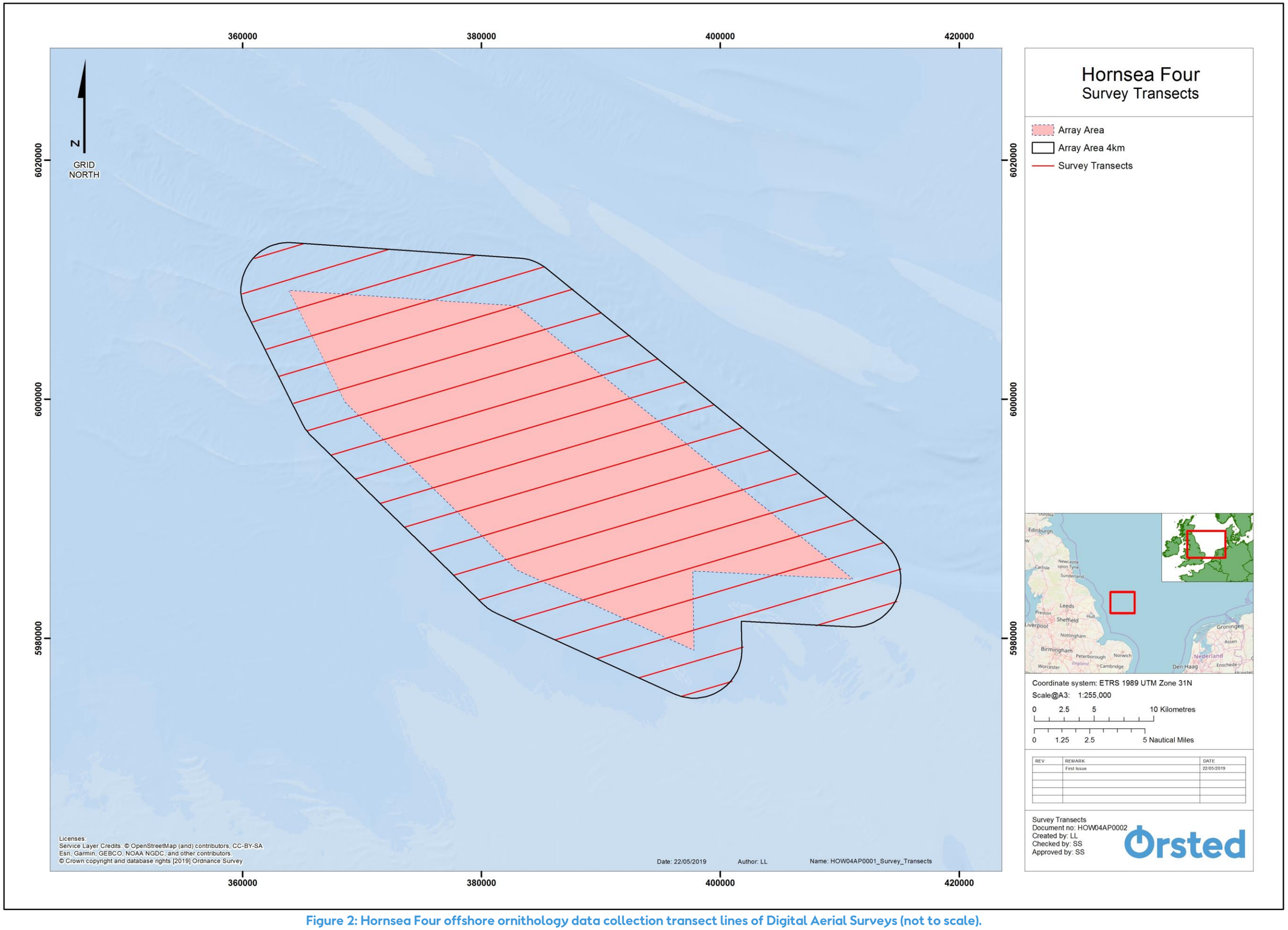

Figure 2: Hornsea Four offshore ornithology data collection transect lines of Digital Aerial Surveys (not to scale).

3.4 Data Analysis

3.4.1 Image Analysis

3.4.1.1 The digital video imagery was analysed to identify birds and anthropogenic objects requiring further analysis. As part of the Quality Assurance (QA) process a 'blind' review of 20% of the raw data was carried out. If there was less than 90% agreement the remaining data set was reviewed and appropriate corrective measures applied.

3.4.1.2 Images marked for further analysis were reviewed to enumerate birds to the lowest taxonomic level. Assessment of the approximate age and the sex, as well as any behaviour visible from the imagery was provided where possible.

3.4.1.3 As part of the external QA process 20% of all objects identified are reviewed. If there was less than 90% agreement these data were re-reviewed and corrections applied where necessary. Any disputed identifications are passed to a third-party ornithologist for a final decision.

3.4.2 Bird Abundance and Density Estimates

3.4.2.1 Abundance estimates were derived from the data collected from all 24 months of surveys undertaken between April 2016 and March 2018, inclusive. For each digital aerial survey, the geo-referenced locations of birds contained within each individual transect video footage were used to generate the raw counts. Bird locations contained within the boundaries of study area were then extracted using ArcGIS, to give raw count data. Where the transects fall across the study area boundary, only the part of the transect that fell within the study area were included in the analysis.

3.4.2.2 Abundance estimates were generated by summing the raw counts from each transect and dividing this number by the total number of transects to give the mean number of birds per transect (i). Abundance estimates (N) for each survey month were then calculated by multiplying the mean number of birds per transect by the total number of transects required to cover the entire study area (A).

3.4.2.3 To calculate abundance estimates, it is necessary to know the total number of transects required to cover the survey area. This was done by calculating the average area of the transects. An average transect area was calculated by dividing the sum of the areas of the transects contained within the survey area by the number of transects that were wholly or partially within the survey area. The total number of transects required is then calculated by dividing the survey area by the average transect area. This is analogous to abundance estimation outlined in Borchers *et al.* (2002). N = i A.

3.4.2.4 Confidence limits (CL) showing the extent of variability surrounding the abundance estimate were calculated using a non-parametric bootstrap method. For the bootstrap simulation, raw count data were re-sampled 999 times with replacement from transect data (i.e. 999 subsamples of the raw counts were used to produce 999 new 'total raw count' values). Each

of the 999 bootstrap values were then used to produce abundance estimates within each stratum. The upper and lower 95% confidence intervals (+CL and –CL, respectively) of all the bootstrapped abundance estimates was taken as the variability of the statistic over the abundance (Efron & Tibshirani, 1993).

3.4.2.5 For every abundance estimate, a CV' (coefficient of variation) is calculated to provide a measure of precision about the mean abundance estimate, i.e. to provide a measure of how good the estimates are of the relative population. This produced a CV' based on the relationship of the standard error (SE) to the mean (μ); CV'= SE / μ. Effectively, this statistic is used to determine whether the sampling regime is sufficient to estimate the abundance with a given level of precision. A CV' ≤ 0.16 relates to a precision level able to detect a doubling or halving of the population (Bohlin, 1990), although at very low densities, it is not always mathematically possible to obtain a CV' of 0.16, even if 99% of the area is covered.

3.4.2.6 The total monthly raw counts, abundance and density estimates of all birds recorded from the digital aerial surveys are provided in **Appendix A**. Additional tables in **Appendix A** provide behaviour information relating to flying and sitting birds.

3.4.3 Species Identification

3.4.3.1 All birds were first assigned to a species group and where possible, each of these then further identified to species level. Birds which could not be positively identified to species level remained assigned to the broader species group level. For example, a bird first assigned to the species group 'auk species' if not identified as a guillemot, would remain as an 'auk species' if no species level identification was determined. The grouping for unidentified birds and the species of which they comprise are listed in **Table 3**.

3.4.4 Attribution and Apportionment of Unidentified Birds

3.4.4.1 There were occasions when it was not possible to identify a particular bird on the aerial digital survey image to the species level and the image is identified as belonging to a higher level group. To avoid underestimating species abundance due to the omission of birds which could not be identified to species level, the density of each unidentified species grouping (e.g. large gulls, small gulls, etc.) was estimated (using the methods described above) and then added proportionately to each member species of that group. The proportions were calculated from the ratios of positively identified birds in that group. This was undertaken on a survey by survey basis. For example, the number of unidentified birds in a group (such as 'large gulls') is proportioned to the specific species that are contained within that group (great black-backed gull, herring gull and lesser black-backed gull) based on the relative abundance of the positively identified species in that month's survey. The grouping for unidentified birds and the species of which they comprise are listed in **Table 3**.

Table 3: Grouping levels for birds with no species level identification.

Species	Species Grouping Level 1	Species Grouping Level 2	Species Grouping Level 3		Species Grouping Level 4
Arctic skua	Skua species	N/A	N/A	N/A	N/A
Great skua					
Fulmar	N/A	N/A	N/A	N/A	Fulmar / gull species
Lesser black-backed gull	Large gull species	Unknown gull species	N/A		
Great black-backed gull					
Herring gull					
Kittiwake	Small gull species		Tern / small gull species	Auk / small gull species	
Little gull					
Black-headed gull					
Common gull					
Sandwich tern	N/A	Tern species		N/A	N/A
Common tern	Arctic / common tern				
Artic tern					
Red-throated diver	Diver species	N/A	Large auk / diver species	N/A	
Guillemot	Large auk	Auk species		Auk / small gull species	Auk / shearwater species
Razorbill					
Little auk	Small auk		N/A		
Puffin					
Manx shearwater	Shearwater species	N/A	N/A	N/A	
Curlew	Wader species	N/A	N/A	N/A	N/A
Lapwing					

3.4.4.2 Instances can occur when there are no positively identified species in months where group level identified individuals have been recorded. A number of rules were applied to such cases, with the preferable method being the first or the second, where possible.

i. Use the proportion from the same month, different area;

ii. Use the proportion from the same month, different year;

iii. Use the proportion from the same bio-season, same area;

iv. Use the proportion from the same bio-season, next largest area; or

v. Use the proportion from the same bio-season, any other area.

3.4.4.3 Instances where this occurred include for 'tern species' and 'tern / small gull' which were divided equally between Sandwich tern and 'commic' tern as there were no other records in that month.

3.4.4.4 The apportioned monthly abundance and density estimates of all birds subject to this process due to being unidentified from the from the digital aerial video data are provided in **Appendix A**. Additional tables in **Appendix A** provide behaviour information relating to flying and sitting birds.

3.4.5 Correction for Availability Bias

3.4.5.1 For auk species such as guillemot, razorbill and puffin that make foraging dives underwater, a proportion will not be detectable at the surface during the analysis of the survey images. Density and abundance estimates need to be adjusted to allow for this 'availability bias'.

3.4.5.2 A fixed species-specific correction factor was applied to the number of each auk species recorded on the sea surface. The correction factors are derived from time spent under water (during the chick-rearing stage) from Thaxter *et al.*, (2010) for guillemots and razorbills and from records from data loggers from Spencer (2012) for puffins.

3.4.5.3 The correction factors used to multiply the relative abundance estimate of guillemots, razorbills and puffins sitting on the sea surface are 1.2375, 1.174 and 1.1416, respectively. For the purpose of this report the same correction factor for puffin was applied to little auk for availability bias.

3.4.5.4 The corrected monthly abundance and density estimates of all birds subject to this process due to being 'unavailable' at the point of the digital aerial video data being captured are provided in **Appendix A**. Additional tables in **Appendix A** provide behaviour information relating to flying and sitting birds.

3.4.6 Consideration of Biological Seasons

3.4.6.1 Bird behaviour and abundance is recognised to differ across a calendar year dependent upon the bio-season. Separate bio-seasons are recognised in this baseline technical report to establish the level of importance any seabird species has within the study area during any particular period of time. The biologically defined minimum population scales (BDMPS) bio-seasons are based on those in Furness (2015), hereafter referred to as BDMPS bio-seasons or bio-seasons (**Table 4**). The bio-seasons are defined within this baseline technical report as: return migration, migration-free breeding, post-breeding and migration-free winter bio-seasons. These four bio-seasons can be applied to different periods within the annual cycle for most species, though not all four are applicable for all seabird species, with different combinations used depending on the biology and life history of a species:

- Return migration: when birds are migrating to breeding grounds;
- Migration-free breeding: when birds are attending colonies, nesting and provisioning young;

- Post-breeding: when birds are migrating to wintering areas or dispersing from colonies; and
- Migration-free winter: when non-breeding birds are over-wintering in an area.

Table 4: BDMPS bio-seasons (Furness 2015) used as the basis for the species accounts presented in Section 3.5.

Species	Return Migration	Migration-free Breeding	Post-breeding Migration	Migration-free Winter
Fulmar	December to March	April to August	September to October	November
Gannet	December to March	April to August	September to November	
Kittiwake	January to April	May to July	August to December	
Herring gull	January to April	May to July	August to November	December
Great black-backed gull	January to April	May to July	August to November	December
'Commic' tern	April to May	June	July to September	
Guillemot	December to February	March to June	July to October	November
Razorbill	January to March	April to July	August to October	November to December
Puffin	March to April	May to June	July to August	September to February

3.4.7 Spatial Distribution

3.4.7.1 For this report the spatial distribution of seabirds within the Hornsea Four array area and a 4 km buffer are presented in the form of heatmaps within each species account. The heatmaps present data on a bio-season basis, pooling multiple months over separate bio-seasons (using the definitions in Table 4) in order to account for species-specific spatial and temporal distribution for the purpose of defining the Hornsea Four ornithological baseline.

3.4.8 Flight Height / Direction

3.4.8.1 Data was provided on flight direction from the digital aerial video surveys. The height at which birds were flying relative to the sea surface was not recorded by the survey provider (HiDef) due to their digital aerial video system not being able to estimate this parameter. However, alternate data sets on seabird flight heights from previous Hornsea projects (collected from boat surveys), as well as wider generic data sets (Johnson *et al.* 2014), will be used for impact assessment.

3.4.9 Age Classification

3.4.9.1 The knowledge of the different ages of each species of bird present within the proposed area for an offshore wind farm can contribute to the assessment of the significance of potential

impacts. This can include consideration of whether that potential impact might occur to an adult bird that is part of the breeding population of a Special Protection Area (SPA) or if it might occur to an immature bird that is not associated with the breeding population of a particular SPA.

3.4.9.2 The approximate age of seabirds has been categorised as follows: adult, immature and juvenile. A detailed breakdown of seabird age classification for birds recorded in the digital aerial video surveys is presented in **Appendix B**.

3.5 Offshore Ornithology Survey Results

3.5.1 Species Recorded

3.5.1.1 The following bird species (**Table 5**) were recorded within the study area between April 2016 and March 2018. Several species were only recorded in the study area in trivial numbers or numbers determined by expert judgement to be too low to warrant detailed species accounts (these species are in *italic* font within the table). For this baseline technical report these species are omitted from the main species accounts, but data are included for these species in the form of raw counts, abundance and density estimates (apportioned and corrected where appropriate), behaviour information and age classification (where available) within **Appendix A** and **B**, respectively. Those species highlighted in bold in **Table 5** form the basis of detailed accounts for this baseline technical report.

Table 5: Bird species recorded in site-specific digital aerial video surveys of the Hornsea Four study area.

Divers and pelagic species	Gulls	Skuas & terns	Auks	Other
Red-throated diver	**Kittiwake**	*Great skua*	**Guillemot**	*Lapwing*
Gannet	*Black-headed gull*	*Arctic skua*	**Razorbill**	*Curlew*
Fulmar	*Little gull*	*Sandwich tern*	**Puffin**	*Feral pigeon*
Manx shearwater	*Common gull*	*Common tern*	*Little auk*	
	Herring gull	***'Commic' tern**		
	Great black-backed gull			
	Lesser black-backed gull			

Table Note: *'Commic' tern represents tern sightings of unidentified Arctic tern and common tern.

3.5.2 Information within Species Accounts

3.5.2.1 The focus of this report is to provide readers with a visual representation of the most abundant species recorded in the study area. Each species account presents data on

relative abundances and densities within the Hornsea Four array area in the first instance and where relevant for future impact assessment purposes additional data on relative abundances and densities within a 4 km buffer are also presented. Data are presented in the form of bar chart graphs within each species account, with more detailed data containing raw counts, abundances and behavioural data within **Appendix A**. Additional consideration is afforded for each species on the mean peak abundances for species-specific bio-seasons to present the level of importance that the Hornsea Four array area (and 4 km buffer where appropriate) may be for each species at different times of their annual life cycle. The final section within each species account presents the distribution according to species-specific bio-seasons, with the use of heatmaps to provide the reader with a more visual representation of usage within the study area.

3.6 Fulmar

3.6.1 Hornsea Four Survey Data

3.6.1.1 Fulmars were recorded in all of the 24 digital aerial surveys within the Hornsea Four array area. Fulmar densities within the Hornsea Four array area ranged from 0.017 to 0.861 birds/km^2 with an average 0.173 birds/km^2. Fulmar abundance was highest during May 2016 (n=517) in Year 1 and September 2017 (n=140) in Year 2 in the Hornsea Four array area (**Appendix A**). Fulmar abundance in the Hornsea Four array area was generally higher in the return migration bio-season to breeding bio-season with a decline towards the end of the breeding bio-season and a second rise in abundance in the post-breeding bio-season (**Figure 3**). This trend in fulmar abundance in the Hornsea Four array area was observed across both years although it is noted that peak abundances in the breeding bio-season were greater in Year 1 than in Year 2 (**Figure 3**).

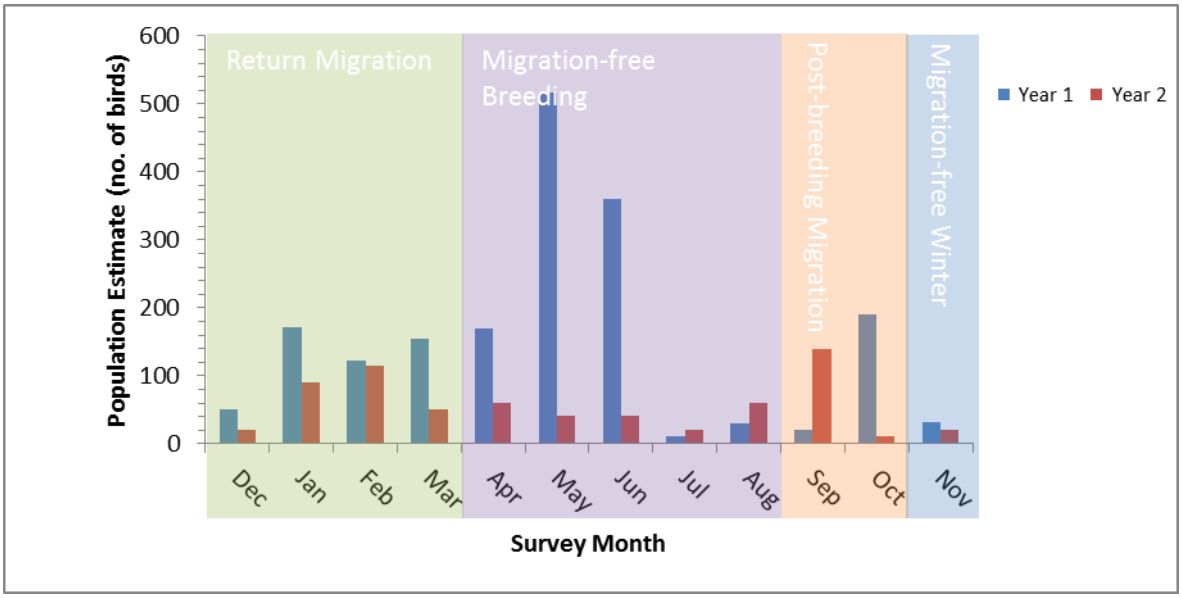

Figure 3: Bar chart displaying fulmar abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.6.2 Biological Season Mean Peak Estimates

3.6.2.1 Fulmar peak abundance in the Hornsea Four array area occurred during the migration-free breeding bio-season (April to August) with an estimated mean peak abundance of 288 birds and a mean peak density of 0.480 birds/km^2 (Table 6).

Table 6: Fulmar bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array area birds/km^2
Return migration	Dec-Mar	144	0.239
Migration-free breeding	Apr-Aug	288	0.480
Post-breeding	Sept-Oct	165	0.275
Migration-free winter	Nov	26	0.044

3.6.3 Spatial Distribution

3.6.3.1 Fulmar were loosely distributed through-out the study area within three of the four bio-seasons (Figure 4), with very low densities during the migration-free winter bio-season being the exception. The number and density of hot spots increased in the breeding bio-season with the highest densities in the northwest of the Hornsea Four array area and north of the 4 km buffer area, the latter being a hotspot in the return migration bio-season.

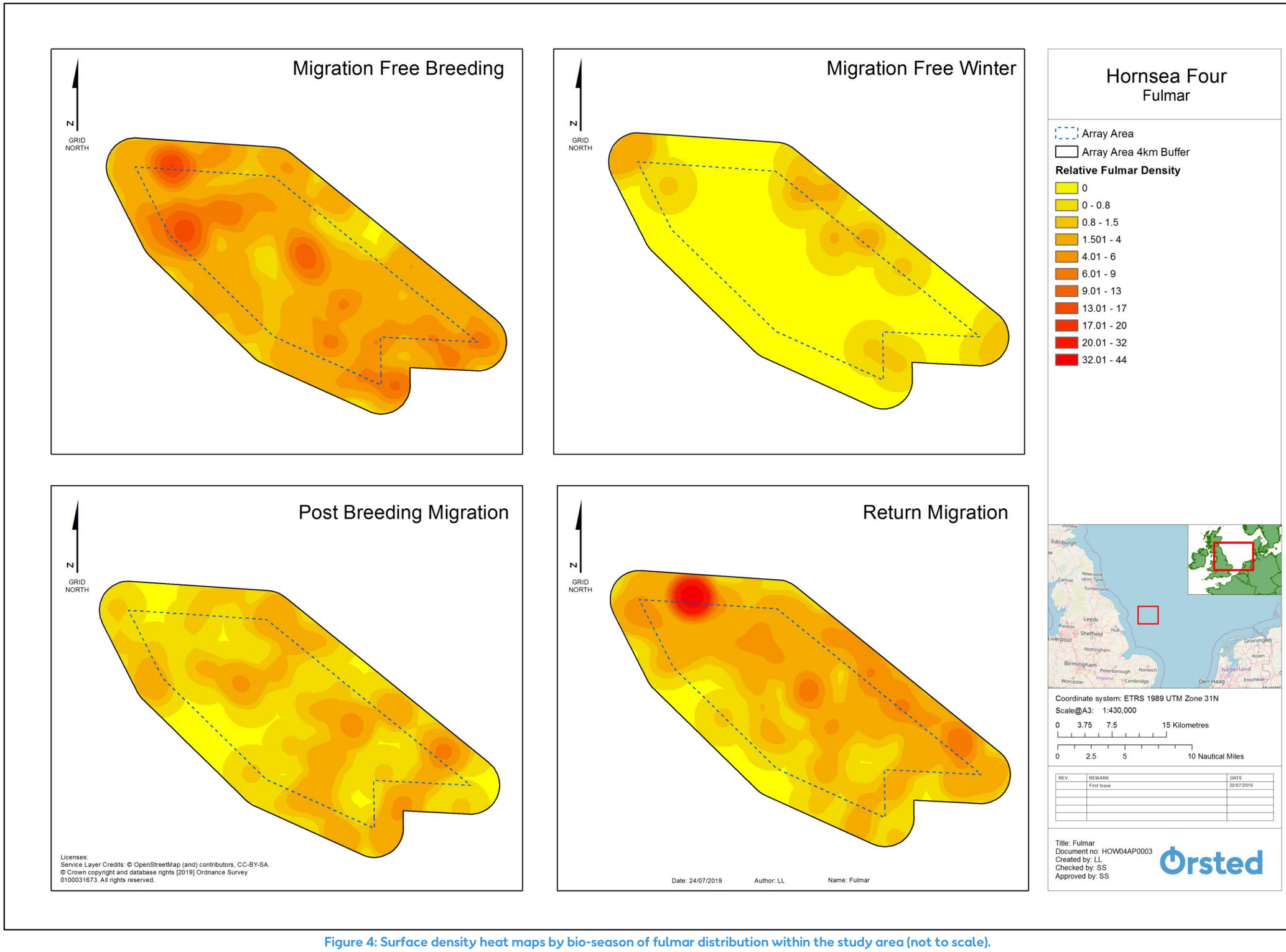

Figure 4: Surface density heat maps by bio-season of fulmar distribution within the study area (not to scale).

3.7 Gannet

3.7.1 Hornsea Four Survey Data

3.7.1.1 Gannets were recorded in 22 of the 24 digital aerial surveys within the Hornsea Four array area. Gannet abundance was highest during the months of June to December in Year 1 and July to December in Year 2 , with peak abundances in June 2017 (n=1,397) during Year 1 and in July 2018 (n=698) in Year 2 in the Hornsea Four array area (Figure 5 and Appendix A). Gannet abundance in the Hornsea Four array area steadily rose during the breeding bio-season, remaining relatively high during the post-breeding bio-season and then declined during the return migration bio-season (Figure 5). This trend in gannet abundance in the Hornsea Four array area was observed across both years as demonstrated by the plotted trend lines in the graph (Figure 5).

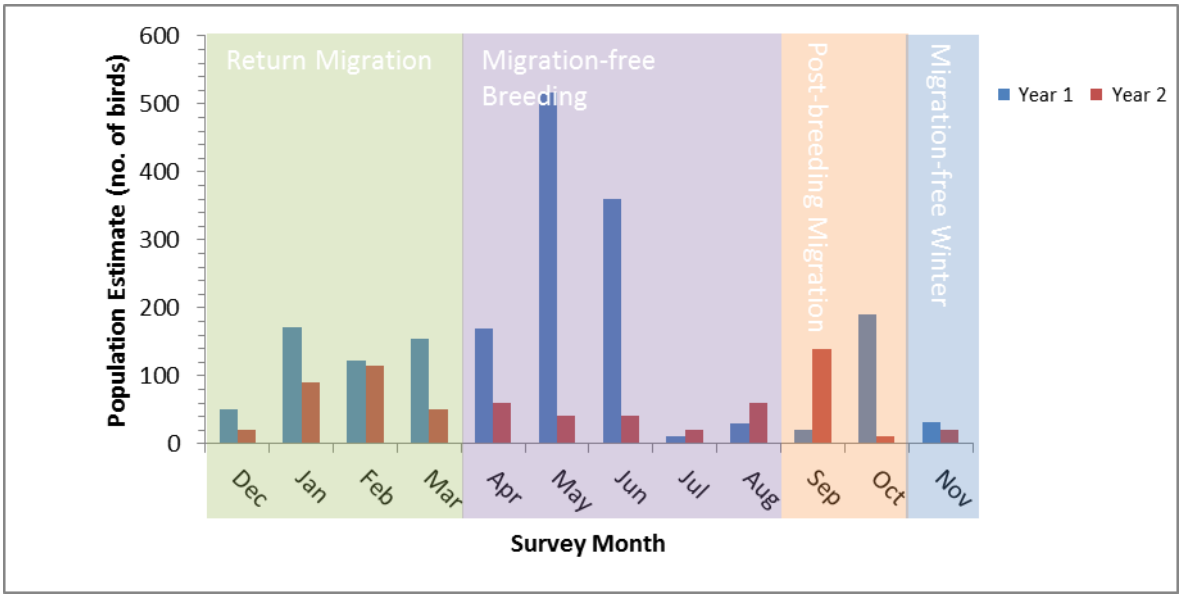

Figure 5: Bar chart displaying gannet abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.7.1.2 Gannet abundance within the 4 km buffer was highest during the months of May to December in Year 1 and July to December in Year 2, with peak abundance in October 2017 (n=848) during Year 1 and in July and November 2018 (both n=775) in Year 2 (Figure 6 and Appendix A). Gannet abundance in the 4 km buffer area steadily rose during the breeding bio-season and rapidly declined after the post-breeding bio-season (Figure 6). This trend in gannet abundance in the 4 km buffer Area was observed across both years as demonstrated by the plotted trend lines in the graph (Figure 6).

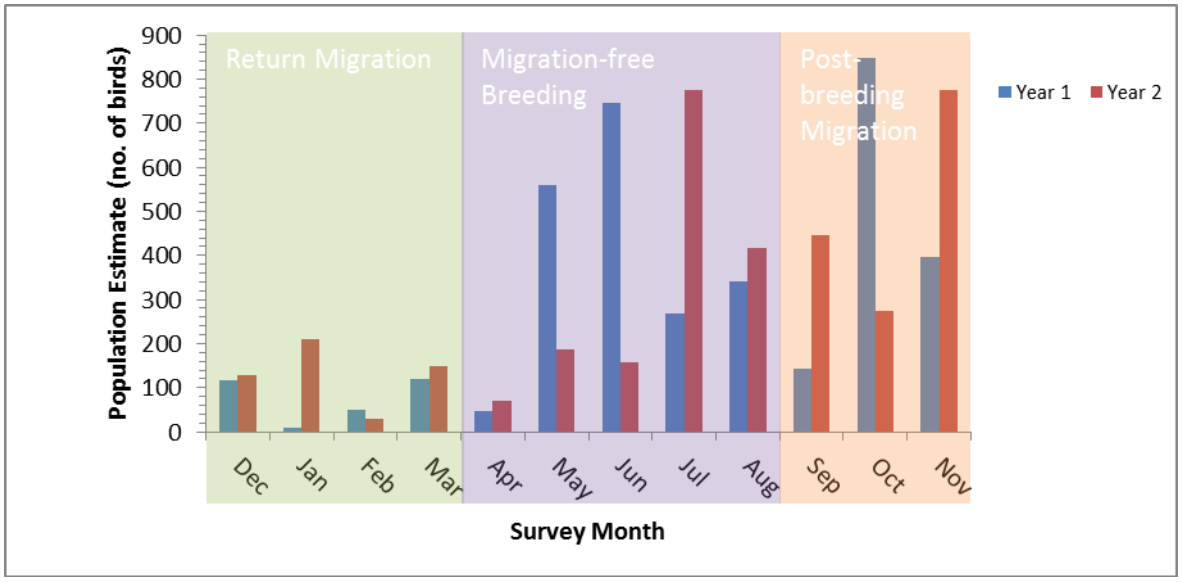

Figure 6: Bar chart displaying gannet abundance estimates within the 4 km buffer per survey, between survey years and within each bio-season.

3.7.2 Biological Season Mean Peak Estimates

3.7.2.1 Gannet peak abundance in the Hornsea Four array area occurs during the breeding bio-season (April to August) with estimated mean peak abundance of 1048 birds and mean peak density of 1.745 birds/km^2. In the 4 km buffer area gannet peak abundance occurs during the post-breeding bio-season (September to November) with estimated mean peak abundance of 812 birds and mean peak density of 1.515 birds/km^2 (Table 7).

Table 7: Gannet bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km^2	Mean Peak Abundance 4 km buffer	Mean Peak Density 4 km buffer birds/km^2
Return migration	Dec-Mar	449	0.745	164	0.305
Migration-free breeding	Apr-Aug	1048	1.745	760	1.420
Post-breeding	Sept-Nov	639	1.065	812	1.515
Migration-free winter	N/A	N/A	N/A	N/A	N/A

3.7.3 Spatial Distribution

3.7.3.1 Gannets were loosely distributed throughout the study area within each of the three bio-seasons (Figure 7). Lowest densities with few hot spots were observed in the return migration bio-season. The number and density of hot spots increased in the breeding bio-season with the highest densities in the southeast of the Hornsea Four array area bordering the 4 km buffer. In the post-breeding bio-season the number and density of hot spots were reduced with the highest densities remaining in the southeast of the Hornsea Four array area.

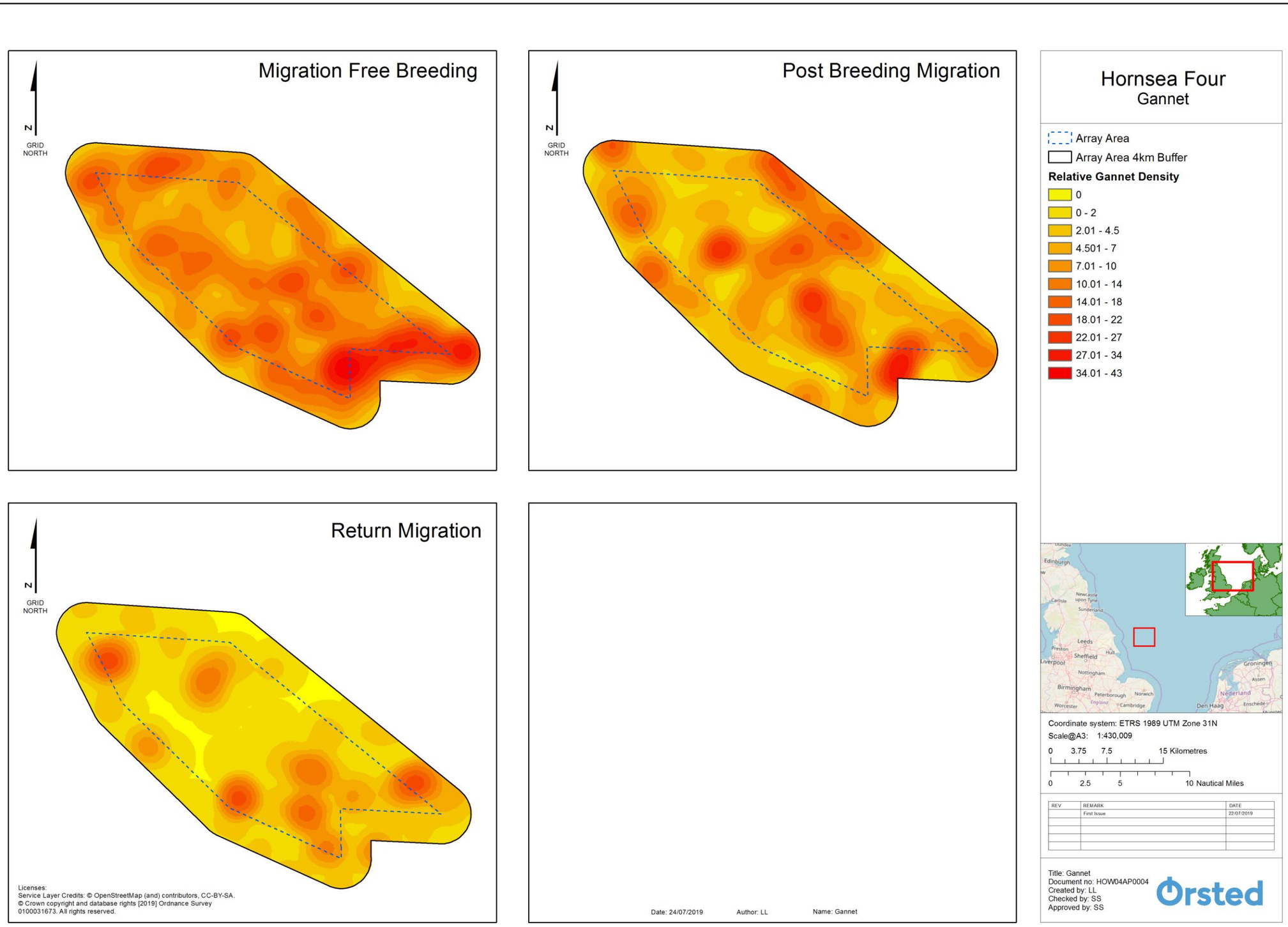

Figure 7: Surface density heat maps by bio-season of gannet distribution within the study area (not to scale).

3.8 Kittiwake

3.8.1 Hornsea Four Survey Data

3.8.1.1 Kittiwake were recorded in all 24 digital aerial surveys within the Hornsea Four array area. Peak abundance was in August 2016 (n=2,972) in Year 1 and stayed fairly stable into September 2016 decreasing by a small amount to 2,765. In Year 2 peak abundance was also in August 2017 (n=8,685), however numbers then dropped dramatically in September 2017 (n=30). Kittiwake densities within the Hornsea Four array area ranged from 0.05 birds/km^2 in September 2017 to 14.47 birds/km^2 in August 2017 (Figure 8 and Appendix A).

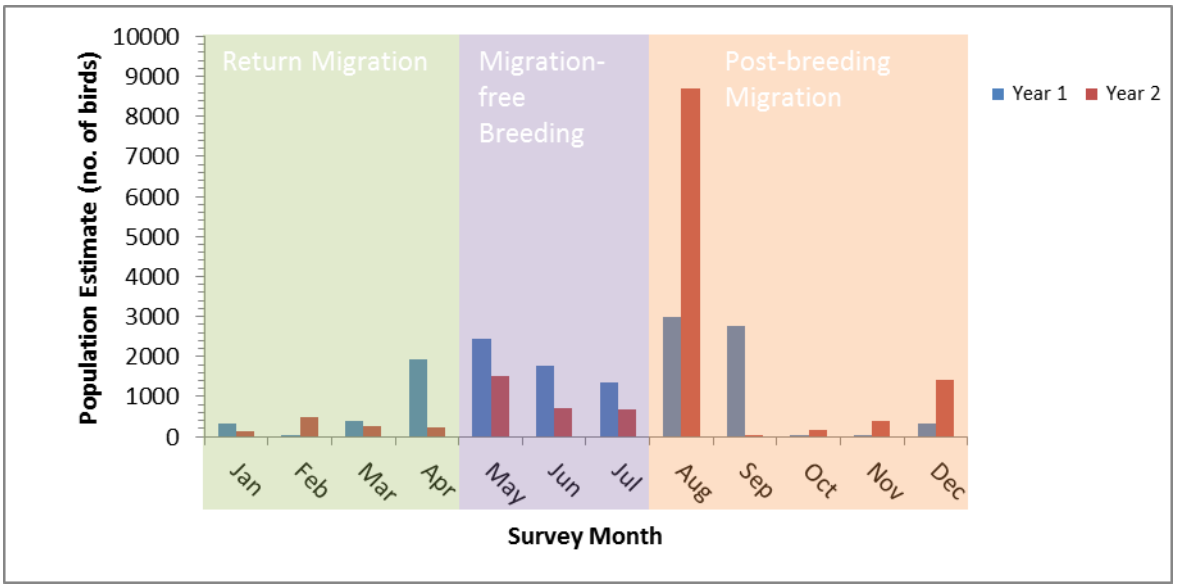

Figure 8: Bar chart displaying kittiwake abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.8.2 Biological Season Mean Peak Estimates

3.8.2.1 Kittiwake peak abundance in the Hornsea Four array area occurred during the post-breeding migration bio-season (August – December) with an estimated mean peak of 5,829 birds and mean peak density of 9.709 birds/km^2 (Table 8).

Table 8: Kittiwake bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km^2
Return migration	Jan-Apr	1208	2.012
Migration-free breeding	May-Jul	1980	3.298
Post-breeding	Aug-Dec	5829	9.709
Migration-free winter	N/A	N/A	N/A

3.8.3 Spatial Distribution

3.8.3.1 Kittiwakes were loosely distributed throughout the study area within each of the three bio-seasons (Figure 9). Lowest densities with few hot spots were observed in the return migration bio-season. The number and density of hot spots increased in the breeding bio-season with the highest densities in the south of the Hornsea Four array area and 4 km buffer. The highest number of and density of hot spots occurred in the post-breeding bio-season, though these were mostly in the 4 km buffer to the northwest and south, with a further hot spot in the east of the Hornsea Four array area and 4 km buffer.

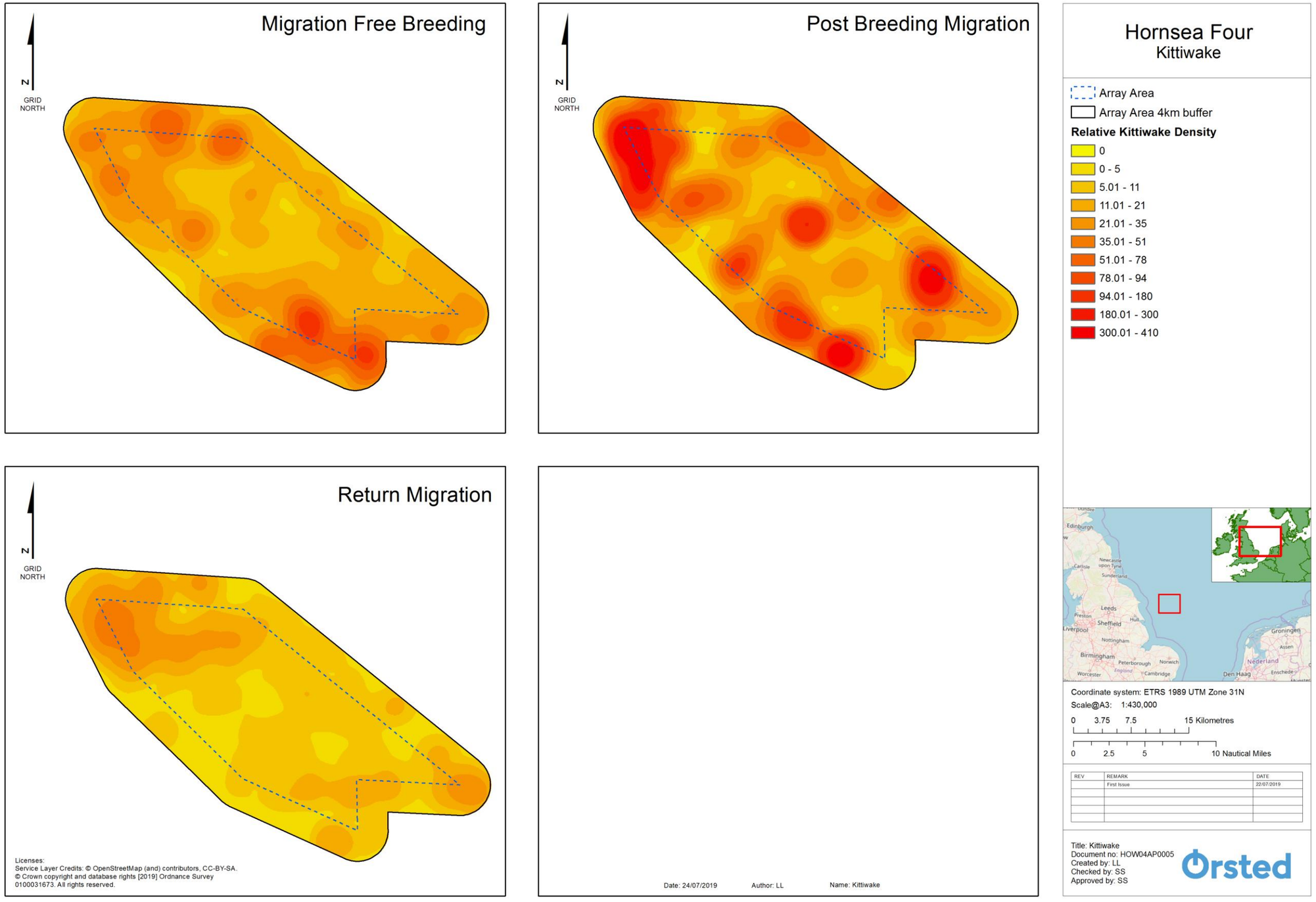

Figure 9: Surface density heat maps by bio-season of kittiwake distribution within the study area (not to scale).

3.9 Great black-backed gull

3.9.1 Hornsea Four Survey Data

3.9.1.1 Great black backed gulls where recorded in 19 of the 24 digital aerial surveys within the Hornsea Four array area. Peak abundance was in February 2017 (n=245) in Year 1 with a density of 0.41 birds/km^2 in the Hornsea Four array area. Peak abundance was in in December 2017 (n=301) in Year 2 with a density of 0.50 birds/km^2 in the Hornsea Four array area (**Figure 10** and **Appendix A**). In Year 1 abundances increased from the end of the post-breeding migration bio-season into the middle of the return migration bio-season. In Year 2 numbers increased in the post-breading bio-season in to the migration-free winter bio-season, before decreasing again at the start of the return migration bio-season.

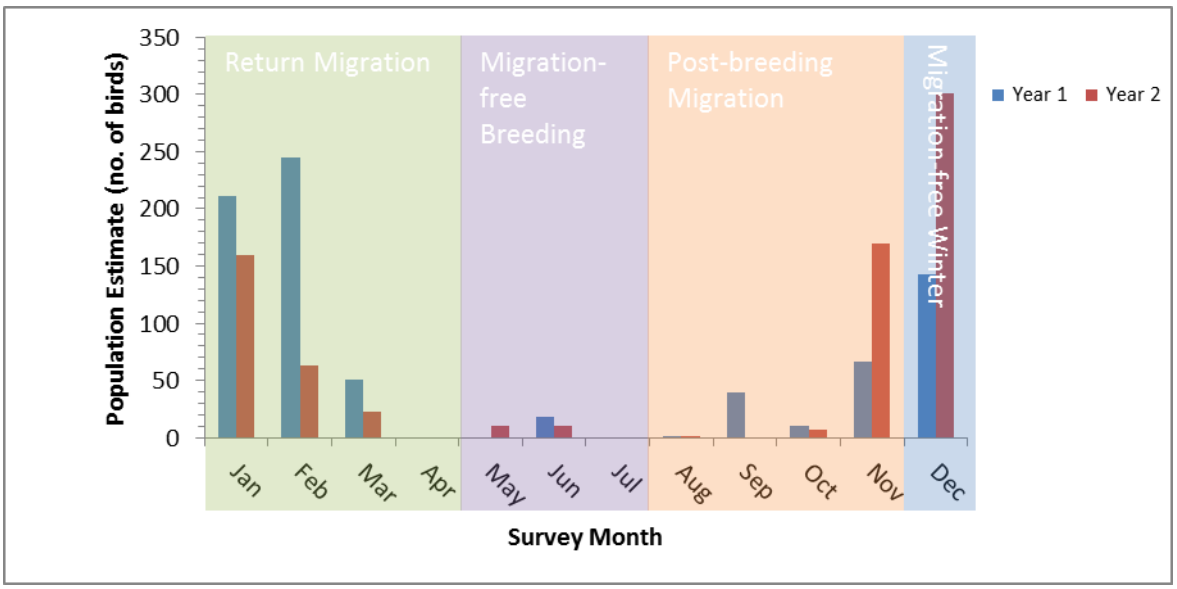

Figure 10: Bar chart displaying great black-backed gull abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.9.2 Biological Season Mean Peak Estimates

3.9.2.1 Great black-backed gull abundance in the Hornsea Four array area peaked during the migration-free winter bio-season (December), with an estimated mean peak abundance of 222 birds and a mean peak density of 0.370 birds/km^2 (**Table 9**).

Table 9: Great black-backed gull bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km^2
Return migration	Jan-Apr	202	0.336
Migration-free breeding	May-Jul	14	0.024
Post-breeding	Aug-Nov	118	0.197
Migration-free winter	Dec	222	0.370

3.9.3 Spatial Distribution

3.9.3.1 Great black-backed gulls were loosely distributed in low densities with few hot spots throughout the study area within three bio-seasons (**Figure 11**) and in densities too low for mapping in the migration-free bio-season (**Figure 10**). Low density hot spots were observed in the migration-free winter and return migration bio-seasons. Low density hotspots were also evident in the post-breeding migration bio-season, with a single high-density hot spot in the south of the 4 km buffer.

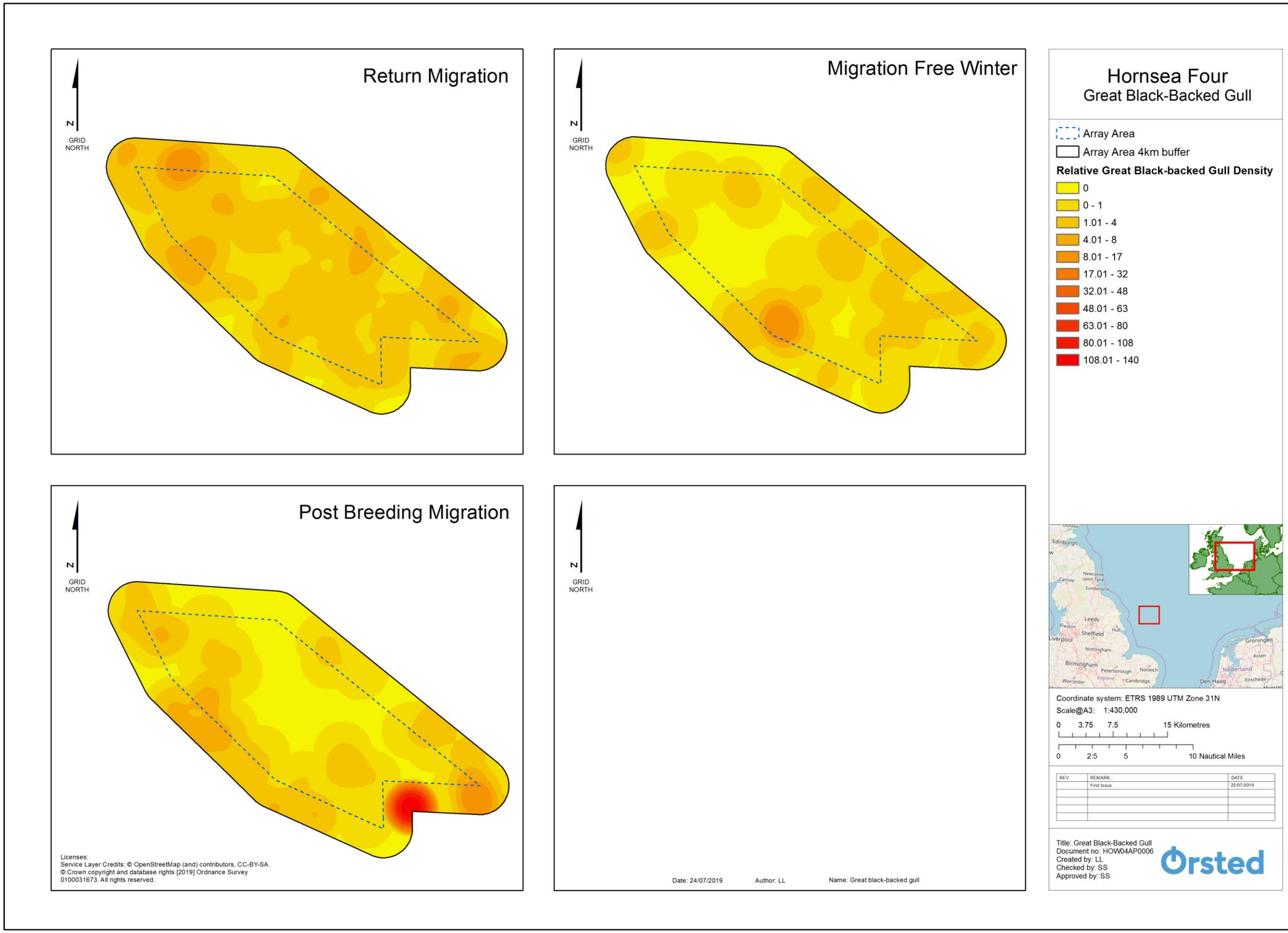

Figure 11: Surface density heat maps by bio-season of great black-backed gull distribution within the study area (not to scale).

3.10 'Commic' tern

3.10.1 Hornsea Four Survey Data

3.10.1.1 'Commic' terns (unidentified common and / or Arctic terns) were recorded in five of the 24 digital aerial surveys within the Hornsea Four array area. Peak abundance was in August for both Year 1 (n=1,834) and Year 2 (n=437), which are within the common tern and Arctic tern post-breeding migration bio-seasons (**Figure 12** and **Appendix A**). 'Commic' tern densities with the Hornsea Four array area were at their highest during August 2016 with 3.06 birds/km^2.

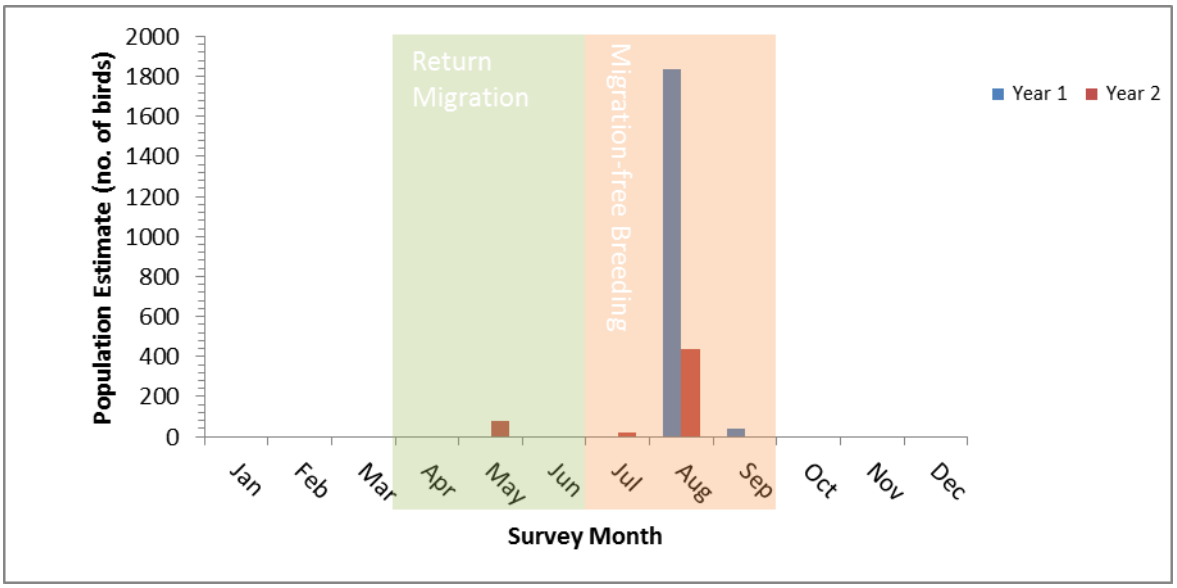

Figure 12: Bar chart displaying 'commic' tern abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.10.2 Biological Season Mean Peak Estimates

3.10.2.1 The peak bio-season for 'Commic' tern abundance in the Hornsea Four array area was during the post-breeding migration (July – September) with an estimated mean peak of 1,136 individuals and a mean peak density of 1.892 birds/km^2 (**Table 10**).

Table 10: 'Commic' tern bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km^2
Return migration	Apr-Jun	40	0.067
Migration-free breeding	N/A	N/A	N/A
Post-breeding	Jul-Sep	1136	1.892
Migration-free winter	N/A	N/A	N/A

3.10.3 Spatial Distribution

3.10.3.1 'Commic' terns were sparsely distributed throughout the study area within the return migration bio-season (**Figure 13**), with low density hot spots in the south of the Hornsea Four array area. The number and density of hot spots increased in the post-breeding bio-season with the highest densities in the south and east of the Hornsea Four array area and the 4 km buffer. In the post-breeding bio-season the number and density of hot spots were reduced with the highest densities remaining in the southeast of the Hornsea Four array area.

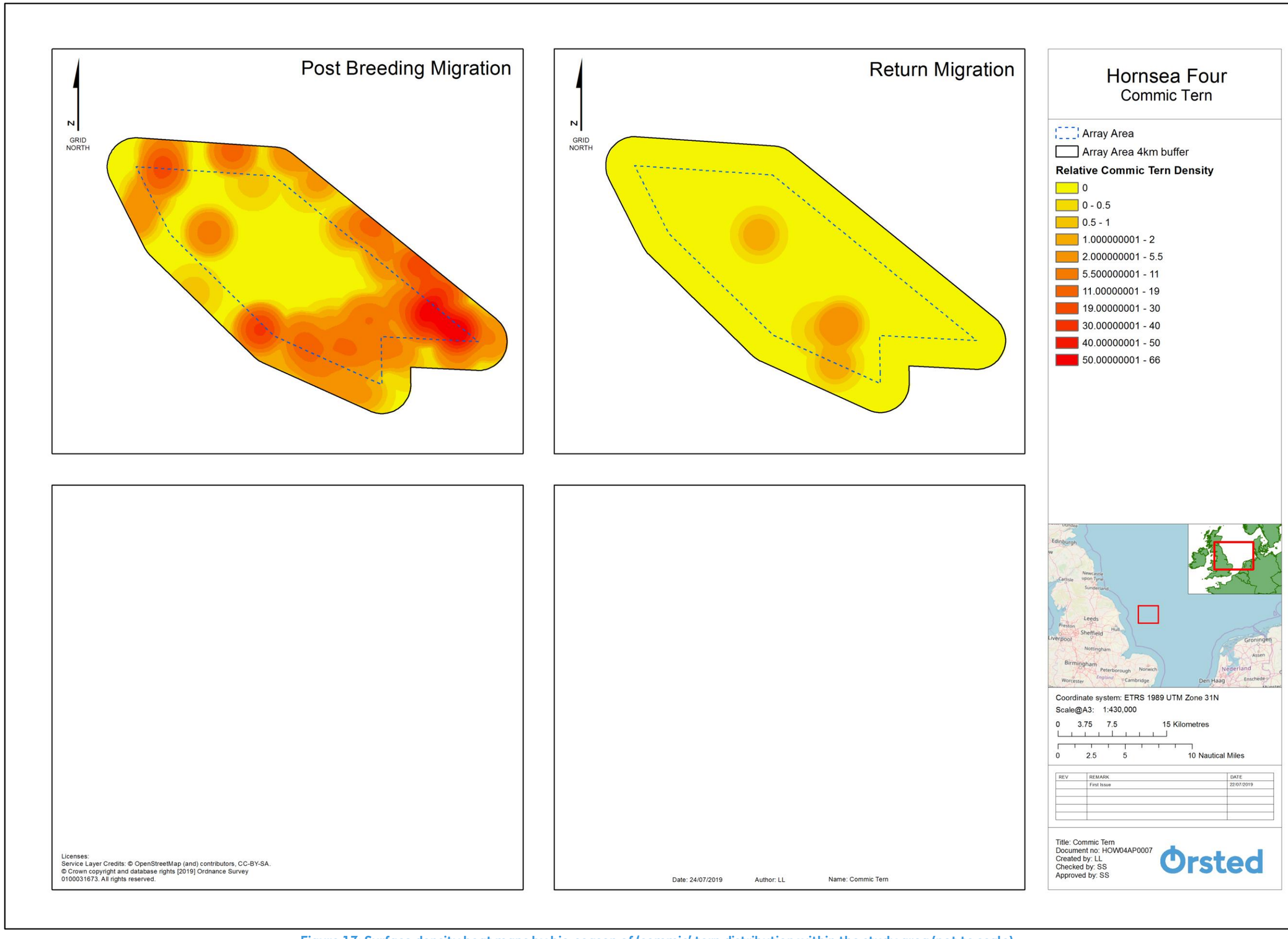

Figure 13: Surface density heat maps by bio-season of 'commic' tern distribution within the study area (not to scale).

3.11 Guillemot

3.11.1 Hornsea Four Survey Data

3.11.1.1 Guillemot were recorded in all 24 of the digital aerial surveys within the Hornsea Four array area. Lowest abundances were recorded between November through to April in Year 1, before a rise to a peak in September 2016 (n=13,732) with a density of 29.37 birds/km^2. Lowest abundances were recorded between January and April in Year 2, before a rise to a peak in August 2017 (n=45,222) with a density of 75.33 birds/km^2 (**Figure 14** and **Appendix A**).

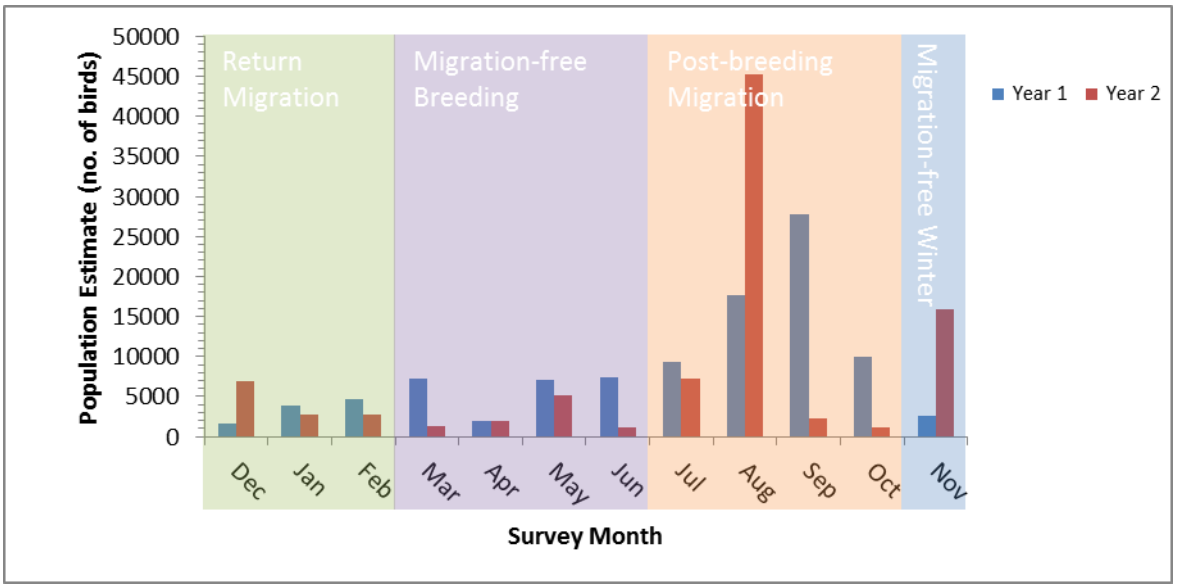

Figure 14: Bar chart displaying guillemot abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.11.1.2 A similar trend in guillemot abundance can be seen in the 4 km buffer as seen in the Hornsea Four array area for both Year 1 and Year 2. For Year 1 guillemot abundance is at its lowest in April 2016 (n=1,226), rising to its highest in September 2016 (n=27,261). In Year 2 peak abundance can be seen in August 2017 (n=42,885). Densities range from 2.18 birds/km^2 in October 2017 to 80.08 birds/km^2 August 2017 (**Figure 15** and **Appendix A**).

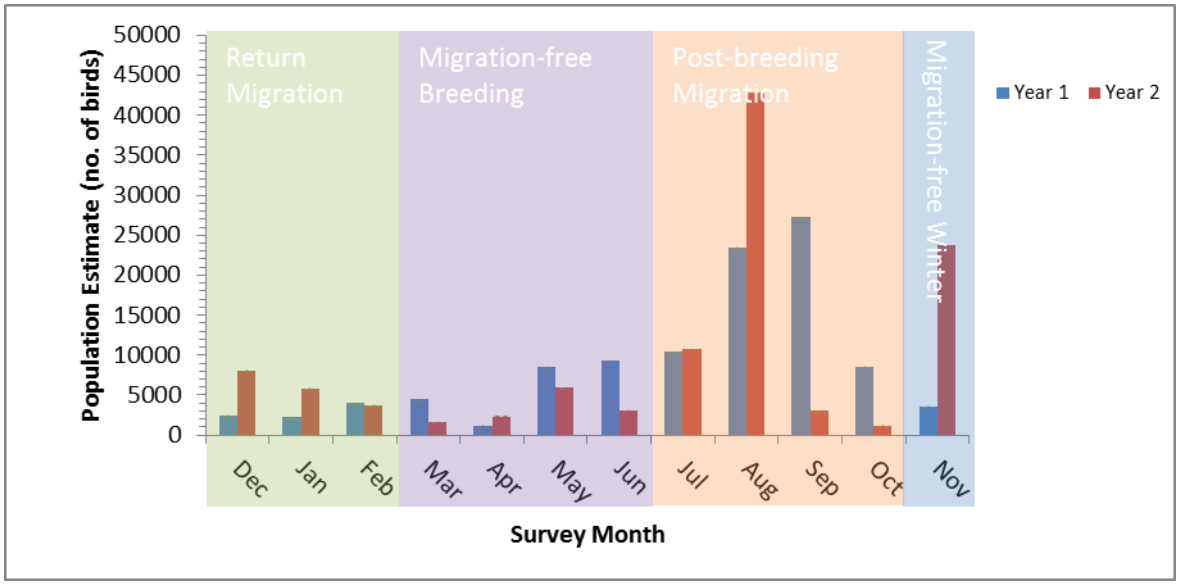

Figure 15: Bar chart displaying guillemot abundance estimates within the 4 km buffer per survey, between survey years and within each bio-season.

3.11.2 Biological Season Mean Peak Estimates

3.11.2.1 Guillemot abundance in the Hornsea Four array area was highest during the post-breeding migration bio-season (July – October) with an estimated mean peak abundance of 36,523 birds and density of 60.836 birds/km^2. In the 4 km buffer guillemot abundance was also highest during the post-breeding migration bio-season with an estimated mean peak of 35,086 birds and density of 65.515 birds/km^2 (Table 11).

Table 11: Guillemot bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km^2	Mean Peak Abundance 4 km buffer	Mean Peak Density 4 km buffer birds/km^2
Return migration	Dec-Feb	5801	9.663	6021	11.243
Migration-free breeding	Mar-Jun	6265	10.436	7622	14.233
Post-breeding	July-Oct	36523	60.836	35086	65.515
Migration-free winter	Nov	9182	15.294	13653	25.494

3.11.3 Spatial Distribution

3.11.3.1 Guillemots were loosely distributed throughout the study area within each of the four bio-seasons (Figure 16). Lower densities, with no obvious hot spots, were observed in the migration-free breeding and migration-free wintering bio-seasons. The number and density of hot spots increased in the return-migration and post-breeding bio-seasons with the highest densities in the north west and southeast of the study area.

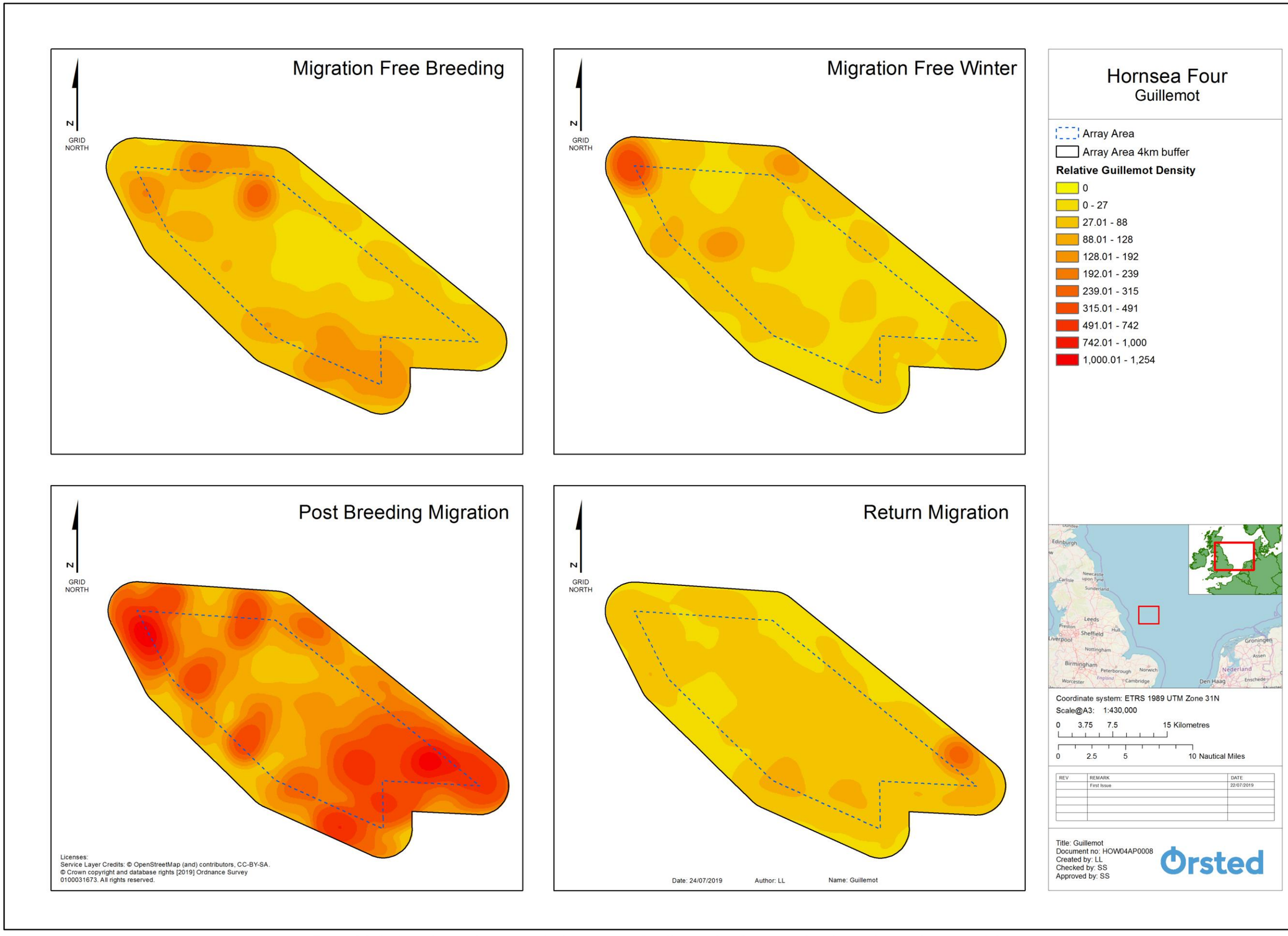

Figure 16: Surface density heat maps by bio-season of guillemot distribution within the study area (not to scale).

3.12 Razorbill

3.12.1 Hornsea Four Survey Data

3.12.1.1 Razorbills were recorded in all 24 digital aerial surveys within the Hornsea Four array area. Abundance peaked in September 2016 (n=4,572) in Year 1 and in August 2017 (n=4,433) in Year 2. Abundances in both Year 1 and Year 2 were considerably lower outside of these individual annual peak months. Densities ranged from 0.10 birds/km^2 in February 2017 to 7.62 birds/km^2 in August 2016 Year 1 and from 0.04 birds/km^2 in July 2017 to 7.38 birds/km^2 in August 2017 (**Figure 17** and **Appendix A**).

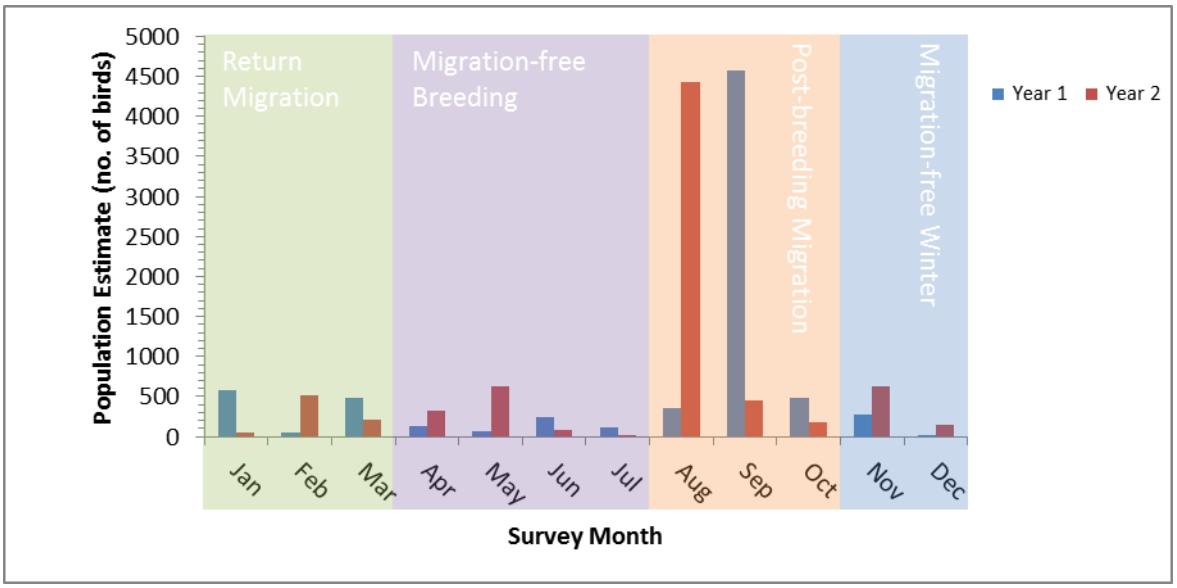

Figure 17: Bar chart displaying razorbill abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.12.1.2 Razorbill abundance peaked in the same months within the 4 km buffer as that for the Hornsea Four array area in both Year 1 and 2, in September 2016 and August 2017 respectively, both months being with the post-breeding migration bio season. Abundance peaked in September 2016 (n=2,338) in Year 1 and in August 2017 (n=2,988) in Year 2. Densities ranged from 0.01 birds/km^2 in May 2016 to 5.58 birds/km^2 in August 2017 (**Figure 18** and **Appendix A**).

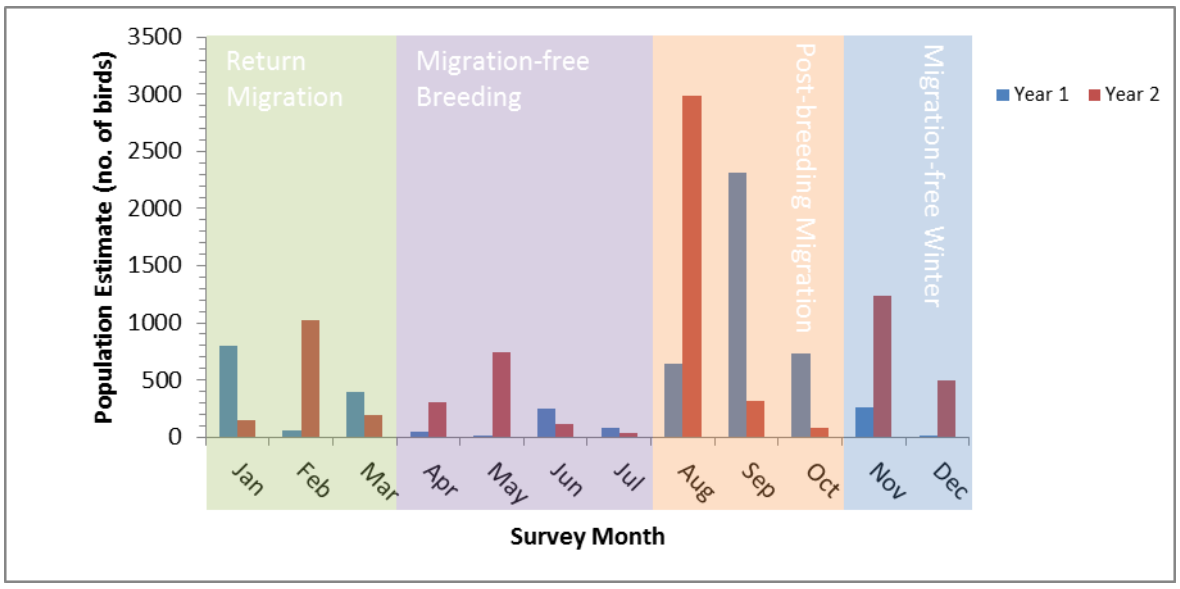

Figure 18: Bar chart displaying razorbill abundance estimates within the 4 km buffer area per survey, between survey years and within each bio-season.

3.12.2 Biological Season Mean Peak Estimates

3.12.2.1 Razorbill abundance in the Hornsea Four array area was recorded at its highest during the post-breeding migration bio-season (August – October) with an estimated mean peak abundance of 4,502 birds and a mean peak density of 7.500 birds/km^2. In the 4 km buffer razorbill abundance also occurred at its highest during the post-breeding migration bio-season with an estimated peak abundance of 2,651 birds and a mean peak density of 4.950 birds/km^2 (Table 12).

Table 12: Razorbill bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km^2	Mean Peak Abundance 4 km buffer	Mean Peak Density 4 km buffer birds/km^2
Return migration	Jan-Mar	545	0.907	914	1.706
Migration-free breeding	Apr-Jul	439	0.731	498	0.930
Post-breeding	Aug-Oct	4502	7.500	2651	4.950
Migration-free winter	Nov-Dec	455	0.758	750	1.401

3.12.3 Spatial Distribution

3.12.3.1 Razorbills were loosely distributed throughout the study area within each of the four bio-seasons (Figure 19). Lower densities, with no obvious hot spots, were observed in the migration-free breeding and migration-free wintering bio-seasons, with a more pronounced hotspot in the southeast of the study area in the return-migration bio-season. The number and density of hot spots increased in post-breeding bio-seasons with the highest densities in the northwest, west and southwest of the study area.

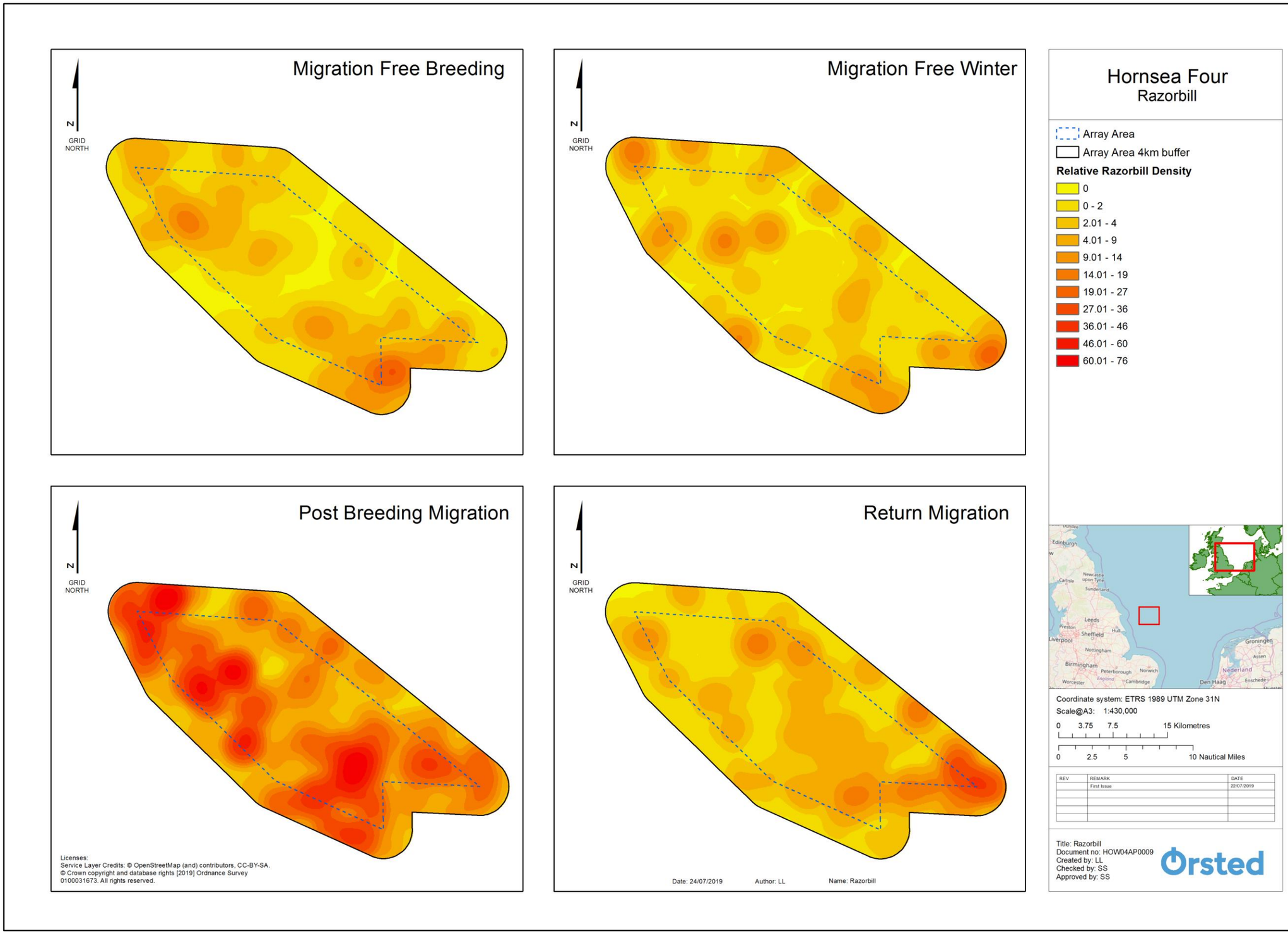

Figure 19: Surface density heat maps by bio-season of razorbill distribution within the study area (not to scale).

3.13 Puffin

3.13.1 Hornsea Four Survey Data

3.13.1.1 Puffins were recorded in 14 of the 24 monthly digital aerial surveys within the Hornsea Four array area, although the months they were recorded differed between Year 1 and Year 2. No puffins were recorded in November of either Year 1 or Year 2 and densities ranged from 0.00 birds/km^2 in November 2016 and 2017 to 0.48 birds/ km^2 in August 2017 (**Figure 20** and **Appendix A**). Puffin abundance peaked in April 2016 (n=288) in Year 1 and in August 2017 (n=538) in Year 2.

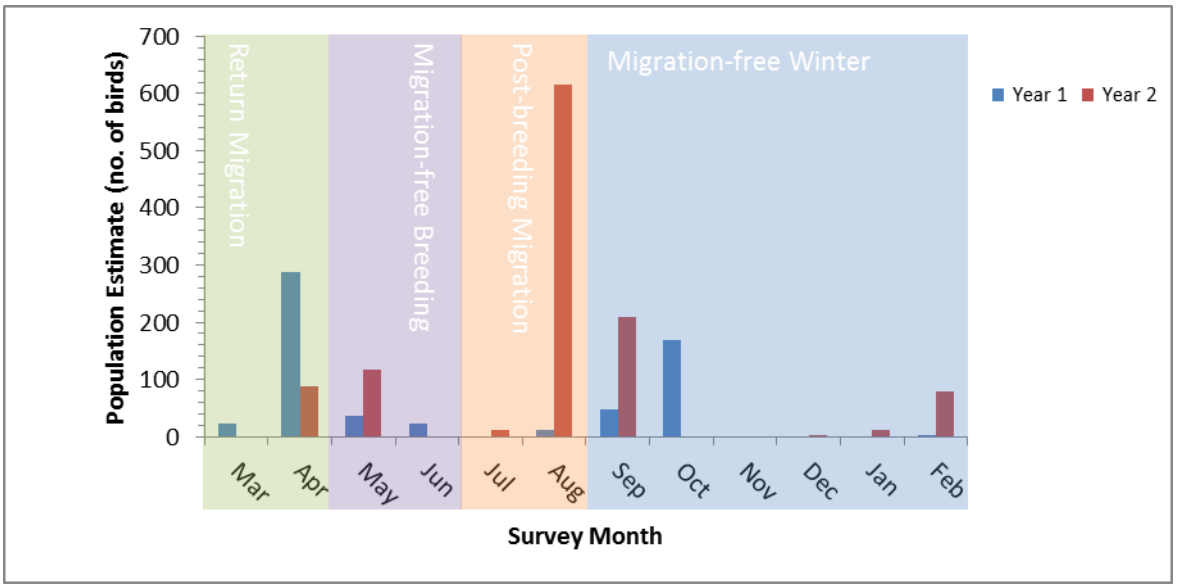

Figure 20: Bar chart displaying puffin abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.13.1.2 Puffin abundance within the 4 km buffer was similar to that recorded in the Hornsea Four array area in Year 1 and Year 2. Peak abundance of puffins was in October 2016 (n= 228) in Year 1 and in August 2017 (n=367) in Year 2. Densities ranged from 0.00 birds/km^2 in several months to 0.69 birds/km^2 in August 2017 (**Figure 21** and **Appendix A**).

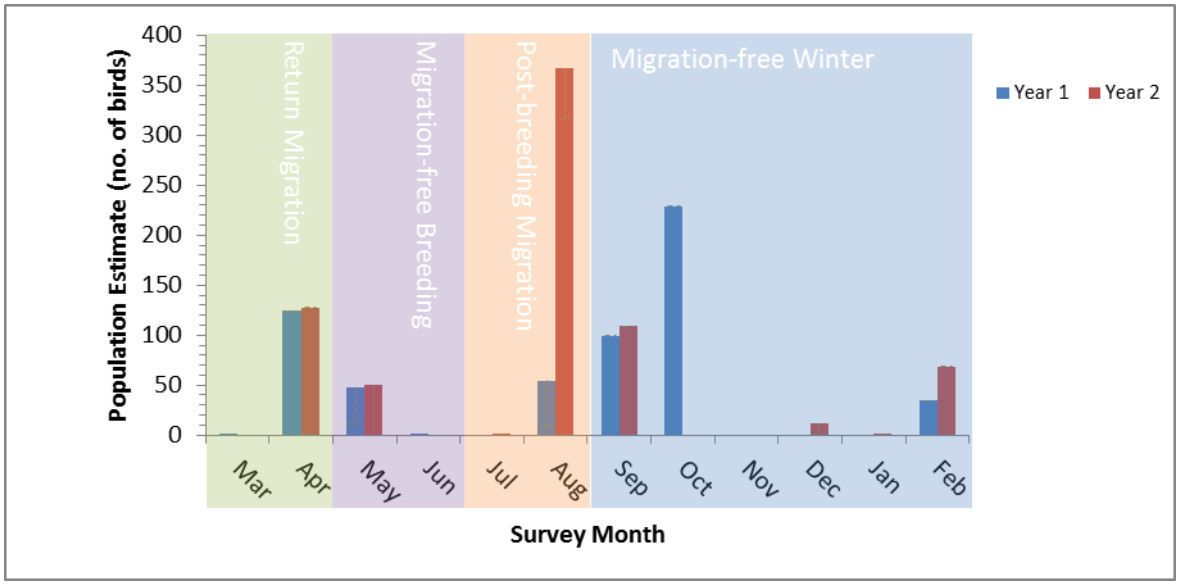

Figure 21: Bar chart displaying puffin abundance estimates within the 4 km buffer area per survey, between survey years and within each bio-season.

3.13.2 Biological Season Mean Peak Estimates

3.13.2.1 Puffin abundance was highest in the Hornsea Four array area during the post-breeding migration bio-season (July – August) with an estimated mean peak abundance of 313 birds and a mean peak density of 0.522 birds/km^2. In the 4 km buffer puffin abundance was also highest during the post-breeding migration bio-season with an estimated mean peak abundance of 211 birds and a mean peak density of 0.315 birds/km^2 (Table 13).

Table 13: Puffin bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km^2	Mean Peak Abundance 4 km buffer	Mean Peak Density 4 km buffer birds/km^2
Return migration	Mar-Apr	189	0.314	126	0.235
Migration-free breeding	May-Jun	77	0.128	49	0.091
Post-breeding	July-Aug	313	0.522	211	0.394
Migration-free winter	Sep-Feb	189	0.314	169	0.315

3.13.3 Spatial Distribution

3.13.3.1 Puffins were loosely distributed in low densities throughout the study area within each of the three bio-seasons (Figure 22). Due to this species occurring within the study area in only low densities the density hot spots presented in Figure 22 must be observed with an element of caution, as they are based on limited numbers of birds recorded. The number and density of hot spots is similar in each bio-season with the highest densities in the northwest and west of the Hornsea Four array area.

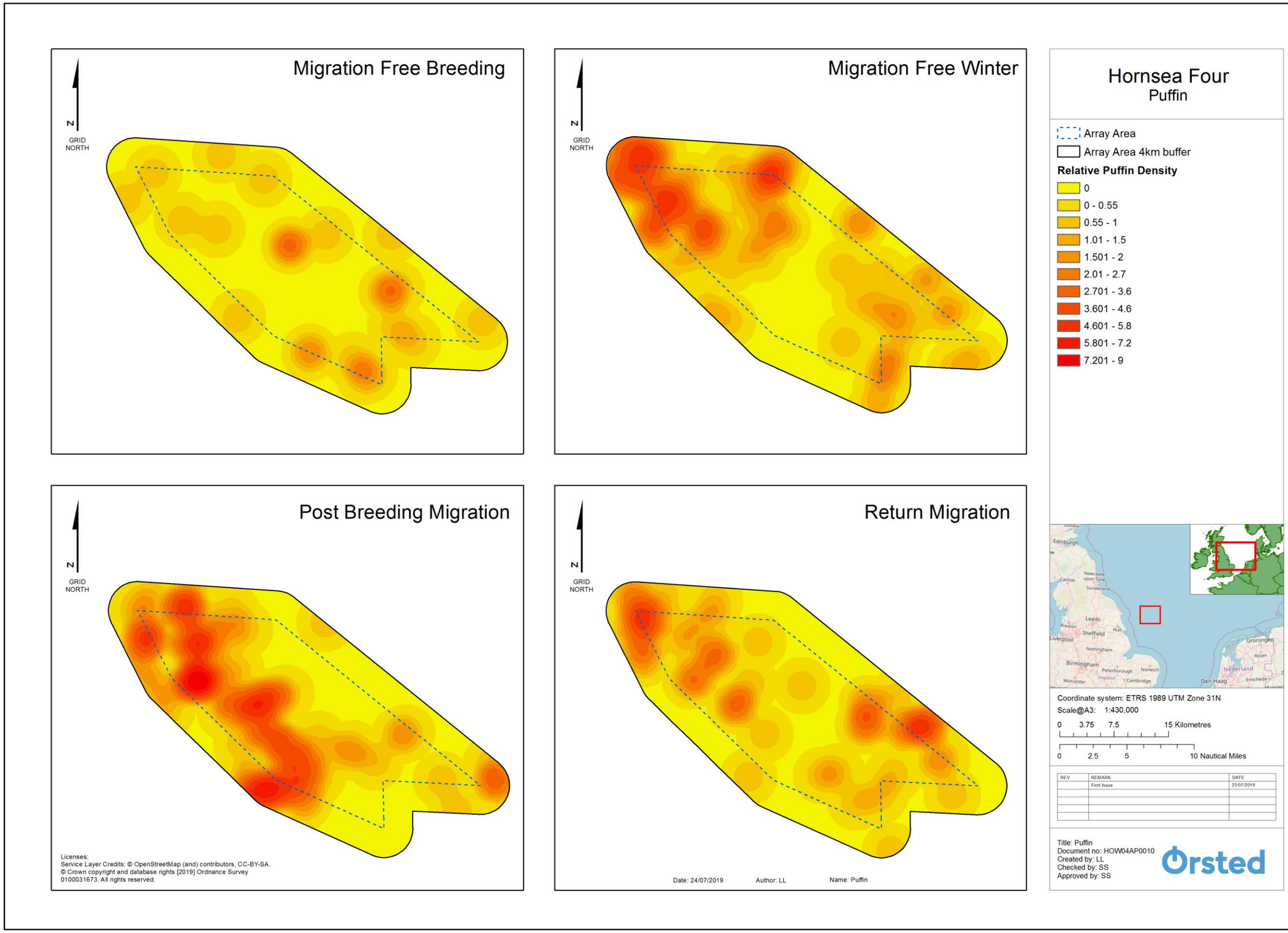

Figure 22: Surface density heat maps by bio-season of puffin distribution within the study area (not to scale).

4 Intertidal Ornithology Results

4.1.1.1 The intertidal environment of the Holderness coast of East Yorkshire is dominated by mobile, sandy beaches backed by low, soft cliffs and sand dunes and is an area of active erosion. It is bounded by the chalk cliffs of Flamborough Head to the north and the Humber Estuary to the south. The Holderness coast itself lacks any significant areas of intertidal estuary or muddy habitats. The result is that as a habitat for intertidal birds it provides limited food resources and the populations of birds using the coast is as a result very low.

4.1.1.2 A programme of national counts of birds along the UK's non-estuarine shoreline was conducted in 1984/85, 1997/98, 2006/07 and 2015/16, originally under the title of the 'Winter Shorebird Count' and for the most recent three times under the title of 'Non-Estuarine Waterbird Survey'[1]. The Holderness coast was covered in this programme and the results published by the British Trust for Ornithology[2] (BTO). For the stretch of coast from Hilderthorpe to Skipsea (this covers the scoping boundary for the proposed offshore ECC landfall) **Table 14** presents the peak winter count of birds (expressed as within a range of values in the manner published by the BTO) from that programme of non-estuarine waterbird counts. This stretch of coast was counted completely and consistently between surveys. Also included in that table are the thresholds for identifying a site of national importance for each species[3] and the population estimate for the East Yorkshire coast in 2015/16 determined from the non-estuarine waterbird counts of that winter. The latter gives a measure of the county population only for those species that are habitat specialists of sandy coasts since for many species such as dunlin a much larger population will occur on the Humber Estuary that is outside the scope of the survey programme.

Table 14: Non-estuarine waterbird peak winter counts for the coast from Hilderthorpe to Skipsea.

Survey Species	1985	1997/98	2006/07	2015/16	E. Yorks coastal population	Great Britain 1% threshold
Shelduck	0	0	0	0	3	3,000
Wigeon	0	0	0	0	39	4,400
Mallard	0	0	1-20	11-20	11	6,800
Common Scoter	0	1-50	0	0	5	1,000
Goldeneye	0	0	0	0	3	200
Goosander	0	0	0	0	3	120
Red-throated Diver	0	0	0	0	42	170
Great Northern Diver	0	0	0	0	1	25
Cormorant	0	0	0	3-30	81	350
Shag	0	0	0	0	6	1,100
Grey Heron	0	0	0	0	1	610
Little Grebe	0	0	0	0	8	160

[1] **https://www.bto.org/volunteer-surveys/webs/taking-part/non-estuarine-waterbird-survey-iii**
[2] **http://www.bto.org/volunteer-surveys/webs/publications/webs-annual-report**
[3] **https://www.bto.org/volunteer-surveys/webs/data/species-threshold-levels**

Survey Species	1985	1997/98	2006/07	2015/16	E. Yorks coastal population	Great Britain 1% threshold
Great Crested Grebe	0	1-20	0	4-6	5	190
Slavonian Grebe	0	0	0	0	3	11
Oystercatcher	1-10	21-40	3-30	3-30	148	3,200
Golden Plover	0	0	0	9-12	10	4,000
Lapwing	0	0	0	0	6	6,200
Ringed Plover	0	61-90	1-3	61-90	112	340
Curlew	0	0	1-10	0	10	1,400
Turnstone	0	31-60	0	1-40	221	480
Sanderling	1-40	61-90	1-20	41-60	77	160
Dunlin	1-20	41-80	1-3	11-20	31	3,500
Purple Sandpiper	0	1-20	0	0	2	130
Redshank	1-30	1-50	1-20	1-10	75	1,200
Snipe	0	0	0	0	1	10,000
Black-headed Gull	nc	nc	nc	1-60	493	22,000
Mediterranean Gull	nc	nc	nc	0	1	18
Common Gull	nc	nc	nc	1-200	1,590	7,000
Lesser Black-bd Gull	nc	nc	nc	11-20	30	1,200
Herring Gull	nc	nc	nc	201-400	1,527	1,300
Great Black-bd Gull	nc	nc	nc	3-30	147	760

Table note: nc = no count recorded

4.1.1.3 The consented Dogger Bank Creyke Beck (A & B) offshore wind farm has an export cable landfall on the Holderness coast near Ulrome, to the north of Skipsea and within the scoping boundary for the proposed Hornsea Four offshore ECC landfall. As part of the characterisation of the intertidal ornithological interest of the cable landfall site a wintering bird survey was conducted in 2011/12 of the coast between Ulrome and Barmston (Forewind, 2013). The peak counts from this survey are presented in **Table 15** (reproduced from Table 3.43 of Forewind, 2013). Since the counts cover a shorter length of coast than those counts presented in **Table 15** above, they can be expected to have recorded lower numbers of birds.

Table 15: Wintering waterbird peak counts for the coast between Ulrome and Barmston (Forewind, 2013).

Species	2011/12
Wigeon	0
Mallard	0
Common Scoter	0
Red-throated Diver	0
Cormorant	0
Great Crested Grebe	0

Species	2011/12
Oystercatcher	2
Lapwing	0
Ringed Plover	2
Turnstone	2
Knot	1
Sanderling	8
Dunlin	0
Bar-tailed Godwit	1
Redshank	11
Black-headed Gull	15
Common Gull	593
Herring Gull	0
Great Black-backed Gull	17

4.1.1.4 The national atlas of breeding and wintering birds (Balmer et al., 2013) provides information on the range of species that can be associated with the intertidal environment. This can provide a measure of diversity but for information on numbers, the wintering waterbird counts referred to above are better suited to evaluating the wintering bird populations for impact assessment purposes. No bird is able to breed within the intertidal zone but the national atlas identifies the following species that breed along the open coast and that can be associated with feeding in the intertidal environment from Hilderthorpe to Skipsea during the breeding season: Shelduck, oystercatcher and herring gull. Birds that breed and feed in the vegetation above MHWS are addressed in **Volume 3, Chapter 3: Ecology and Nature Conservation**.

4.1.1.5 The Yorkshire Bird Report (YNU, 2015) provides information on all species recorded in the county, though a finer scale report is available for East Yorkshire that is not included in this review. The report provides an overview of birds recorded with the intertidal and nearshore environment, with records of breeding and wintering numbers highlighted where considered of significance locally or regionally. However, records within county bird reports are, often, focussed on particular locations where birdwatchers frequent on a regular basis and do not systematically cover entire stretches of coastline, so should not be the sole source of data used in order to evaluate bird populations for impact assessment purposes.

4.1.1.6 The Yorkshire Bird Report 2012 (YNU, 2015) refers to no species of duck, wader, gull or tern breeding within or in close proximity to the intertidal zone along the coast between Hilderthorpe and Skipsea. However, notable records of birds recording on migration or during the non-breeding (wintering period) are referred to throughout the report. The counts recorded within the Yorkshire Bird Report 2012 (YNU, 2015) are presented in **Table 16**, with commentary with regards to the time of year and location of the records. Of those species recorded in peak numbers within the Yorkshire Bird Report 2012 (YNU, 2015) only sanderling were above the 1% of the national populations for the given season, the common threshold for consideration within impact assessments.

Table 16: Waterbirds recorded in Yorkshire Bird Report 2012 and 2013 (YNU, 2015 and YNU, 2018) between Hilderthorpe (south Bridlington) and Skipsea.

Species	Annual Report Year	Count	Month	Comment
Common Scoter	2012	1,000	January	Flying north off Barmston coast
Goldeneye	2012	17	October	Flying north off Bridlington coast
Goosander	2012	2	June	Flying north off Barmston coast (Unseasonable record)
Red-throated Diver	2012	176	January	Flying north off Barmston coast
	2013	227	February	Offshore between Atwick & Barmston
Great Northern Diver	2012	1 to 11	Jan-Mar	Off Barmston coast
Cormorant	2012	186	March	Flying north off Barmston coast (Significant record)
Shag	2013	300+	n/a	North Bridlington Bay
Great Crested Grebe	2012	41	March	Off Barmston coast
	2013	26 / 35 / 27	Jan / Mar / Nov	Off Barmston coast (Jan) and between Barmston & Atwick (Mar & Nov)
Slavonian Grebe	2012	1	Jan	Off Barmston coast
Oystercatcher	2013	180	February	Barmston coastline
Ringed Plover	2012	61	January	Barmston coastline
Turnstone	2012	60 / 85	Jan / Dec	Shoreline south of Bridlington
	2013	36	Jul	Barmston coastline
Sanderling	2012	150 / 160 / 24	Feb / Mar / Jul	All records on coastline at Barmston, with the latter record of migrants moving south
	2013	295 / 200	Jan / Jan	Barmston / Bridlington
Purple Sandpiper	2012	1+	winter	Described as low single numbers over winter period on shoreline at Barmston.
	2013	3	winter	Barmston
Redshank	2013	316	Jul	Flying south off Barmston
Little tern	2012	3-4	May-Jul	North or South passage movements offshore from Barmston

5 References

Johnston, A., Cook, A.S.C.P., Wright, L.J., Humphreys, E.M. and Burton, E.H.K. (2014) Modelling flight heights of marine birds to more accurately assess collision risk with offshore wind turbines. Journal of Applied Ecology 51: 31-41.

Ørsted (2018). *Hornsea Four Scoping Report, Chapter 6, Intertidal and Offshore Ornithology*.

PINS (2018). Scoping Opinion: Proposed Hornsea Four Wind Farm. Case Reference: EN010098. https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010098/EN010098-000064-H4WF%20-%20Scoping%20Opinion.pdf

6 Appendix A: Abundance Estimates and Behaviour Information of Seabirds from Site-Specific Surveys

Fulmar

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	7	70	10	140	0.51	0.12	10	100	50	150	0.28	0.17	17	170	70	290	0.34	0.28
May-16	38	379	210	579	0.25	0.63	12	120	60	190	0.30	0.20	50	499	319	689	0.20	0.83
Jun-16	34	339	100	659	0.43	0.56	1	10	1	30	1.00	0.02	35	349	90	679	0.44	0.58
Jul-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Aug-16	1	10	1	30	-	0.02	2	20	2	50	0.68	0.03	3	30	3	70	0.53	0.05
Sep-16	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02	2	20	2	50	0.68	0.03
Oct-16	16	160	80	270	0.32	0.27	3	30	3	60	0.53	0.05	19	190	90	310	0.29	0.32
Nov-16	2	20	2	50	0.68	0.03	1	10	1	30	1.00	0.02	3	30	3	60	0.53	0.05
Dec-16	1	10	1	30	1.00	0.02	4	40	10	80	0.44	0.07	5	50	20	90	0.38	0.08
Jan-17	9	90	40	140	0.32	0.15	8	80	30	130	0.31	0.13	17	170	100	229	0.21	0.28
Feb-17	7	70	10	150	0.51	0.12	5	50	20	90	0.38	0.08	12	120	50	210	0.37	0.20
Mar-17	11	110	11	269	0.66	0.18	4	40	10	70	0.44	0.07	15	150	40	319	0.49	0.25
Apr-17	1	10	1	30	1.00	0.02	5	50	10	100	0.48	0.08	6	60	10	120	0.48	0.10
May-17	2	20	2	50	0.68	0.03	2	20	2	50	0.68	0.03	4	40	10	80	0.44	0.07
Jun-17	3	30	3	60	0.53	0.05	1	10	1	30	1.00	0.02	4	40	10	80	0.44	0.07
Jul-17	0	0	0	0	-	0	2	20	2	50	0.68	0.03	2	20	2	50	0.68	0.03
Aug-17	2	20	2	50	0.68	0.03	4	40	10	80	0.44	0.07	6	60	20	110	0.41	0.10
Sep-17	12	120	40	229	0.44	0.2	2	20	2	50	0.68	0.03	14	140	50	239	0.37	0.23
Oct-17	1	9	1	27	1.00	0.01	0	0	0	0	-	0	1	9	1	28	1.00	0.01
Nov-17	2	20	2	50	0.68	0.03	0	0	0	0	-	0	2	20	2	50	0.68	0.03
Dec-17	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02	2	20	2	50	0.68	0.03
Jan-18	0	0	0	0	-	0	8	80	30	140	0.40	0.13	8	80	20	150	0.40	0.13
Feb-18	0	0	0	0	0	0	6	60	6	120	0.53	0.10	11	110	20	220	0.49	0.18
Mar-18	0	0	0	0	0	0	3	30	3	60	0.53	0.05	5	50	20	90	0.38	0.08

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	6	57	19	105	0.42	0.11	19	182	105	258	0.22	0.34	25	239	143	354	0.23	0.45
May-16	49	474	145	860	0.39	0.89	6	58	6	116	0.54	0.11	55	532	184	976	0.40	0.99
Jun-16	7	68	10	145	0.52	0.13	1	10	1	29	1.00	0.02	8	77	19	155	0.46	0.14
Jul-16	1	10	1	29	1.00	0.02	2	19	2	48	0.69	0.04	3	29	3	58	0.54	0.05
Aug-16	6	57	19	104	0.42	0.11	0	0	0	0	-	0	6	57	19	104	0.42	0.11
Sep-16	4	38	4	86	0.58	0.07	0	0	0	0	-	0	4	38	4	95	0.58	0.07
Oct-16	15	148	49	266	0.39	0.28	1	10	1	30	1.00	0.02	18	177	69	315	0.37	0.33
Nov-16	4	40	4	89	0.58	0.07	1	10	1	30	1.00	0.02	5	50	5	109	0.57	0.09
Dec-16	0	0	0	0	-	0	3	30	3	69	0.54	0.06	3	30	3	59	0.54	0.06
Jan-17	17	168	30	326	0.44	0.31	5	49	10	99	0.49	0.09	23	227	89	375	0.33	0.42
Feb-17	5	50	10	99	0.49	0.09	6	59	10	119	0.49	0.11	11	109	30	198	0.38	0.20
Mar-17	12	119	20	268	0.58	0.22	37	367	37	1052	0.89	0.69	49	486	49	1309	0.84	0.91
Apr-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
May-17	1	10	1	30	1.00	0.02	4	40	4	99	0.69	0.07	5	50	5	109	0.57	0.09
Jun-17	6	59	6	129	0.60	0.11	3	30	3	69	0.54	0.06	9	89	20	169	0.47	0.17
Jul-17	1	10	1	30	1.00	0.02	2	20	2	50	0.69	0.04	3	30	3	60	0.54	0.06
Aug-17	8	80	10	169	0.52	0.15	4	40	10	80	0.46	0.07	12	119	50	209	0.35	0.22
Sep-17	22	219	89	387	0.36	0.41	1	10	1	30	1.00	0.02	23	228	89	378	0.35	0.43
Oct-17	1	11	1	32	1.00	0.02	1	11	1	32	1.00	0.02	2	22	2	54	0.68	0.04
Nov-17	4	40	10	79	0.46	0.07	7	70	20	129	0.43	0.13	11	109	40	189	0.33	0.20
Dec-17	0	0	0	0	-	0	2	20	2	50	0.69	0.04	2	20	2	50	0.69	0.04
Jan-18	6	60	6	159	0.73	0.11	13	129	79	189	0.22	0.24	19	189	109	298	0.25	0.35
Feb-18	5	49	10	99	0.49	0.09	6	59	20	99	0.35	0.11	11	109	49	168	0.27	0.20
Mar-18	1	10	1	30	1.00	0.02	4	39	4	89	0.58	0.07	5	49	10	99	0.49	0.09

Fulmar – gull species

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-16	11	110	30	210	0.41	0.18	0	0	0	0	-	0	11	110	30	200	0.41	0.18
Jun-16	9	90	20	170	0.45	0.15	1	10	1	30	1.00	0.02	10	100	20	190	0.46	0.17
Jul-16	3	30	3	60	0.53	0.05	0	0	0	0	-	0	3	30	3	60	0.53	0.05
Aug-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Sep-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Oct-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Dec-16	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Jan-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Feb-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Mar-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02	2	20	2	50	0.68	0.03
Jun-17	3	30	3	60	0.53	0.05	0	0	0	0	-	0	3	30	3	60	0.53	0.05
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-17	2	18	2	45	0.68	0.03	0	0	0	0	-	0	2	18	2	45	0.68	0.03
Nov-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-18	3	30	3	60	0.53	0.05	0	0	0	0	-	0	3	30	3	60	0.53	0.05
Feb-18	2	20	2	60	1.00	0.03	1	10	1	30	1.00	0.02	3	30	3	80	0.72	0.05
Mar-18	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-16	26	251	48	532	0.53	0.47	1	10	1	29	1.00	0.02	27	261	48	551	0.53	0.49
Jun-16	0	0	0	0	-	0	1	10	1	29	1.00	0.02	1	10	1	29	1.00	0.02
Jul-16	0	0	0	0	-	0	1	10	1	29	1.00	0.02	1	10	1	29	1.00	0.02
Aug-16	4	38	4	104	0.78	0.07	0	0	0	0	-	0	4	38	4	114	0.78	0.07
Sep-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Dec-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Feb-17	2	20	2	50	0.69	0.04	0	0	0	0	-	0	2	20	2	50	0.69	0.04
Mar-17	6	60	6	169	0.84	0.11	0	0	0	0	-	0	6	60	6	169	0.84	0.11
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02	2	20	2	50	0.69	0.04
Jun-17	3	30	3	69	0.73	0.06	0	0	0	0	-	0	3	30	3	79	0.73	0.06
Jul-17	3	30	3	60	0.54	0.06	0	0	0	0	-	0	3	30	3	60	0.54	0.06
Aug-17	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02	2	20	2	50	0.69	0.04
Sep-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Dec-17	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02	2	20	2	50	0.69	0.04
Jan-18	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-18	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-18	3	30	3	89	1.00	0.06	2	20	2	49	0.69	0.04	5	49	5	118	0.64	0.09

Gannet

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	-	0	3	30	3	80	0.72	0.05	3	30	3	80	0.72	0.05
May-16	22	220	90	379	0.33	0.37	16	160	80	259	0.30	0.27	38	379	240	549	0.23	0.63
Jun-16	86	858	459	1358	0.27	1.43	53	529	299	809	0.25	0.88	140	1397	858	2076	0.24	2.33
Jul-16	13	130	30	280	0.50	0.22	29	290	150	489	0.30	0.48	42	419	220	619	0.25	0.70
Aug-16	9	90	9	240	0.78	0.15	13	130	60	200	0.30	0.22	22	220	80	419	0.41	0.37
Sep-16	23	230	80	439	0.42	0.38	10	100	40	170	0.38	0.17	33	330	120	589	0.36	0.55
Oct-16	45	450	150	879	0.42	0.75	18	180	50	340	0.42	0.30	65	649	230	1159	0.39	1.08
Nov-16	21	210	100	360	0.35	0.35	27	270	130	410	0.27	0.45	48	480	260	739	0.27	0.80
Dec-16	8	80	8	199	0.68	0.13	31	309	70	598	0.46	0.51	40	399	80	787	0.49	0.66
Jan-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	3	30	3	60	0.53	0.05	3	30	3	60	0.53	0.05
Mar-17	15	150	15	359	0.60	0.25	13	130	50	219	0.34	0.22	28	279	80	529	0.43	0.46
Apr-17	2	20	2	50	0.68	0.03	4	40	10	80	0.44	0.07	6	60	20	100	0.33	0.10
May-17	6	60	6	160	0.72	0.10	2	20	2	50	0.68	0.03	8	80	10	170	0.54	0.13
Jun-17	4	40	4	100	0.68	0.07	7	70	20	140	0.46	0.12	11	110	30	230	0.47	0.18
Jul-17	31	309	31	728	0.64	0.51	37	369	180	619	0.33	0.61	70	698	230	1407	0.47	1.16
Aug-17	20	200	60	380	0.44	0.33	42	420	210	719	0.30	0.70	63	630	300	1029	0.31	1.05
Sep-17	10	100	40	169	0.38	0.17	12	120	50	209	0.35	0.20	22	219	130	319	0.23	0.36
Oct-17	19	170	80	268	0.28	0.28	7	63	9	116	0.50	0.10	26	232	116	376	0.30	0.39
Nov-17	32	319	110	599	0.40	0.53	31	309	90	658	0.50	0.51	63	628	239	1227	0.43	1.05
Dec-17	46	459	46	989	0.51	0.76	4	40	4	90	0.57	0.07	50	499	90	1009	0.48	0.83
Jan-18	6	60	6	160	0.84	0.10	14	140	20	309	0.58	0.23	20	200	30	479	0.64	0.33
Feb-18	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-18	2	20	2	60	1.00	0.03	4	40	4	90	0.57	0.07	6	60	10	120	0.48	0.10

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	-	0	5	48	10	96	0.49	0.09	5	48	10	105	0.49	0.09
May-16	32	309	126	599	0.40	0.58	25	242	116	416	0.34	0.45	58	561	280	986	0.35	1.05
Jun-16	38	368	136	668	0.38	0.69	39	378	242	542	0.20	0.71	77	745	455	1104	0.24	1.39
Jul-16	14	134	19	316	0.65	0.25	14	134	29	269	0.47	0.25	28	269	96	489	0.39	0.50
Aug-16	13	123	28	256	0.50	0.23	23	218	76	407	0.40	0.41	36	341	142	616	0.38	0.64
Sep-16	5	48	10	95	0.49	0.09	9	86	19	162	0.44	0.16	15	143	57	257	0.34	0.27
Oct-16	73	720	325	1183	0.32	1.34	13	128	49	227	0.35	0.24	86	848	404	1409	0.29	1.58
Nov-16	20	198	109	297	0.27	0.37	20	198	89	337	0.34	0.37	40	397	218	615	0.25	0.74
Dec-16	4	39	4	89	0.58	0.07	8	79	30	148	0.42	0.15	12	118	30	227	0.42	0.22
Jan-17	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Feb-17	1	10	1	30	1.00	0.02	4	40	10	79	0.46	0.07	5	50	20	89	0.39	0.09
Mar-17	9	89	9	258	0.89	0.17	3	30	3	60	0.54	0.06	12	119	12	308	0.75	0.22
Apr-17	3	30	3	79	0.73	0.06	3	30	3	69	0.54	0.06	7	69	10	149	0.59	0.13
May-17	9	89	40	149	0.30	0.17	10	99	10	268	0.70	0.18	19	188	69	357	0.43	0.35
Jun-17	4	40	4	99	0.69	0.07	12	119	40	218	0.37	0.22	16	159	59	268	0.34	0.30
Jul-17	45	447	50	1013	0.63	0.83	33	328	149	576	0.33	0.61	78	775	209	1619	0.47	1.45
Aug-17	12	119	30	229	0.47	0.22	30	298	119	497	0.34	0.56	42	418	179	696	0.31	0.78
Sep-17	13	129	20	278	0.51	0.24	25	248	50	556	0.57	0.46	45	447	109	1023	0.59	0.83
Oct-17	15	162	54	325	0.42	0.3	7	76	32	130	0.36	0.14	23	249	119	422	0.32	0.46
Nov-17	34	338	109	616	0.39	0.63	43	427	228	666	0.27	0.80	78	775	368	1242	0.29	1.45
Dec-17	8	79	20	139	0.42	0.15	5	50	10	99	0.49	0.09	13	129	50	218	0.35	0.24
Jan-18	12	119	12	298	0.78	0.22	9	89	20	199	0.57	0.17	21	209	30	536	0.67	0.39
Feb-18	0	0	0	0	-	0	3	30	3	69	0.54	0.06	3	30	3	59	0.54	0.06
Mar-18	9	89	9	257	0.89	0.17	6	59	10	118	0.49	0.11	15	148	30	326	0.54	0.28

2 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	-	0	4	40	4	90	0.58	0.16	4	40	4	90	0.58	0.16
May-16	24	240	60	520	0.53	0.94	12	120	40	210	0.36	0.47	37	370	140	700	0.42	1.44
Jun-16	34	339	100	638	0.42	1.32	25	249	140	369	0.25	0.97	59	589	329	938	0.28	2.30
Jul-16	2	20	2	50	0.68	0.08	7	70	7	159	0.63	0.27	9	90	10	179	0.52	0.35
Aug-16	0	0	0	0	-	0	10	99	20	208	0.51	0.39	10	99	30	218	0.51	0.39
Sep-16	1	10	1	30	1.00	0.04	8	80	10	159	0.49	0.31	9	90	10	179	0.49	0.35
Oct-16	45	447	129	845	0.41	1.74	10	99	40	199	0.41	0.39	55	547	199	965	0.38	2.13
Nov-16	7	70	20	130	0.42	0.27	10	100	50	160	0.29	0.39	17	170	90	261	0.26	0.66
Dec-16	2	20	2	49	0.68	0.08	1	10	1	30	1.00	0.04	3	30	3	69	0.73	0.12
Jan-17	0	0	0	0	-	0	1	10	1	30	1.00	0.04	1	10	1	30	1.00	0.04
Feb-17	1	10	1	30	1.00	0.04	1	10	1	30	1.00	0.04	2	20	2	50	0.68	0.08
Mar-17	9	90	9	259	0.89	0.35	2	20	2	50	0.68	0.08	11	110	11	299	0.82	0.43
Apr-17	1	10	1	30	1.00	0.04	2	20	2	50	0.68	0.08	3	30	3	60	0.54	0.12
May-17	4	40	10	70	0.45	0.16	1	10	1	30	1.00	0.04	5	50	20	90	0.39	0.20
Jun-17	2	20	2	60	1.00	0.08	8	80	30	139	0.37	0.31	10	100	40	159	0.33	0.39
Jul-17	25	249	25	539	0.53	0.97	22	219	90	379	0.36	0.85	47	469	120	878	0.42	1.83
Aug-17	11	110	20	229	0.51	0.43	13	130	50	219	0.36	0.51	24	239	100	418	0.35	0.93
Sep-17	4	40	10	70	0.45	0.16	7	70	20	130	0.42	0.27	11	110	60	160	0.26	0.43
Oct-17	12	119	30	239	0.51	0.46	3	30	3	60	0.53	0.12	15	149	50	308	0.47	0.58
Nov-17	11	110	11	270	0.65	0.43	9	90	20	160	0.40	0.35	20	200	50	399	0.48	0.78
Dec-17	5	50	5	110	0.57	0.20	2	20	2	50	0.68	0.08	7	70	10	150	0.51	0.27
Jan-18	10	100	10	270	0.74	0.39	6	60	6	150	0.68	0.23	16	160	16	440	0.70	0.62
Feb-18	0	0	0	0	-	0	2	20	2	50	0.68	0.08	2	20	2	50	0.68	0.08
Mar-18	8	80	8	229	0.88	0.31	1	10	1	30	1.00	0.04	9	90	9	239	0.78	0.35

Puffin

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	22	220	120	330	0.25	0.37	2	20	2	60	1.00	0.03	24	240	140	350	0.23	0.4
May-16	3	30	3	90	1.00	0.05	0	0	0	0	-	0	3	30	3	90	1.00	0.05
Jun-16	2	20	2	50	0.68	0.03	0	0	0	0	-	0	2	20	2	50	0.68	0.03
Jul-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Sep-16	4	40	10	70	0.44	0.07	0	0	0	0	-	0	4	40	10	80	0.44	0.07
Oct-16	13	130	50	210	0.30	0.22	0	0	0	0	-	0	13	130	60	210	0.30	0.22
Nov-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	2	20	2	50	0.68	0.03	0	0	0	0	-	0	2	20	2	50	0.68	0.03
Apr-17	7	70	20	130	0.41	0.12	0	0	0	0	-	0	7	70	20	130	0.41	0.12
May-17	10	100	30	200	0.43	0.17	0	0	0	0	-	0	10	100	30	200	0.43	0.17
Jun-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Aug-17	53	530	280	819	0.27	0.88	0	0	0	0	-	0	53	530	280	809	0.27	0.88
Sep-17	17	169	60	299	0.37	0.28	0	0	0	0	-	0	17	169	60	299	0.37	0.28
Oct-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-18	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Feb-18	5	50	20	90	0.38	0.08	2	20	2	60	1.00	0.03	7	70	20	130	0.46	0.12
Mar-18	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	10	96	19	210	0.55	0.18	0	0	0	0	-	0	10	96	10	220	0.55	0.18
May-16	4	39	4	87	0.58	0.07	0	0	0	0	-	0	4	39	4	87	0.58	0.07
Jun-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-16	5	47	9	85	0.39	0.09	0	0	0	0	-	0	5	47	19	85	0.39	0.09
Sep-16	9	86	29	162	0.41	0.16	0	0	0	0	-	0	9	86	29	162	0.41	0.16
Oct-16	19	187	79	315	0.33	0.35	1	10	1	30	1.00	0.02	20	197	89	315	0.31	0.37
Nov-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	3	30	3	59	0.54	0.06	0	0	0	0	-	0	3	30	3	69	0.54	0.06
Mar-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	10	99	40	178	0.37	0.18	0	0	0	0	-	0	10	99	30	168	0.37	0.18
May-17	4	40	4	89	0.58	0.07	0	0	0	0	-	0	4	40	4	89	0.58	0.07
Jun-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	32	318	149	547	0.33	0.59	0	0	0	0	-	0	32	318	139	547	0.33	0.59
Sep-17	8	79	20	149	0.46	0.15	0	0	0	0	-	0	8	79	20	159	0.46	0.15
Oct-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Jan-18	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-18	6	59	10	128	0.54	0.11	0	0	0	0	-	0	6	59	10	138	0.54	0.11
Mar-18	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0

2 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	5	50	5	109	0.57	0.20	0	0	0	0	0	0	5	50	5	109	0.57	0.2
May-16	1	10	1	30	1.00	0.04	0	0	0	0	0	0	1	10	1	30	1.00	0.04
Jun-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jul-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Aug-16	2	20	2	50	0.68	0.08	0	0	0	0	0	0	2	20	2	50	0.68	0.08
Sep-16	2	20	2	50	0.68	0.08	0	0	0	0	0	0	2	20	2	50	0.68	0.08
Oct-16	11	109	30	209	0.42	0.43	1	10	1	30	1.00	0.04	12	119	40	209	0.38	0.46
Nov-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Apr-17	5	50	5	109	0.57	0.20	0	0	0	0	0	0	5	50	5	109	0.57	0.20
May-17	3	30	3	80	0.73	0.12	0	0	0	0	0	0	3	30	3	80	0.73	0.12
Jun-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Aug-17	17	169	60	319	0.43	0.66	0	0	0	0	0	0	17	169	50	319	0.43	0.66
Sep-17	5	50	10	100	0.48	0.2	0	0	0	0	0	0	5	50	10	110	0.48	0.20
Oct-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-17	1	10	1	30	1.00	0.04	0	0	0	0	0	0	1	10	1	30	1.00	0.04
Jan-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-18	4	40	4	89	0.58	0.16	0	0	0	0	0	0	4	40	4	89	0.58	0.16
Mar-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0

Little auk

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Guillemot

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	134	1339	720	2129	0.30	2.23	11	110	11	220	0.49	0.18	145	1449	750	2389	0.30	2.41
May-16	516	5150	3104	7575	0.23	8.58	21	210	70	419	0.46	0.35	537	5359	3194	7745	0.22	8.93
Jun-16	513	5121	3414	7307	0.21	8.53	48	479	299	679	0.22	0.80	564	5630	3893	7965	0.20	9.38
Jul-16	711	7099	5502	8737	0.12	11.82	19	190	100	280	0.25	0.32	730	7289	5671	8917	0.12	12.14
Aug-16	1375	13722	3463	29310	0.48	22.86	0	0	0	0	-	0	1376	13732	2954	26835	0.48	22.87
Sep-16	2650	26465	11785	43343	0.32	44.08	0	0	0	0	-	0	2650	26465	11855	45571	0.32	44.08
Oct-16	736	7353	5045	9911	0.17	12.25	6	60	20	110	0.41	0.10	743	7423	5065	9761	0.17	12.36
Nov-16	196	1958	1399	2498	0.15	3.26	1	10	1	30	1.00	0.02	197	1968	1399	2537	0.15	3.28
Dec-16	129	1285	757	1923	0.23	2.14	0	0	0	0	-	0	129	1285	737	1923	0.23	2.14
Jan-17	295	2943	1965	3880	0.18	4.90	14	140	30	279	0.50	0.23	309	3082	2055	4189	0.18	5.13
Feb-17	346	3455	2307	4663	0.17	5.75	24	240	120	369	0.28	0.40	370	3695	2516	4803	0.17	6.15
Mar-17	449	4479	1846	9008	0.46	7.46	109	1087	559	1596	0.25	1.81	559	5576	2803	10335	0.40	9.29
Apr-17	135	1347	739	2106	0.27	2.24	7	70	20	140	0.46	0.12	142	1417	798	2186	0.26	2.36
May-17	345	3444	2117	5172	0.23	5.74	54	539	349	739	0.20	0.90	399	3983	2596	5671	0.20	6.63
Jun-17	87	868	279	1587	0.40	1.45	4	40	4	90	0.57	0.07	91	908	319	1657	0.38	1.51
Jul-17	561	5598	2714	8941	0.29	9.32	5	50	20	90	0.38	0.08	567	5658	2724	9040	0.29	9.42
Aug-17	3365	33626	23593	44058	0.16	56.01	1	10	1	30	1.00	0.02	3388	33856	24093	44758	0.16	56.39
Sep-17	151	1505	1047	2043	0.18	2.51	15	150	15	419	0.86	0.25	166	1655	1136	2253	0.17	2.76
Oct-17	79	706	474	1002	0.20	1.18	22	197	98	304	0.27	0.33	101	903	653	1154	0.15	1.50
Nov-17	1203	12000	8160	16908	0.19	19.99	26	259	150	389	0.24	0.43	1229	12259	8449	17257	0.19	20.42
Dec-17	523	5224	3825	6862	0.16	8.70	12	120	30	230	0.46	0.20	535	5343	3865	7191	0.16	8.90
Jan-18	152	1516	1008	2135	0.20	2.53	35	349	200	529	0.25	0.58	187	1865	1237	2693	0.20	3.11
Feb-18	192	1916	1198	2685	0.21	3.19	29	289	90	549	0.45	0.48	221	2206	1347	3004	0.19	3.67
Mar-18	102	1020	670	1391	0.19	1.70	6	60	10	130	0.53	0.10	108	1080	720	1441	0.17	1.80

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	79	756	440	1138	0.24	1.41	12	115	29	220	0.42	0.21	91	870	526	1320	0.24	1.62
May-16	642	6207	3074	10789	0.35	11.59	23	222	87	396	0.35	0.41	665	6429	3190	11253	0.34	12.00
Jun-16	697	6747	3882	10203	0.24	12.60	47	455	281	649	0.22	0.85	744	7202	4308	10532	0.23	13.45
Jul-16	790	7577	5169	10464	0.17	14.15	18	173	67	288	0.34	0.32	808	7749	5524	10253	0.17	14.47
Aug-16	1913	18128	8462	31593	0.36	33.85	0	0	0	0	-	0	1913	18128	8964	31925	0.36	33.85
Sep-16	2199	20959	9484	34217	0.29	39.14	2	19	2	48	0.69	0.04	2202	20988	10341	34551	0.29	39.19
Oct-16	631	6219	5037	7451	0.10	11.61	15	148	49	276	0.38	0.28	646	6367	5194	7580	0.10	11.89
Nov-16	263	2608	1477	3787	0.23	4.87	9	89	9	208	0.61	0.17	273	2707	1636	3867	0.23	5.05
Dec-16	197	1941	916	3301	0.32	3.62	2	20	2	59	1.00	0.04	199	1961	887	3281	0.31	3.66
Jan-17	163	1610	958	2331	0.23	3.01	5	49	5	109	0.57	0.09	168	1659	1007	2449	0.22	3.10
Feb-17	285	2822	1396	4376	0.27	5.27	22	218	119	347	0.28	0.41	307	3039	1624	4841	0.27	5.67
Mar-17	298	2956	1309	5615	0.41	5.52	49	486	208	764	0.30	0.91	347	3442	1815	5952	0.35	6.43
Apr-17	147	1456	842	2278	0.26	2.72	16	159	50	317	0.45	0.30	163	1615	892	2506	0.26	3.02
May-17	412	4083	2636	5818	0.22	7.62	41	406	218	624	0.26	0.76	453	4490	2904	6472	0.21	8.38
Jun-17	231	2290	763	4213	0.40	4.28	15	149	50	268	0.39	0.28	246	2439	892	4402	0.38	4.55
Jul-17	841	8354	2583	17503	0.47	15.60	5	50	10	99	0.49	0.09	847	8414	2881	16431	0.47	15.71
Aug-17	3255	32367	14220	53448	0.33	60.44	0	0	0	0	-	0	3306	32874	15125	56670	0.33	61.39
Sep-17	212	2106	1550	2672	0.14	3.93	7	70	20	129	0.43	0.13	219	2176	1599	2732	0.14	4.06
Oct-17	61	660	357	1061	0.30	1.23	12	130	65	216	0.31	0.24	73	790	444	1191	0.27	1.48
Nov-17	1813	18011	10123	27369	0.25	33.63	34	338	169	517	0.27	0.63	1847	18349	10729	28015	0.24	34.26
Dec-17	623	6173	3855	8730	0.21	11.53	9	89	30	168	0.41	0.17	632	6263	3815	8908	0.21	11.69
Jan-18	421	4181	1122	9435	0.56	7.81	28	278	149	417	0.26	0.52	450	4469	1351	9514	0.53	8.34
Feb-18	262	2588	1660	3636	0.20	4.83	21	207	119	306	0.24	0.39	283	2796	1778	3932	0.19	5.22
Mar-18	113	1115	819	1402	0.14	2.08	4	39	10	79	0.46	0.07	117	1155	859	1461	0.14	2.16

2 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	33	328	189	487	0.25	1.28	1	10	1	30	1.00	0.04	34	338	189	497	0.25	1.32
May-16	292	2918	1189	5717	0.43	11.39	13	130	50	220	0.36	0.51	305	3048	1299	5687	0.41	11.90
Jun-16	316	3152	1606	4948	0.29	12.30	14	140	60	229	0.36	0.55	330	3292	1666	5177	0.28	12.85
Jul-16	290	2887	1822	4082	0.21	11.27	9	90	20	159	0.40	0.35	299	2977	1971	4192	0.21	11.62
Aug-16	661	6551	2924	10892	0.33	25.57	0	0	0	0	-	0	661	6551	3052	11120	0.33	25.57
Sep-16	997	9915	3540	18737	0.41	38.70	1	10	1	30	1.00	0.04	999	9935	3540	19005	0.41	38.78
Oct-16	327	3252	2476	4097	0.13	12.69	6	60	6	159	0.73	0.23	333	3311	2496	4097	0.13	12.92
Nov-16	115	1153	712	1664	0.22	4.50	8	80	8	200	0.68	0.31	123	1233	752	1744	0.21	4.81
Dec-16	103	1019	386	1969	0.40	3.98	2	20	2	59	1.00	0.08	105	1039	416	1890	0.39	4.06
Jan-17	81	807	418	1315	0.30	3.15	3	30	3	80	0.73	0.12	84	837	458	1335	0.29	3.27
Feb-17	147	1462	656	2437	0.32	5.71	8	80	20	149	0.45	0.31	155	1542	736	2516	0.31	6.02
Mar-17	192	1916	559	4430	0.62	7.48	24	239	40	489	0.49	0.93	216	2155	768	4590	0.55	8.41
Apr-17	60	597	368	855	0.22	2.33	6	60	10	119	0.48	0.23	66	656	408	935	0.21	2.56
May-17	204	2030	1214	2996	0.23	7.92	23	229	80	408	0.36	0.89	227	2259	1353	3274	0.22	8.82
Jun-17	113	1125	239	2270	0.47	4.39	8	80	20	149	0.45	0.31	121	1205	309	2330	0.43	4.70
Jul-17	466	4647	1017	10431	0.54	18.14	2	20	2	50	0.68	0.08	468	4667	1007	10282	0.54	18.22
Aug-17	1955	19480	6098	39796	0.47	76.03	0	0	0	0	-	0	1985	19779	6427	41251	0.47	77.20
Sep-17	110	1099	689	1519	0.20	4.29	3	30	3	70	0.54	0.12	113	1129	719	1579	0.20	4.41
Oct-17	36	358	169	617	0.33	1.40	9	90	30	159	0.39	0.35	45	448	209	716	0.31	1.75
Nov-17	887	8858	3984	15259	0.33	34.57	15	150	60	260	0.36	0.59	902	9007	4214	15179	0.33	35.15
Dec-17	287	2865	1667	4223	0.23	11.18	6	60	10	120	0.48	0.23	293	2925	1757	4263	0.23	11.42
Jan-18	232	2318	550	5206	0.54	9.05	13	130	20	270	0.48	0.51	245	2448	630	5136	0.52	9.55
Feb-18	122	1208	644	1862	0.26	4.71	11	109	40	188	0.37	0.43	133	1317	713	2001	0.26	5.14
Mar-18	45	448	279	617	0.21	1.75	2	20	2	50	0.68	0.08	47	468	299	637	0.20	1.83

Razorbill

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	10	100	30	190	0.41	0.17	1	10	1	30	1.00	0.02	11	110	40	190	0.36	0.18
May-16	6	60	6	150	0.68	0.1	0	0	0	0	-	0	6	60	6	150	0.68	0.10
Jun-16	20	200	60	379	0.42	0.33	0	0	0	0	-	0	20	200	60	379	0.42	0.33
Jul-16	8	80	20	140	0.40	0.13	1	10	1	30	1.00	0.02	9	90	30	150	0.36	0.15
Aug-16	29	289	29	669	0.65	0.48	0	0	0	0	-	0	29	289	29	709	0.65	0.48
Sep-16	377	3765	1718	6382	0.32	6.27	0	0	0	0	-	0	377	3765	1648	5992	0.32	6.27
Oct-16	34	340	180	510	0.25	0.57	4	40	4	90	0.57	0.07	38	380	230	549	0.22	0.63
Nov-16	20	200	90	320	0.30	0.33	4	40	4	120	1.00	0.07	24	240	130	370	0.26	0.40
Dec-16	2	20	2	60	1.00	0.03	0	0	0	0	-	0	2	20	2	60	1.00	0.03
Jan-17	47	469	229	748	0.30	0.78	1	10	1	30	1.00	0.02	48	479	239	758	0.29	0.80
Feb-17	3	30	3	60	0.53	0.05	2	20	2	60	1.00	0.03	5	50	10	100	0.48	0.08
Mar-17	28	279	80	589	0.47	0.46	12	120	20	249	0.53	0.2	40	399	140	828	0.47	0.66
Apr-17	20	200	80	339	0.36	0.33	5	50	5	150	1.00	0.08	25	250	110	409	0.32	0.42
May-17	37	369	140	649	0.37	0.61	15	150	30	309	0.49	0.25	52	519	200	879	0.35	0.86
Jun-17	7	70	7	170	0.62	0.12	0	0	0	0	-	0	7	70	7	160	0.62	0.12
Jul-17	2	20	2	60	1.00	0.03	0	0	0	0	-	0	2	20	2	60	1.00	0.03
Aug-17	354	3537	1799	5676	0.30	5.89	0	0	0	0	-	0	354	3537	1809	5836	0.30	5.89
Sep-17	29	289	110	508	0.36	0.48	7	70	7	209	1.00	0.12	36	359	150	598	0.33	0.60
Oct-17	2	18	2	45	0.68	0.03	16	143	16	402	0.87	0.24	18	161	18	438	0.83	0.27
Nov-17	48	479	90	1057	0.59	0.8	3	30	3	80	0.72	0.05	51	509	100	1127	0.55	0.85
Dec-17	11	110	11	250	0.57	0.18	0	0	0	0	-	0	11	110	11	240	0.57	0.18
Jan-18	4	40	4	90	0.57	0.07	0	0	0	0	-	0	4	40	4	90	0.57	0.07
Feb-18	36	359	110	649	0.39	0.6	7	70	7	150	0.55	0.12	43	429	170	739	0.36	0.71
Mar-18	17	170	17	480	0.72	0.28	0	0	0	0	-	0	17	170	17	440	0.72	0.28

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	3	29	3	77	0.73	0.05	0	0	0	0	-	0	3	29	3	77	0.73	0.05
May-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-16	19	184	97	281	0.26	0.34	2	19	2	48	0.69	0.04	21	203	106	310	0.26	0.38
Jul-16	6	58	10	125	0.54	0.11	0	0	0	0	-	0	6	58	10	125	0.54	0.11
Aug-16	55	521	133	976	0.44	0.97	0	0	0	0	-	0	55	521	142	986	0.44	0.97
Sep-16	196	1868	963	2812	0.26	3.49	0	0	0	0	-	0	196	1868	1029	2907	0.26	3.49
Oct-16	47	463	246	739	0.29	0.86	14	138	39	266	0.46	0.26	61	601	365	877	0.22	1.12
Nov-16	19	188	59	327	0.40	0.35	2	20	2	59	1.00	0.04	21	208	69	397	0.43	0.39
Dec-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	65	642	128	1383	0.52	1.2	1	10	1	30	1.00	0.02	66	652	158	1363	0.53	1.22
Feb-17	5	50	10	109	0.49	0.09	0	0	0	0	-	0	5	50	10	99	0.49	0.09
Mar-17	29	288	89	575	0.45	0.54	3	30	3	79	0.73	0.06	32	317	119	575	0.41	0.59
Apr-17	20	198	40	406	0.47	0.37	2	20	2	50	0.69	0.04	22	218	50	446	0.46	0.41
May-17	47	466	79	1100	0.55	0.87	14	139	14	317	0.63	0.26	61	605	109	1328	0.53	1.13
Jun-17	9	89	9	218	0.69	0.17	0	0	0	0	-	0	9	89	9	208	0.69	0.17
Jul-17	3	30	3	60	0.54	0.06	0	0	0	0	-	0	3	30	3	60	0.54	0.06
Aug-17	240	2387	835	4515	0.42	4.46	0	0	0	0	-	0	240	2387	776	4564	0.42	4.46
Sep-17	15	149	20	358	0.58	0.28	9	89	9	209	0.61	0.17	24	238	50	457	0.45	0.44
Oct-17	0	0	0	0	-	0	5	54	5	162	1.00	0.1	5	54	5	162	1.00	0.10
Nov-17	100	993	467	1629	0.30	1.85	2	20	2	60	1.00	0.04	102	1013	497	1609	0.30	1.89
Dec-17	41	406	41	832	0.54	0.76	0	0	0	0	-	0	41	406	41	822	0.54	0.76
Jan-18	12	119	30	209	0.39	0.22	0	0	0	0	-	0	12	119	40	218	0.39	0.22
Feb-18	79	780	217	1531	0.43	1.46	3	30	3	69	0.73	0.06	82	810	267	1551	0.42	1.51
Mar-18	14	138	30	276	0.49	0.26	1	10	1	30	1.00	0.02	15	148	30	286	0.48	0.28

2 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-16	5	50	5	110	0.57	0.2	1	10	1	30	1.00	0.04	6	60	10	120	0.48	0.23
Jul-16	2	20	2	60	1.00	0.08	0	0	0	0	-	0	2	20	2	60	1.00	0.08
Aug-16	7	69	7	168	0.63	0.27	0	0	0	0	-	0	7	69	7	168	0.63	0.27
Sep-16	52	517	229	885	0.33	2.02	0	0	0	0	-	0	52	517	209	855	0.33	2.02
Oct-16	17	169	60	298	0.35	0.66	4	40	10	80	0.45	0.16	21	209	109	318	0.28	0.82
Nov-16	6	60	6	160	0.68	0.23	0	0	0	0	-	0	6	60	6	150	0.68	0.23
Dec-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	34	339	34	946	0.88	1.32	0	0	0	0	-	0	34	339	34	956	0.88	1.32
Feb-17	2	20	2	50	0.68	0.08	0	0	0	0	-	0	2	20	2	50	0.68	0.08
Mar-17	14	140	14	369	0.78	0.55	3	30	3	80	0.73	0.12	17	170	30	399	0.64	0.66
Apr-17	8	80	8	199	0.66	0.31	2	20	2	50	0.68	0.08	10	99	10	229	0.62	0.39
May-17	18	179	30	418	0.66	0.7	9	90	9	229	0.80	0.35	27	269	60	557	0.51	1.05
Jun-17	1	10	1	30	1.00	0.04	0	0	0	0	-	0	1	10	1	30	1.00	0.04
Jul-17	1	10	1	30	1.00	0.04	0	0	0	0	-	0	1	10	1	30	1.00	0.04
Aug-17	92	917	239	1953	0.53	3.58	0	0	0	0	-	0	92	917	229	2013	0.53	3.58
Sep-17	15	150	20	330	0.57	0.59	5	50	5	130	0.81	0.2	20	200	40	410	0.45	0.78
Oct-17	0	0	0	0	-	0	5	50	5	149	1.00	0.2	5	50	5	149	1.00	0.20
Nov-17	24	240	40	539	0.56	0.94	0	0	0	0	-	0	24	240	40	509	0.56	0.94
Dec-17	14	140	14	399	0.86	0.55	0	0	0	0	-	0	14	140	14	399	0.86	0.55
Jan-18	3	30	3	60	0.54	0.12	0	0	0	0	-	0	3	30	3	70	0.54	0.12
Feb-18	53	525	53	1248	0.62	2.05	2	20	2	59	1.00	0.08	55	545	59	1228	0.60	2.13
Mar-18	6	60	6	119	0.54	0.23	0	0	0	0	-	0	6	60	6	119	0.54	0.23

Large auk

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
May-16	9	90	9	220	0.63	0.15	1	10	1	30	1.00	0.02	10	100	10	230	0.58	0.17
Jun-16	22	220	90	399	0.38	0.37	4	40	4	100	0.68	0.07	26	260	110	429	0.34	0.43
Jul-16	24	240	120	359	0.26	0.4	1	10	1	30	1.00	0.02	25	250	150	369	0.25	0.42
Aug-16	11	110	20	230	0.51	0.18	0	0	0	0	-	0	11	110	20	230	0.51	0.18
Sep-16	95	949	409	1558	0.34	1.58	0	0	0	0	-	0	95	949	459	1628	0.34	1.58
Oct-16	30	300	130	510	0.33	0.5	3	30	3	80	0.72	0.05	33	330	160	529	0.30	0.55
Nov-16	3	30	3	60	0.53	0.05	1	10	1	30	1.00	0.02	4	40	10	70	0.44	0.07
Dec-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Jan-17	4	40	4	90	0.57	0.07	0	0	0	0	-	0	4	40	4	90	0.57	0.07
Feb-17	9	90	20	180	0.48	0.15	0	0	0	0	-	0	9	90	20	180	0.48	0.15
Mar-17	25	249	130	389	0.28	0.41	5	50	5	110	0.63	0.08	30	299	180	419	0.21	0.50
Apr-17	5	50	10	90	0.48	0.08	2	20	2	50	0.68	0.03	7	70	30	120	0.35	0.12
May-17	4	40	4	90	0.57	0.07	3	30	3	80	0.72	0.05	8	80	20	160	0.44	0.13
Jun-17	2	20	2	60	1.00	0.03	0	0	0	0	-	0	2	20	2	60	1.00	0.03
Jul-17	4	40	4	90	0.57	0.07	0	0	0	0	-	0	4	40	4	90	0.57	0.07
Aug-17	221	2208	1179	3288	0.25	3.68	0	0	0	0	-	0	222	2218	1299	3457	0.25	3.69
Sep-17	5	50	10	90	0.38	0.08	1	10	1	30	1.00	0.02	6	60	30	100	0.33	0.10
Oct-17	3	27	3	54	0.53	0.04	4	36	4	107	1.00	0.06	7	63	9	143	0.58	0.10
Nov-17	33	329	120	608	0.37	0.55	18	180	20	419	0.59	0.3	51	509	180	898	0.35	0.85
Dec-17	10	100	30	180	0.43	0.17	0	0	0	0	-	0	10	100	30	190	0.43	0.17
Jan-18	31	309	110	599	0.41	0.51	1	10	1	40	1.00	0.02	32	319	130	589	0.39	0.53
Feb-18	4	40	10	80	0.44	0.07	1	10	1	30	1.00	0.02	5	50	20	90	0.38	0.08
Mar-18	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	2	19	2	48	0.69	0.04	5	48	5	115	0.70	0.09	7	67	10	134	0.52	0.13
May-16	13	126	29	242	0.47	0.24	1	10	1	29	1.00	0.02	14	135	39	271	0.44	0.25
Jun-16	23	223	68	397	0.40	0.42	2	19	2	48	0.69	0.04	25	242	87	416	0.36	0.45
Jul-16	61	585	230	1074	0.40	1.09	0	0	0	0	-	0	61	585	221	1122	0.40	1.09
Aug-16	58	550	104	1232	0.62	1.03	0	0	0	0	-	0	58	550	95	1279	0.62	1.03
Sep-16	89	848	362	1420	0.34	1.58	0	0	0	0	-	0	89	848	353	1430	0.34	1.58
Oct-16	38	375	256	532	0.19	0.7	2	20	2	59	1.00	0.04	41	404	276	532	0.17	0.75
Nov-16	9	89	10	188	0.52	0.17	4	40	4	109	0.78	0.07	13	129	20	268	0.49	0.24
Dec-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	10	1.00	0.02
Jan-17	14	138	49	237	0.37	0.26	2	20	2	59	1.00	0.04	16	158	59	267	0.33	0.30
Feb-17	8	79	30	139	0.38	0.15	5	50	5	149	1.00	0.09	13	129	40	267	0.49	0.24
Mar-17	17	169	79	298	0.34	0.32	6	60	20	109	0.42	0.11	23	228	99	387	0.31	0.43
Apr-17	5	50	10	99	0.49	0.09	1	10	1	30	1.00	0.02	6	59	20	109	0.42	0.11
May-17	11	109	30	208	0.42	0.2	5	50	5	139	0.81	0.09	16	159	50	287	0.39	0.30
Jun-17	8	79	20	169	0.52	0.15	0	0	0	0	-	0	8	79	20	178	0.52	0.15
Jul-17	15	149	20	318	0.51	0.28	0	0	0	0	-	0	15	149	15	308	0.51	0.28
Aug-17	160	1591	497	2983	0.43	2.97	0	0	0	0	-	0	162	1611	487	3112	0.42	3.01
Sep-17	4	40	10	70	0.46	0.07	4	40	4	119	1.00	0.07	8	79	20	169	0.52	0.15
Oct-17	4	43	4	119	0.77	0.08	18	195	18	584	1.00	0.36	22	238	22	660	0.82	0.44
Nov-17	78	775	397	1192	0.27	1.45	5	50	20	89	0.39	0.09	83	825	437	1252	0.26	1.54
Dec-17	11	109	30	228	0.48	0.2	1	10	1	30	1.00	0.02	12	119	30	238	0.46	0.22
Jan-18	12	119	40	218	0.41	0.22	1	10	1	30	1.00	0.02	13	129	50	228	0.37	0.24
Feb-18	18	178	59	326	0.40	0.33	12	119	12	247	0.50	0.22	30	296	119	484	0.34	0.55
Mar-18	12	118	20	237	0.47	0.22	0	0	0	0	-	0	12	118	20	237	0.47	0.22

Large auk / diver species

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Nov-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Small auk species

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Auk / small gull species

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
May-16	10	100	30	180	0.41	0.17	0	0	0	0	0	0	10	100	30	190	0.41	0.17
Jun-16	4	40	10	80	0.44	0.07	0	0	0	0	0	0	4	40	10	80	0.44	0.07
Jul-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Aug-16	8	80	30	130	0.36	0.13	0	0	0	0	0	0	8	80	30	130	0.36	0.13
Sep-16	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Oct-16	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Nov-16	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Dec-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Feb-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Mar-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
May-17	2	20	2	50	0.68	0.03	0	0	0	0	0	0	2	20	2	50	0.68	0.03
Jun-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Jul-17	3	30	3	60	0.53	0.05	0	0	0	0	0	0	3	30	3	60	0.53	0.05
Aug-17	7	70	10	150	0.51	0.12	0	0	0	0	0	0	7	70	10	140	0.51	0.12
Sep-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Oct-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Dec-17	15	150	30	290	0.46	0.25	1	10	1	30	1.00	0.02	16	160	20	300	0.46	0.27
Jan-18	0	0	0	0	-	0	1	10	1	40	1.00	0.02	1	10	1	30	1.00	0.02
Feb-18	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Mar-18	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Auk / shearwater species

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	1	10	1	29	1.00	0.02	1	10	1	29	1.00	0.02
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
Aug-17	1	10	1	30	1	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Unknown auk

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	6	60	10	120	0.48	0.10	7	70	20	140	0.46	0.12	13	130	50	220	0.35	0.22
May-16	16	160	60	289	0.39	0.27	3	30	3	60	0.53	0.05	19	190	80	329	0.35	0.32
Jun-16	16	160	50	299	0.40	0.27	0	0	0	0	-	0	16	160	50	279	0.40	0.27
Jul-16	8	80	30	140	0.40	0.13	0	0	0	0	-	0	8	80	20	150	0.40	0.13
Aug-16	36	359	130	669	0.39	0.60	0	0	0	0	-	0	36	359	130	669	0.39	0.60
Sep-16	27	270	100	489	0.39	0.45	0	0	0	0	-	0	27	270	100	479	0.39	0.45
Oct-16	34	340	160	549	0.30	0.57	0	0	0	0	-	0	34	340	160	539	0.30	0.57
Nov-16	3	30	3	80	0.72	0.05	0	0	0	0	-	0	3	30	3	80	0.72	0.05
Dec-16	6	60	10	130	0.53	0.10	0	0	0	0	-	0	6	60	10	130	0.53	0.10
Jan-17	2	20	2	50	0.68	0.03	0	0	0	0	-	0	2	20	2	50	0.68	0.03
Feb-17	6	60	20	100	0.33	0.10	0	0	0	0	-	0	6	60	20	100	0.33	0.10
Mar-17	15	150	80	229	0.28	0.25	2	20	2	50	0.68	0.03	17	170	90	249	0.24	0.28
Apr-17	17	170	80	269	0.30	0.28	0	0	0	0	-	0	17	170	80	269	0.30	0.28
May-17	22	220	90	389	0.36	0.37	1	10	1	30	1.00	0.02	23	230	100	409	0.38	0.38
Jun-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	15	150	40	289	0.46	0.25	0	0	0	0	-	0	15	150	40	299	0.46	0.25
Aug-17	65	650	410	899	0.21	1.08	0	0	0	0	-	0	65	650	390	919	0.21	1.08
Sep-17	25	249	130	379	0.27	0.41	1	10	1	30	1.00	0.02	26	259	140	399	0.25	0.43
Oct-17	1	9	1	27	1.00	0.01	0	0	0	0	-	0	1	9	1	27	1.00	0.01
Nov-17	13	130	13	339	0.76	0.22	1	10	1	30	1.00	0.02	14	140	20	349	0.71	0.23
Dec-17	4	40	10	70	0.44	0.07	0	0	0	0	-	0	4	40	10	80	0.44	0.07
Jan-18	7	70	30	120	0.35	0.12	0	0	0	0	-	0	7	70	30	120	0.35	0.12
Feb-18	1	10	1	30	1.00	0.02	3	30	3	90	1.00	0.05	4	40	4	100	0.77	0.07
Mar-18	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	6	57	10	115	0.49	0.11	5	48	5	134	0.81	0.09	11	105	29	201	0.42	0.20
May-16	38	367	106	725	0.46	0.69	0	0	0	0	-	0	38	367	97	725	0.46	0.69
Jun-16	16	155	77	252	0.30	0.29	1	10	1	29	1.00	0.02	17	165	77	252	0.28	0.31
Jul-16	9	86	29	144	0.34	0.16	0	0	0	0	-	0	9	86	29	144	0.34	0.16
Aug-16	24	227	85	426	0.39	0.42	0	0	0	0	-	0	24	227	85	426	0.39	0.42
Sep-16	30	286	57	581	0.49	0.53	0	0	0	0	-	0	30	286	57	581	0.49	0.53
Oct-16	20	197	118	296	0.24	0.37	1	10	1	30	1.00	0.02	21	207	118	306	0.23	0.39
Nov-16	9	89	10	208	0.59	0.17	0	0	0	0	-	0	9	89	10	218	0.59	0.17
Dec-16	2	20	2	59	1.00	0.04	0	0	0	0	-	0	2	20	2	59	1.00	0.04
Jan-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Feb-17	10	99	40	158	0.30	0.18	0	0	0	0	-	0	10	99	40	158	0.30	0.18
Mar-17	8	79	20	159	0.46	0.15	0	0	0	0	-	0	8	79	20	159	0.46	0.15
Apr-17	24	238	119	376	0.29	0.44	3	30	3	89	1.00	0.06	27	267	119	456	0.33	0.50
May-17	28	278	149	436	0.28	0.52	1	10	1	30	1.00	0.02	29	287	149	446	0.29	0.00
Jun-17	3	30	3	79	0.73	0.06	0	0	0	0	-	0	3	30	3	69	0.73	0.06
Jul-17	13	129	30	268	0.47	0.24	0	0	0	0	-	0	13	129	30	268	0.47	0.24
Aug-17	29	288	169	438	0.26	0.54	0	0	0	0	-	0	29	288	159	428	0.26	0.54
Sep-17	31	308	179	467	0.24	0.58	0	0	0	0	-	0	31	308	179	447	0.24	0.58
Oct-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0		0
Nov-17	11	109	30	219	0.48	0.20	0	0	0	0	-	0	11	109	30	238	0.48	0.20
Dec-17	8	79	30	139	0.38	0.15	0	0	0	0	-	0	8	79	20	149	0.38	0.15
Jan-18	18	179	40	387	0.56	0.33	0	0	0	0	-	0	18	179	40	407	0.56	0.33
Feb-18	3	30	3	79	0.73	0.06	1	10	1	30	1.00	0.02	4	40	4	89	0.58	0.07
Mar-18	1	10	1	30	1	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02

Kittiwake

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	50	500	130	900	0.45	0.83	143	1429	790	2269	0.28	2.38	193	1929	930	3228	0.31	3.21
May-16	90	898	230	1886	0.53	1.50	143	1427	619	2555	0.39	2.38	234	2335	858	4661	0.44	3.89
Jun-16	49	489	80	1148	0.64	0.81	116	1158	809	1547	0.17	1.93	168	1677	938	2725	0.27	2.79
Jul-16	68	679	170	1458	0.54	1.13	60	599	260	1118	0.41	1.00	129	1288	579	2267	0.35	2.15
Aug-16	177	1766	177	4531	0.70	2.94	113	1128	479	2215	0.45	1.88	290	2894	549	6846	0.59	4.82
Sep-16	206	2057	206	5832	0.90	3.43	68	679	300	1168	0.36	1.13	274	2736	389	7181	0.76	4.56
Oct-16	1	10	1	30	1.00	0.02	4	40	10	80	0.44	0.07	5	50	20	90	0.38	0.08
Nov-16	2	20	2	50	0.68	0.03	2	20	2	50	0.68	0.03	4	40	4	90	0.57	0.07
Dec-16	1	10	1	30	1.00	0.02	30	299	120	488	0.33	0.50	31	309	149	518	1.00	0.51
Jan-17	16	160	40	309	0.47	0.27	16	160	70	249	0.30	0.27	32	319	140	539	0.33	0.53
Feb-17	1	10	1	30	1.00	0.02	2	20	2	50	0.68	0.03	3	30	3	60	0.53	0.05
Mar-17	14	140	50	239	0.34	0.23	26	259	140	399	0.25	0.43	40	399	219	589	0.25	0.66
Apr-17	5	50	5	120	0.70	0.08	18	180	100	260	0.25	0.30	23	230	130	349	0.25	0.38
May-17	27	270	90	499	0.41	0.45	121	1208	549	2166	0.35	2.01	148	1478	729	2426	0.31	2.46
Jun-17	15	150	15	399	0.72	0.25	53	529	190	998	0.42	0.88	68	679	210	1317	0.45	1.13
Jul-17	10	100	10	259	0.81	0.17	56	559	349	798	0.21	0.93	68	679	419	998	0.23	1.13
Aug-17	678	6775	2728	12051	0.38	11.29	187	1869	709	3567	0.39	3.11	866	8654	3707	14310	0.32	14.41
Sep-17	1	10	1	30	1.00	0.02	2	20	2	50	0.68	0.03	3	30	3	60	0.53	0.05
Oct-17	3	27	3	72	0.72	0.04	13	116	36	215	0.41	0.19	16	143	63	232	0.33	0.24
Nov-17	9	90	9	249	0.78	0.15	29	289	160	439	0.26	0.48	38	379	190	638	0.31	0.63
Dec-17	53	529	60	1258	0.65	0.88	83	829	489	1228	0.24	1.38	136	1358	599	2357	0.35	2.26
Jan-18	0	0	0	0	-	0	12	120	60	190	0.30	0.20	12	120	50	190	0.30	0.20
Feb-18	7	70	30	120	0.35	0.12	39	389	210	619	0.29	0.65	46	459	240	739	0.29	0.76
Mar-18	8	80	10	160	0.51	0.13	15	150	60	240	0.31	0.25	23	230	110	360	0.28	0.38

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	28	268	96	469	0.38	0.50	110	1052	526	1616	0.27	1.96	138	1320	689	2047	0.28	2.46
May-16	137	1324	464	2301	0.38	2.47	176	1701	986	2784	0.26	3.18	313	3026	1576	4824	0.28	5.65
Jun-16	41	397	136	736	0.41	0.74	108	1045	726	1413	0.17	1.95	149	1442	910	2081	0.19	2.69
Jul-16	29	278	125	441	0.31	0.52	54	518	326	738	0.21	0.97	87	834	518	1285	0.23	1.56
Aug-16	369	3497	569	8216	0.61	6.53	247	2341	720	4454	0.40	4.37	619	5866	1564	12575	0.49	10.95
Sep-16	151	1439	151	3765	0.74	2.69	53	505	257	772	0.27	0.94	204	1944	429	4451	0.57	3.63
Oct-16	1	10	1	30	1.00	0.02	4	39	4	89	0.58	0.07	5	49	10	99	0.49	0.09
Nov-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Dec-16	0	0	0	0	-	0	16	158	49	286	0.41	0.30	16	158	49	296	0.41	0.30
Jan-17	56	553	207	1017	0.37	1.03	20	198	79	316	0.31	0.37	76	751	316	1244	0.33	1.40
Feb-17	2	20	2	50	0.69	0.04	3	30	3	59	0.54	0.06	5	50	10	89	0.39	0.09
Mar-17	25	248	40	556	0.55	0.46	34	337	129	684	0.49	0.63	59	585	188	1131	0.43	1.09
Apr-17	12	119	12	357	1.00	0.22	23	228	79	446	0.41	0.43	35	347	79	773	0.59	0.65
May-17	26	258	109	426	0.34	0.48	117	1160	595	1863	0.29	2.17	143	1417	723	2230	0.27	2.65
Jun-17	59	585	89	1269	0.55	1.09	113	1120	357	2062	0.40	2.09	172	1705	535	3202	0.42	3.18
Jul-17	33	328	33	864	0.73	0.61	61	606	318	993	0.28	1.13	94	934	427	1589	0.33	1.74
Aug-17	306	3043	885	5449	0.39	5.68	305	3033	1074	5171	0.37	5.66	613	6096	2198	10560	0.36	11.38
Sep-17	0	0	0	0	-	0	2	20	2	50	0.69	0.04	2	20	2	50	0.69	0.04
Oct-17	0	0	0	0	-	0	6	65	22	119	0.41	0.12	6	65	22	119	0.41	0.12
Nov-17	22	219	40	497	0.60	0.41	33	328	189	497	0.26	0.61	55	546	288	864	0.28	1.02
Dec-17	148	1467	148	3419	0.65	2.74	104	1031	654	1427	0.20	1.93	252	2497	912	4885	0.41	4.66
Jan-18	1	10	1	30	1.00	0.02	17	169	60	288	0.35	0.32	18	179	79	298	0.33	0.33
Feb-18	16	158	49	296	0.40	0.30	27	267	119	474	0.37	0.50	43	425	198	711	0.34	0.79
Mar-18	4	39	10	69	0.46	0.07	26	257	118	424	0.30	0.48	30	296	148	494	0.30	0.55

Common gull

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	2	20	2	60	1.00	0.03	2	20	2	60	1.00	0.03
Sep-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-16	1	10	1	30	1.00	0.02	2	20	2	60	1.00	0.03	3	30	3	70	0.72	0.05
Nov-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	-	0	3	30	3	60	0.53	0.05	3	30	3	60	0.53	0.05
Sep-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-17	1	9	1	27	1.00	0.01	5	45	18	80	0.37	0.07	6	54	18	89	0.32	0.09
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Nov-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	0	0	2	20	2	50	0.69	0.04	2	20	2	50	0.69	0.04
Apr-17	0	0	0	0	0	0	2	20	2	50	0.69	0.04	2	20	2	50	0.69	0.04
May-17	0	0	0	0	0	0	3	30	3	79	0.73	0.06	3	30	3	79	0.73	0.06
Jun-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-17	1	11	1	32	1.00	0.02	6	65	6	162.00	0.68	0.12	7	76	7	173	0.62	0.14
Nov-17	0	0	0	0	-	0	1	10	1	30.00	1.00	0.02	1	10	1	30	1.00	0.02
Dec-17	0	0	0	0	-	0	0	0	0	0.00	-	0	0	0	0	0	-	0
Jan-18	1	10	1	30	1.00	0.02	2	20	2	60.00	1.00	0.04	3	30	3	89	1.00	0.06
Feb-18	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-18	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02

Black-headed gull

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	2	20	2	60	1.00	0.03	2	20	2	60	1.00	0.03

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Nov-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jun-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Aug-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Sep-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Oct-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-18	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02

Little gull

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	3	30	3	90	1.00	0.05	2	20	2	50	0.68	0.03	5	50	5	130	0.81	0.08
Nov-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	0	0	4	40	4	120	1.00	0.07	4	40	4	120	1.00	0.07
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	12	118	12	296	0.69	0.22	3	30	10	69	0.54	0.06	16	158	16	365	0.60	0.30
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Herring gull

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	-	0	2	20	2	50	0.68	0.03	2	20	2	50	0.68	0.03
Jul-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Aug-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Nov-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Jan-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Mar-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Oct-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-17	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Jan-18	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-18	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Mar-18	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	1	10	1	29	1.00	0.02	0	0	0	0	0	0	1	10	1	29	1.00	0.02
Oct-16	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Nov-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	2	20	2	59	1.00	0.04	2	20	2	59	1.00	0.04
Feb-17	0	0	0	0	-	0	2	20	2	50	0.69	0.04	2	20	2	50	0.69	0.04
Mar-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-17	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02	2	20	2	50	0.69	0.04
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	1	10	1	29	1.00	0.02
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0

Lesser black-backed gull

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	2	20	2	60	1.00	0.03	2	20	2	60	1.00	0.03
Jul-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Jun-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Oct-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-18	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	1	9	1	28	1.00	0.02	2	19	2	57	1.00	0.04	3	28	3	76	0.73	0.05
Sep-16	2	19	2	76	1.00	0.04	2	19	2	57	1.00	0.04	4	38	4	114	1.00	0.07
Oct-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Jun-17	1	10	1	30	1.00	0.02	5	50	5	149	1.00	0.09	6	59	6	169	0.84	0.11
Jul-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	0	0	2	20	2	80	1.00	0.04	2	20	2	60	1.00	0.04
Sep-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Great black-backed gull

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-16	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Jul-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-16	3	30	3	60	0.53	0.05	0	0	0	0	-	0	3	30	3	60	0.53	0.05
Oct-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Nov-16	3	30	3	60	0.53	0.05	3	30	3	60	0.53	0.05	6	60	20	110	0.41	0.10
Dec-16	7	70	10	149	0.51	0.12	6	60	6	139	0.59	0.1	13	130	30	239	0.45	0.22
Jan-17	11	110	40	199	0.39	0.18	10	100	50	150	0.28	0.17	21	209	110	329	0.29	0.35
Feb-17	22	220	100	379	0.34	0.37	1	10	1	30	1.00	0.02	23	230	110	399	0.32	0.38
Mar-17	2	20	2	50	0.68	0.03	2	20	2	50	0.68	0.03	4	40	4	90	0.57	0.07
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Jun-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-17	8	80	8	209	0.71	0.13	8	80	30	140	0.36	0.13	16	160	50	289	0.41	0.27
Dec-17	22	220	30	549	0.72	0.37	8	80	30	150	0.40	0.13	30	300	80	659	0.55	0.50
Jan-18	7	70	20	130	0.41	0.12	7	70	30	120	0.35	0.12	14	140	70	219	0.29	0.23
Feb-18	5	50	5	100	0.56	0.08	1	10	1	30	1.00	0.02	6	60	10	120	0.48	0.10
Mar-18	0	0	0	0	-	0	2	20	2	50	0.68	0.03	2	20	2	50	0.68	0.03

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	4	38	4	114	1.00	0.07	0	0	0	0	0	0	4	38	4	114	1.00	0.07
Sep-16	21	200	21	477	0.61	0.37	0	0	0	0	0	0	21	200	21	448	0.61	0.37
Oct-16	0	0	0	0	-	0	7	69	10	158	0.59	0.13	7	69	10	158	0.59	0.13
Nov-16	8	79	30	139	0.33	0.15	8	79	30	139	0.38	0.15	16	159	89	228	0.23	0.30
Dec-16	9	89	30	148	0.37	0.17	3	30	3	69	0.54	0.06	12	118	39	217	0.39	0.22
Jan-17	14	138	49	237	0.36	0.26	6	59	20	109	0.42	0.11	20	198	89	306	0.30	0.37
Feb-17	13	129	50	228	0.37	0.24	4	40	10	79	0.46	0.07	17	168	69	297	0.35	0.31
Mar-17	13	129	13	308	0.60	0.24	1	10	1	30	1.00	0.02	14	139	14	308	0.62	0.26
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	2	20	2	50	0.69	0.04	0	0	0	0	-	0	2	20	2	50	0.69	0.04
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02	2	20	2	60	1.00	0.04
Sep-17	138	1371	138	4113	1.00	2.56	0	0	0	0	-	0	138	1371	138	4113	1.00	2.56
Oct-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-17	10	99	10	248	0.72	0.18	3	30	3	89	1.00	0.06	13	129	20	298	0.58	0.24
Dec-17	10	99	30	178.00	0.39	0.18	5	50	20	89	0.39	0.09	15	149	69	238	0.32	0.28
Jan-18	7	70	20	129.00	0.43	0.13	5	50	20	89	0.39	0.09	12	119	40	218	0.39	0.22
Feb-18	4	40	4	89	0.58	0.07	4	40	10	79	0.46	0.07	8	79	30	138	0.33	0.15
Mar-18	12	118	39	207.00	0.41	0.22	4	39	10	79	0.46	0.07	16	158	79	257	0.30	0.30

Unknown large gull

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	4	40	10	80	0.44	0.07	4	40	10	70	0.44	0.07
Jul-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Oct-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	2	30	1.00	0.02
Jan-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Mar-17	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-17	0	0	0	0	-	0	1	9	1	27	1.00	0.01	1	9	1	27	1.00	0.01
Nov-17	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Dec-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-18	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	2	19	2	48	0.69	0.04	2	19	2	48	0.69	0.04
Aug-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-16	0	0	0	0	0	0	3	29	3	76	0.73	0.05	3	29	3	76	0.73	0.05
Oct-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Feb-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	0	0	2	20	2	50	0.69	0.04	2	20	2	50	0.69	0.04
Apr-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	-	0	2	20	2	60	1.00	0.04	2	20	2	60	1.00	0.04
Sep-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Oct-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Dec-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-18	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Mar-18	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02

Unknown small gull

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Nov-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Jan-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Mar-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jun-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Aug-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Sep-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Oct-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-18	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Unknown gull

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	2	20	2	50	0.68	0.03	0	0	0	0	0	0	2	20	2	50	0.68	0.03
Oct-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jun-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Aug-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Oct-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Jan-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-18	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-18	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Feb-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-17	2	20	2	60	1.00	0.04	1	10	1	30	1.00	0.02	3	30	3	89	1.00	0.06
Apr-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
May-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	1	10	1	30	1.00	0.02	0	0	0	0	-	0	1	10	1	30	1.00	0.02
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-17	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02	2	20	2	50	0.69	0.04
Oct-17	0	0	0	0	-	0	1	11	1	32	1.00	0.02	1	11	1	32	1.00	0.02
Nov-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-17	3	30	3	59	0.54	0.06	0	0	0	0	0	0	3	30	3	59	0.54	0.06
Jan-18	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Arctic / common tern

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	37	369	37	868	0.63	0.61	134	1337	134	2794	0.54	2.23	172	1716	172	3623	0.55	2.86
Sep-16	1	10	1	30	1.00	0.02	3	30	3	80	0.72	0.05	4	40	4	100	0.77	0.07
Oct-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	8	80	8	220	0.77	0.13	8	80	8	220	0.77	0.13
Jun-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	2	20	2	60	1.00	0.03	2	20	2	60	1.00	0.03
Aug-17	13	130	13	330	0.70	0.22	17	170	17	490	0.88	0.28	30	300	30	779	0.70	0.50
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	67	635	67	1365	0.56	1.19	86	815	398	1365	0.31	1.52	153	1450	663	2407	0.33	2.71
Sep-16	0	0	0	0	-	0	3	29	3	76	0.73	0.05	3	29	3	76	0.73	0.05
Oct-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	-	0	2	20	2	59	1.00	0.04	2	20	2	59	1.00	0.04
Jul-17	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	22	219	22	517	0.71	0.41	32	318	80	587	0.42	0.59	54	537	189	974	0.38	1.00
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Common tern

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	1	10	1	29	1.00	0.02	1	10	1	29	1.00	0.02
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sandwich tern

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	1	10	1	29	1.00	0.02	1	10	1	29	1.00	0.02
Jul-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-16	0	0	0	0	0	0	1	10	1	29	1.00	0.02	1	10	1	29	1.00	0.02
Oct-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	0	0	2	20	2	60	1.00	0.04	2	20	2	60	1.00	0.04
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tern / small gull

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	3	30	3	90	1.00	0.05	0	0	0	0	0	0	3	30	3	90	1.00	0.05
Aug-16	5	50	5	120	0.63	0.08	2	20	2	50	0.68	0.03	7	70	10	170	0.59	0.12
Sep-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Oct-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jun-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Aug-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	1	10	1	29	1.00	0.02	1	10	1	29	1.00	0.02	2	19	2	48	0.69	0.04
Aug-16	0	0	0	0	-	0	1	9	1	28	1.00	0.02	1	9	1	28	1.00	0.02
Sep-16	1	10	1	29	1.00	0.02	2	19	2	57	1.00	0.04	3	29	3	76	0.73	0.05
Oct-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Unknown tern species

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	2	20	2	60	1.00	0.03	8	80	8	190	0.60	0.13	10	100	10	210	0.54	0.17
Sep-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Oct-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Nov-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Dec-16	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jan-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Feb-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Mar-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Apr-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
May-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jun-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Jul-17	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	0
Aug-17	14	140	14	420	1.00	0.23	0	0	0	0	0	0	14	140	14	420	1.00	0.23
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	1	10	1	29	1.00	0.02	1	10	1	29	1.00	0.02
Jun-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-16	7	66	7	199	0.86	0.12	2	19	2	47	0.69	0.04	9	85	9	218	0.69	0.16
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Arctic skua

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	2	20	2	50	0.68	0.03	2	20	2	50	0.68	0.03
Oct-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	1	10	1	29	1.00	0.02	1	10	1	29	1.00	0.02
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Great skua

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Oct-17	0	0	0	0	0	0	1	9	1	27	1.00	0.01	1	9	1	27	1.00	0.01
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	1	10	1	29	1.00	0.02	1	10	1	29	1.00	0.02
Oct-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Aug-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	0	0	2	20	2	50	0.69	0.04	2	20	2	50	0.69	0.04
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Skua species

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	1	10	1	30	1.00	0.02	0	0	0	0	0	0	1	10	1	30	1.00	0.02
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Manx shearwater

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Sep-16	9	90	9	270	1.00	0.15	0	0	0	0	-	0	9	90	9	270	1.00	0.15
Oct-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Nov-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Dec-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jan-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Feb-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Mar-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Apr-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
May-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jun-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Jul-17	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Aug-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	6	57	6	172	1.00	0.11	0	0	0	0	0	0	6	57	6	172	1.00	0.11
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Curlew

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wader species

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Feral pigeon

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Passerine species

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	3	30	3	90	1.00	0.05	3	30	3	90	1.00	0.05
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	4	38	4	115	1.00	0.07	4	38	4	115	1.00	0.07
Aug-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Sep-16	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0
Oct-16	0	0	0	0	0	0	2	20	2	59	1.00	0.04	2	20	2	59	1.00	0.04
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Small bird

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Red-throated diver

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Starling

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	15	150	15	450	1.00	0.25	15	150	15	450	1.00	0.25
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Lapwing

Hornsea Four Array Area	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	1	10	1	30	1.00	0.02	1	10	1	30	1.00	0.02
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4 km Buffer	Sitting						Flying						Total					
Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Precision (CV)	Density (birds km-2)
Apr-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

7 Appendix B: Age Classification of Seabirds from Site-specific Surveys

Gannet

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	3			5		
May-16	15			20		
Jun-16	45	7		34	2	
Jul-16	29			10		
Aug-16	11	1		20	3	
Sep-16	1	9	1	3	6	
Oct-16	18	2		13	1	1
Nov-16	24	2		17	2	
Dec-16	28	2		8		
Jan-17				1		
Feb-17	3			4		
Mar-17	13			3		
Apr-17	3	1		4		
May-17	2			8	2	
Jun-17	6	1		10	2	
Jul-17	36	2		33		
Aug-17	43			24	5	
Sep-17	11	1		28	4	
Oct-17	7			8		
Nov-17	28	1		41		
Dec-17	4			5		
Jan-18	14			9		
Feb-18				3		
Mar-18	4			6		

Razorbill

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16	1		1			
Aug-16						
Sep-16						
Oct-16						
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17				2		2
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18						

Guillemot

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16	22		21	23		23
Jul-16	74		75	87		86
Aug-16						
Sep-16						
Oct-16						
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17	56	1	55	79		80
Aug-17	25		24	23		23
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18						

Large auk

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16	1	1		1		1
Aug-16						
Sep-16						
Oct-16						
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						1
Aug-17						
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18						

Auk / small gull

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16						
Aug-16						
Sep-16						
Oct-16						
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17						
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18	1					
Feb-18						
Mar-18						

Kittiwake

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	141			106	1	
May-16	132	2		165	4	
Jun-16	115	1		104	1	
Jul-16	57			51		
Aug-16	106			200	2	
Sep-16	58		5	42	1	7
Oct-16	2			4		
Nov-16			1			
Dec-16	21	5		13	3	
Jan-17	14	2		14	6	
Feb-17	2			3		
Mar-17	24			28	3	
Apr-17	18			22	1	
May-17	114	7		113	2	
Jun-17	52	1		109	3	
Jul-17	57			60		
Aug-17	184		3	288	4	6
Sep-17			1	2		
Oct-17	9	2	2	5		1
Nov-17	24	2		23	2	4
Dec-17	69	10		82	15	
Jan-18	10	1		13	3	
Feb-18	23	15		21	4	
Mar-18	11	3		18	8	

Common gull

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16						
Aug-16	2					
Sep-16						
Oct-16	1		1	1		
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17				2		
Apr-17				2		
May-17				1	2	
Jun-17						
Jul-17						
Aug-17	2	1		1		
Sep-17						
Oct-17	4	1		6		
Nov-17				1		
Dec-17						
Jan-18				2		
Feb-18						
Mar-18				1		

Black-headed gull

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16						
Aug-16						
Sep-16						
Oct-16				1		
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17						
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18	1					

Little gull

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16						
Aug-16						
Sep-16						
Oct-16				2		
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17						
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18						

Herring gull

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16	1	1				
Jul-16						
Aug-16						
Sep-16						
Oct-16				1		
Nov-16						
Dec-16	1					
Jan-17				1		
Feb-17				2		
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17		1				
Sep-17	1					
Oct-17						
Nov-17						
Dec-17	1					
Jan-18						
Feb-18						
Mar-18	1					

Great black-backed gull

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16		1				
Jul-16						
Aug-16						
Sep-16						
Oct-16				3	4	
Nov-16	2	1		5	2	
Dec-16	4	2		2	1	
Jan-17	8			4	2	
Feb-17		1		1	3	
Mar-17	1	1			1	
Apr-17						
May-17		1				
Jun-17						
Jul-17						
Aug-17						
Sep-17						
Oct-17						
Nov-17	7			3		
Dec-17	7	1		3	1	
Jan-18	7			3	1	
Feb-18	1			4		
Mar-18		2			3	

Lesser black-backed gull

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16	2					
Jul-16						
Aug-16				2		
Sep-16				1		
Oct-16						
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17	1			1		
Jun-17				4	1	
Jul-17						
Aug-17	1					
Sep-17						
Oct-17						
Nov-17				1		
Dec-17						
Jan-18						
Feb-18						
Mar-18						

Large gull species

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16						
Aug-16						
Sep-16					2	1
Oct-16						
Nov-16						
Dec-16		1				
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17						
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18						

Gull species

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16						
Aug-16						
Sep-16						
Oct-16						
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17		1				
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18						

Arctic / Common tern

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16						
Aug-16	1					
Sep-16						
Oct-16						
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17	11			9		
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18						

Common tern

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16						
Aug-16						
Sep-16				1		
Oct-16						
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17						
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18						

Sandwich tern

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16				1		
Jul-16						
Aug-16						
Sep-16						
Oct-16						
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17						
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18						

Arctic skua

Survey	Hornsea Four Array Area			4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16						
May-16						
Jun-16						
Jul-16						
Aug-16						
Sep-16				1		
Oct-16						
Nov-16						
Dec-16						
Jan-17						
Feb-17						
Mar-17						
Apr-17						
May-17						
Jun-17						
Jul-17						
Aug-17	1					
Sep-17						
Oct-17						
Nov-17						
Dec-17						
Jan-18						
Feb-18						
Mar-18						