



Hornsea Project Four: Environmental Statement (ES)

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Volume A5, Annex 5.1: Offshore and Intertidal Ornithology Baseline Characterisation Report

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Glossary

Term	Definition
Commitment	A term used interchangeably with mitigation and enhancement measures. The purpose of Commitments is to reduce and/or eliminate Likely Significant Effects (LSEs), in EIA terms. Primary (Design) or Tertiary (Inherent) are both embedded within the assessment at the relevant point in the EIA (e.g. at Scoping, Preliminary Environmental Information Report (PEIR) or ES). Secondary commitments are incorporated to reduce LSE to environmentally acceptable levels following initial assessment i.e. so that residual effects are acceptable.
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 Project Four Offshore Wind Farm	The term covers all elements of the project (i.e. both the offshore and onshore). Hornsea Four infrastructure will include offshore generating stations (wind turbines), electrical export cables to landfall, and connection to the electricity transmission network. Hereafter referred to as Hornsea Four.
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 ES 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 Springs (MHWS)	The height of mean high water during spring tides in a year.
Mean Low Water Springs (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, PEIR or ES).
Marine Renewables Strategic environmental assessment (MRSea)	Statistical package to model spatial count data and predict spatial densities / abundances; developed by the Centre for Research into Ecological and Environmental Modelling (CREEM) specifically for dealing with data collected for offshore wind farm projects.

Term	Definition
Order Limits	The limits within which Hornsea Four (the authorised project) may be carried out.
Orsted Hornsea Project Four Ltd	The Applicant for the proposed Hornsea Project Four Offshore Wind Farm Development Consent Order (DCO).

Acronyms

Acronym	Definition
AfL	Agreement for Lease
BDMPS	Biologically Defined Minimum Population Scale
BTO	British Trust for Ornithology
CL	Confidence Limits
CREEM	Centre for Research into Ecological and Environmental Modelling
CReSS	Complex Region Spatial Smoother
CV	Coefficient of Variation
DCO	Development Consent Order
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
ES	Environmental Statement
GSD	Ground Sample Distance
JNCC	Joint Nature Conservation Committee
MHWS	Mean High Water Spring
MLWS	Mean Low Water Springs
MRSea	Marine Renewables Strategic environmental assessment
NSIP	Nationally Significant Infrastructure Project
OWF	Offshore Wind Farm
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
QA	Quality Assurance
RSPB	The Royal Society for the Protection of Birds
SE	Standard Error
SPA	Special Protection Area
TCE	The Crown Estate
UK	United Kingdom

Units

Unit	Definition
km	Kilometre
km ²	Kilometre squared
m	Metres
μ	Mean

Scientific Bird Names

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

1 Introduction

1.1 Introduction

1.1.1 Project background

1.1.1.1 Orsted 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 69 km offshore from coastline of the East Riding of Yorkshire in the Southern North Sea with the array area covering an area of approximately 468 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 study area for this Environmental Statement (ES) Chapter combines the search areas for the onshore and offshore infrastructure.

1.1.1.2 The Hornsea Four Agreement for Lease (AfL) area was 846 km² 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 gave due consideration to the size and location (within the existing AfL area) of the final project that is being 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.

1.1.1.3 The combination of Hornsea Four's Proportionality in EIA and Developable Area process has resulted in a marked reduction in the array area taken forward at the point of DCO application (see [Figure 1](#)). Hornsea Four adopted a major site reduction from the array area presented at Scoping (846 km²) to the Preliminary Environmental Information Report (PEIR) boundary (600 km²), with a further reduction adopted for the ES and DCO application (468 km²) due to the results of the PEIR, technical considerations and stakeholder feedback. The evolution of the Hornsea Four Order Limits is detailed in [Volume A1, Chapter 3: Site Selection and Consideration of Alternatives](#) and [Volume A4, Annex 3.2: Selection and Refinement of the Offshore Infrastructure](#).

1.1.1.4 APEM Ltd (hereafter APEM) was commissioned by the Applicant 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. 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 aerial digital surveys for offshore ornithology and from desk study for the intertidal ornithology (i.e. birds that are seaward of the Mean High Water Springs (MHWS) tide level).

1.1.2.2 This report presents information on offshore birds derived from 24 consecutive months of aerial digital 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).

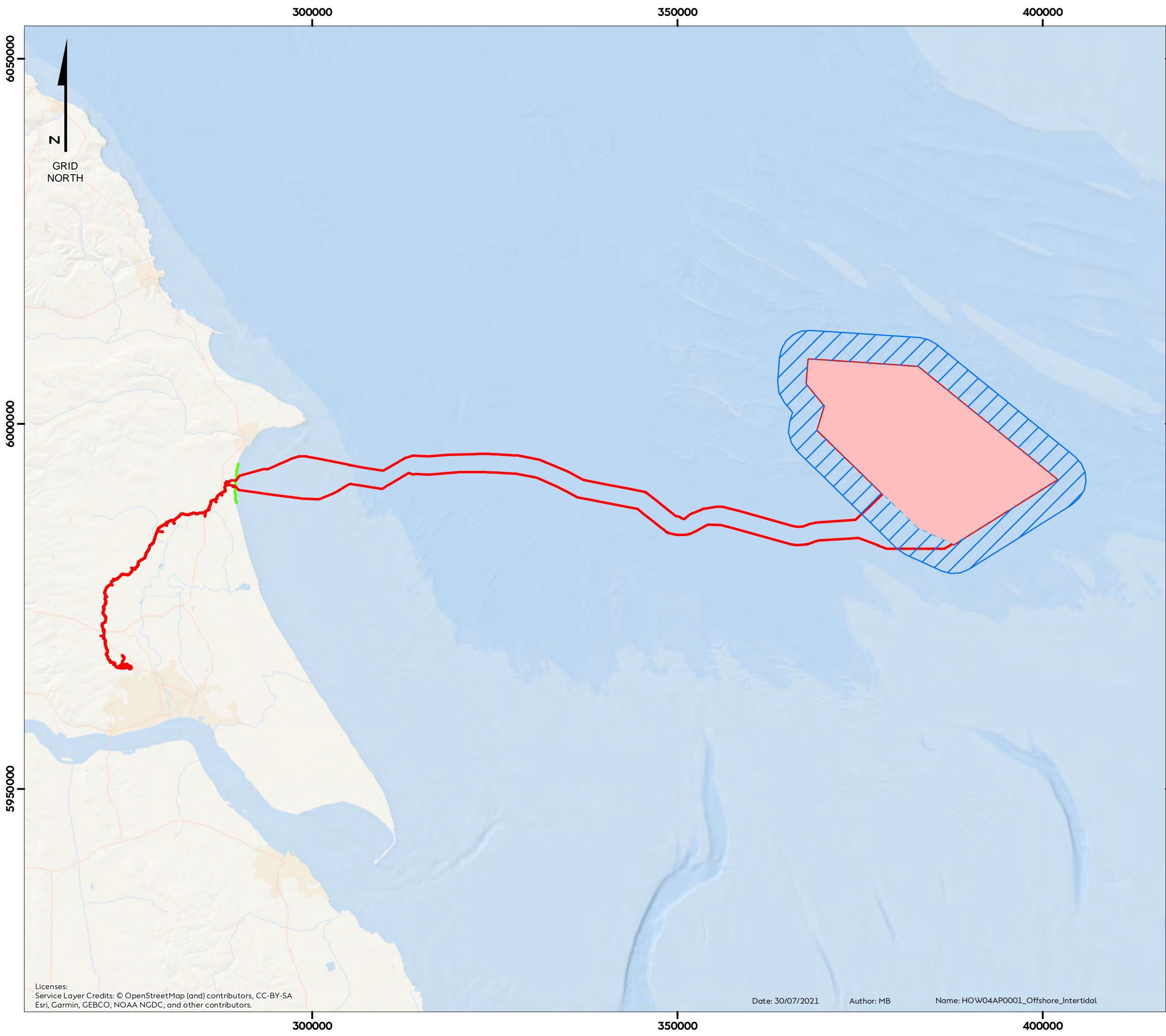
1.1.2.3 The offshore and intertidal ornithology baseline for Hornsea Four has been discussed with consultees through the Hornsea Four Evidence Plan process; specifically with the Offshore and Intertidal Ornithology Evidence Plan Technical Panel. Agreements made with consultees within the Evidence Plan process are set out in the topic specific Evidence Plan Logs which are appendices to the Hornsea Four Evidence Plan ([Volume B1, Annex 1.1: Evidence Plan](#)), an annex of the Hornsea Four Consultation Report ([Volume B1, Chapter 1: Consultation Report](#)). All agreements within the Evidence Plan Logs have unique identifier codes which have been used throughout this document to signpost to the specific agreements made (e.g. OFF-ORN-1.1).

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 ES stage), 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 was refined for this assessment 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. The study area has evolved in response to consultation between Scoping, PEIR and application stage, with each area of interest (array area, offshore export cable corridor and cable landfall area) having reduced in scale from the original AfL plans. In particular, these changes to the footprint of the cable landfall and the ECC further reduce any potential impacts on waterbirds associated with the habitats within these areas.



Hornsea Four

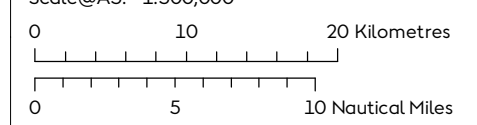
Figure 1

The Hornsea Four Offshore and Intertidal Ornithology Study Area

-  Array Area
-  Array Area 4 km buffer
-  Order Limits
-  Intertidal Study Area



Coordinate system: ETRS 1989 UTM Zone 31N
 Scale@A3: 1:500,000



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The Hornsea Four Offshore and Intertidal Ornithology Study Area
 Document no: HOW04AP0001
 Created by: MB
 Checked by: SS
 Approved by: SS



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 Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
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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 2017” column of the list of English and scientific names prepared by the British Ornithologists’ Union (BOU 2017). The corresponding scientific names from that publication are listed in the glossary on scientific bird names at the front of this document.

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 (Orsted 2018). The data sources listed in **Table 1**, which were identified in the Scoping Report (Orsted 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 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 the application stage. Additionally, the data sources have been agreed with the Offshore and Intertidal Ornithology Evidence Plan Technical Panel (OFF-ORN-1.18).

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

Source	Summary	Coverage of Hornsea Four array area and ECC
		along it, including those within the scoping boundary of the ECC.
Dogger Bank A & B Offshore Wind Farm (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 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 Royal Society for the Protection of Birds (RSPB) were considered to characterise the wider region and for the purpose of impact assessments.

3.2 Key Site-Specific Data Source

3.2.1.1 The species accounts presented on offshore ornithology derive from the data collected from the core programme of data collection for offshore ornithology, which comprises 24 months of site-specific aerial digital video surveys of the original AfL plus a 4 km buffer, as described in [Sections 1.1.2.3](#), for which the survey methodology and approach are described in detail in [Section 3.3](#). It has been agreed through the Offshore and Intertidal Ornithology Evidence Plan Technical Panel that 24 months of survey data, and the methodology outlines in [Section 3.3](#) is sufficient for characterising the offshore ornithology baseline (OFF-ORN-1.5 - OFF-ORN-1.8).

3.3 Aerial Digital Video Survey Methodology

3.3.1 Approach to Surveys

3.3.1.1 A programme of high-resolution aerial digital video surveys of offshore 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 the application 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 half of

these data analysed for characterising the offshore ornithology baseline for this technical report, representing 10% coverage of the survey area. Natural England requested that the additional survey data be analysed for an initial four months in order to test if 20% coverage would vary seabird abundances and / or densities significantly in comparison to the data using 10% coverage (OFF-ORN-1.13). The Applicant proposed April 2017, May 2017, June 2017 and July 2017 to assess a full breeding season. Natural England then requested a further three months of additional survey data be analysed, specifically for the following months: June 2016, August 2016 and August 2017 to measure inter-annual variability (OFF-ORN-1.14). In response to this request, an assessment was undertaken for seven months of survey data (OFF-ORN-1.19), comparing whether using up to 20% coverage of data significantly changed the baseline results. The outcome of the assessment found that the additional 10% of coverage caused no significant change to spatial distribution, abundance and density estimates compiled for the baseline data results. Natural England concluded that they were satisfied with the Applicant using 10% coverage of the survey data collected to characterise the offshore ornithology baseline (OFF-ORN-1.19), as the outcome of the data review proved there were no significant differences between using data representing 10%, 15% or 20% coverage of the survey area from the aerial digital video surveys.

3.3.1.3 During a single survey completed in October 2017, four transect lines were not completed due to poor weather conditions. The transects missed during this survey were the southernmost transects covering areas of the 4 km buffer and the southernmost limit of the Hornsea Four array area as defined at PEIR stage. At the PEIR stage, in order to ensure 10% coverage was achieved for this survey month additional data were analysed from the transect lines immediately to the north of the missing transects using data that were not processed previously (Figure 3) to determine the baseline. As the missing transect lines no longer fall into the area of interest for the Hornsea Four array area plus 4 km buffer at the application stage, the use of these additional data were not required to reach 10% coverage of the survey area.

Table 2: Months and timings when aerial digital 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)	
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)	

*Note: Two flights were undertaken in June 2016 to replace a survey which was missed due to poor weather in May.

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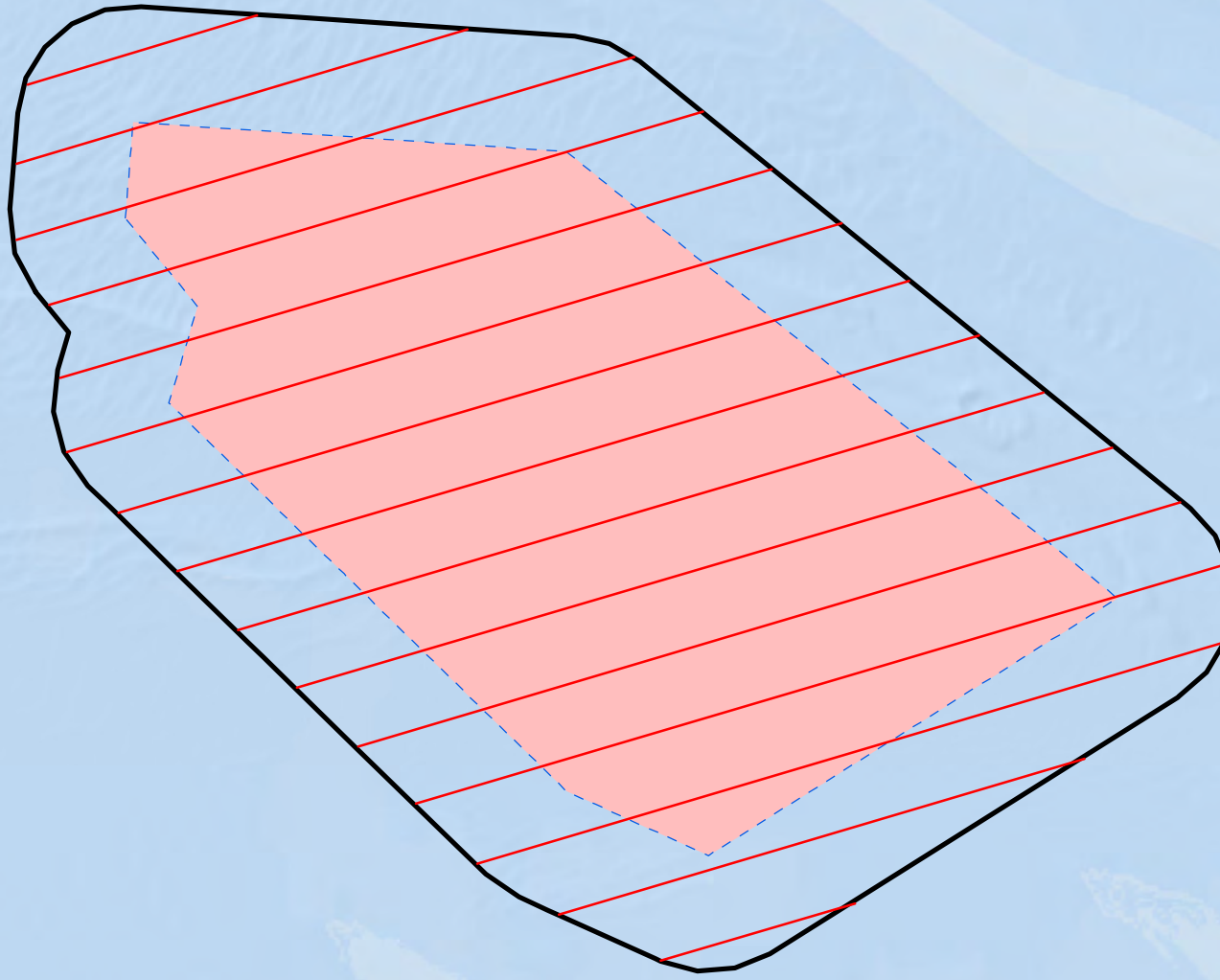
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Hornsea Four

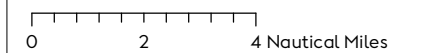
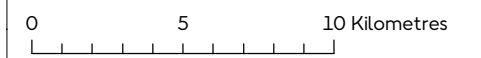
Figure 2 Hornsea Four Offshore Ornithology Data Collection Transect Lines of Aerial Digital Surveys

-  Array Area
-  Array Area 4 km buffer
-  Survey Transect DCO



Coordinate system: ETRS 1989 UTM Zone 31N

Scale@A3: 1:250,000



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Hornsea Four Offshore Ornithology
Data Collection Transect Lines
of Aerial Digital Surveys
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Approved by: SS



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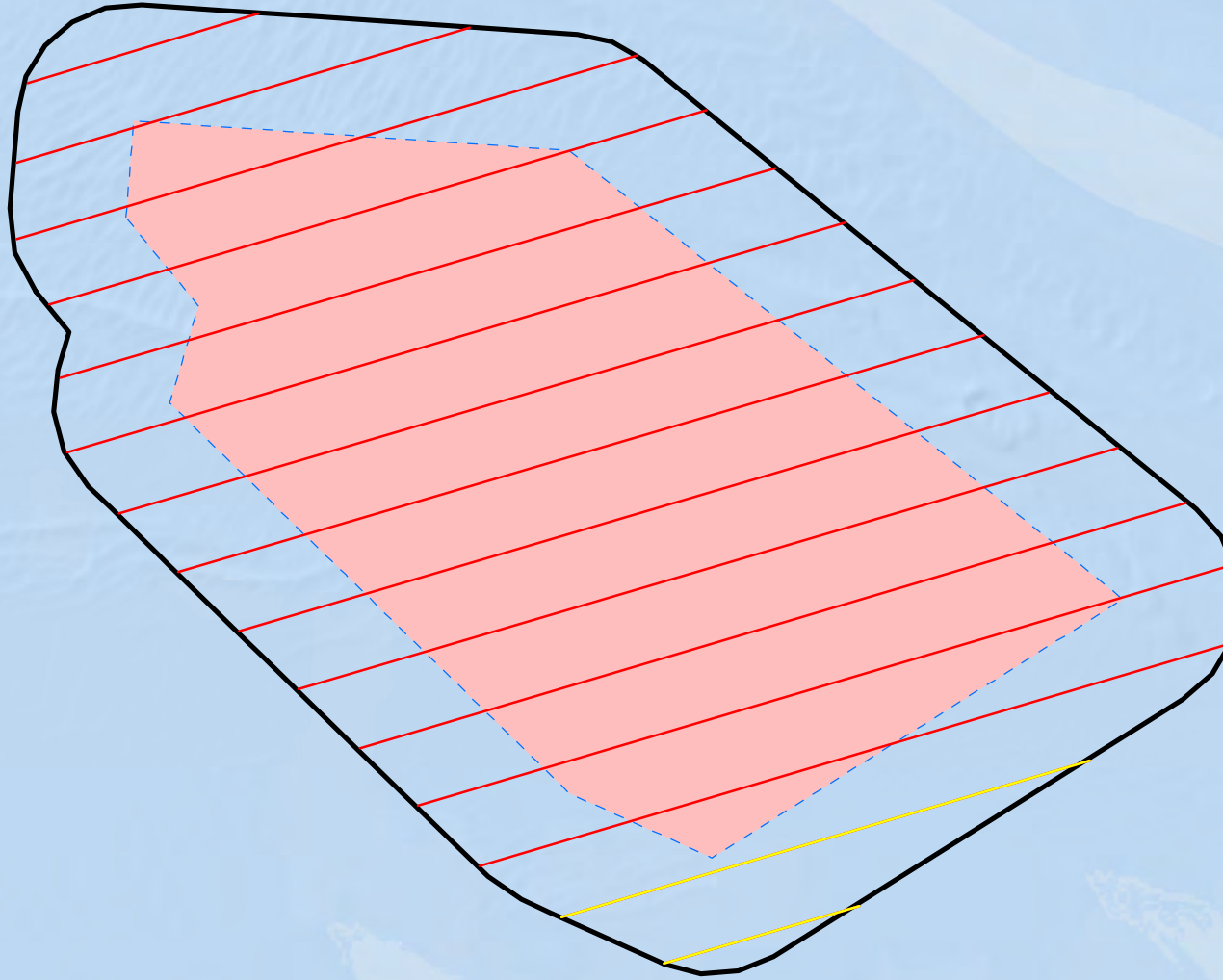
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Hornsea Four

Figure 3

Missing / Compensatory Transect Lines from October 2017 Aerial Digital Survey

-  Array Area
-  Array Area 4 km buffer
-  Oct 2017 Extra Coverage Lines
-  Survey Transect DCO



Coordinate system: ETRS 1989 UTM Zone 31N
Scale@A3: 1:250,000



REV	REMARK	DATE
	First Issue	22/05/2019
A	Updated following PEIR consultations, for DCO	19/05/2021

Missing / Compensatory
Transect Lines from
October 2017 Aerial Digital Survey
Document no: HOW04AP0003
Created by: MB
Checked by: SS
Approved by: SS



Hornsea 4

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 aerial digital 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 the array area and 4 km buffer were then extracted using ArcGIS, to give raw count data. Where the transects fall across the Order Limits of the array area and 4 km buffer, only the part of the transect that fell within the array area and 4 km buffer were included in the analysis.
- 3.4.2.2 The total monthly raw counts, abundance and density estimates of all birds (including identified and unidentified birds) recorded from the aerial digital surveys are provided in [Appendix A](#): Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds), which also provides behavioural information relating to flying and sitting birds.
- 3.4.2.3 Abundance estimates were generated by summing the raw counts from each transect and dividing this number by the total surveyed area across all transects to give the mean density of birds (i). Abundance estimates (N) for each survey month were then calculated by multiplying the mean density of birds by the total area of the entire array area and 4 km buffer (A). 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).

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- 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); $CV' = SE / \mu$. Effectively, this statistic is used to determine whether the sampling regime is sufficient to estimate the abundance with a given level of precision. A $CV' \leq 0.16$ 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 To supplement these design-based abundance estimates, for certain species, abundance estimates were also generated using a model-based technique, specifically the Marine Renewables Strategic environmental assessment (MRSea) R package (see [Annex 5.6: Offshore Ornithology MRSea Report](#)). MRSea requires sufficient data to correctly fit the models and therefore it was only possible to use this approach for the more regularly occurring species. These species included; fulmar, gannet, kittiwake, great black-backed gull, guillemot, razorbill and puffin.
- 3.4.2.7 MRSea is a software package designed to be able to identify statistically significant changes in abundance or redistribution of animals following the construction of marine renewables developments, or other marine activities. This includes generating spatially explicit models of species' abundances using a Complex Region Spatial Smoother (CReSS) model. The model uses geo-referenced data on bird distribution from surveys along with user-defined co-variates to predict species' densities over the entire area of interest.
- 3.4.2.8 For this analysis, the following co-variates were used in the MRSea models: depth of water; distance to nearest Special Protection Area (SPA). The output is a map of predicted density of each species at a 1 km x 1 km resolution (1 km²), which can be used to predict total abundance of each species within a given region.

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 in the aerial digital video survey footage to the species level and the bird is categorised as belonging to a higher level group. There were also occasions when it was not possible to identify a particular bird in the aerial digital video survey footage to the species group level and the bird is categorised as potentially belonging to a number of different higher level groups. To avoid underestimating species abundance, due to the omission of birds which could not be identified to species or a higher group levels, 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

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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](#).

3.4.4.2 As common terns and Arctic terns are very difficult to distinguish using aerial digital video surveys, apportionment to species level was not possible and therefore 'commic' tern has been treated as comparable to a species-level unit for analysis.

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	N/A
Common tern	Arctic / common tern ('commic tern')						
Arctic tern							
Red-throated diver	Diver species	N/A	Large auk / diver species	N/A	Auk / shearwater species		
Guillemot	Large auk	Auk 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		
Starling	Passerine species	N/A	N/A	N/A	N/A		

3.4.4.3 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

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

3.4.4.4 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.

3.4.4.5 The apportioned monthly abundance and density estimates of all unidentified birds subject to this process are provided in [Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys \(Apportioned and Corrected\)](#), which also provides behavioural 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, it is assumed that a proportion will be diving at the time of survey and will, therefore, 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 1.311, 1.211 and 1.165, respectively.

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 aerial digital video data being captured are provided in [Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys \(Apportioned and Corrected\)](#), which also provides behavioural information relating to flying and sitting birds.

3.4.6 Consideration of Biological Seasons

3.4.6.1 Bird behaviour and abundance differs 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 use of the BDMPS bio-seasons has been agreed through the Offshore and Intertidal Ornithology Evidence Plan Technical Panel (OFF-ORN-2.1). The bio-seasons are defined within this baseline technical report as: return migration, migration-free breeding, post-breeding, migration-free winter bio-seasons, breeding bio-season and non-breeding bio-seasons. These six bio-seasons can be applied to different periods within the annual cycle for most species, though not all six 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;

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- Post-breeding migration: when birds are migrating to wintering areas or dispersing from colonies;
- Migration-free winter: when non-breeding birds are over-wintering in an area;
- Breeding: bio-season from modal return to the colony till the modal departure from the colony at the end of the breeding season; and
- Non-breeding: bio-season from modal departure from the colony at the end of breeding to modal return to the colony the following year.

3.4.6.2 It is recognised that for the purpose of assessing potential impacts on bird populations that the use of a wider breeding and non-breeding bio-season may be appropriate in certain circumstances. However, for the purpose of defining the importance of a specific area in recognition of the likely seasonal behaviour of a species, the most robust account of each species associated with a specific area is better established through consideration of the multiple bio-seasons that are referred to above that exist outside of the migration-free breeding bio-season.

3.4.6.3 This also allows for the overall abundance and estimated level of importance of a specific area to be defined and recognised without an inflated bias being included from the concentration of birds during a particular bio-season. A prime example for inflationary bias within a wider non-breeding bio-season would be where a species occurs in greatest numbers for a short period during migratory periods or as a consequence of multiple colony dispersions in for instance August and September, but then is found in much lower abundances between November and March. It may also be that survey data are collected immediately after a winter storm event when seabirds have been temporarily concentrated into an area, whilst for the remainder of the bio-season very few birds are recorded in the same area of interest. Should the mean peak of two years only rely on those data from such instances to define the wider non-breeding bio-season, then any assessments would be overly precautionary if considering these peaks for months and periods where significantly lower abundances are actually present.

3.4.6.4 Such an over-inflation in the non-breeding bio-season abundance from the use of a typical bio-season mean peak estimate is particularly apparent in guillemot, as a relatively common seabird in UK waters. Estimating the abundance to define the use of Hornsea Four by guillemots using the typical bio-season mean peak method creates a bias towards the inclusion of birds undertaking their post-breeding dispersal during only one or two months (when peak numbers occur at this location) within the wider non-breeding bio-season rather than accounting for the more typical usage of this location across the whole seven month period.

3.4.6.5 In order to reduce this bias for guillemot and provide more representative, yet still precautionary, abundance and density estimates for the non-breeding bio-season, a weighted mean approach has been used in this instance. The weighted mean approach takes into account the three-component bio-season mean peaks and the number of months which each component bio-season contributes to the wider non-breeding bio-season for each year. The outcome of such a process provides a more accurate estimate of guillemot usage, temporally and spatially, across the wider non-breeding bio-season to enable a more robust baseline for use in impact assessments for Hornsea Four.

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Table 4: BDMPS bio-seasons (Furness 2015) used as the basis for the species accounts presented in Section 3.5 and less abundant species of interest presented in Appendix A.

Species	Return Migration	Migration-free Breeding	Post-breeding Migration	Migration-free Winter	Breeding	Non-breeding
Red-throated diver	February to April	May to August	September to November	December to January		
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			
Lesser black-backed gull	March to April	May to July	August to October	November to February		
Herring gull	January to April	May to July	August to November	December	March to February	September to February
Great black-backed gull	January to April	May to July	August to November	December	April to August	September to March
'Commic' tern	April to May	June	July to September	October to March		
Guillemot	December to February	March to June	July to October	November	March to July	August to February
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	April to July	August to March

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 spatial density distribution maps within each species account. These spatial density distribution maps were outputs from the MRSea modelling, which were loaded in ArcGIS to provide a visual presentation of bird density across the Hornsea Four array area and 4 km buffer. The spatial density distribution maps present data on a bio-season basis, pooling multiple months over separate bio-seasons from the 24 months of data available (using the bio-season 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 were provided on flight direction from the aerial digital 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 aerial digital 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), have been used to inform the impact assessment. Additional details on the flight heights of seabirds used for the purpose of estimating collision risk are provided in [Annex 5.3: Offshore Ornithology Collision Risk Modelling](#).

3.4.8.2 The direction of flight was recorded for all birds within the aerial digital video survey footage. These data can be used to explore connectivity of seabirds to nearby breeding colonies or designated sites such as SPAs as well as helping to determine if flying birds are undertaking migration / dispersal movements. Flight direction was provided within the 24 months of data analysed for this report and represents the orientation of individual birds at time of video capture. Bearings of bird flight directions were plotted using rose diagrams to summarise combined monthly (e.g. data from the same months in Year 1 and Year 2 combined) directions of movement. Flight direction rose diagrams are interpreted as follows; proportions are shown by dashed circles and the length of each wedge (shaded in blue) indicates the relative proportions of flights recorded in a particular direction. The flight direction rose diagrams completed for those species with a reasonable sample size are provided in [Appendix C: Flight Directional Rose Diagrams for Seabirds Recorded in flight from Site-specific surveys](#).

3.4.9 Age Classification

3.4.9.1 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 any potential impact(s) might occur to an adult bird that is part of the breeding population of a specific colony or designated site (an SPA) or if it might occur to an immature bird that is not associated with the breeding population of a particular colony or SPA.

3.4.9.2 A detailed breakdown of seabird age classification for birds recorded in the aerial digital video surveys is presented in [Appendix D: Age Classification of Seabirds from Site-Specific Surveys](#). The approximate age of seabirds has been categorised as follows: adult, immature and juvenile.

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 Hornsea Four array area and 4 km buffer between April 2016 and March 2018. Several species were only recorded in the Hornsea Four array area and 4 km buffer 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 [Table 5](#)). 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: Abundance Estimates and Behaviour Information](#) (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) to [Appendix D: Age Classification of Seabirds from Site-Specific Surveys](#), respectively. Those species highlighted in bold in [Table 5](#) form the basis of detailed accounts for this baseline technical report.
- 3.5.1.2 Red-throated diver were not recorded in the Hornsea Four array area, so in order to account for them potentially being within the Export Cable Corridor (ECC) and a 2 km buffer surrounding this area a separate method for estimating the potential abundance and density of this species was developed and agreed for use with Natural England (OFF-ORN 2.39). The methods and corresponding data for red-throated diver within the ECC and a 2 km buffer are presented in [Annex 5.2: Offshore Ornithology Displacement Analysis](#).
- 3.5.1.3 For a number of migratory seabird species (underlined in [Table 5](#)) and as agreed with Natural England (OFF-ORN 2.41), an additional report ([Annex 5.5: Offshore Ornithology Migratory Birds Report](#)) provides species accounts considering site-specific and wider literature to estimate potential numbers flying through the study area during migratory periods. Additional consideration is also provided for a selection of migratory non-seabird species (mostly waterbirds), as agreed with Natural England (OFF-ORN 2.41), that may have flight paths close to or over the study area and these species were subject to a separate screening selection and modelling process (using APEM's bespoke Migropath model), which is also described and presented in [Annex 5.5: Offshore Ornithology Migratory Birds Report](#).

Table 5: Bird species recorded in site-specific aerial digital video surveys of the Hornsea Four array area and 4 km buffer.

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

Note: Those species highlighted in bold form the basis of detailed accounts for this baseline technical report. Species in italics represent species that were only recorded in the Hornsea Four array area and 4 km buffer in trivial numbers or numbers determined by expert judgement to be too low to warrant detailed species accounts. Species in underlined text are migratory seabird species.

*'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 Hornsea Four array area and 4 km buffer. Each species account presents data on relative abundances and densities within the Hornsea Four array area in the first instance and where relevant for the impact assessment, 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: Abundance Estimates and Behaviour Information](#) (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) to [Appendix D: Age Classification of Seabirds from Site-Specific Surveys](#). For gannet, guillemot, razorbill and puffin, additional abundance estimates are provided for the Hornsea Four array area plus a 2 km buffer ([Appendix A: Abundance Estimates and Behaviour Information](#) (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds)), as these data are determined appropriate for assessing displacement. 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 spatial density distribution according to species-specific bio-seasons, with the use of MRSea output maps to provide the reader with a more visual representation of usage within the Hornsea Four array area and 4 km buffer.

3.6 Fulmar

3.6.1 Hornsea Four Survey Data

3.6.1.1 Fulmars were recorded in 23 of the 24 aerial digital surveys within the Hornsea Four array area. Fulmar densities within the Hornsea Four array area ranged from 0.051 to 0.736 birds/km² with an average 0.198 birds/km². Fulmar abundance was highest during May 2016 (n=346) in Year 1 and September 2017 (n=117) in Year 2 in the Hornsea Four array area ([Appendix A: Abundance Estimates and Behaviour Information](#) (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including

unidentified birds) & [Appendix B](#): Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)). Fulmar abundance in the Hornsea Four array area was generally higher towards the end of the return migration bio-season to migration-free breeding bio-season with a decline towards the end of the migration-free breeding bio-season and a second rise in abundance in the post-breeding migration bio-season ([Figure 4](#)). 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 4](#)).

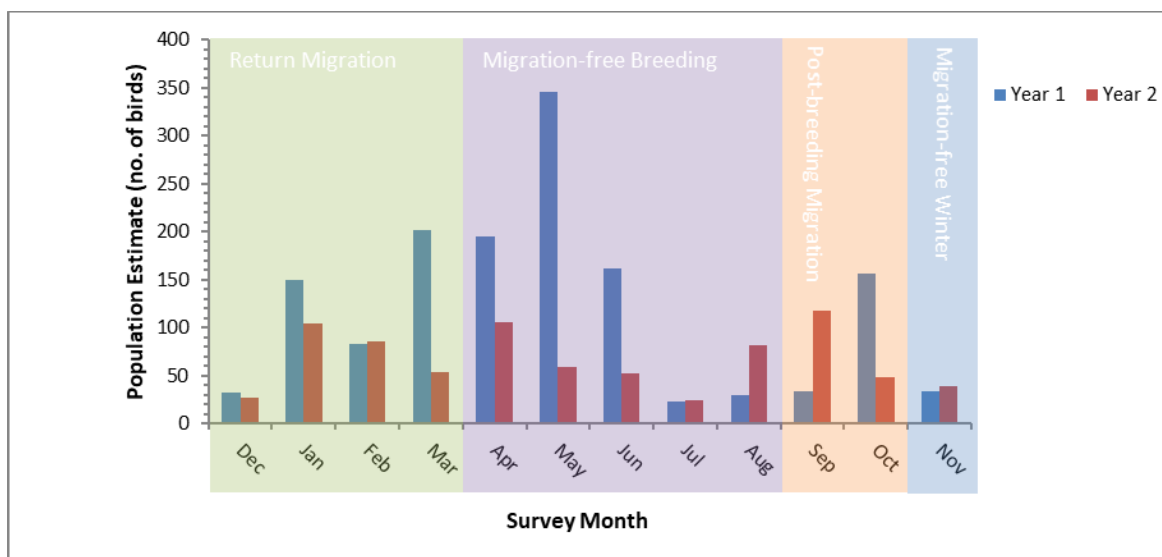


Figure 4: Bar chart displaying fulmar abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.6.2 Biological Season Mean Peak Estimates

3.6.2.1 Fulmar were present in greatest abundance in the Hornsea Four array area during the migration-free breeding bio-season (April to August) with an estimated mean peak abundance of 226 birds and a mean peak density of 0.480 birds/km² ([Table 6](#)).

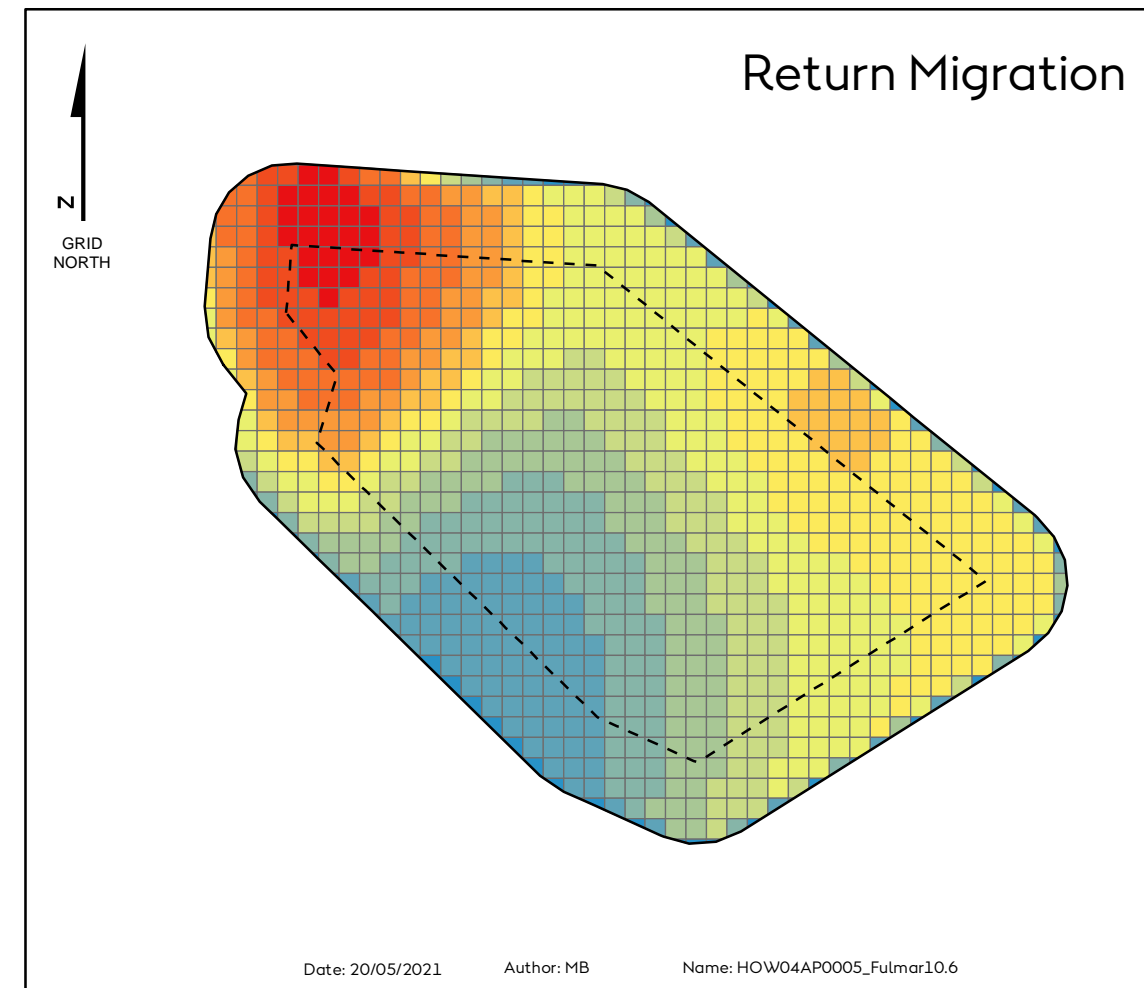
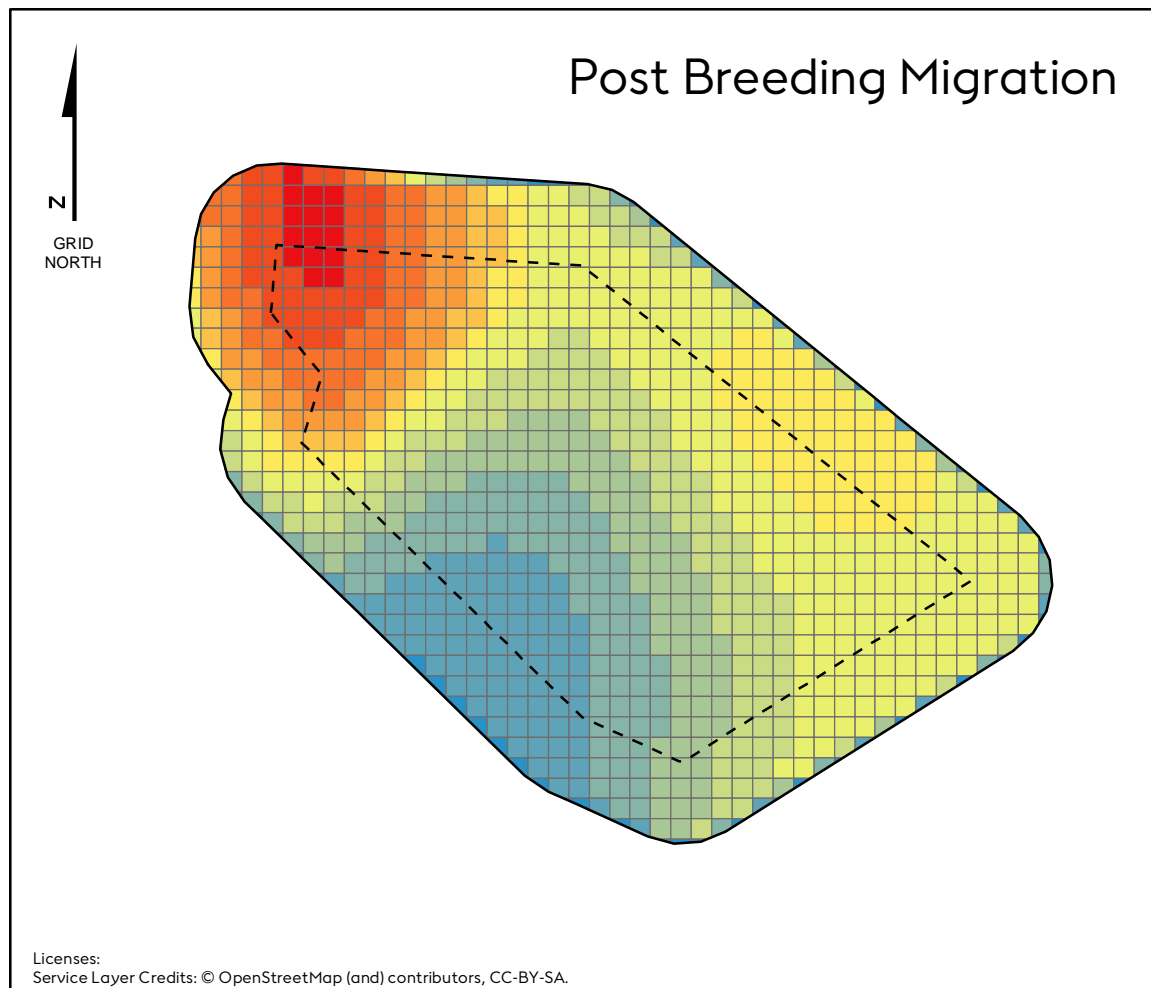
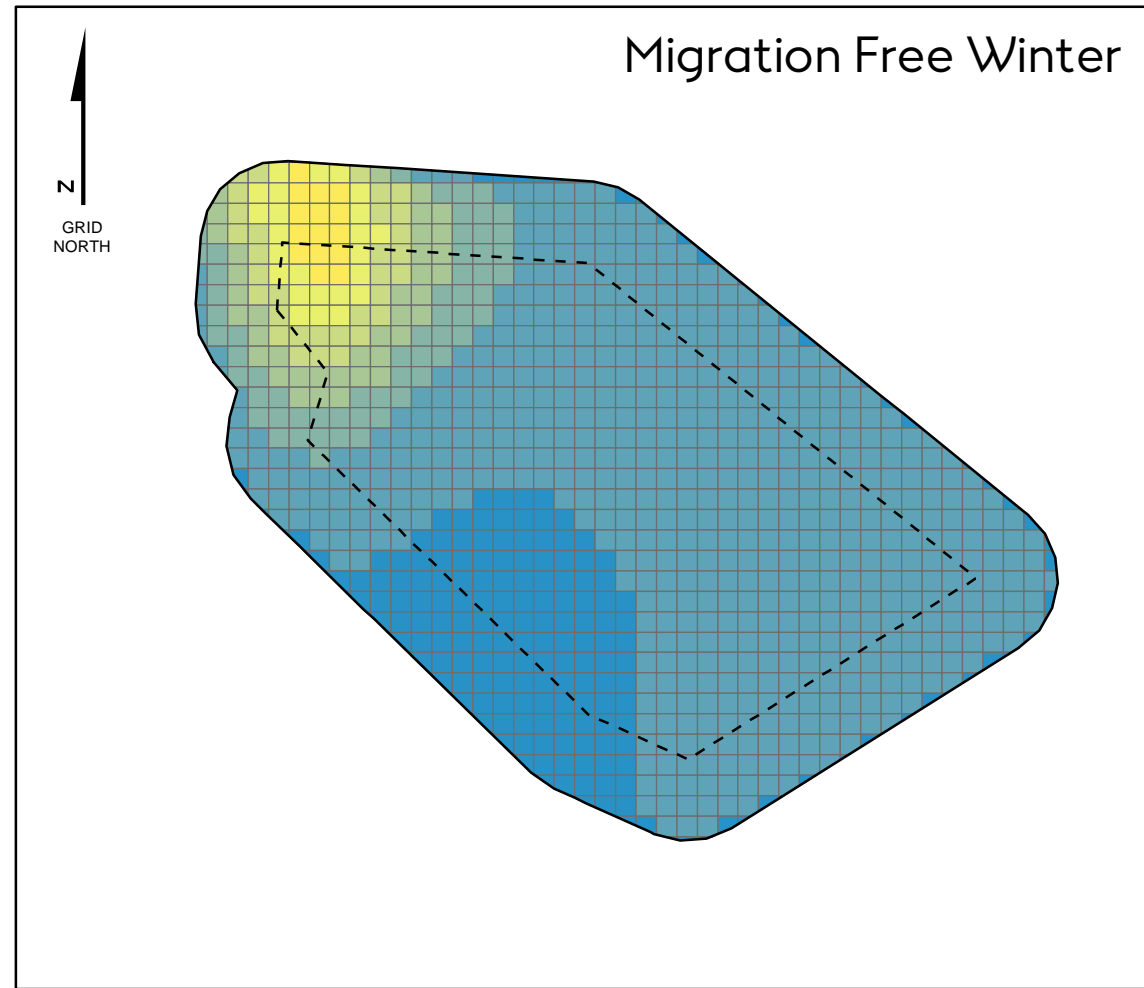
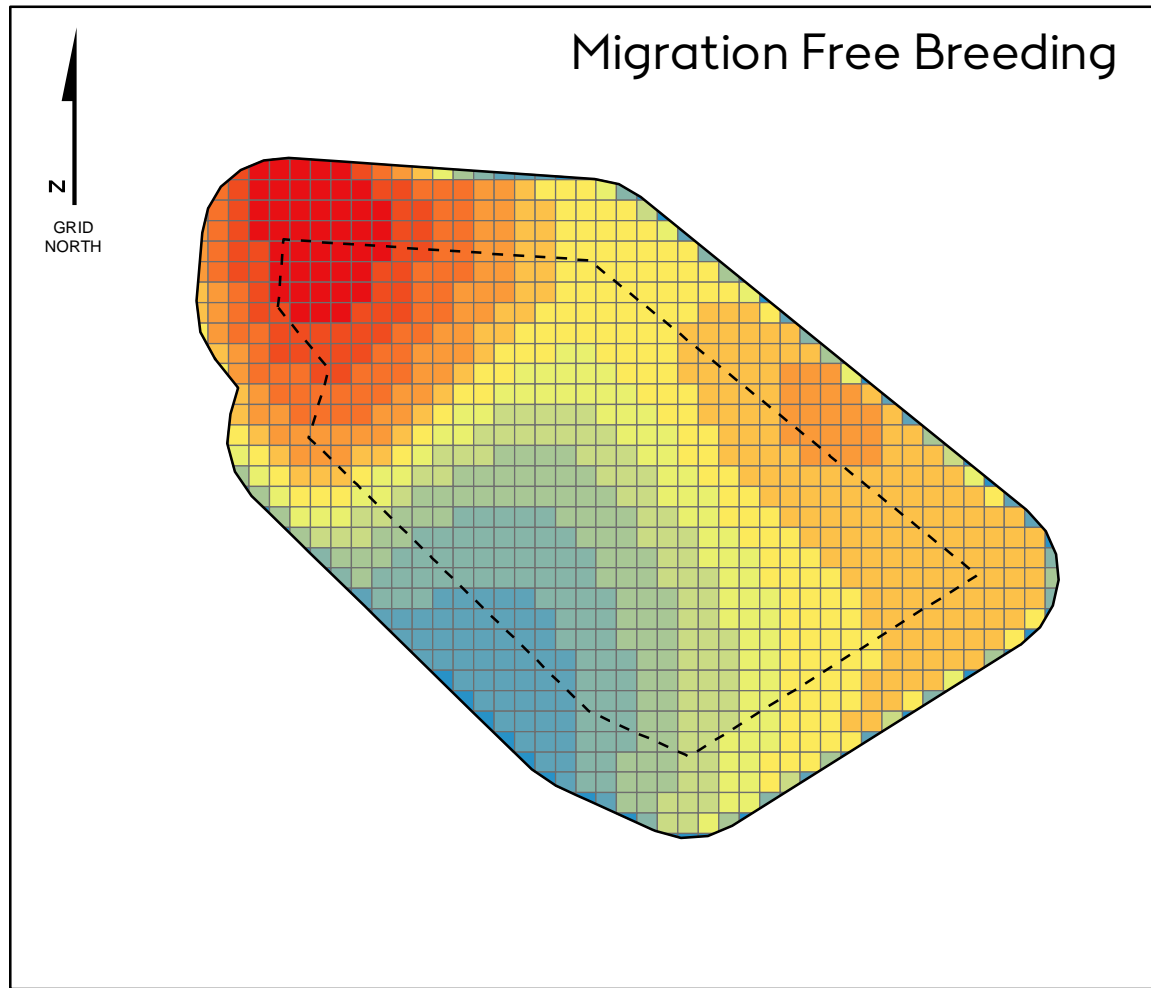
Table 6: Fulmar bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array area birds/km ²
Return migration	Dec-Mar	153	0.325
Migration-free breeding	Apr-Aug	226	0.480
Post-breeding migration	Sept-Oct	136	0.290
Migration-free winter	Nov	36	0.077

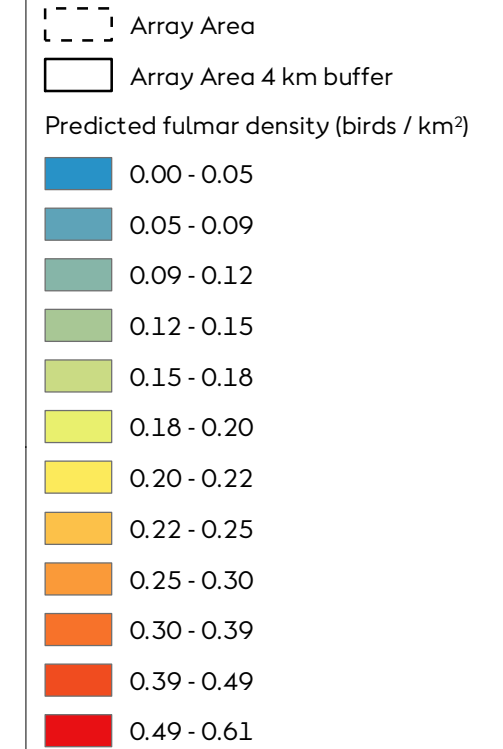
3.6.3 Spatial Density Distribution and Flight Direction

3.6.3.1 Fulmar were loosely distributed throughout the study area within three of the four bio-seasons ([Figure 5](#)), with very low densities during the migration-free winter bio-season being the exception. The highest densities for all seasons from the MRSea modelling were in the northwest of the Hornsea Four array area and in the north of the 4 km buffer area.

- 3.6.3.2 Data presented in rose diagrams ([Appendix C: Flight Directional Rose Diagrams for Seabirds Recorded in flight from Site-specific surveys](#)) of monthly flight directions for fulmars within the study area during the migration-free breeding bio-season show no predominant flight heading. During the migratory bio-seasons rose diagrams indicate a preference of flight direction in parallel with the orientation of the coast. These latter flight directional patterns are characteristic of movements during the post-breeding and return migration bio-seasons.



Hornsea Four
Figure 5
 Bio-season Spatial Density
 Distribution of Fulmar Within
 Hornsea Four Plus 4 km Buffer



Coordinate system: ETRS 1989 UTM Zone 31N
 Scale@A3: 1:370,000

0 10 20 Kilometres
 0 5 10 Nautical Miles

REV	REMARK	DATE
	First Issue	22/07/2019
A	Updated following PER consultations, for DCO	20/05/2021

Bio-season Spatial Density
 Distribution of Fulmar Within
 Hornsea Four Plus 4 km Buffer
 Document no: HOW04AP0005
 Created by: MB
 Checked by: SS
 Approved by: SS



3.7 Gannet

3.7.1 Hornsea Four Survey Data

3.7.1.1 Gannets were recorded in 22 of the 24 aerial digital surveys within the Hornsea Four array area. Gannet abundance was highest during the months of May to November in Year 1 and 2, with peak abundances in June 2016 (n=661) during Year 1 and in November 2017 (n=593) in Year 2 in the Hornsea Four array area (Figure 6 and Appendix A: Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) & Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)). Gannet abundance in the Hornsea Four array area steadily peaked in the migration-free breeding bio-season, remaining relatively high during the post-breeding migration bio-season and then declined during the return migration bio-season (Figure 6). This trend in gannet abundance in the Hornsea Four array area was observed across both years as demonstrated in Figure 6.

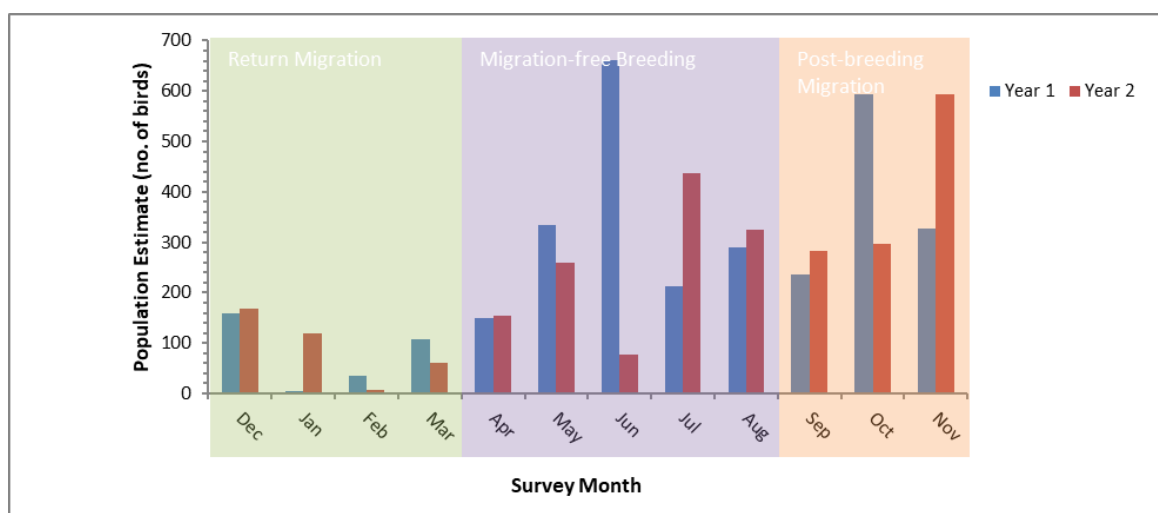


Figure 6: Bar chart displaying gannet abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.7.1.2 Gannet abundance within the 4 km buffer was highest during the months of May to November in Year 1 and July to November in Year 2, with peak abundance in June 2016 (n=604) during Year 1 and in November 2017 (n=541) in Year 2 (Figure 7 and Appendix A: Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) & Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)). Gannet abundance in the 4 km buffer area steadily rose during the migration-free breeding bio-season and rapidly declined after the post-breeding migration bio-season (Figure 7). This trend in gannet abundance in the 4 km buffer area was observed across both years as demonstrated by the plotted data in Figure 7.

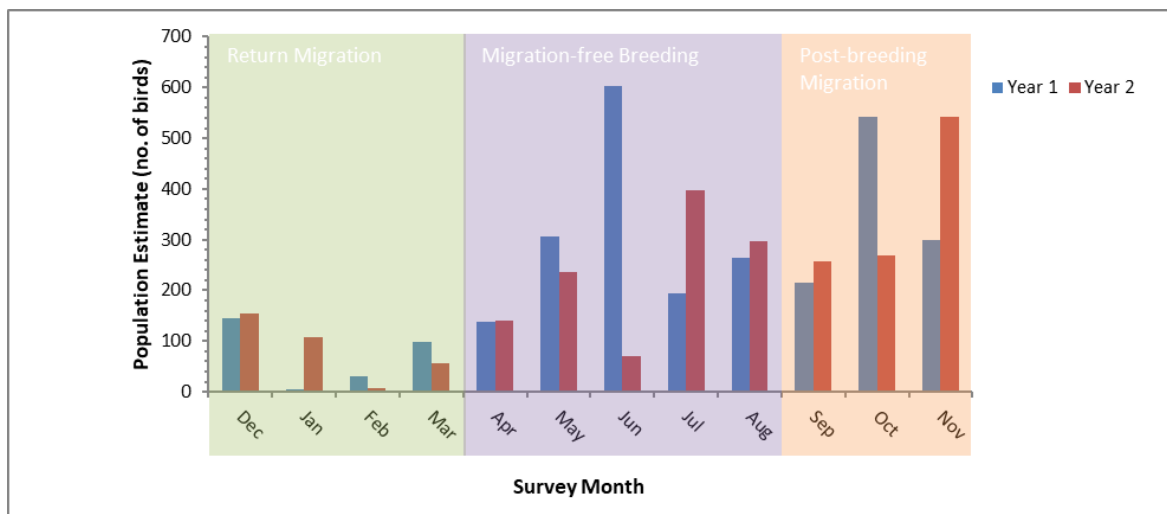


Figure 7: Bar chart displaying gannet abundance estimates within the 4 km buffer per survey, between survey years and within each bio-season.

3.7.2 Biological Season Mean Peak Estimates

3.7.2.1 Gannet were present in greatest abundance in the Hornsea Four array area during the post-breeding bio-season (September to November) with an estimated mean peak abundance of 593 birds and mean peak density of 1.26 birds/km². 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 541 birds and mean peak density of 2.75 birds/km² (Table 7).

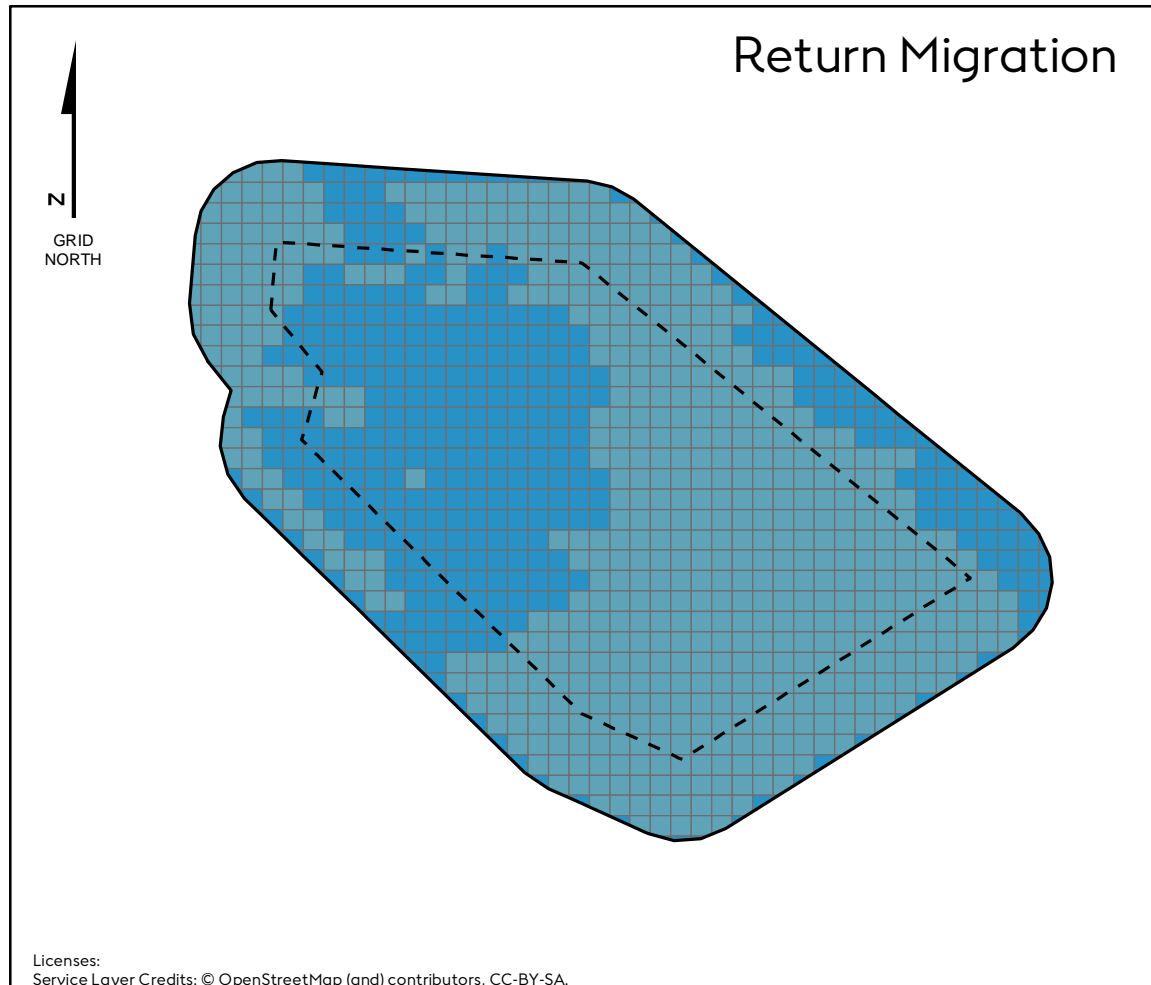
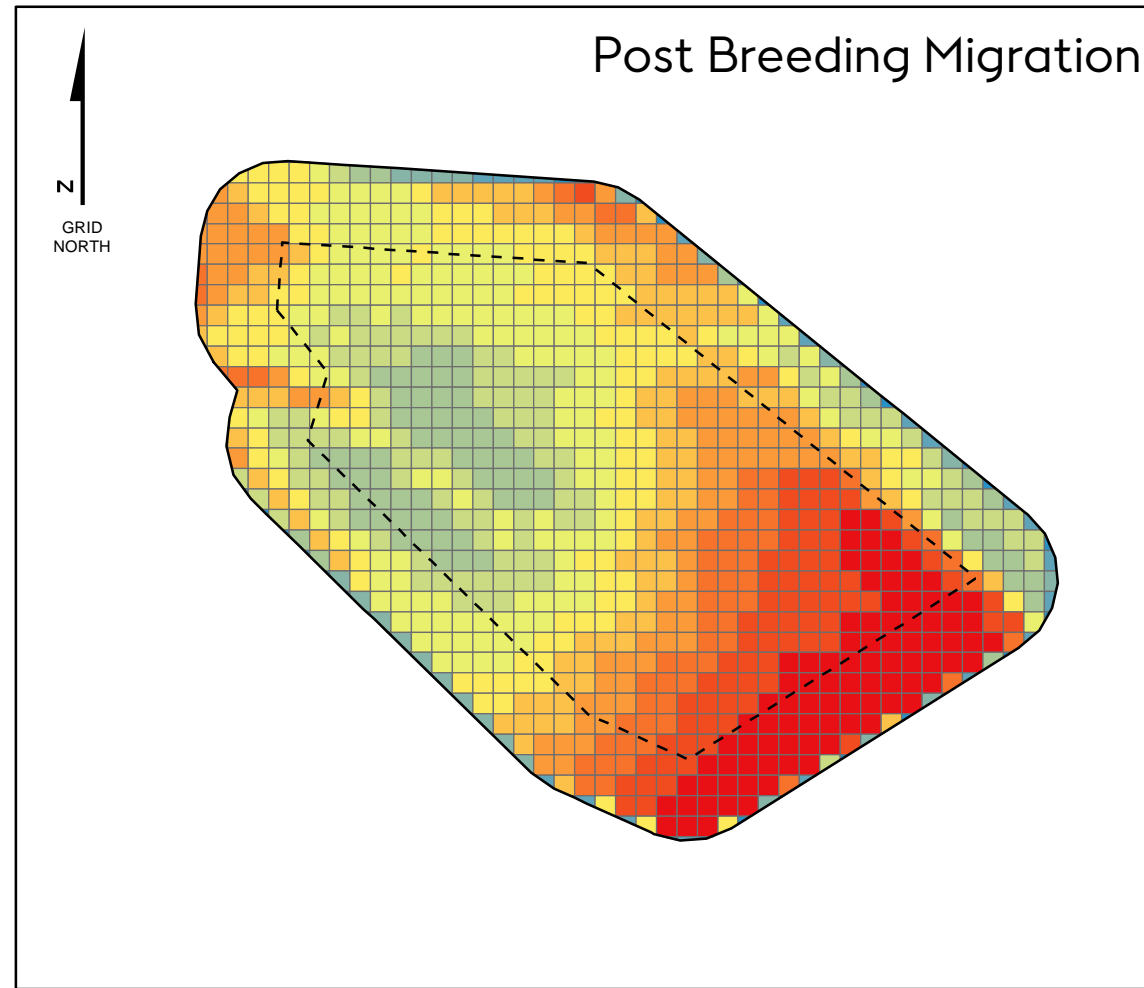
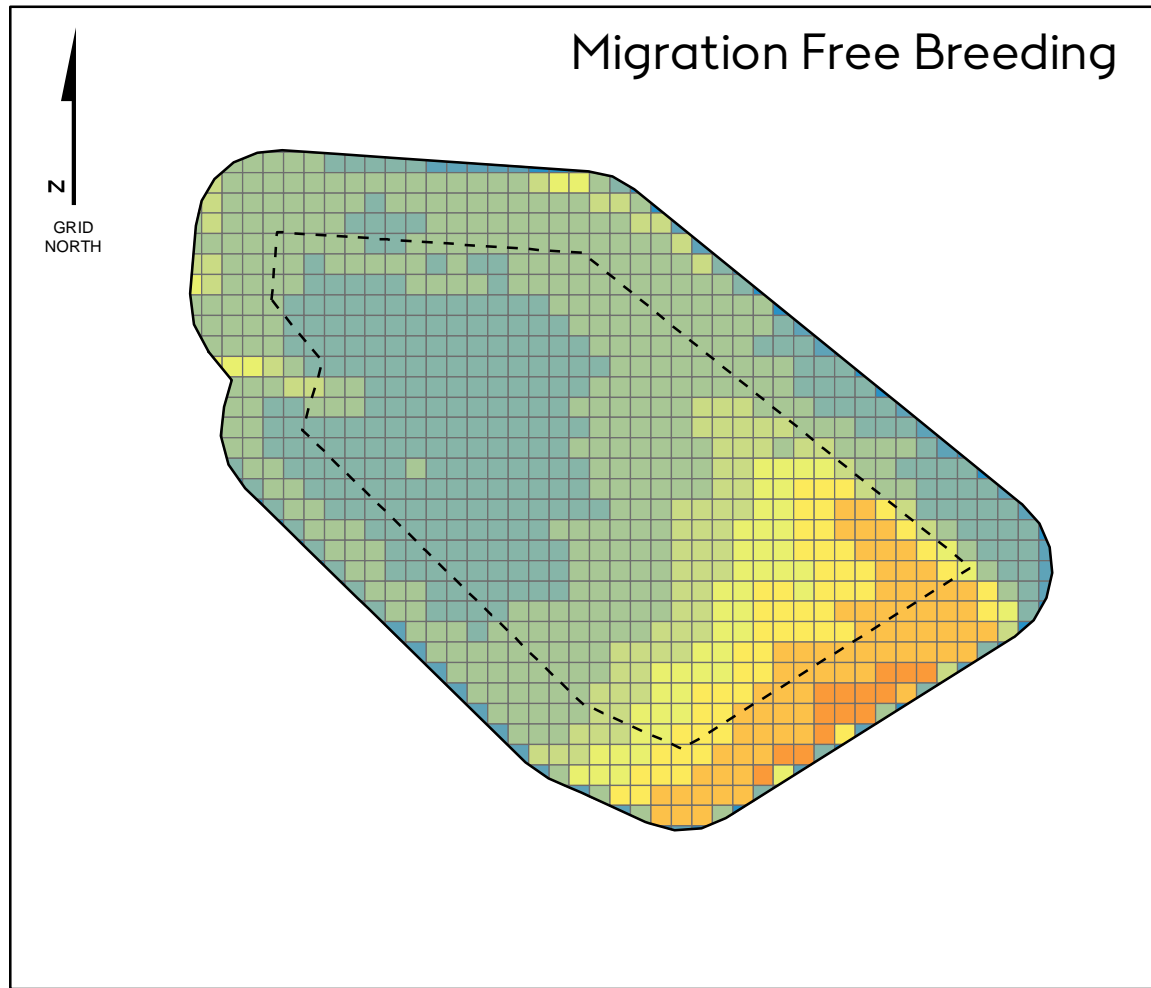
Table 7: Gannet bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km ²	Mean Peak Abundance within the 4 km buffer	Mean Peak Density within the 4 km buffer birds/km ²
Return migration	Dec-Mar	163	0.347	149	0.357
Migration-free breeding	Apr-Aug	549	1.167	501	1.198
Post-breeding migration	Sept-Nov	593	1.261	541	1.295
Migration-free winter	N/A	N/A	N/A	N/A	N/A

3.7.3 Spatial Density Distribution and Flight Direction

3.7.3.1 Gannets were loosely distributed throughout the study area within each of the three bio-seasons (Figure 8). Lowest densities with no definitive hot spots were observed in the return migration bio-season. The number and density of hot spots increased from the migration-free breeding bio-season to the post-breeding migration bio-season with the highest densities in the southeast of the Hornsea Four array area bordering the 4 km buffer for both seasons.

- 3.7.3.2 Data presented in rose diagrams ([Appendix C: Flight Directional Rose Diagrams for Seabirds Recorded in flight from Site-specific surveys](#)) of monthly flight directions for gannets within the study area indicates, as might be expected, that during the migration-free breeding bio-season bird flights are orientated either flying out from the nearest breeding colonies in an easterly direction to foraging grounds or in a westerly direction returning to nesting sites. Outside this bio-season flight directional preferences are less defined with increasing preference of flight direction in parallel to the coast or a general dispersal pattern. These latter flight directional patterns are characteristic of movements during the post-breeding and return migration bio-seasons.



Hornsea Four

Figure 8

Bio-season Spatial Density Distribution of Gannet Within Hornsea Four Plus 4 km Buffer

--- Array Area

▭ Array Area 4 km buffer

Predicted gannet density (birds / km²)

- 0.00 - 0.16
- 0.16 - 0.37
- 0.37 - 0.55
- 0.55 - 0.66
- 0.66 - 0.71
- 0.71 - 0.76
- 0.76 - 0.80
- 0.80 - 0.86
- 0.86 - 0.92
- 0.92 - 0.99
- 0.99 - 1.07
- 1.07 - 1.18

Coordinate system: ETRS 1989 UTM Zone 31N
Scale@A3: 1:370,000

0 10 20 Kilometres

0 5 10 Nautical Miles

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Date: 20/05/2021 Author: MB Name: HOW04AP0008_Gannet10.6

Bio-season Spatial Density
Distribution of Gannet Within
Hornsea Four Plus 4 km Buffer
Document no: HOW04AP0008
Created by: MB
Checked by: SS
Approved by: SS

3.8 Kittiwake

3.8.1 Hornsea Four Survey Data

3.8.1.1 Kittiwake were recorded in all 24 aerial digital surveys within the Hornsea Four array area. Peak abundances were highest during the months of April to September in Year 1 and April to August in Year 2, with peak abundances in September 2016 (n=4,040) during Year 1 and in August 2017 (n=1,848) in Year 2 in the Hornsea Four array area (Figure 9). Kittiwake densities within the Hornsea Four array area ranged from 0.05 birds/km² in February 2017 to 8.59 birds/km² in September 2016 (Appendix A: Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) & Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)).

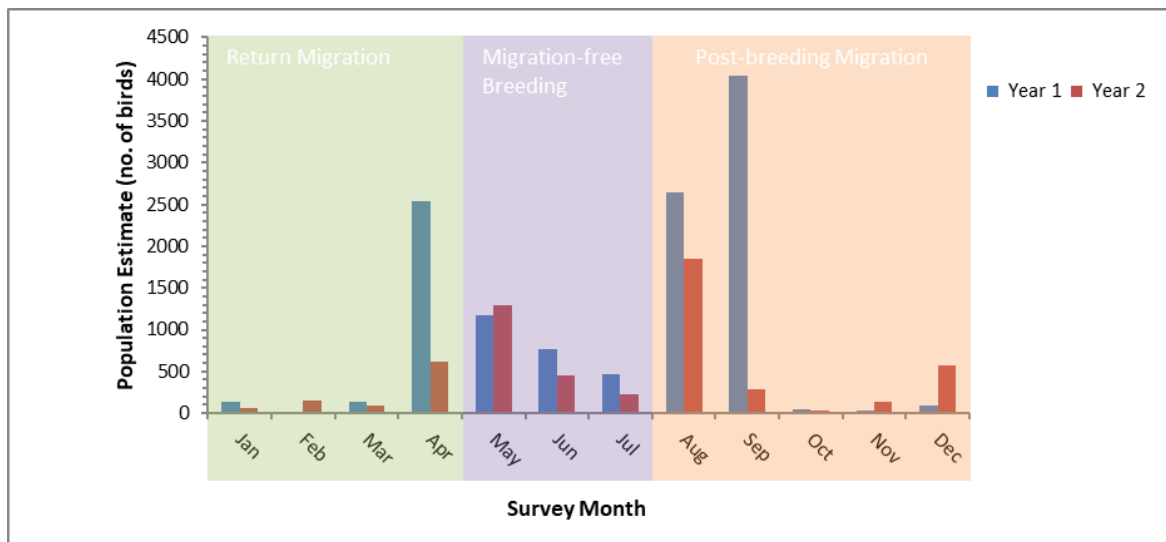


Figure 9: Bar chart displaying kittiwake abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.8.2 Biological Season Mean Peak Estimates

3.8.2.1 Kittiwake were present in greatest abundance in the Hornsea Four array area during the post-breeding migration bio-season (August to December) with an estimated mean peak of 2,944 birds and mean peak density of 6.26 birds/km² (Table 8).

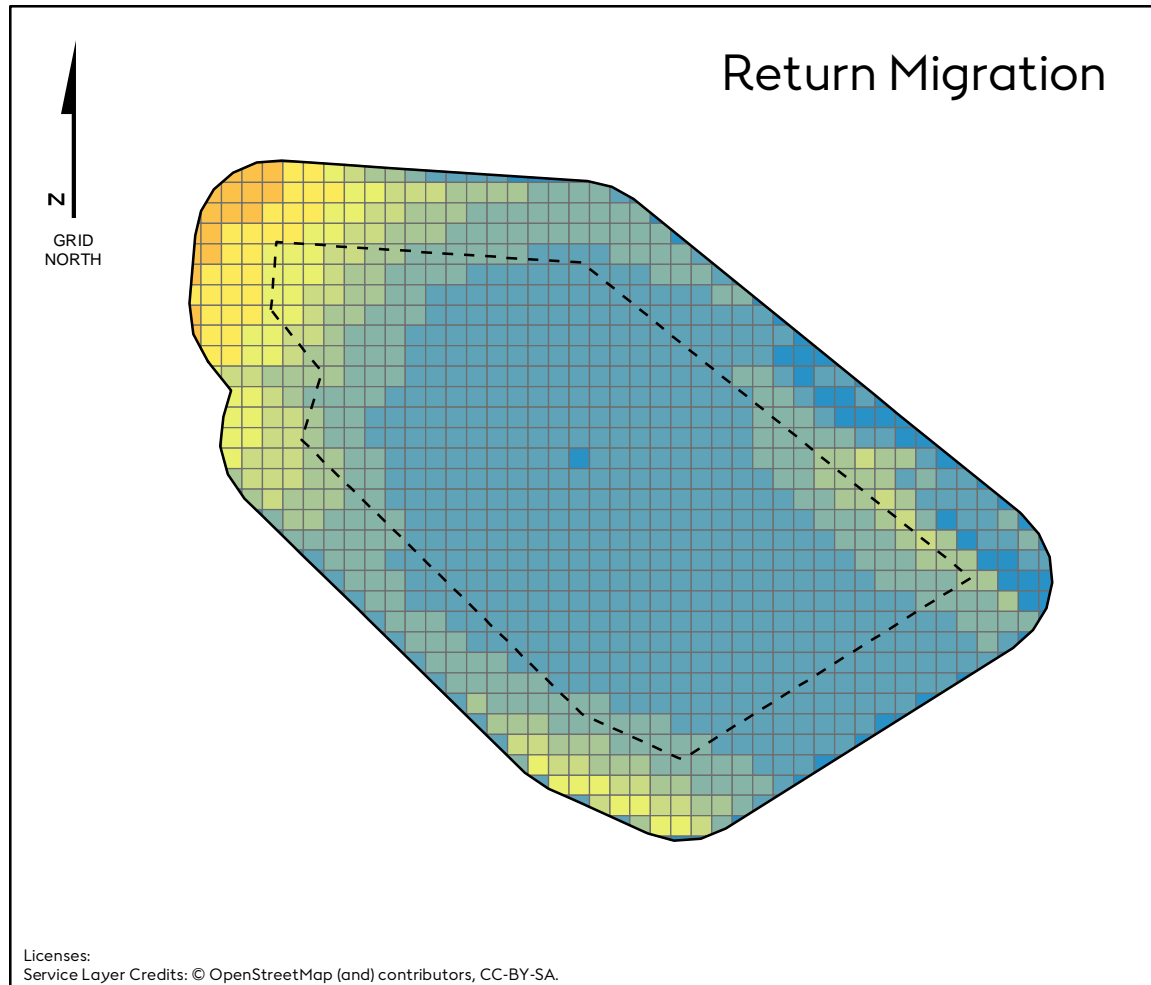
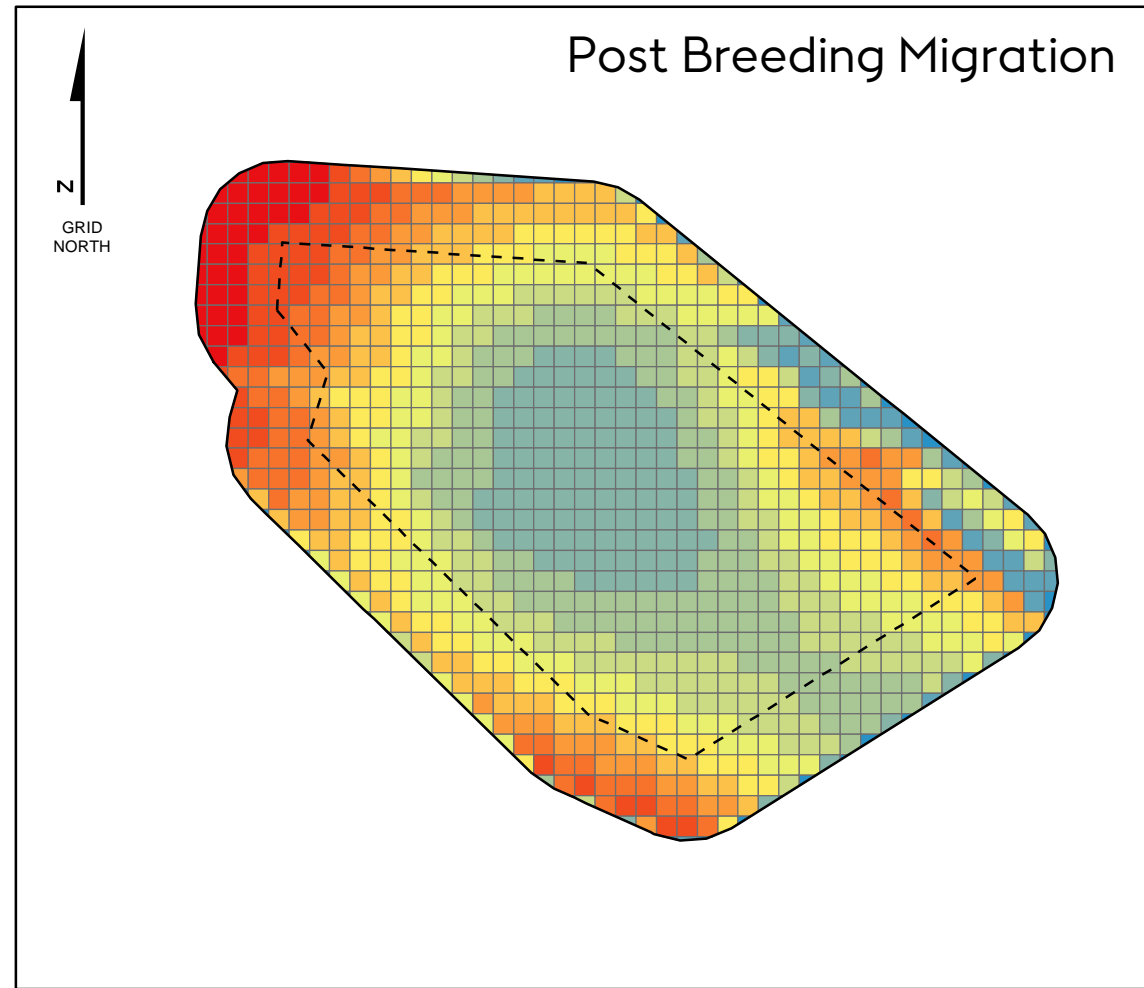
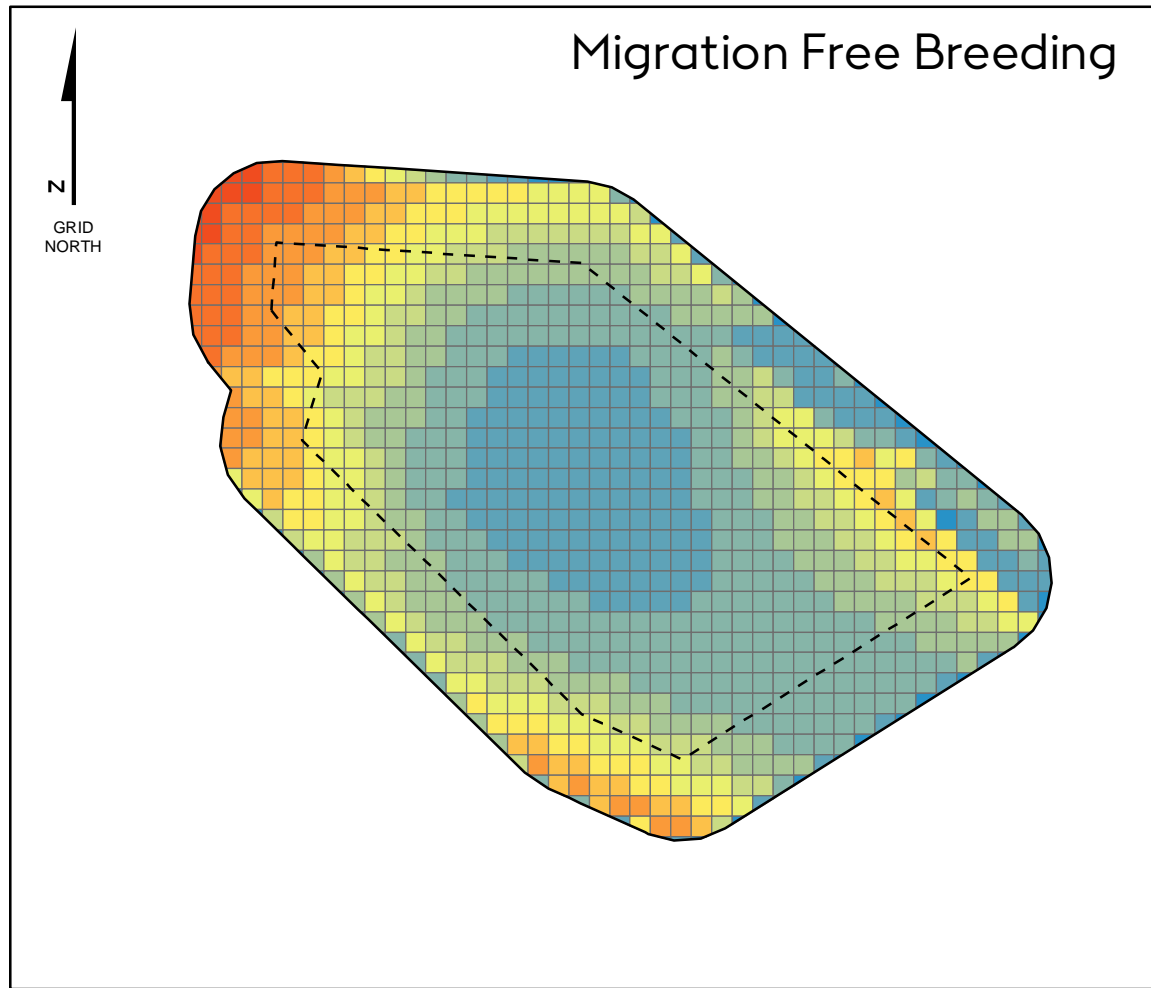
Table 8: Kittiwake bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km ²
Return migration	Jan-Apr	1,575	3.350
Migration-free breeding	May-Jul	1,234	2.624
Post-breeding migration	Aug-Dec	2,944	6.260
Migration-free winter	N/A	N/A	N/A

3.8.3 Spatial Density Distribution and Flight Direction

3.8.3.1 Kittiwakes were loosely distributed throughout the study area within each of the three bio-seasons ([Figure 10](#)). Lowest densities with few hot spots were observed in the return migration bio-season. The number and density of hot spots increased in the migration-free 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 migration 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.

3.8.3.2 Data presented in rose diagrams ([Appendix C: Flight Directional Rose Diagrams for Seabirds Recorded in flight from Site-specific surveys](#)) of monthly flight directions for kittiwakes within the study area indicates, as might be expected, that during the migration-free breeding bio-season a clear indication of birds either flying out from the nearest breeding colonies in an easterly direction to foraging grounds or in a westerly direction returning to nesting sites. This east-west axis of travel is most evident in July. During the post-breeding migration bio-season flight headings are generally in a southerly direction, with predominance in August. Towards the end of the post-breeding migration bio-season flight headings were in a more northerly direction. During the return migration bio-season flight headings were generally in a northerly direction, with predominance in April. These latter flight directional patterns are characteristic of kittiwake movements during the post-breeding and return migration bio-seasons and provide site-specific evidence in support of the bio-seasons used to define the baseline within the Hornsea Four array area.



Hornsea Four

Figure 10

Bio-season Spatial Density Distribution of Kittiwake Within Hornsea Four Plus 4 km Buffer

Array Area
 Array Area 4 km buffer

Predicted kittiwake density (birds / km²)

- 0.00 - 0.57
- 0.57 - 1.14
- 1.14 - 1.50
- 1.50 - 1.77
- 1.77 - 2.04
- 2.04 - 2.35
- 2.35 - 2.73
- 2.73 - 3.17
- 3.17 - 3.69
- 3.69 - 4.31
- 4.31 - 5.05
- 5.05 - 6.33

Coordinate system: ETRS 1989 UTM Zone 31N
Scale@A3: 1:370,000

0 10 20 Kilometres

0 5 10 Nautical Miles

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Bio-season Spatial Density Distribution of Kittiwake Within Hornsea Four Plus 4 km Buffer
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 Checked by: SS
 Approved by: SS

3.9 Great black-backed gull

3.9.1 Hornsea Four Survey Data

3.9.1.1 Great black-backed gulls were recorded in 14 of the 24 aerial digital surveys within the Hornsea Four array area. Peak abundance was in October 2016 (n=188) in Year 1 with a density of 0.40 birds/km² in the Hornsea Four array area. Peak abundance was in September 2017 (n=230) in Year 2 with a density of 0.49 birds/km² in the Hornsea Four array area ([Appendix A](#): Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) & [Appendix B](#): Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)). In both years, abundances peaked during the post-breeding migration bio-season, steadily decreasing through the return migration bio-season with very few birds present within the migration-free breeding bio-season (Figure 11).

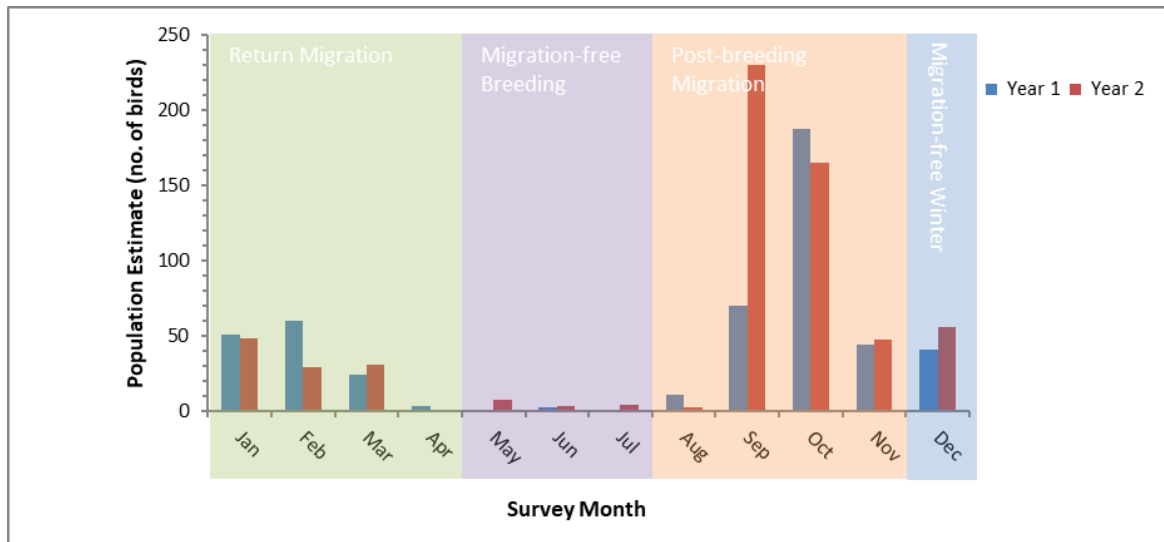


Figure 11: Bar chart displaying great black-backed gull abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.9.2 Biological Season Mean Peak Estimates

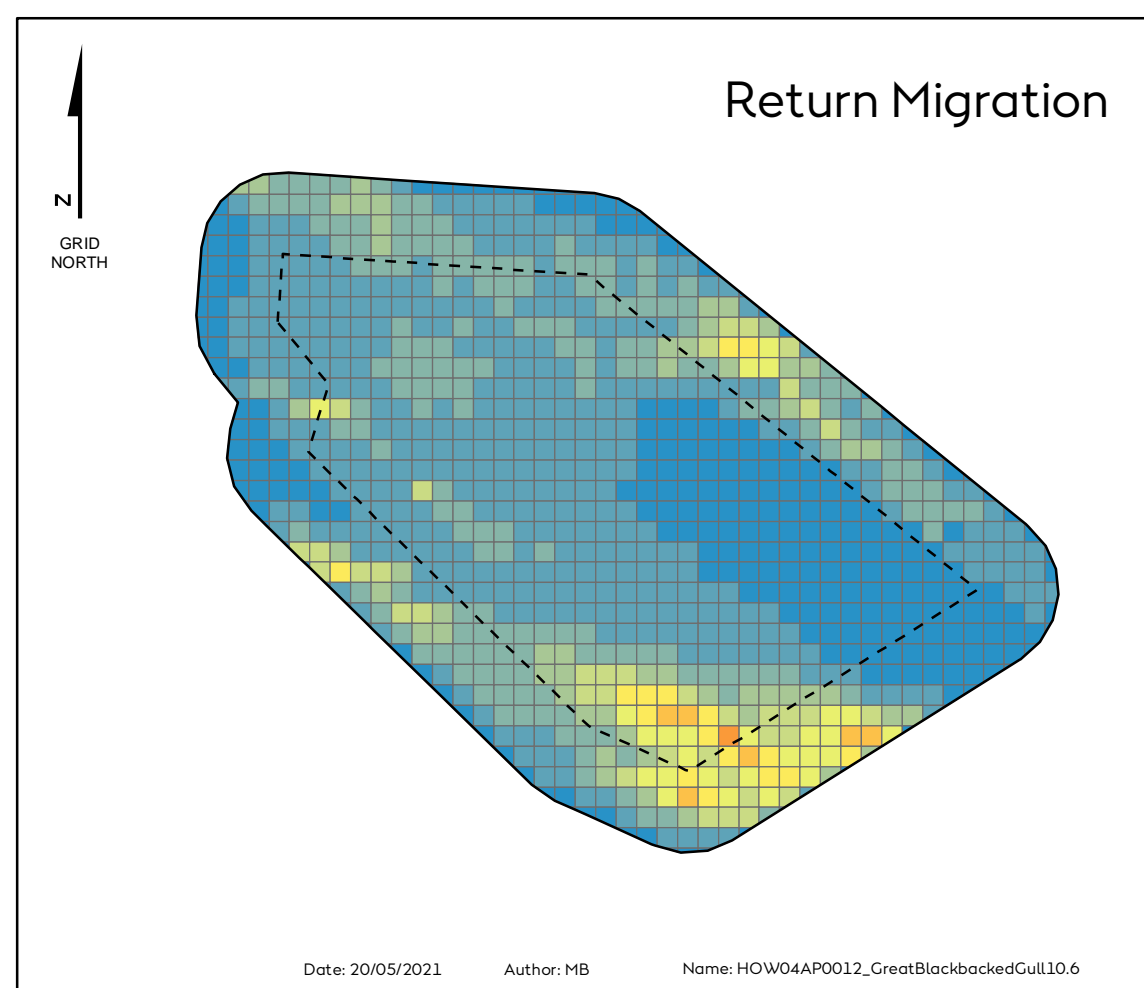
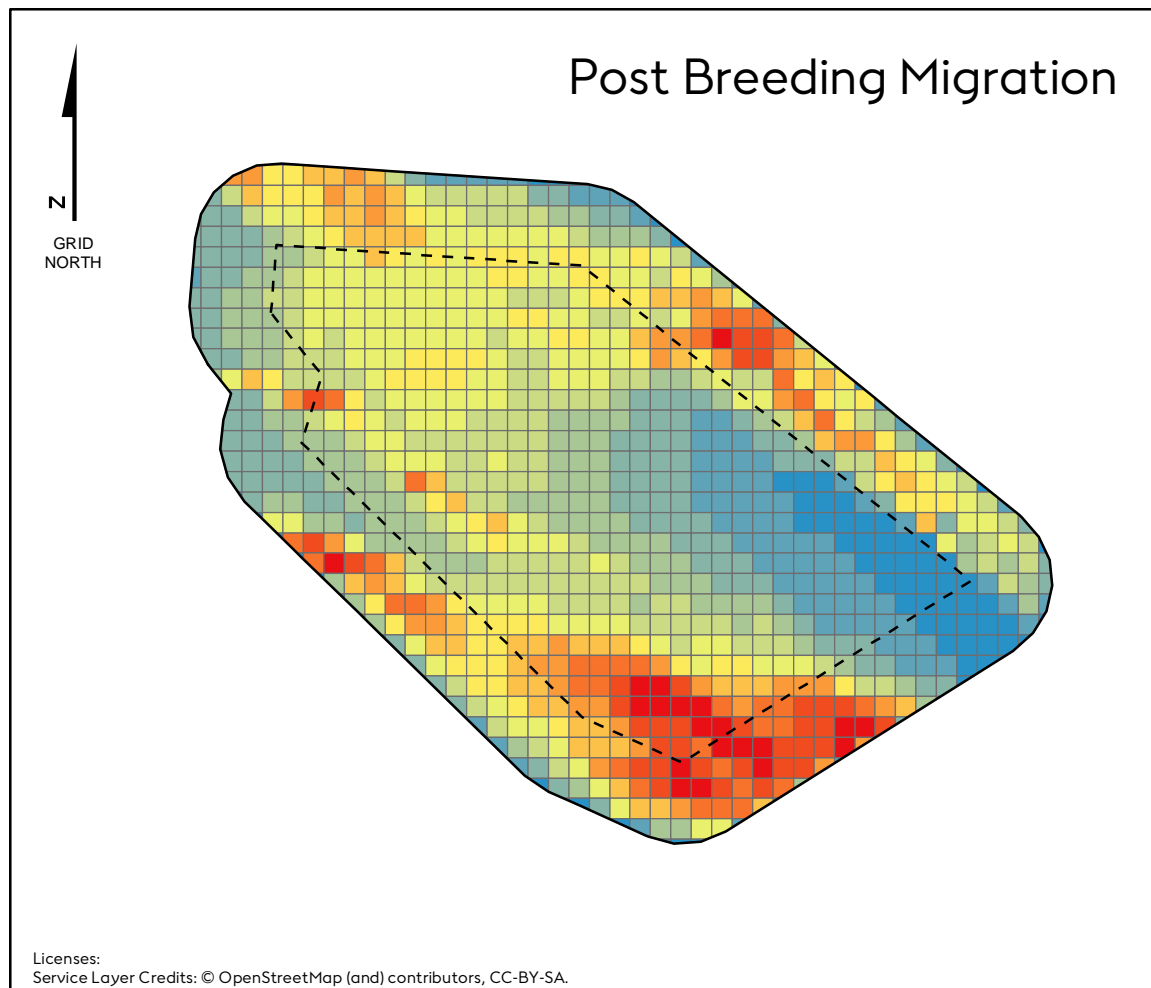
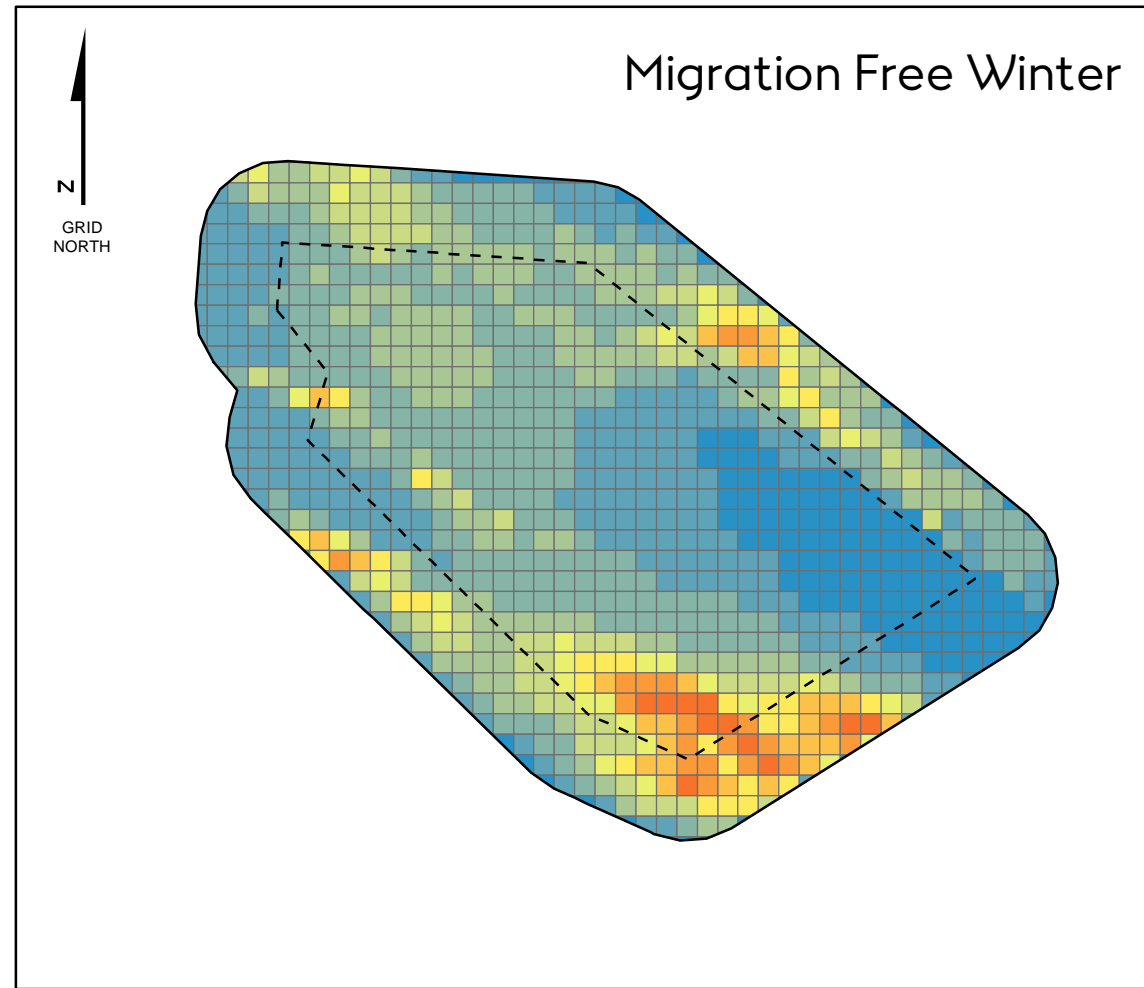
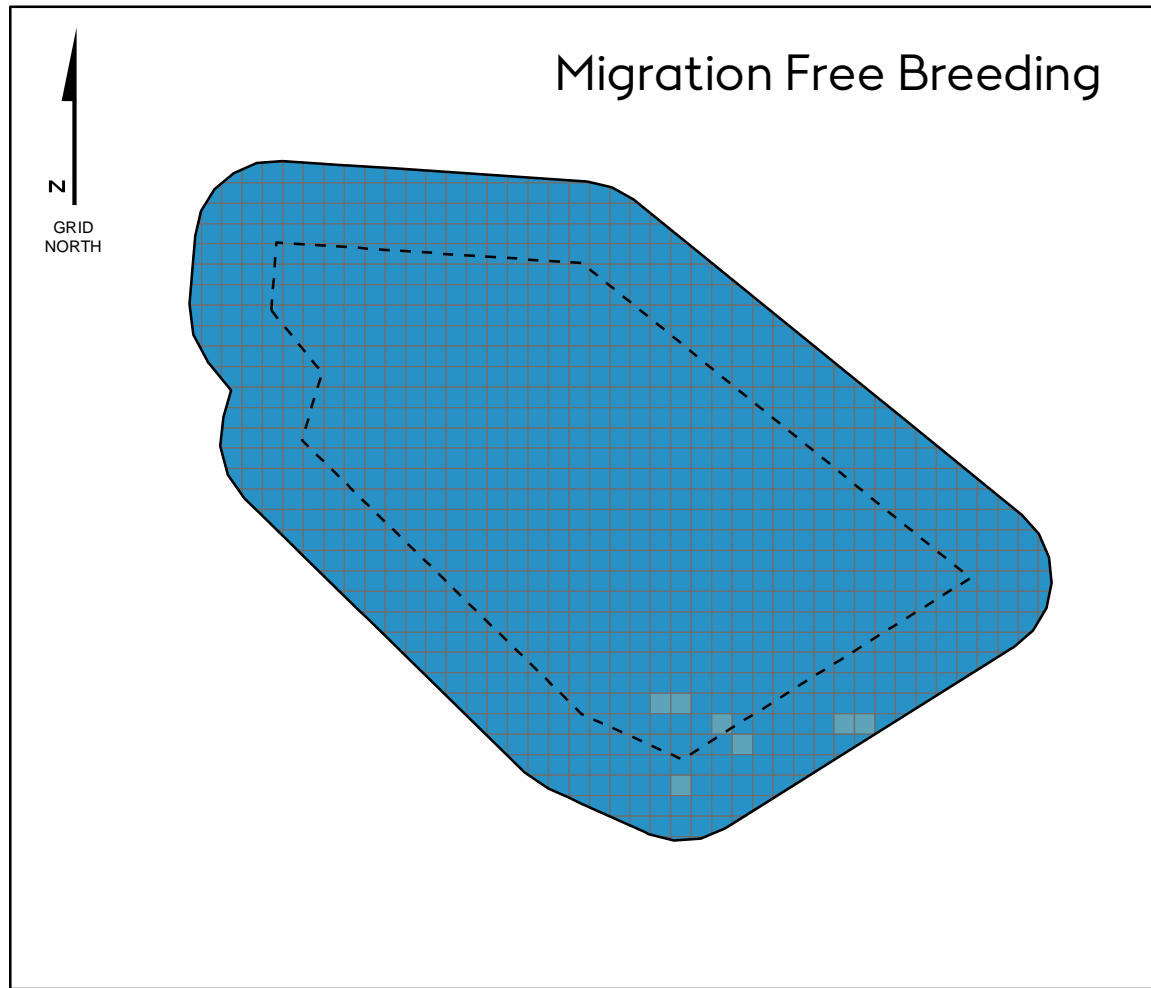
3.9.2.1 Great black-backed gull were present in greatest abundance in the Hornsea Four array area during the post-breeding migration bio-season (August to November), with an estimated mean peak abundance of 209 birds and a mean peak density of 0.445 birds/km² (Table 9). When considering the abundance of great black-backed gulls throughout the non-breeding bio-season the mean peak was equal to that of the post-breeding migration bio-season, with an estimated mean peak abundance of 209 birds and a mean peak density of 0.445 birds/km².

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	55	0.116
Migration-free breeding	May-Jul	5	0.011
Post-breeding migration	Aug-Nov	209	0.445
Migration-free winter	Dec	49	0.103
Breeding	Apr-Aug	9	0.020
Non-breeding	Sep-Mar	209	0.445

3.9.3 Spatial Density Distribution and Flight Direction

- 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 12](#)) and in very low densities throughout the whole study area during the migration-free breeding bio-season ([Figure 11](#)). For three of the bio-seasons, the greatest densities were in the south of the array area and 4 km buffer, with lower density hotspots in the north and east within the 4 km buffer surrounding the array area.
- 3.9.3.2 Too few birds in flight were recorded to determine flight directional preferences of great black-backed gulls within the study area in relation to the defined bio-seasons.



Hornsea Four

Figure 12

Bio-season Spatial Density Distribution of Great Black-backed Gull Within Hornsea Four Plus 4 km Buffer

Array Area
 Array Area 4 km buffer

Predicted great black-backed gull density (birds / km²)

- 0.00 - 0.04
- 0.04 - 0.08
- 0.08 - 0.13
- 0.13 - 0.17
- 0.17 - 0.23
- 0.23 - 0.28
- 0.28 - 0.34
- 0.34 - 0.42
- 0.42 - 0.51
- 0.51 - 0.70
- 0.70 - 0.91
- 0.91 - 1.38

Coordinate system: ETRS 1989 UTM Zone 31N
 Scale@A3: 1:370,000

0 10 20 Kilometres
 0 5 10 Nautical Miles

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Bio-season Spatial Density Distribution of Great Black-backed Gull Within Hornsea Four Plus 4 km Buffer
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 Checked by: SS
 Approved by: SS

3.10 Guillemot

3.10.1 Hornsea Four Survey Data

3.10.1.1 Guillemot were recorded in all 24 of the aerial digital surveys within the Hornsea Four array area. Lowest abundances were recorded between November through to April in Year 1 (Figure 13), before a rise to a peak in September 2016 (n=24,164) with a density of 51.39 birds/km². Lowest abundances were generally recorded between January and March in Year 2 (though October was the overall lowest), before a rise to a peak in August 2017 (n=18,873) with a density of 40.13 birds/km² (Appendix A: Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) & Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)). Densities range from 1.58 birds/km² in March 2018 to 51.39 birds/km² September 2016 (Appendix A: Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) & Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)).

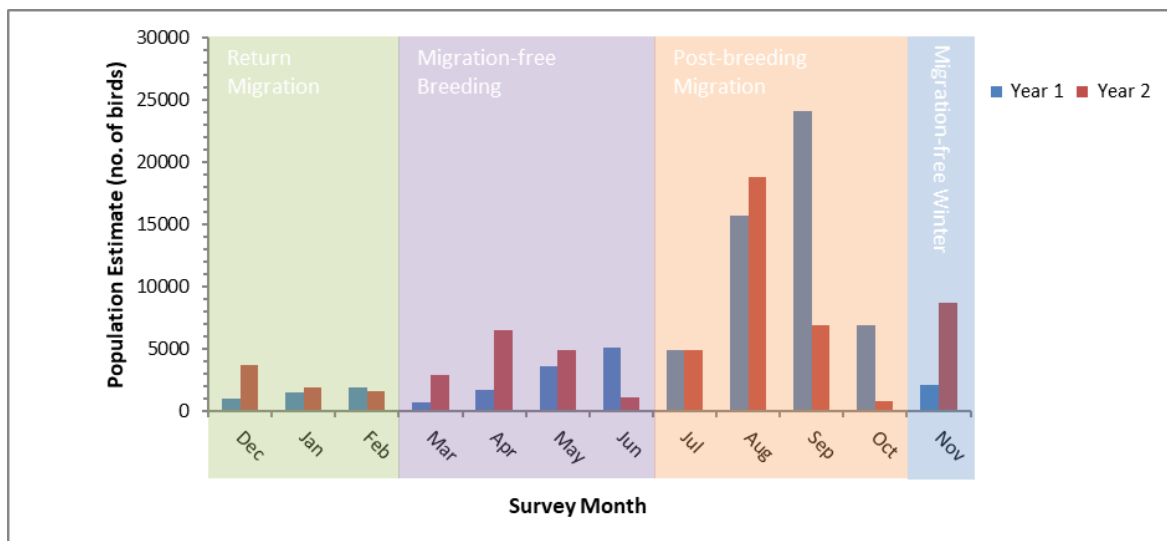


Figure 13: Bar chart displaying guillemot abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.10.1.2 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 highest in September 2016 (n=28,667) and in Year 2 peak abundance can be seen in August 2017 (n=21,647) (Figure 14).

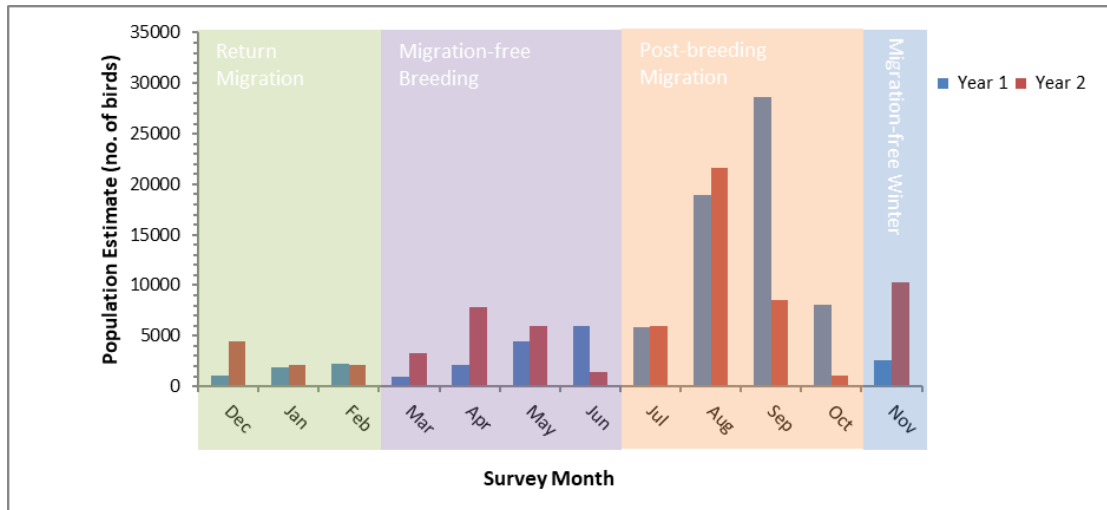


Figure 14: Bar chart displaying guillemot abundance estimates within the 4 km buffer per survey, between survey years and within each bio-season.

3.10.2 Biological Season Mean Peak Estimates

3.10.2.1 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 21,519 birds and density of 45.76 birds/km². In the 4 km buffer guillemot abundance was also highest during the post-breeding migration bio-season with an estimated mean peak of 25,157 birds and density of 127.61 birds/km² (Table 10).

3.10.2.2 When considering the abundance of guillemots throughout the non-breeding bio-season using the weighted mean peak method (Section 3.4.6.2), the mean peak abundance is estimated at 11,205 birds and a density of 23.83 birds/km² (Table 10) in the array area and a mean peak abundance of 13,144 birds and a density of 66.68 birds/km² (Table 10) in the 4 km buffer. If the standard bio-season mean peak method is used to define the number of guillemots throughout the non-breeding bio-season, the mean peak mirrors that of the post-breeding migration bio-season, with an estimated mean peak abundance of 21,519 birds and a mean peak density of 45.76 birds/km² in the array area and a mean peak estimate of 25,157 birds in the 4 km buffer and a mean peak density of 127.61 birds/km². However, it must be noted that this mean peak estimate of the non-breeding bio-season for guillemot is not truly representative of the actual abundance of this species across this wider period of time, as it is biased towards the inclusion of birds undertaking their post-breeding dispersal and not the typically lower abundances through the migration-free winter and return migration bio-seasons.

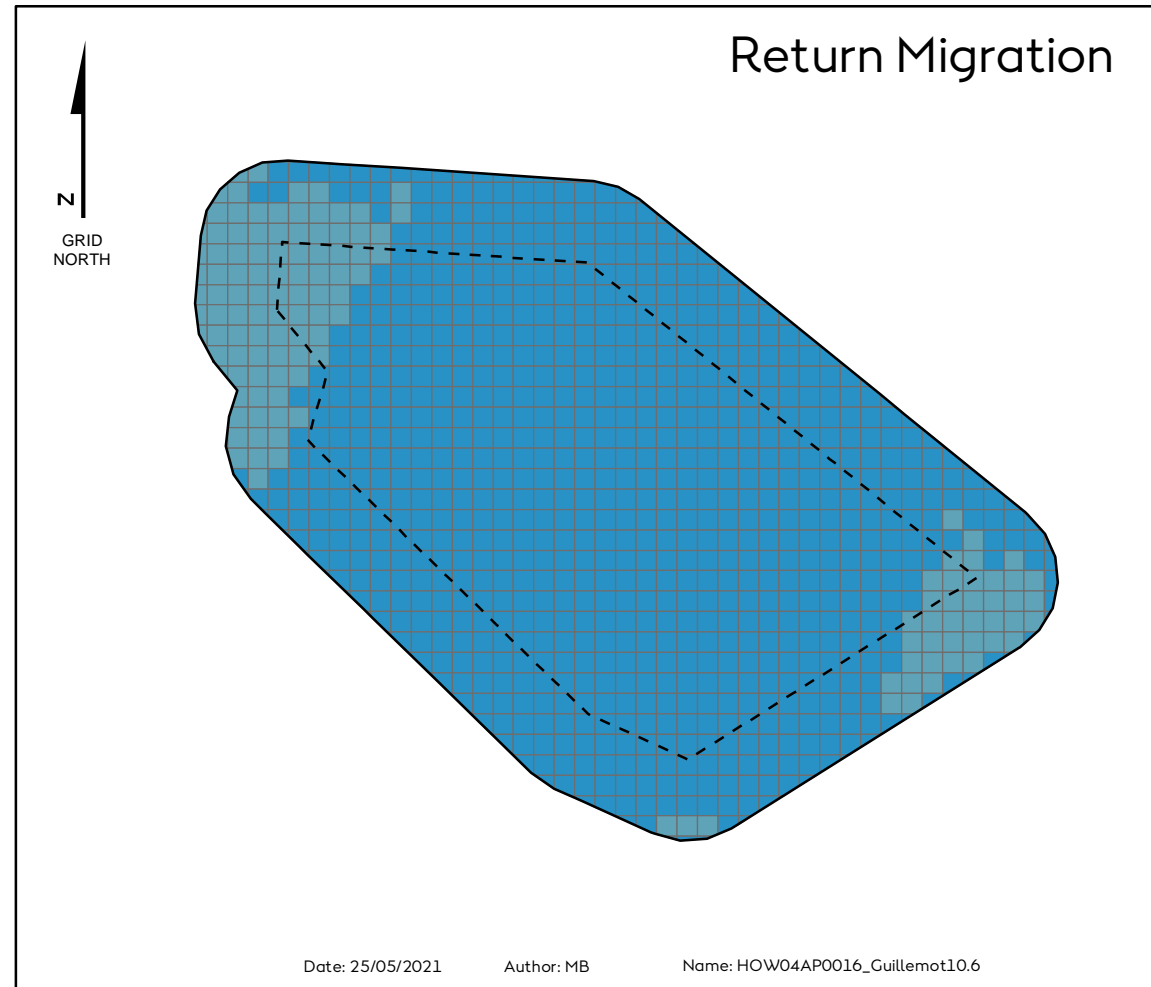
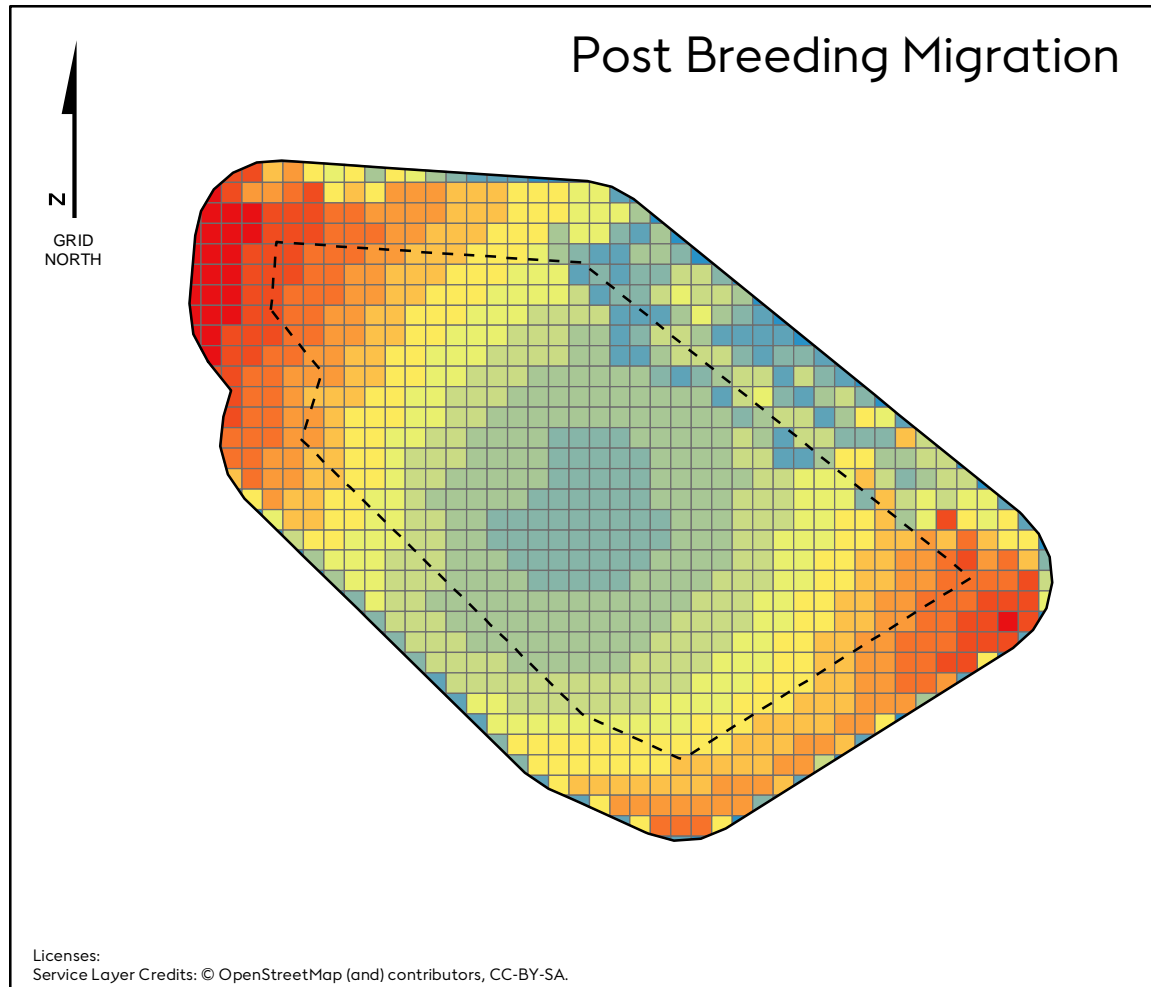
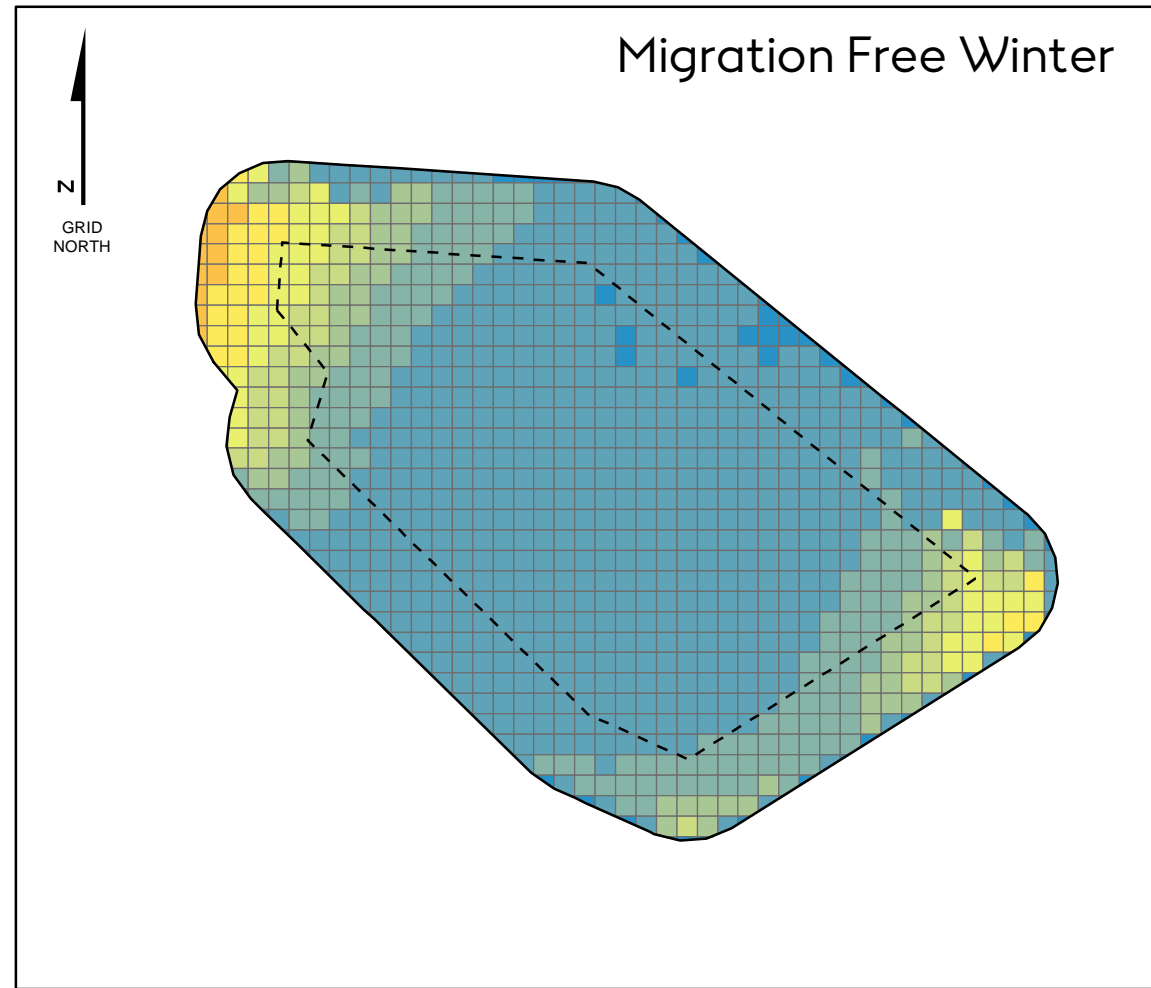
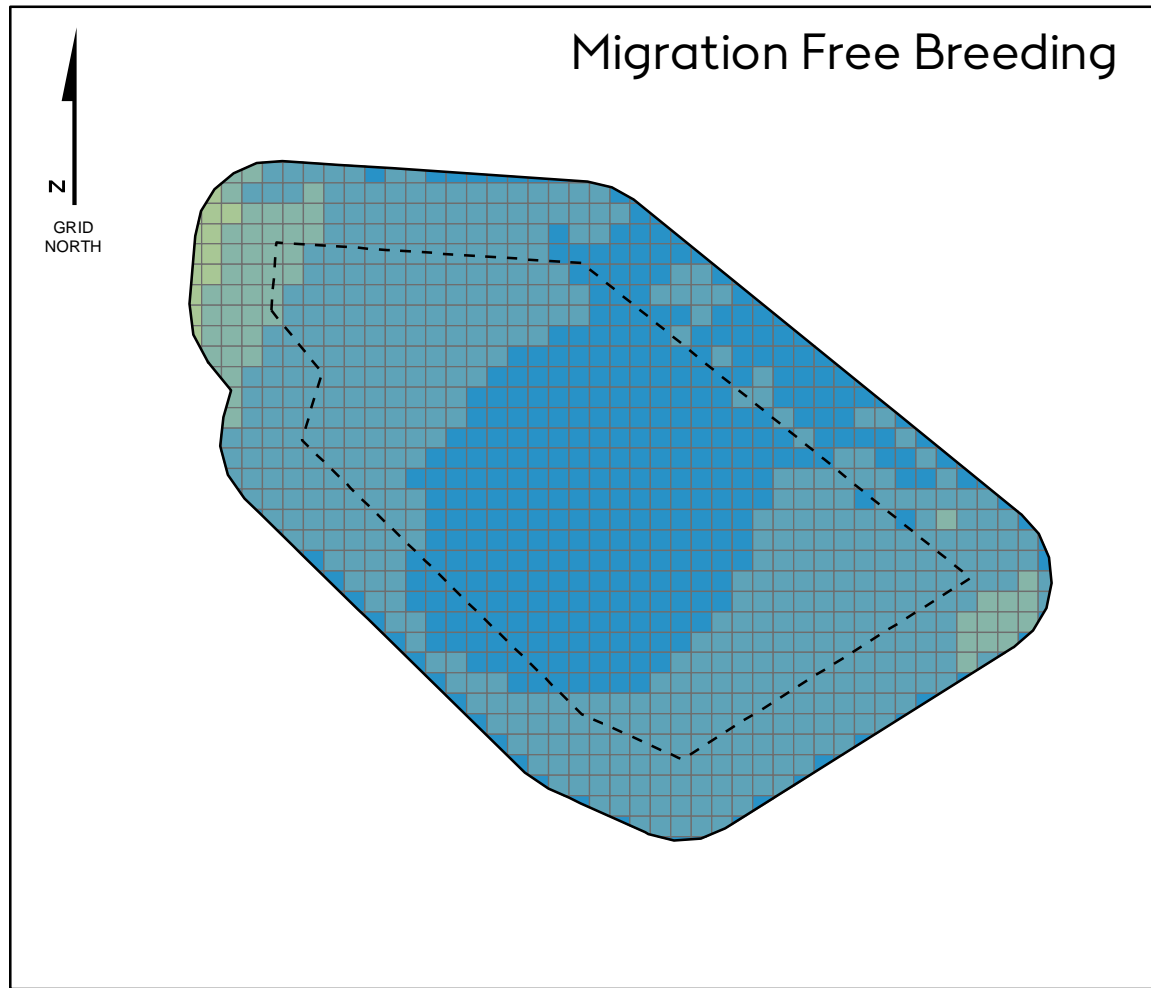
Table 10: Guillemot bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km ²	Mean Peak Abundance within the 4 km buffer	Mean Peak Density within the 4 km buffer birds/km ²
Return migration	Dec-Feb	2,813	5.982	3,371	8.062
Migration-free breeding	Mar-Jun	5,855	12.452	6,947	16.610
Post-breeding	July-Oct	21,519	45.760	25,157	60.154
Migration-free winter	Nov	5,440	11.568	6,426	15.365
Non-breeding (weighted mean approach)	Aug-Feb	11,205	23.828	13,144	31.430

3.10.3 Spatial Distribution and Flight Direction

3.10.3.1 Guillemots were predominantly distributed to the North West and South East of the study area within each of the four bio-seasons (**Figure 15**). Lower densities were observed in the migration-free breeding and return migration bio-seasons. The number and density of hot spots increased in the migration-free winter and post-breeding bio-seasons with the highest densities in the North West of the study area for both seasons.

3.10.3.2 Data presented in rose diagrams (**Appendix C: Flight Directional Rose Diagrams for Seabirds Recorded in flight from Site-specific surveys**) of monthly flight directions of guillemots within the study area indicates, as might be expected, a movement of birds in a northerly direction throughout the return migration bio-season with movement also east south easterly suggesting overseas birds returning to breeding grounds in Germany, Denmark, Scandinavia and / or further afield. During the migration-free breeding bio-season there is an indication that birds may be heading out from breeding colonies on the East coast of England in an easterly direction to foraging grounds or in a westerly direction returning to the same nesting sites. At the beginning of the post-breeding migration bio-season in July there is a predominant heading west suggesting migrant birds arriving from Germany, Denmark, Scandinavia and / or further afield. In August when peak abundances are recorded too few birds are in flight to determine migratory movements, though it is likely that during this month adult birds may be dispersing from coastal colonies with their young. Flight directional preferences for the rest of the post-breeding migration bio-season are in a southerly direction. These latter flight directional patterns are characteristic of the post-breeding migration.



Hornsea Four

Figure 15

Bio-season Spatial Density Distribution of Guillemot Within Hornsea Four Plus 4 km Buffer

Array Area
 Array Area 4 km buffer

Predicted guillemot density (birds / km²)

- 0.00 - 4.71
- 4.71 - 9.92
- 9.92 - 12.29
- 12.29 - 13.79
- 13.79 - 15.46
- 15.46 - 17.46
- 17.46 - 19.83
- 19.83 - 22.61
- 22.61 - 25.96
- 25.96 - 30.07
- 30.07 - 35.06
- 35.06 - 42.50

Coordinate system: ETRS 1989 UTM Zone 31N
 Scale@A3: 1:370,000

0 10 20 Kilometres
 0 5 10 Nautical Miles

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Bio-season Spatial Density Distribution of Guillemot Within Hornsea Four Plus 4 km Buffer
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 Checked by: SS
 Approved by: SS

3.11 Razorbill

3.11.1 Hornsea Four Survey Data

3.11.1.1 Razorbills were recorded in 21 of the 24 aerial digital surveys within the Hornsea Four array area. Abundance peaked in September 2016 (n=3,413) in Year 1 and in August 2017 (n=1,320) in Year 2 (Figure 16). Abundances in both Year 1 and Year 2 were considerably lower outside of these individual annual peak months. Densities ranged from 0.01 birds/km² in December 2016 to 7.26 birds/km² in September 2016 (Appendix A: Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) & Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)).

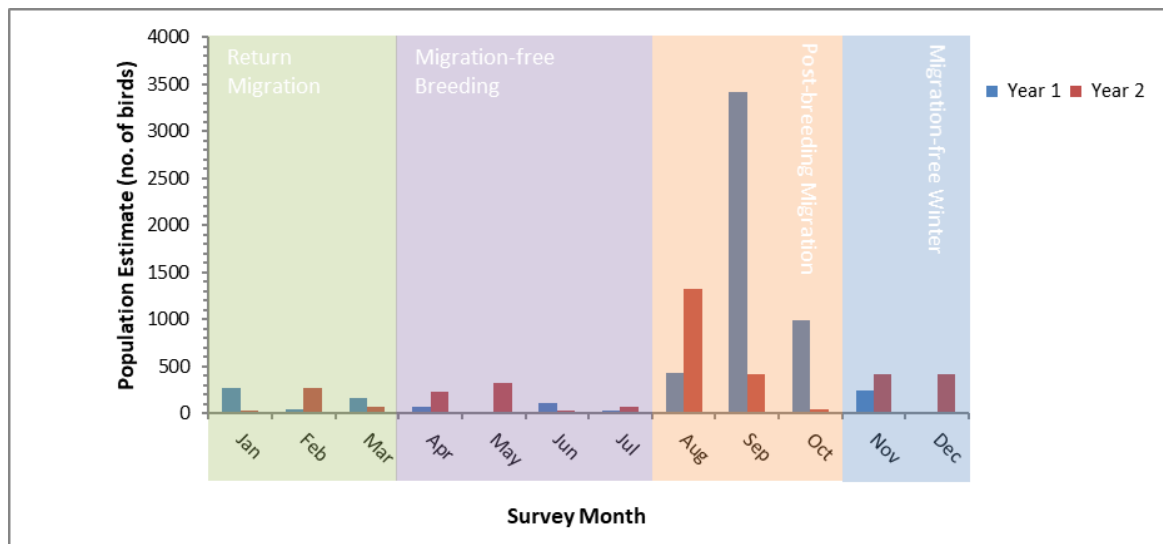


Figure 16: Bar chart displaying razorbill abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

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 within the post-breeding migration bio-season (Figure 17). Abundance peaked in September 2016 (n=3,924) in Year 1 and in August 2017 (n=1,466) in Year 2.

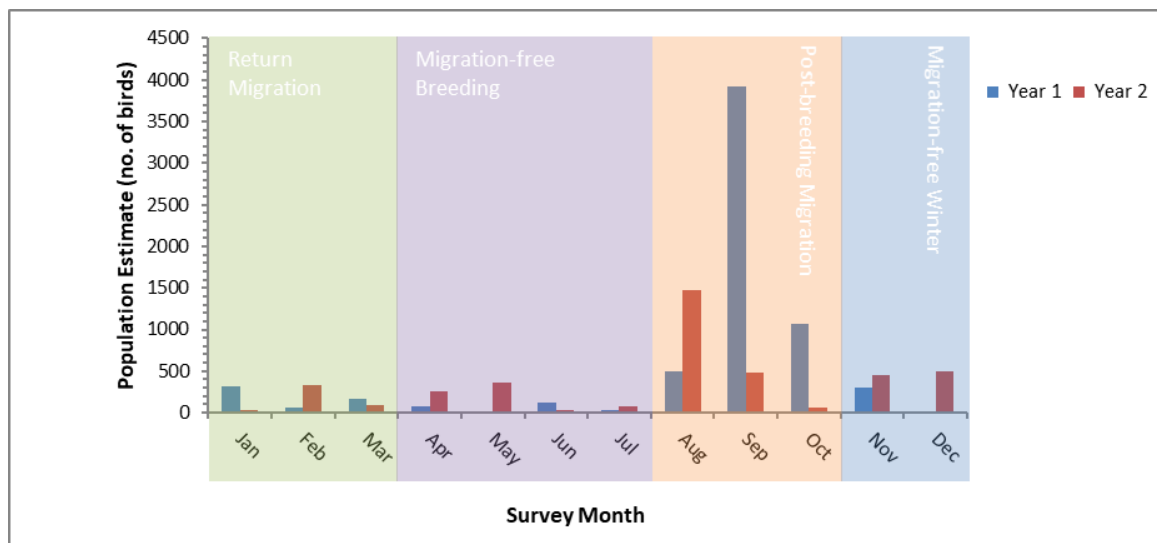


Figure 17: Bar chart displaying razorbill abundance estimates within the 4 km buffer area per survey, between survey years and within each bio-season.

3.11.2 Biological Season Mean Peak Estimates

3.11.2.1 Razorbill abundance in the Hornsea Four array area was recorded at its highest during the post-breeding migration bio-season (August to October) with an estimated mean peak abundance of 2,367 birds and a mean peak density of 5.03 birds/km². 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 2,695 birds and a mean peak density of 13.67 birds/km² (Table 11).

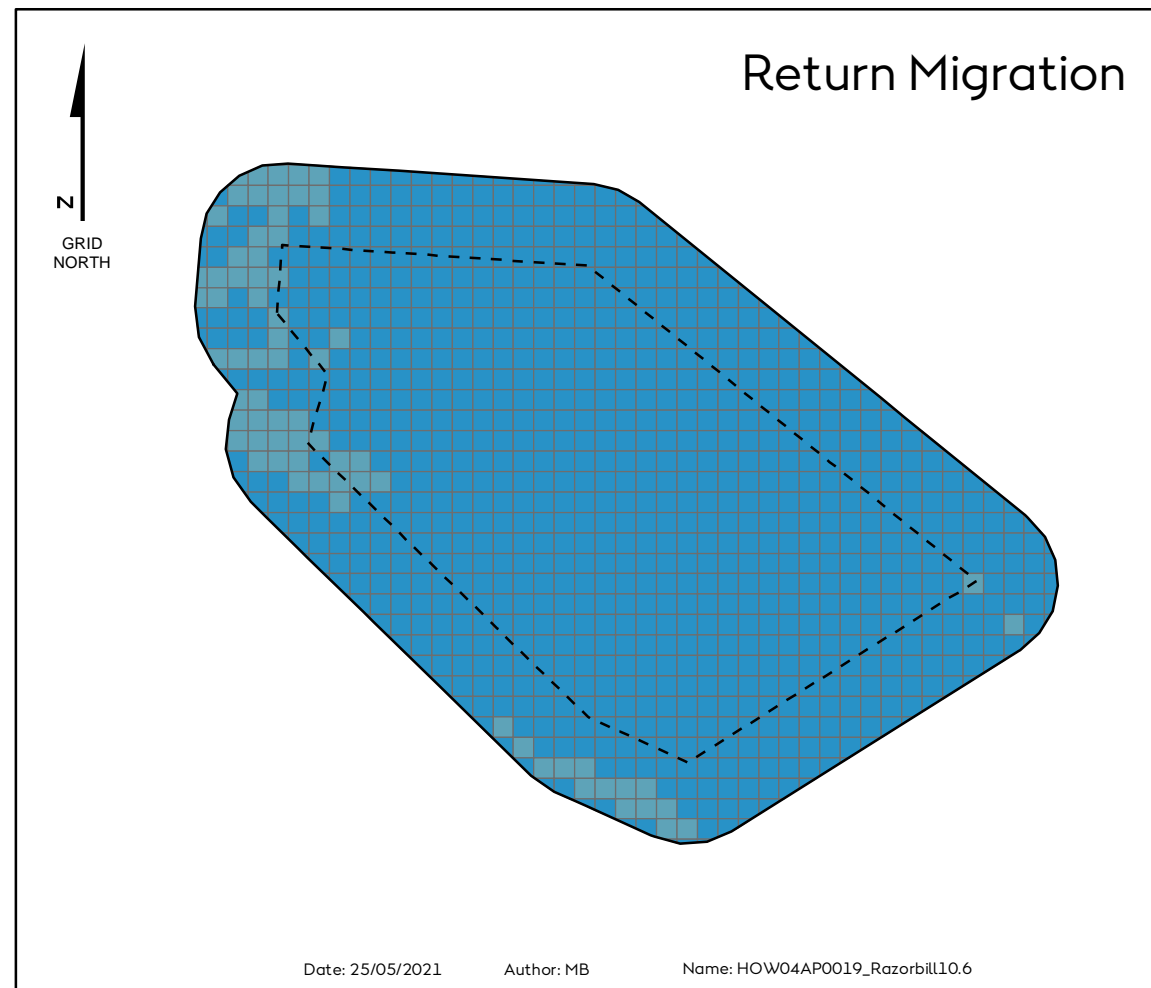
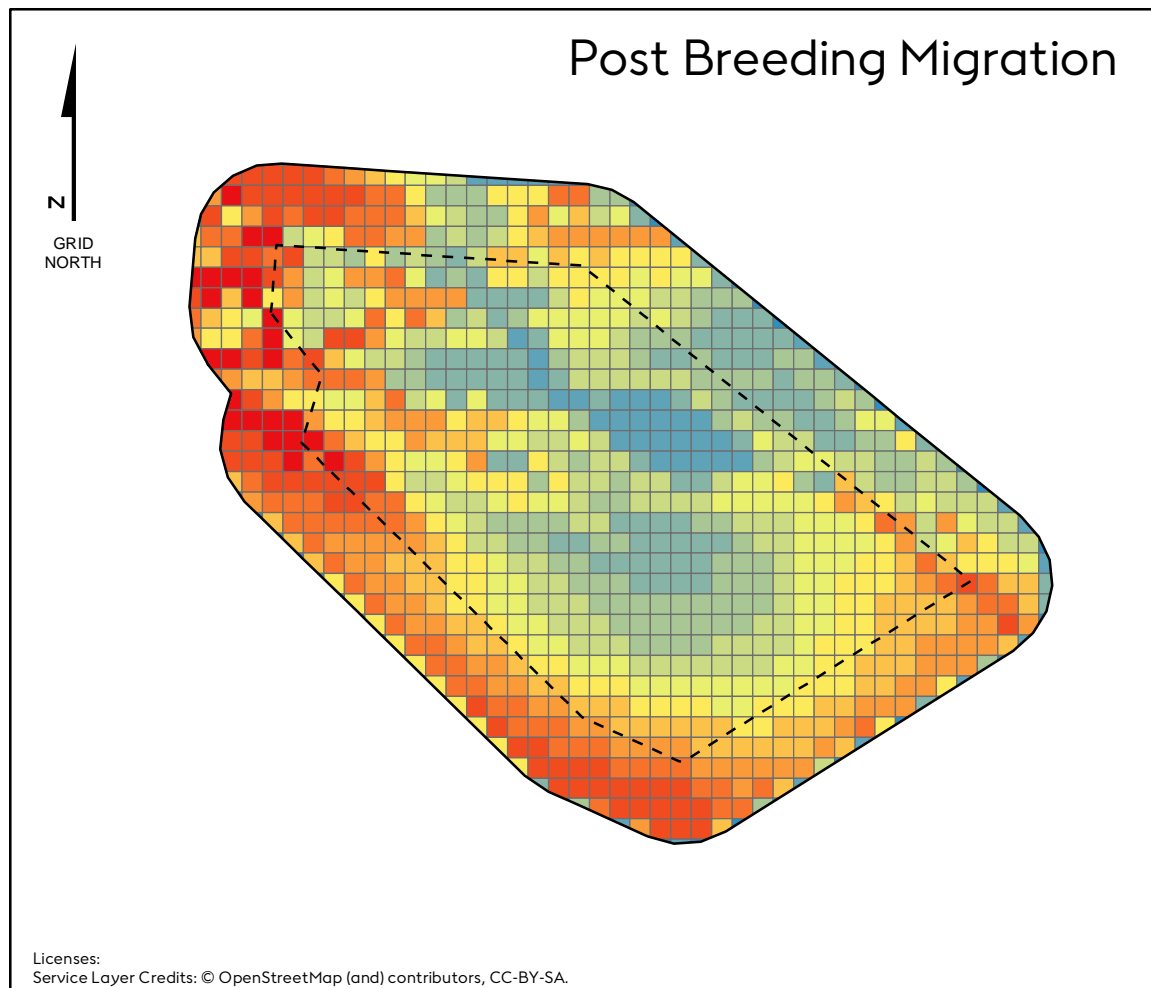
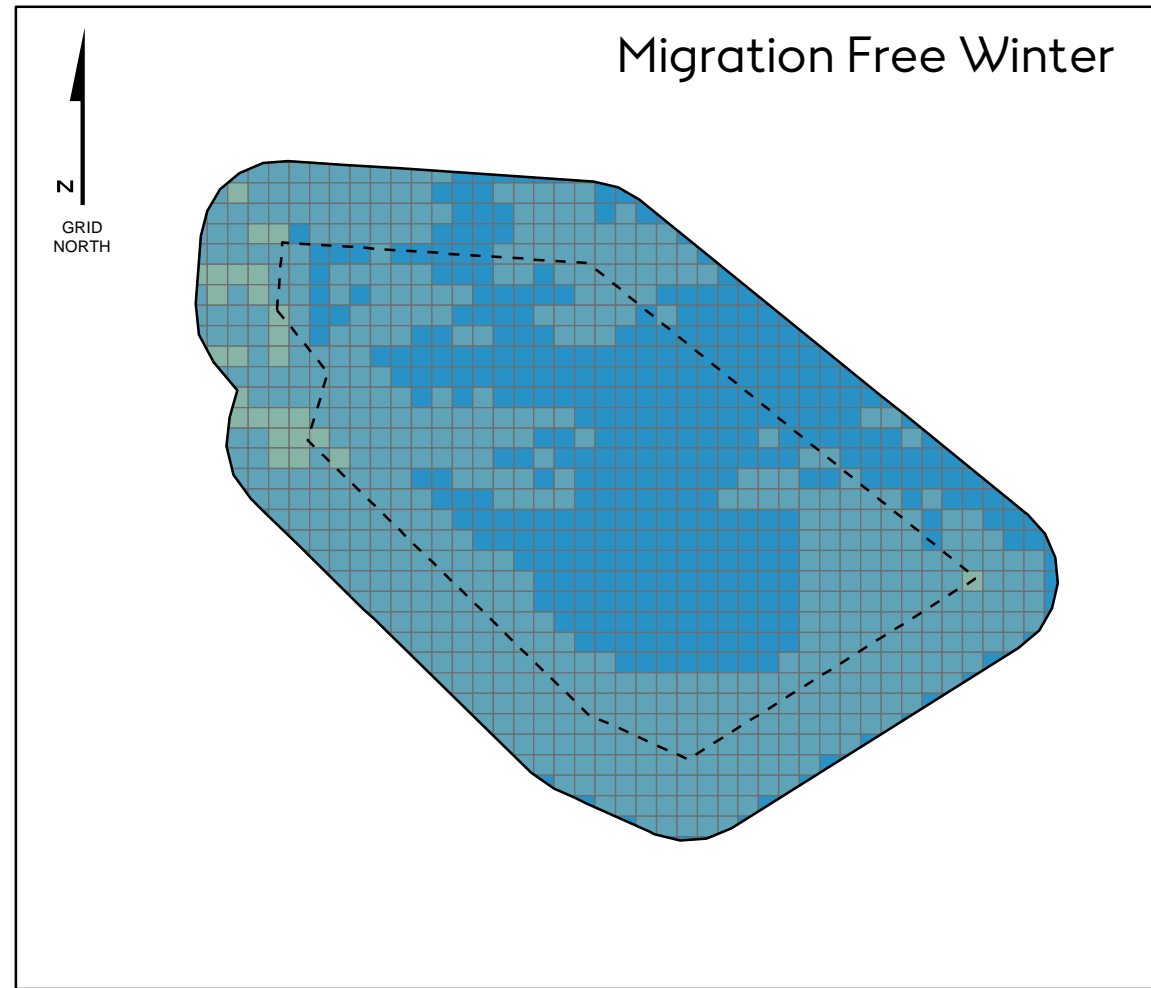
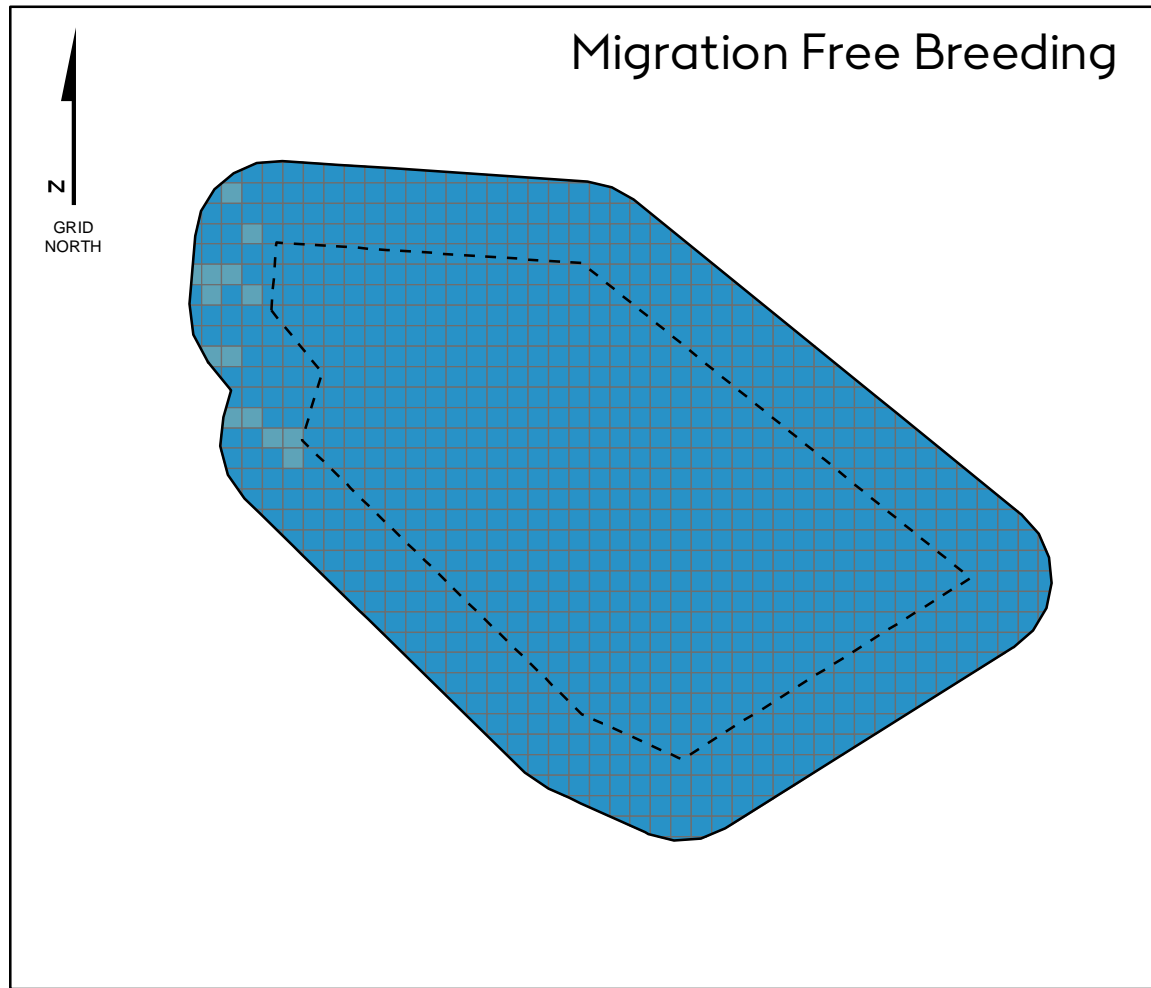
Table 11: Razorbill bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km ²	Mean Peak Abundance within the 4 km buffer	Mean Peak Density within the 4 km buffer birds/km ²
Return migration	Jan-Mar	265	0.563	328	0.785
Migration-free breeding	Apr-Jul	219	0.466	246	0.589
Post-breeding	Aug-Oct	2,367	5.033	2,695	6.444
Migration-free winter	Nov-Dec	331	0.703	397	0.948

3.11.3 Spatial Distribution and Flight Direction

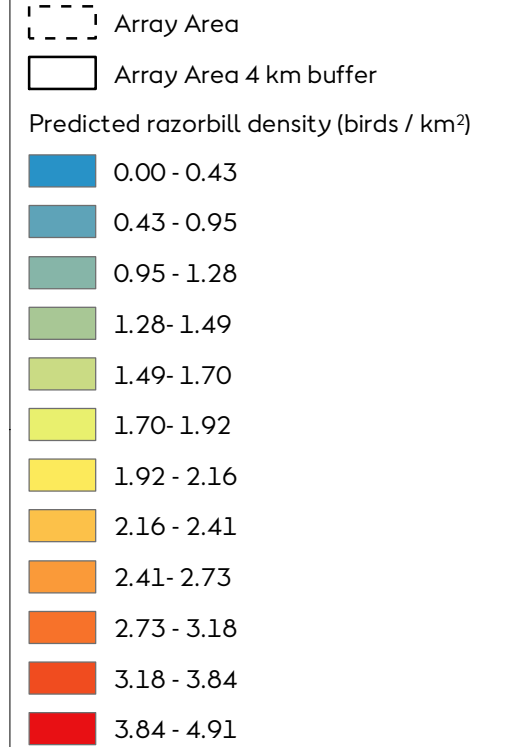
3.11.3.1 Razorbills were loosely distributed throughout the study area within each of the four bio-seasons (Figure 18). Lower densities, with no obvious hot spots, were observed in the migration-free breeding, migration-free wintering and return migration bio-seasons, with a more pronounced hotspot in the North West of the study area in the migration-free winter bio-season. The number and density of hot spots increased in post-breeding bio-seasons with the highest densities in the North West, West and South West of the study area.

3.11.3.2 Data from rose diagrams ([Appendix C: Flight Directional Rose Diagrams for Seabirds Recorded in flight from Site-specific surveys](#)) of the compiled monthly flight directions of razorbills over the study area indicate flight direction of birds to be similar to that reported for guillemots. Although flight directional preferences are less clearly defined, due to fewer birds recorded, it is evident from the data that birds head south during the post-breeding migration bio-season and continued to do so during November, considered as the migration-free winter bio-season.



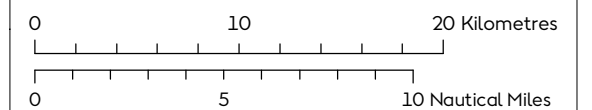
Hornsea Four

Figure 18
Bio-season Spatial Density
Distribution of Razorbill
Within Hornsea Four
Plus 4 km Buffer



Coordinate system: ETRS 1989 UTM Zone 31N

Scale@A3: 1:370,000



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Bio-season Spatial Density
Distribution of Razorbill Within
Hornsea Four Plus 4 km Buffer
Document no: HOW04AP0020
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Checked by: SS
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3.12 Puffin

3.12.1 Hornsea Four Survey Data

3.12.1.1 Puffins were recorded in 12 of the 24 monthly aerial digital surveys within the Hornsea Four array area, although the months they were recorded differed between Year 1 and Year 2 (Figure 19). No puffins were recorded in January, March, November and December of either Year 1 or Year 2 and densities ranged from 0.00 birds/km² for December 2016, January 2017, June 2017, October 2017, November 2017 and March 2018 to 0.71 birds/ km² in August 2017 (Appendix A: Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) & Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)). Puffin abundance peaked in October 2016 (n=157) in Year 1 and in August 2017 (n=332) in Year 2.

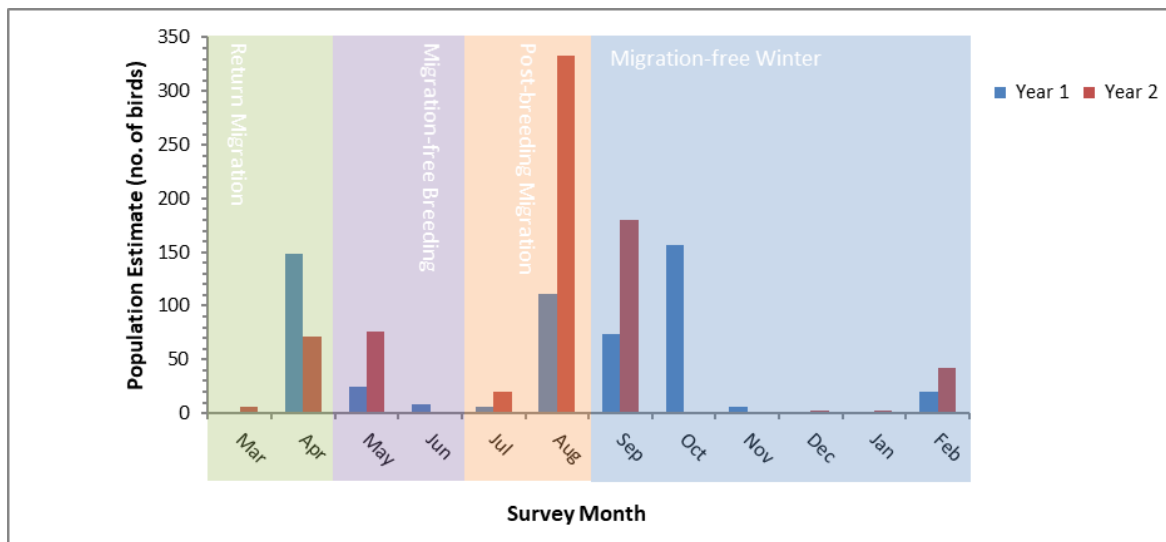


Figure 19: Bar chart displaying puffin abundance estimates within the Hornsea Four array area per survey, between survey years and within each bio-season.

3.12.1.2 Puffin abundance within the 4 km buffer was similar to that recorded in the Hornsea Four array area in Year 1 and Year 2 (Figure 20). Peak abundance of puffins was in April 2016 (n=135) in Year 1 and in August 2017 (n=304) in Year 2. Densities ranged from 0.00 birds/km² for December 2016, January 2017, June 2017, October 2017, November 2017 and March 2018 to 1.54 birds/km² in August 2017 (Appendix A: Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds) & Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)).

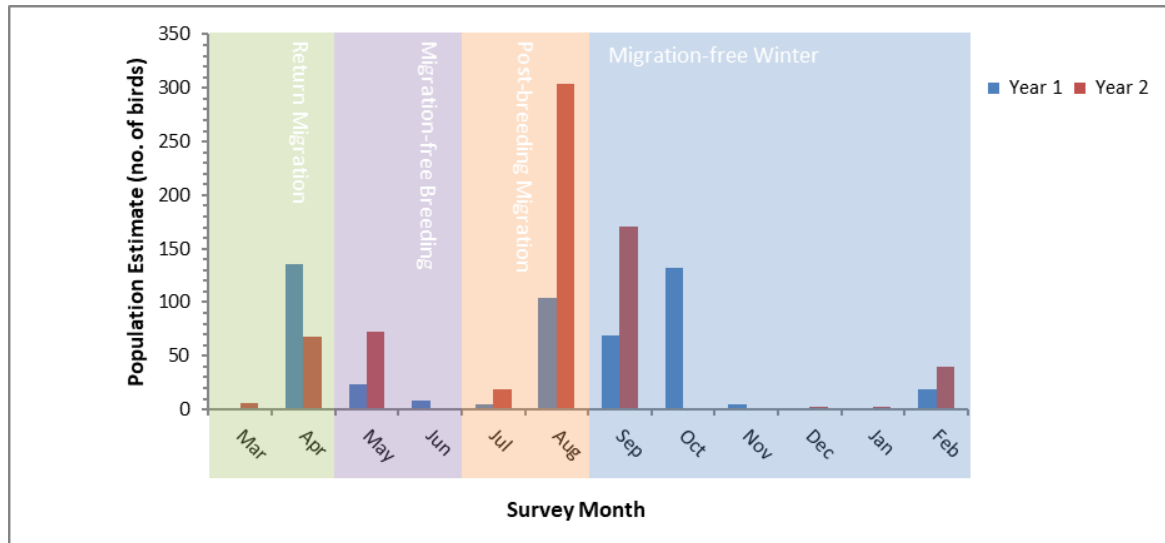


Figure 20: Bar chart displaying puffin abundance estimates within the 4 km buffer area per survey, between survey years and within each bio-season.

3.12.2 Biological Season Mean Peak Estimates

3.12.2.1 Puffin abundance was highest in the Hornsea Four array area during the post-breeding migration bio-season (July to August) with an estimated mean peak abundance of 222 birds and a mean peak density of 0.47 birds/km². In the 4 km buffer, puffin abundance was also highest during the post-breeding migration bio-season with an estimated mean peak abundance of 204 birds and a mean peak density of 1.04 birds/km² (Table 12).

3.12.2.2 When considering the abundance of puffins throughout the non-breeding bio-season, a higher mean peak was apparent, with an estimated mean peak abundance of 245 birds and a mean peak density of 0.52 birds/km² in the array area and a mean peak estimate of 218 birds in the 4 km buffer and a mean peak density of 1.11 birds/km². However, it must be noted that this mean peak estimate of the non-breeding bio-season for puffin is not truly representative of the actual abundance of this species across this wider period of time, as it is biased towards the inclusion of birds undertaking their post-breeding dispersal.

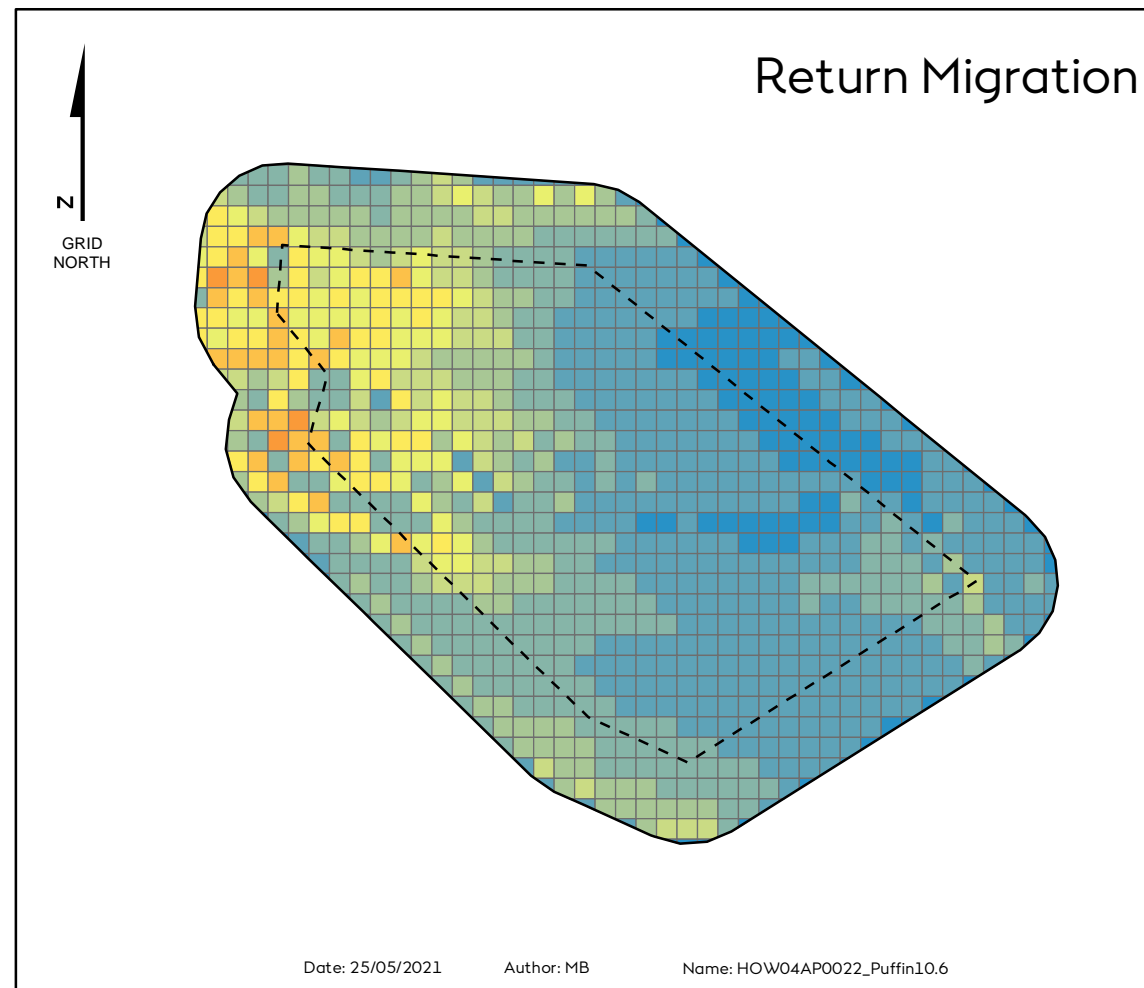
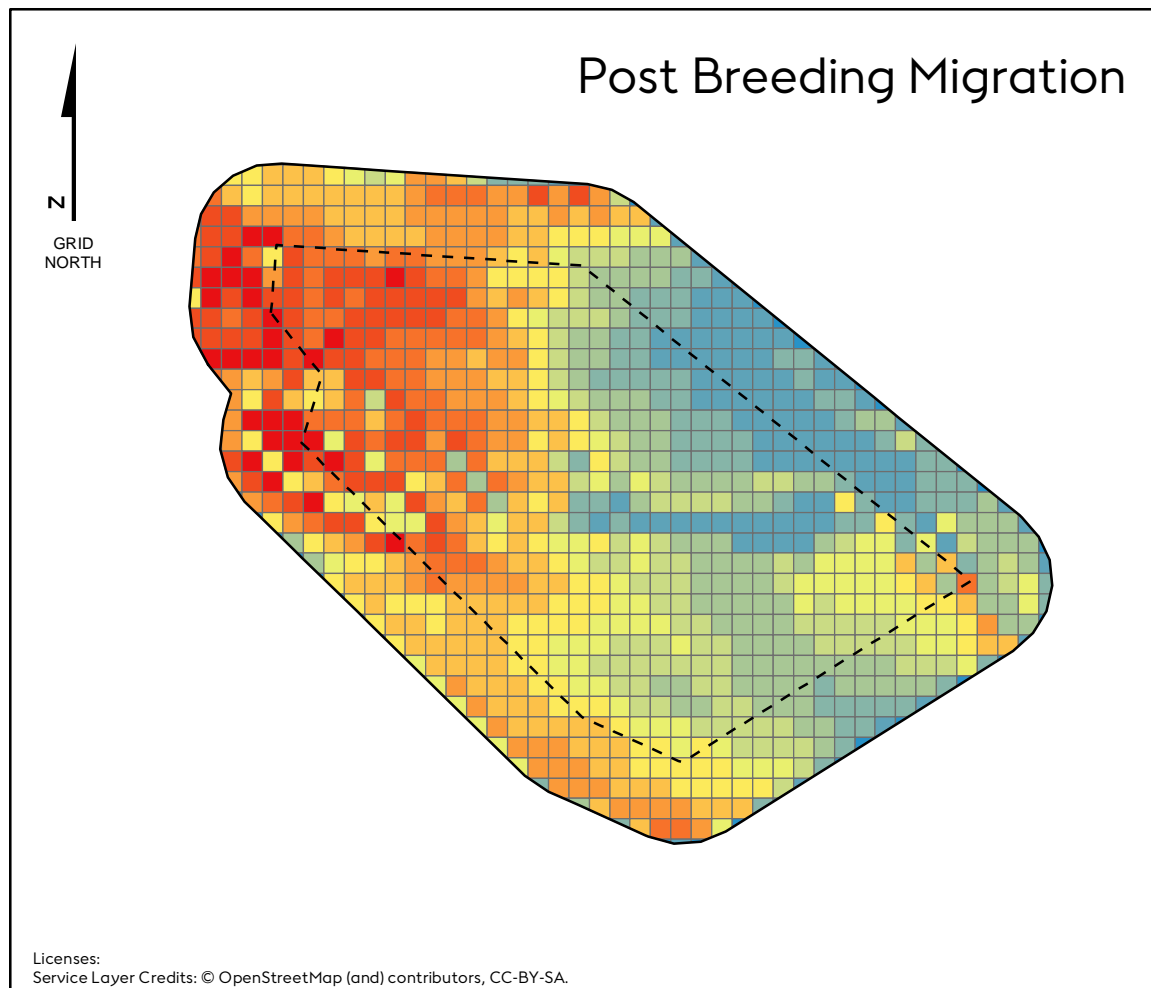
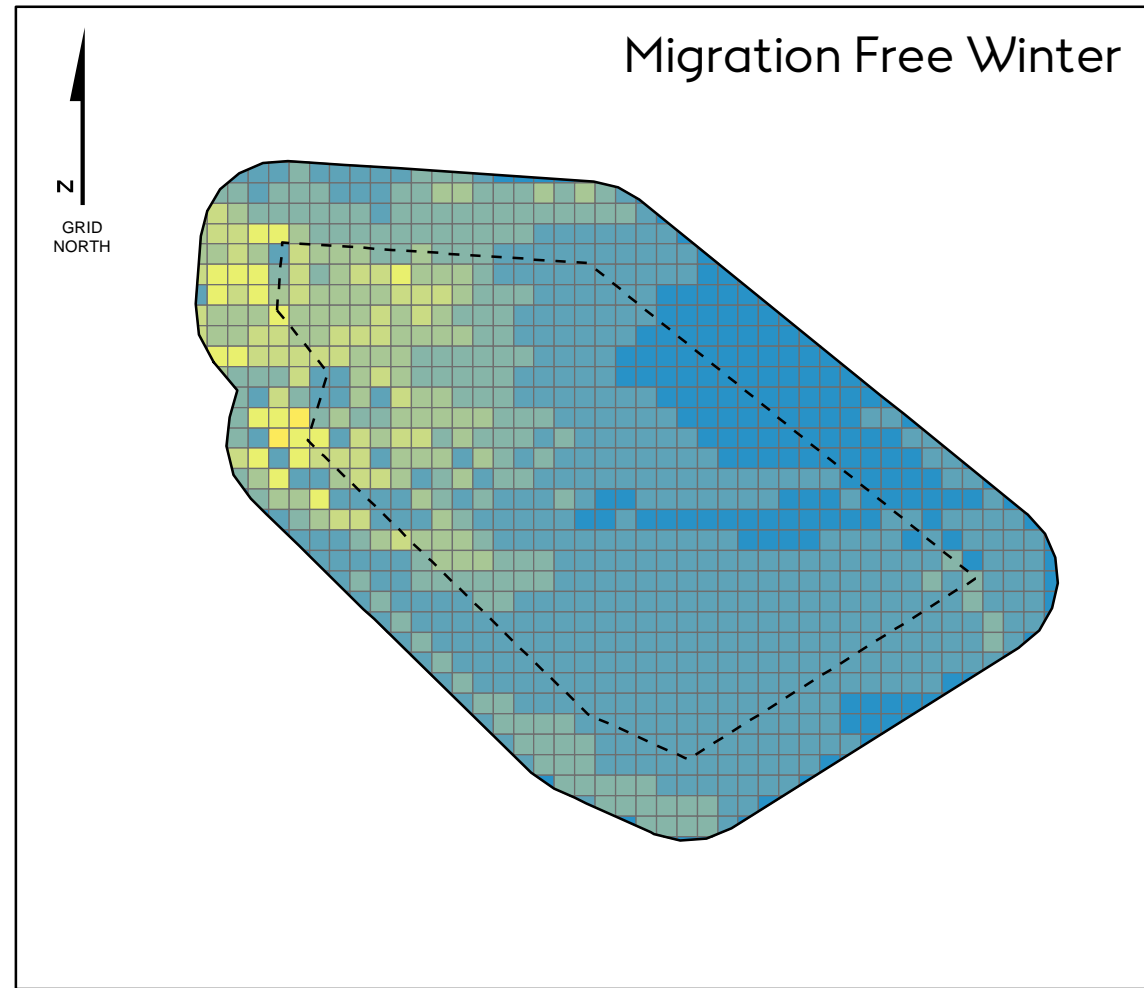
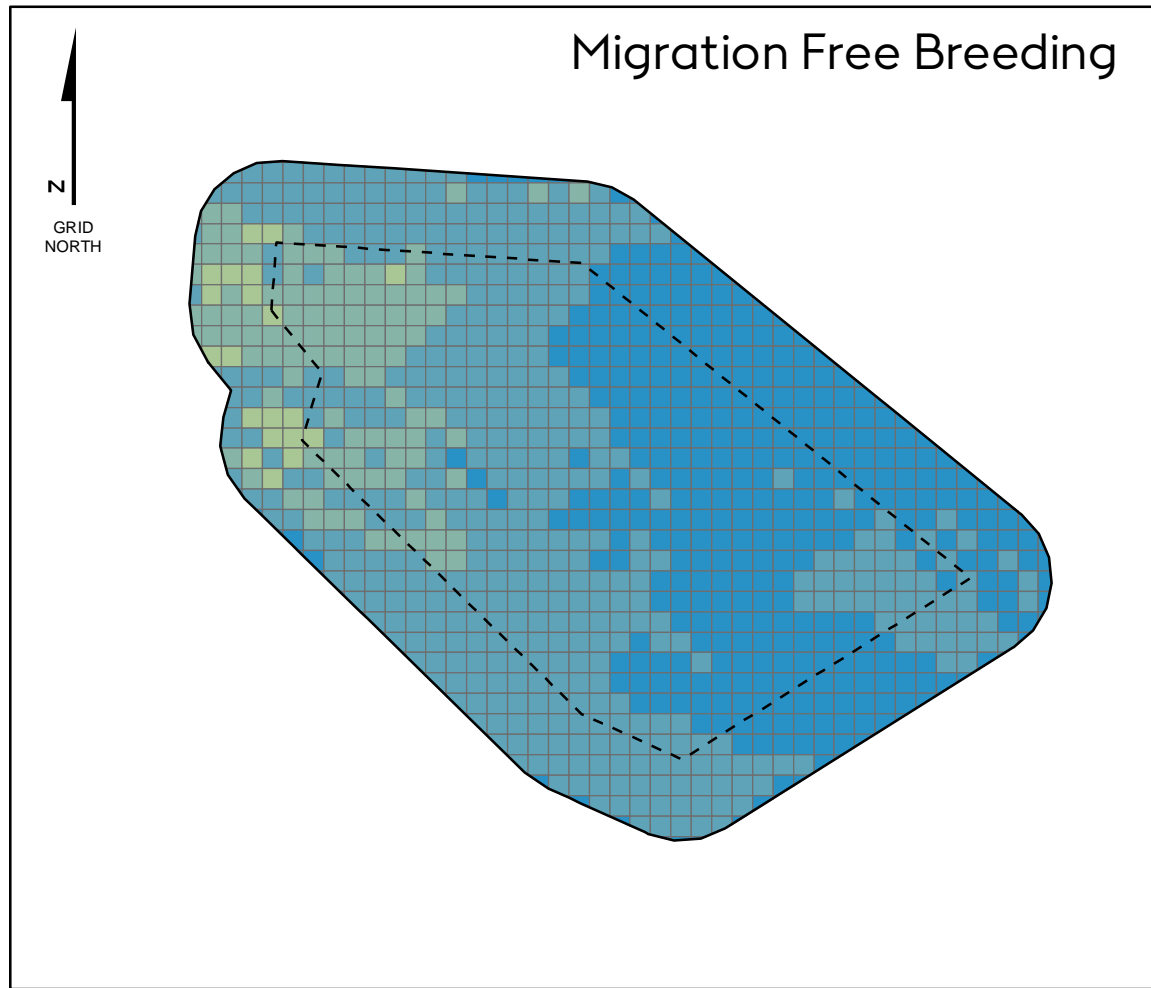
Table 12: Puffin bio-season mean peak abundance and density estimates.

BDMPS Bio-seasons	Months	Mean Peak Abundance Area Array	Mean Peak Density Array Area birds/km ²	Mean Peak Abundance within the 4 km buffer	Mean Peak Density within the 4 km buffer birds/km ²
Return migration	Mar-Apr	110	0.234	102	0.243
Migration-free breeding	May-Jun	50	0.107	48	0.114
Post-breeding	July-Aug	222	0.471	204	0.488
Migration-free winter	Sep-Feb	168	0.358	151	0.362
Breeding	Apr-Jul	112	0.239	104	0.248
non-breeding	Aug-Mar	245	0.520	218	0.521

3.12.3 Spatial Distribution and Flight Direction

3.12.3.1 Puffins were distributed mainly to the North West of the study area within each of the four bio-seasons (Figure 21). Lower densities were apparent in the migration-free breeding and migration-free wintering bio-seasons, with a more pronounced hotspot in the North West of the study area in the return migration and post-breeding migration bio-seasons.

3.12.3.2 Too few birds in flight were recorded to determine flight directional preferences of puffins over the study area in relation to the defined bio-seasons.



Hornsea Four

Figure 21

Bio-season Spatial Density Distribution of Puffin Within Hornsea Four Plus 4 km Buffer

Array Area
 Array Area 4 km buffer

Predicted puffin density (birds / km²)

- 0.00 - 0.04
- 0.04 - 0.08
- 0.08 - 0.11
- 0.11 - 0.14
- 0.14 - 0.16
- 0.16 - 0.19
- 0.19 - 0.22
- 0.22 - 0.26
- 0.26 - 0.31
- 0.31 - 0.38
- 0.38 - 0.46
- 0.46 - 0.57

Coordinate system: ETRS 1989 UTM Zone 31N
 Scale@A3: 1:370,000

0 10 20 Kilometres
 0 5 10 Nautical Miles

REV	REMARK	DATE
	First Issue	23/07/2019
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Bio-season Spatial Density
 Distribution of Puffin Within
 Hornsea Four Plus 4 km Buffer
 Document no: HOW04AP0023
 Created by: MB
 Checked by: SS
 Approved by: SS

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 included within this programme and the results published by the British Trust for Ornithology² (BTO). For the stretch of coast from Hilderthorpe to Skipsea (this covers the scoping boundary for the proposed offshore ECC landfall) **Table 13** 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 species³ 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 13: Non-estuarine waterbird peak winter counts for the coast from Hilderthorpe to Skipsea.

Survey	1985	1997/98	2006/07	2015/16	E. Yorkshire 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
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

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	1985	1997/98	2006/07	2015/16	E. Yorkshire coastal population	Great Britain 1% threshold
Species						
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

Note: nc = no count recorded.

4.1.1.3 The consented Dogger Bank 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 14](#) (reproduced from Table 3.43 of Forewind 2013). Since the counts cover a shorter length of coast than those counts presented in [Table 14](#) above, they can be expected to have recorded lower numbers of birds.

Table 14: 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
Oystercatcher	2
Lapwing	0
Ringed Plover	2
Turnstone	2
Knot	1
Sanderling	8
Dunlin	0
Bar-tailed Godwit	1

Species	2011/12
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 A3, Chapter 3: Ecology and Nature Conservation](#).
- 4.1.1.5 The Yorkshire Bird Reports (YNU, 2015, 2018, 2019 & 2020) 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 Reports (YNU, 2015, 2018, 2019 & 2020) 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 Reports 2012, 2013, 2015 and 2016 (YNU, 2015, 2018, 2019 & 2020) are presented in [Table 15](#), 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 Reports (YNU, 2015, 2018, 2019 & 2020) common scoter, red-throated diver and sanderling were above the 1% of the national populations for the given season, the common threshold for consideration within impact assessments.

Table 15: Waterbirds recorded in Yorkshire Bird Report 2012, 2013, 2015 and 2016 (YNU, 2015, YNU, 2018, YNU 2019 AND YNU 2020) between Hilderthorpe (south Bridlington) and Skipsea.

Species	Annual Report Year	Count	Month	Comment
Widgeon	2016	200	January	Off Barmston
Teal	2015	1,128	September	Heading North off Barmston / Fraisthorpe coast
Pintail	2015	-	Aug / Sep	Passage noted off Barmston coast
Eider	2015	5	Jun / Jul	Five present from the 27th June to 18th of July off Barmston coast
	2016	1	November	Off Barmston coast, singles reported
Common Scoter	2012	1,000	January	Flying north off Barmston coast
	2015	1,500 / 1,013 / 1,111 / 2,572	Jun - Sep	Monthly maxima off Barmston coast
	2016	189	October	Off Barmston coast
Velvet scoter	2015	1	Jan / Aug / Sep / Oct	Off Barmston coast, singles reported
Goldeneye	2012	17	October	Flying north off Bridlington coast
Goldeneye	2016	24	October	Off Barmston coast, presumably involved staging birds
Red-breasted merganser	2015	1	October	Off Barmston coast, singles reported
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
	2015	30	September	Off Barmston coast
	2016	15	November	Off Barmston coast
Black-throated diver	2015	2	October	Off Barmston coast
	2016	1	November	Off Barmston coast, one individual reported
Great Northern Diver	2012	1 to 11	Jan-Mar	Off Barmston coast
	2015	2	September	Off Fraisthorpe, singles also recorded in Feb off Skipsea
Cormorant	2012	186	March	Flying north off Barmston coast (Significant record)
	2015	164	July	Reported off Barmston / Fraisthorpe coast
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)
	2015	19	January	Off Barmston coast
	2016	34	December	Off Barmston coast
Slavonian Grebe	2012	1	Jan	Off Barmston coast
Oystercatcher	2013	180	February	Barmston coastline
	2015	<60	Winter / Jul	Less than 60 Off Barmston during winter, with 53 on passage in July
Grey plover	2015	8	January	Frequenting Fraisthorpe and Barmston beach
Ringed Plover	2012	61	January	Barmston coastline
	2015	26 / 29	Jan / Aug	26 frequenting Barmston beach in January and 29 recorded on passage off Barmston beach in August
	2016	100	January	Off Barmston coast
Whimbrel	2015	57	Jul / Sep	Off Fraisthorpe / Barmston on passage, with singles recording in September

Species	Annual Report Year	Count	Month	Comment
Bar-tailed godwit	2015	25	Jul - Dec	Two were present on Fraisthorpe / Barmston beaches between July and December, with 25 noted on passage in August
Turnstone	2012	60 / 85	Jan / Dec	Shoreline south of Bridlington
	2013	36	Jul	Barmston coastline
	2015	9	Jul - Dec	Nine recorded on Barmston beach during July, with small numbers recorded in the later months
	2016	20	Jan - Feb	On Barmston and Fraisthorpe beaches
Knot	2015		Jul - Sep	Low double figure counts recorded between Fraisthorpe and Barmston from July to September
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
	2015	52 / 20 / 79	Jan / May / Sep	Barmston beach
	2016	100	Jan - Feb	up to 100 on Fraisthorpe beach and 30 reported in first two months of the year on Barmston beach
Dunlin	2015	358	August	Barmston beach
	2016	60	First winter period	On Barmston and Fraisthorpe beaches
Purple sandpiper	2012	1+	winter	Described as low single numbers over winter period on shoreline at Barmston.
	2013	3	winter	Barmston
	2015	1	Jan - Mar	Singles reported at Barmston beach
	2016	1	Oct - Dec	Singles reported from Barmston
Redshank	2013	316	Jul	Flying south off Barmston
	2015	67	July	Reported off Barmston on migration
Pomarine skua	2016	10	November	Passing Barmston coast
Long-tailed skua	2016	1	November	Singles reported passing Barmston
Great skua	2016	6	November	Passing Barmston coast
Little tern	2012	3-4	May-Jul	North or South passage movements offshore from Barmston
	2015	9	Jun - Jul	Reported off Barmston / Fraisthorpe coast
	2016	3	May / Jul	On passage off Barmston and Fraisthorpe coast
Black tern	2015	3	Aug / Sep	Reported off Barmston / Fraisthorpe coast
Common tern	2016	129	July - Oct	Off Barmston coast with a maximum day passage of 129 in August
Little gull	2015	45	August	Off Barmston coast
	2016	-	July	Small numbers reported off Fraisthorpe and Barmston
Yellow-legged gull	2016	1	March	On the beach between Fraisthorpe and Barmston

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Hornsea 4



Appendix A: Abundance Estimates and Behaviour Information (not subject to Apportionment / Correction) of all bird species from Site-Specific Surveys (including unidentified birds)

Fulmar MRSea Results

Hornsea Four Array Area	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km ⁻²)	Count	Abundance Estimate	Density (birds km ⁻²)	Count	Abundance Estimate	Density (birds km ⁻²)
Apr-16	11	195.33	127.31	308.35	0.42	7	124.30	0.26	4	71.03	0.15
May-16	33	333.96	199.50	535.90	0.71	9	91.08	0.19	24	242.88	0.52
Jun-16	29	129.50	49.52	273.39	0.28	1	4.47	0.01	28	125.03	0.27
Jul-16	1	21.04	9.04	43.83	0.04	0	0.00	0.00	1	21.04	0.04
Aug-16	0	30.08	14.95	63.35	0.06	0	6.02	0.01	0	24.06	0.05
Sep-16	1	33.15	18.02	66.58	0.07	0	0.00	0.00	1	33.15	0.07
Oct-16	15	155.85	84.77	274.55	0.33	3	31.17	0.07	12	124.68	0.27
Nov-16	3	33.07	16.82	72.36	0.07	1	11.02	0.02	2	22.05	0.05
Dec-16	5	29.98	15.79	55.63	0.06	4	23.99	0.05	1	6.00	0.01
Jan-17	14	150.03	88.55	253.89	0.32	6	64.30	0.14	8	85.73	0.18
Feb-17	9	78.07	45.82	133.31	0.17	4	34.70	0.07	5	43.37	0.09
Mar-17	15	201.42	75.10	647.37	0.43	4	53.71	0.11	11	147.71	0.31
Apr-17	5	105.10	37.39	260.00	0.22	4	84.08	0.18	1	21.02	0.04
May-17	4	57.12	32.72	101.20	0.12	2	28.56	0.06	2	28.56	0.06
Jun-17	3	42.11	20.87	86.80	0.09	1	14.04	0.03	2	28.07	0.06
Jul-17	2	24.04	10.61	61.49	0.05	2	24.04	0.05	0	0.00	0.00
Aug-17	5	81.24	52.38	137.60	0.17	3	48.74	0.10	2	32.50	0.07
Sep-17	12	117.10	70.31	205.70	0.25	2	19.52	0.04	10	97.58	0.21
Oct-17	1	41.35	12.66	188.89	0.09	0	0.00	0.00	1	41.35	0.09
Nov-17	1	39.21	20.09	88.09	0.08	0	0.00	0.00	1	39.21	0.08
Dec-17	1	27.07	11.96	59.52	0.06	1	27.07	0.06	0	0.00	0.00
Jan-18	8	104.42	63.68	171.61	0.22	8	104.42	0.22	0	0.00	0.00
Feb-18	10	75.06	43.64	130.36	0.16	6	45.04	0.10	4	30.03	0.06
Mar-18	3	54.11	30.82	101.94	0.12	1	18.04	0.04	2	36.07	0.08

Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	30	385.62	245.74	613.61	0.43	22	282.78	0.32	8	102.83	0.12
May-16	67	659.28	391.63	1065.01	0.74	14	137.76	0.16	53	521.52	0.59
Jun-16	43	255.65	99.60	532.71	0.29	2	11.89	0.01	41	243.76	0.27
Jul-16	4	41.54	17.84	86.39	0.05	2	20.77	0.02	2	20.77	0.02
Aug-16	5	59.38	29.30	123.81	0.07	1	11.88	0.01	4	47.50	0.05
Sep-16	5	65.45	35.10	131.78	0.07	1	13.09	0.01	4	52.36	0.06
Oct-16	25	307.67	167.01	537.28	0.35	3	36.92	0.04	22	270.75	0.30
Nov-16	4	65.29	32.99	142.82	0.07	1	16.32	0.02	3	48.97	0.06
Dec-16	8	59.19	31.05	110.44	0.07	7	51.79	0.06	1	7.40	0.01
Jan-17	28	296.19	172.91	509.90	0.33	12	126.94	0.14	16	169.25	0.19
Feb-17	18	154.12	89.13	266.71	0.17	10	85.62	0.10	8	68.50	0.08
Mar-17	61	397.64	144.21	1278.10	0.45	40	260.75	0.29	21	136.89	0.15
Apr-17	7	207.48	72.77	516.09	0.23	5	148.20	0.17	2	59.28	0.07
May-17	5	112.76	63.74	200.22	0.13	2	45.10	0.05	3	67.66	0.08
Jun-17	11	83.14	40.82	171.21	0.09	3	22.67	0.03	8	60.46	0.07
Jul-17	4	47.46	20.72	119.93	0.05	4	47.46	0.05	0	0.00	0.00
Aug-17	11	160.38	102.06	272.42	0.18	6	87.48	0.10	5	72.90	0.08
Sep-17	23	231.18	137.24	410.12	0.26	3	30.15	0.03	20	201.02	0.23
Oct-17	1	81.64	25.17	373.58	0.09	0	0.00	0.00	1	81.64	0.09
Nov-17	8	77.40	38.98	176.07	0.09	4	38.70	0.04	4	38.70	0.04
Dec-17	3	53.43	23.43	118.66	0.06	3	53.43	0.06	0	0.00	0.00
Jan-18	19	206.15	122.69	343.13	0.23	13	141.05	0.16	6	65.10	0.07
Feb-18	19	148.19	84.80	259.30	0.17	9	70.19	0.08	10	77.99	0.09
Mar-18	6	106.83	60.91	200.88	0.12	3	53.41	0.06	3	53.41	0.06

Gannet MRSea Results

Hornsea Four Array Area	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km ⁻²)	Count	Abundance Estimate	Density (birds km ⁻²)	Count	Abundance Estimate	Density (birds km ⁻²)
Apr-16	1	150.76	76.28	337.97	0.32	1	150.76	0.32	0	0.00	-0.00
May-16	31	334.13	213.99	541.93	0.71	13	140.12	0.30	18	194.01	0.41
Jun-16	102	661.26	443.25	956.13	1.41	40	259.32	0.55	62	401.94	0.85
Jul-16	39	212.84	136.05	329.79	0.45	27	147.35	0.31	12	65.49	0.14
Aug-16	9	289.58	177.94	494.91	0.62	7	225.23	0.48	2	64.35	0.14
Sep-16	26	235.49	154.25	376.32	0.50	10	90.57	0.19	16	144.91	0.31
Oct-16	48	593.15	427.11	788.03	1.26	9	111.22	0.24	39	481.94	1.02
Nov-16	45	326.65	229.56	494.18	0.69	25	181.47	0.39	20	145.18	0.31
Dec-16	21	158.34	78.84	274.76	0.34	16	120.64	0.26	5	37.70	0.08
Jan-17	0	4.94	1.37	18.21	0.01	0	1.67	0.00	0	3.27	0.01
Feb-17	2	34.57	20.92	59.84	0.07	2	34.57	0.07	0	0.00	0.00
Mar-17	28	106.42	50.81	254.22	0.23	13	49.41	0.11	15	57.01	0.12
Apr-17	5	153.34	61.73	339.74	0.33	3	92.01	0.20	2	61.34	0.13
May-17	8	259.72	132.95	657.58	0.55	2	64.93	0.14	6	194.79	0.41
Jun-17	6	76.77	46.31	125.51	0.16	4	51.18	0.11	2	25.59	0.05
Jul-17	25	436.21	250.19	764.92	0.93	17	296.62	0.63	8	139.59	0.30
Aug-17	40	324.14	225.13	509.49	0.69	33	267.42	0.57	7	56.72	0.12
Sep-17	18	281.93	175.64	457.30	0.60	10	156.63	0.33	8	125.30	0.27
Oct-17	16	295.71	194.58	484.65	0.63	6	110.89	0.24	10	184.82	0.39
Nov-17	58	592.63	343.07	1006.92	1.26	31	316.75	0.67	27	275.88	0.59
Dec-17	21	168.27	73.03	368.41	0.36	1	8.01	0.02	20	160.26	0.34
Jan-18	3	118.27	49.88	303.88	0.25	3	118.27	0.25	0	0.00	0.00
Feb-18	0	7.42	2.54	20.82	0.02	0	2.50	0.01	0	4.92	0.01
Mar-18	3	61.83	30.90	135.17	0.13	3	61.83	0.13	0	0.00	0.00

Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	4	288.42	147.31	652.78	0.32	4	288.42	0.32	0	0.00	0.00
May-16	77	639.23	404.42	1061.26	0.72	32	265.65	0.30	45	373.57	0.42
Jun-16	171	1265.07	850.43	1826.65	1.42	71	525.26	0.59	100	739.81	0.83
Jul-16	65	407.18	258.81	637.77	0.46	40	250.57	0.28	25	156.61	0.18
Aug-16	32	553.99	336.38	965.30	0.62	26	450.12	0.51	6	103.87	0.12
Sep-16	31	450.51	297.98	718.43	0.51	13	188.92	0.21	18	261.59	0.29
Oct-16	116	1134.77	817.05	1529.97	1.28	25	244.56	0.28	91	890.21	1.00
Nov-16	68	624.92	437.66	966.75	0.70	38	349.22	0.39	30	275.70	0.31
Dec-16	41	302.92	154.97	523.78	0.34	32	236.42	0.27	9	66.49	0.07
Jan-17	0	9.46	2.59	34.39	0.01	0	3.19	0.00	0	6.26	0.01
Feb-17	5	66.13	39.86	114.10	0.07	4	52.90	0.06	1	13.23	0.01
Mar-17	39	203.60	100.19	495.96	0.23	15	78.31	0.09	24	125.29	0.14
Apr-17	12	293.37	117.95	674.45	0.33	6	146.68	0.17	6	146.68	0.17
May-17	14	496.88	253.60	1248.47	0.56	2	70.98	0.08	12	425.90	0.48
Jun-17	16	146.86	87.26	241.68	0.17	12	110.15	0.12	4	36.72	0.04
Jul-17	56	834.53	466.16	1520.58	0.94	42	625.89	0.70	14	208.63	0.23
Aug-17	73	620.12	434.24	971.05	0.70	53	450.23	0.51	20	169.90	0.19
Sep-17	34	539.36	331.97	889.82	0.61	19	301.41	0.34	15	237.95	0.27
Oct-17	34	565.72	369.17	942.89	0.64	11	183.03	0.21	23	382.69	0.43
Nov-17	125	1133.78	656.87	1926.38	1.28	65	589.56	0.66	60	544.21	0.61
Dec-17	48	321.92	144.22	709.74	0.36	6	40.24	0.05	42	281.68	0.32
Jan-18	12	226.27	93.29	603.49	0.25	12	226.27	0.25	0	0.00	0.00
Feb-18	2	14.20	4.96	39.33	0.02	2	4.79	0.01	0	9.41	0.01
Mar-18	18	118.29	59.12	261.06	0.13	7	46.00	0.05	11	72.29	0.08

Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	3	217.26	110.72	489.40	0.33	3	217.26	0.33	0	0.00	0.00
May-16	58	481.52	306.81	790.50	0.72	22	182.64	0.27	36	298.87	0.45
Jun-16	143	952.95	640.70	1372.09	1.43	56	373.18	0.56	87	579.77	0.87
Jul-16	44	306.72	195.86	477.16	0.46	30	209.13	0.31	14	97.59	0.15
Aug-16	20	417.31	255.58	720.23	0.63	17	354.71	0.53	3	62.60	0.09
Sep-16	26	339.36	223.82	541.34	0.51	10	130.52	0.20	16	208.84	0.31
Oct-16	86	854.80	617.56	1140.64	1.28	16	159.03	0.24	70	695.77	1.04
Nov-16	54	470.74	331.12	718.31	0.71	31	270.24	0.40	23	200.50	0.30
Dec-16	37	228.18	115.58	394.68	0.34	28	172.68	0.26	9	55.50	0.08
Jan-17	0	7.12	1.96	26.00	0.01	0	2.40	0.00	0	4.72	0.01
Feb-17	3	49.81	30.15	85.82	0.07	3	49.81	0.07	0	0.00	0.00
Mar-17	32	153.37	74.49	369.91	0.23	15	71.89	0.11	17	81.48	0.12
Apr-17	7	220.99	89.01	498.48	0.33	4	126.28	0.19	3	94.71	0.14
May-17	9	374.29	191.76	943.14	0.56	2	83.18	0.12	7	291.12	0.44
Jun-17	10	110.63	66.27	181.01	0.17	8	88.50	0.13	2	22.13	0.03
Jul-17	44	628.63	356.13	1124.30	0.94	30	428.61	0.64	14	200.02	0.30
Aug-17	59	467.13	326.90	731.37	0.70	42	332.53	0.50	17	134.60	0.20
Sep-17	26	406.29	251.73	663.60	0.61	15	234.40	0.35	11	171.89	0.26
Oct-17	23	426.15	279.35	704.14	0.64	7	129.70	0.19	16	296.45	0.44
Nov-17	72	854.05	495.46	1447.40	1.28	37	438.89	0.66	35	415.16	0.62
Dec-17	42	242.49	107.18	532.16	0.36	5	28.87	0.04	37	213.63	0.32
Jan-18	7	170.45	71.12	446.45	0.26	7	170.45	0.26	0	0.00	0.00
Feb-18	1	10.70	3.70	29.76	0.02	1	3.61	0.01	0	7.09	0.01
Mar-18	13	89.11	44.64	195.50	0.13	5	34.27	0.05	8	54.83	0.08

Kittiwake MRSea Results

Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km ⁻²)	Count	Abundance Estimate	Density (birds km ⁻²)	Count	Abundance Estimate	Density (birds km ⁻²)
Apr-16	140	611.76	348.31	1226.28	1.30	106	463.19	0.98	34	148.57	0.32
May-16	95	1141.90	610.74	2023.71	2.43	65	781.30	1.66	30	360.60	0.77
Jun-16	145	694.91	408.63	1192.58	1.48	97	464.87	0.99	48	230.04	0.49
Jul-16	117	442.29	243.22	803.80	0.94	52	196.57	0.42	65	245.72	0.52
Aug-16	46	2640.06	1482.86	4698.90	5.61	44	2525.28	5.37	2	114.79	0.24
Sep-16	237	4020.02	2134.16	8272.55	8.55	49	831.14	1.77	188	3188.87	6.78
Oct-16	5	42.36	14.23	126.22	0.09	4	33.89	0.07	1	8.47	0.02
Nov-16	4	25.44	12.08	55.41	0.05	2	12.72	0.03	2	12.72	0.03
Dec-16	20	74.07	38.19	141.62	0.16	19	70.37	0.15	1	3.70	0.01
Jan-17	22	140.63	71.65	288.43	0.30	13	83.10	0.18	9	57.53	0.12
Feb-17	3	12.13	5.38	29.31	0.03	2	8.09	0.02	1	4.04	0.01
Mar-17	35	138.00	63.50	334.30	0.29	24	94.63	0.20	11	43.37	0.09
Apr-17	17	2537.82	1183.21	5146.86	5.40	15	2239.26	4.76	2	298.57	0.63
May-17	115	1289.98	737.94	2421.47	2.74	102	1144.15	2.43	13	145.82	0.31
Jun-17	16	450.06	212.86	907.43	0.96	16	450.06	0.96	0	0.00	0.00
Jul-17	41	227.35	119.83	445.77	0.48	33	182.99	0.39	8	44.36	0.09
Aug-17	506	1834.73	812.93	4735.41	3.90	156	565.65	1.20	350	1269.08	2.70
Sep-17	3	290.31	75.04	1203.26	0.62	2	193.54	0.41	1	96.77	0.21
Oct-17	12	32.14	14.72	75.16	0.07	9	24.10	0.05	3	8.03	0.02
Nov-17	34	133.42	64.20	291.05	0.28	26	102.03	0.22	8	31.39	0.07
Dec-17	96	549.42	248.03	1258.89	1.17	52	297.60	0.63	44	251.82	0.54
Jan-18	7	61.47	33.89	104.53	0.13	7	61.47	0.13	0	0.00	0.00
Feb-18	26	141.84	70.51	265.28	0.30	22	120.02	0.26	4	21.82	0.05
Mar-18	18	73.89	38.85	160.25	0.16	10	41.05	0.09	8	32.84	0.07

Hornsea 4



Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	284	1497.95	846.98	2943.84	1.69	209	1102.36	1.24	75	395.58	0.45
May-16	362	2796.02	1479.29	5074.00	3.15	216	1668.34	1.88	146	1127.68	1.27
Jun-16	270	1701.53	966.87	3024.47	1.92	181	1140.66	1.28	89	560.88	0.63
Jul-16	171	1082.97	581.97	1972.34	1.22	81	512.99	0.58	90	569.99	0.64
Aug-16	423	6464.37	3587.91	11566.33	7.28	222	3392.65	3.82	201	3071.72	3.46
Sep-16	390	9843.29	5372.02	20341.68	11.08	81	2044.38	2.30	309	7798.92	8.78
Oct-16	9	103.73	33.01	308.04	0.12	7	80.68	0.09	2	23.05	0.03
Nov-16	5	62.30	29.55	139.65	0.07	2	24.92	0.03	3	37.38	0.04
Dec-16	35	181.37	91.68	352.53	0.20	34	176.19	0.20	1	5.18	0.01
Jan-17	54	344.35	174.87	740.13	0.39	23	146.67	0.17	31	197.68	0.22
Feb-17	7	29.70	12.93	72.45	0.03	4	16.97	0.02	3	12.73	0.01
Mar-17	90	337.91	153.75	817.99	0.38	54	202.74	0.23	36	135.16	0.15
Apr-17	32	6214.04	2818.43	13273.91	6.99	30	5825.66	6.56	2	388.38	0.44
May-17	209	3158.59	1762.19	5863.56	3.56	177	2674.98	3.01	32	483.61	0.54
Jun-17	102	1102.01	509.54	2266.34	1.24	82	885.93	1.00	20	216.08	0.24
Jul-17	96	556.69	291.52	1106.11	0.63	87	504.50	0.57	9	52.19	0.06
Aug-17	1363	4492.47	1920.55	12232.33	5.06	411	1354.66	1.52	952	3137.81	3.53
Sep-17	4	710.84	180.53	3102.95	0.80	3	533.13	0.60	1	177.71	0.20
Oct-17	16	78.70	34.87	194.24	0.09	13	63.94	0.07	3	14.76	0.02
Nov-17	88	326.69	158.39	724.82	0.37	59	219.03	0.25	29	107.66	0.12
Dec-17	327	1345.29	587.05	3041.25	1.51	140	575.97	0.65	187	769.33	0.87
Jan-18	22	150.50	82.62	266.84	0.17	22	150.50	0.17	0	0.00	0.00
Feb-18	59	347.31	176.16	664.45	0.39	47	276.67	0.31	12	70.64	0.08
Mar-18	39	180.91	92.42	389.21	0.20	31	143.80	0.16	8	37.11	0.04

Hornsea 4



Great black-backed gull MRSea Results

Hornsea Four Array Area	Total					Flying			Sitting		
	Survey	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km ⁻²)	Count	Abundance Estimate	Density (birds km ⁻²)	Count	Abundance Estimate
Apr-16	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	1	1.15	0.18	11.61	0.00	1	1.15	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	10.55	2.17	51.22	0.02	0	0.00	0.00	0	10.55	10.55
Sep-16	1	60.00	20.41	201.69	0.13	0	0.00	0.00	1	60.00	60.00
Oct-16	1	187.91	60.02	671.28	0.40	0	0.00	0.00	1	187.91	187.91
Nov-16	5	43.98	17.51	126.91	0.09	3	26.39	0.06	2	17.59	17.59
Dec-16	9	34.84	13.50	133.46	0.07	3	11.61	0.02	6	23.22	23.22
Jan-17	18	51.16	15.50	176.55	0.11	8	22.74	0.05	10	28.42	28.42
Feb-17	19	47.94	16.48	181.62	0.10	1	2.52	0.01	18	45.42	45.42
Mar-17	4	24.50	6.77	97.03	0.05	2	12.25	0.03	2	12.25	12.25
Apr-17	0	3.34	0.76	14.96	0.01	0	1.00	0.00	0	2.33	2.33
May-17	1	7.92	2.64	30.86	0.02	1	7.92	0.02	0	0.00	0.00
Jun-17	0	3.40	0.72	25.24	0.01	0	3.40	0.01	0	0.00	0.00
Jul-17	0	4.58	0.65	26.53	0.01	0	4.58	0.01	0	0.00	0.00
Aug-17	0	2.24	0.38	17.78	0.00	0	0.97	0.00	0	1.26	1.26
Sep-17	0	230.30	61.25	1572.68	0.49	0	100.29	0.21	0	130.01	130.01
Oct-17	0	142.82	44.36	535.53	0.30	0	62.19	0.13	0	80.62	80.62
Nov-17	14	47.92	15.92	183.44	0.10	6	20.54	0.04	8	27.38	27.38
Dec-17	27	54.50	16.87	217.88	0.12	6	12.11	0.03	21	42.39	42.39
Jan-18	9	38.62	13.60	130.62	0.08	4	17.16	0.04	5	21.45	21.45
Feb-18	5	23.89	8.28	86.76	0.05	1	4.78	0.01	4	19.11	19.11
Mar-18	2	31.17	9.77	104.95	0.07	2	31.17	0.07	0	0.00	0.00

Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	1	2.71	0.41	28.30	0.00	1	2.71	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	4	24.77	5.37	119.30	0.03	0	0.00	0.00	4	24.77	0.03
Sep-16	5	140.91	50.26	464.43	0.16	0	0.00	0.00	5	140.91	0.16
Oct-16	8	441.33	125.41	1720.09	0.50	7	386.16	0.43	1	55.17	0.06
Nov-16	17	103.29	42.54	300.54	0.12	9	54.68	0.06	8	48.61	0.05
Dec-16	18	81.82	32.31	305.79	0.09	6	27.27	0.03	12	54.55	0.06
Jan-17	30	120.16	38.76	416.36	0.14	12	48.06	0.05	18	72.10	0.08
Feb-17	32	112.60	40.63	409.36	0.13	4	14.07	0.02	28	98.52	0.11
Mar-17	13	57.53	15.65	225.32	0.06	3	13.28	0.01	10	44.26	0.05
Apr-17	0	7.84	1.85	33.91	0.01	0	2.36	0.00	0	5.48	0.01
May-17	1	18.60	6.15	72.70	0.02	1	18.60	0.02	0	0.00	0.00
Jun-17	0	7.98	1.82	55.98	0.01	0	7.98	0.01	0	0.00	0.00
Jul-17	0	10.75	1.57	65.56	0.01	0	10.75	0.01	0	0.00	0.00
Aug-17	0	5.25	0.89	46.31	0.01	0	2.29	0.00	0	2.97	0.00
Sep-17	0	540.87	150.21	3772.84	0.61	0	235.54	0.27	0	305.33	0.34
Oct-17	0	335.41	106.59	1184.23	0.38	0	146.07	0.16	0	189.35	0.21
Nov-17	28	112.54	38.33	435.27	0.13	11	44.21	0.05	17	68.33	0.08
Dec-17	40	127.99	42.30	482.68	0.14	11	35.20	0.04	29	92.79	0.10
Jan-18	22	90.69	33.37	297.27	0.10	10	41.22	0.05	12	49.47	0.06
Feb-18	12	56.12	20.26	191.66	0.06	4	18.71	0.02	8	37.41	0.04
Mar-18	14	73.20	23.90	253.51	0.08	4	20.92	0.02	10	52.29	0.06

Hornsea 4



'Commic' Tern

Hornsea Four Array Area	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	17	170	0	833	0.94	0.36	15	150	0	740	0.93	0.32	2	20	0	97	1.00	0.04
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	8	80	0	347	0.77	0.17	8	80	0	345	0.77	0.17	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	2	20	0	57	1.00	0.04	2	20	0	54	1.00	0.04	0	0	0	0	-	0.00
Aug-17	10	100	0	260	0.81	0.21	2	20	0	109	1.00	0.04	8	80	0	248	1.00	0.17
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	167	1666	530	2761	0.38	1.88	113	1127	297	2080	0.42	1.27	54	539	82	1003	0.52	0.61
Sep-16	1	10	0	43	1.00	0.01	0	0	0	0	-	0.00	1	10	0	42	1.00	0.01
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	8	80	0	191	0.77	0.09	8	80	0	193	0.77	0.09	0	0	0	0	-	0.00
Jun-17	2	20	0	210	1.00	0.02	2	20	0	215	1.00	0.02	0	0	0	0	-	0.00
Jul-17	2	20	0	53	1.00	0.02	2	20	0	54	1.00	0.02	0	0	0	0	-	0.00
Aug-17	69	690	226	2259	0.51	0.78	34	340	118	1218	0.47	0.38	35	350	63	1120	0.60	0.39
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Common tern

Hornsea Four Array Area	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Survey	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	42	1.00	0.01	1	10	0	42	1.00	0.01	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Guillemot MRSea Results

Hornsea Four Array Area	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	86	1245.96	728.93	2410.45	2.65	7	101.41	0.22	79	1144.54	2.43
May-16	381	2533.00	1664.53	3922.21	5.39	19	126.32	0.27	362	2406.68	5.12
Jun-16	402	3634.44	2581.12	5075.44	7.73	36	325.47	0.69	366	3308.97	7.04
Jul-16	527	3524.69	2537.77	4914.90	7.50	14	93.63	0.20	513	3431.05	7.30
Aug-16	326	11825.65	8588.64	17242.96	25.15	0	0.00	0.00	326	11825.65	25.15
Sep-16	1324	17972.80	13415.26	24625.88	38.22	0	0.00	0.00	1324	17972.80	38.22
Oct-16	596	4809.05	3406.01	6747.59	10.23	6	48.41	0.10	590	4760.64	10.12
Nov-16	163	1621.87	1201.61	2318.88	3.45	1	9.95	0.02	162	1611.92	3.43
Dec-16	81	689.99	421.04	1026.90	1.47	0	0.00	0.00	81	689.99	1.47
Jan-17	224	1117.56	806.29	1535.82	2.38	3	14.97	0.03	221	1102.59	2.34
Feb-17	261	1366.08	940.27	2010.51	2.90	18	94.21	0.20	243	1271.86	2.70
Mar-17	503	1948.87	1181.19	3730.08	4.14	77	298.34	0.63	426	1650.53	3.51
Apr-17	89	4952.47	2057.78	11424.59	10.53	7	389.52	0.83	82	4562.95	9.70
May-17	274	3651.43	2631.37	5134.79	7.76	33	439.77	0.94	241	3211.66	6.83
Jun-17	27	865.36	524.86	1463.89	1.84	3	96.15	0.20	24	769.21	1.64
Jul-17	223	3690.83	2536.57	5823.27	7.85	5	82.75	0.18	218	3608.08	7.67
Aug-17	2339	12216.83	7557.95	22146.47	25.98	1	5.22	0.01	2338	12211.60	25.97
Sep-17	135	5203.86	2457.74	14485.56	11.07	14	539.66	1.15	121	4664.20	9.92
Oct-17	80	598.42	403.90	893.36	1.27	13	97.24	0.21	67	501.17	1.07
Nov-17	902	6149.84	3998.24	10330.48	13.08	16	109.09	0.23	886	6040.75	12.85
Dec-17	333	2711.41	1967.84	3802.26	5.77	8	65.14	0.14	325	2646.27	5.63
Jan-18	115	1284.55	676.92	2415.28	2.73	25	279.25	0.59	90	1005.30	2.14
Feb-18	160	1245.37	906.10	1701.70	2.65	20	155.67	0.33	140	1089.70	2.32
Mar-18	87	549.40	402.78	792.57	1.17	5	31.57	0.07	82	517.83	1.10

Survey	Array Area Plus 4 km Buffer					Total			Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)			
Apr-16	181	2737.10	1600.76	5309.06	3.08	13	196.59	0.22	168	2540.51	2.86			
May-16	937	5564.45	3581.99	8607.29	6.26	41	243.48	0.27	896	5320.97	5.99			
Jun-16	980	7984.09	5638.22	11282.96	8.99	84	684.35	0.77	896	7299.74	8.22			
Jul-16	983	7742.99	5505.99	10869.06	8.72	32	252.06	0.28	951	7490.93	8.43			
Aug-16	1354	25978.45	18689.35	37800.30	29.24	0	0.00	0.00	1354	25978.45	29.24			
Sep-16	2295	39482.42	29091.89	54685.03	44.44	1	17.20	0.02	2294	39465.22	44.42			
Oct-16	1161	10564.46	7397.68	14874.50	11.89	17	154.69	0.17	1144	10409.77	11.72			
Nov-16	321	3562.91	2619.31	5091.09	4.01	6	66.60	0.07	315	3496.32	3.94			
Dec-16	175	1515.76	927.79	2286.43	1.71	0	0.00	0.00	175	1515.76	1.71			
Jan-17	368	2455.05	1751.96	3451.43	2.76	16	106.74	0.12	352	2348.30	2.64			
Feb-17	487	3000.98	2047.86	4438.54	3.38	35	215.68	0.24	452	2785.30	3.13			
Mar-17	798	4281.24	2603.22	8306.01	4.82	129	692.08	0.78	669	3589.16	4.04			
Apr-17	232	10879.52	4483.46	25905.57	12.25	21	984.78	1.11	211	9894.74	11.14			
May-17	558	8021.42	5741.50	11186.66	9.03	68	977.52	1.10	490	7043.90	7.93			
Jun-17	146	1901.02	1145.35	3276.32	2.14	16	208.33	0.23	130	1692.69	1.91			
Jul-17	512	8107.97	5459.81	12830.35	9.13	10	158.36	0.18	502	7949.61	8.95			
Aug-17	5814	26837.77	16344.01	49081.24	30.21	1	4.62	0.01	5813	26833.16	30.20			
Sep-17	311	11431.78	5370.70	31599.82	12.87	19	698.40	0.79	292	10733.38	12.08			
Oct-17	152	1314.59	886.22	1992.49	1.48	31	268.11	0.30	121	1046.49	1.18			
Nov-17	2162	13509.88	8547.53	23468.53	15.21	40	249.95	0.28	2122	13259.93	14.92			
Dec-17	794	5956.38	4295.08	8383.11	6.70	18	135.03	0.15	776	5821.35	6.55			
Jan-18	251	2821.88	1442.08	5447.78	3.18	46	517.16	0.58	205	2304.72	2.59			
Feb-18	332	2735.81	1967.81	3809.98	3.08	35	288.41	0.32	297	2447.39	2.75			
Mar-18	177	1206.92	879.43	1758.50	1.36	9	61.37	0.07	168	1145.55	1.29			

Hornsea 4



Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	145	1939.25	1134.62	3761.30	2.91	8	106.99	0.16	137	1832.26	2.75
May-16	659	3942.45	2562.77	6106.62	5.91	33	197.42	0.30	626	3745.02	5.61
Jun-16	640	5656.78	4003.65	7954.11	8.48	56	494.97	0.74	584	5161.81	7.73
Jul-16	693	5485.95	3922.70	7683.72	8.22	23	182.07	0.27	670	5303.88	7.95
Aug-16	697	18405.88	13288.56	26830.49	27.58	0	0.00	0.00	697	18405.88	27.58
Sep-16	1799	27973.52	20724.68	38509.37	41.91	0	0.00	0.00	1799	27973.52	41.91
Oct-16	872	7484.98	5272.30	10516.58	11.22	12	103.00	0.15	860	7381.97	11.06
Nov-16	243	2524.34	1864.72	3610.60	3.78	5	51.94	0.08	238	2472.40	3.70
Dec-16	126	1073.92	656.97	1609.65	1.61	0	0.00	0.00	126	1073.92	1.61
Jan-17	300	1739.41	1246.44	2419.89	2.61	9	52.18	0.08	291	1687.23	2.53
Feb-17	372	2126.21	1456.28	3139.39	3.19	21	120.03	0.18	351	2006.18	3.01
Mar-17	685	3033.28	1844.01	5857.30	4.54	104	460.53	0.69	581	2572.76	3.85
Apr-17	137	7708.20	3193.63	18162.77	11.55	9	506.38	0.76	128	7201.82	10.79
May-17	414	5683.22	4076.67	7958.59	8.52	58	796.20	1.19	356	4887.02	7.32
Jun-17	49	1346.88	814.67	2305.17	2.02	10	274.87	0.41	39	1072.01	1.61
Jul-17	358	5744.54	3906.39	9086.60	8.61	6	96.28	0.14	352	5648.27	8.46
Aug-17	3480	19014.71	11670.84	34679.71	28.49	1	5.46	0.01	3479	19009.25	28.48
Sep-17	220	8099.48	3818.93	22438.91	12.14	17	625.87	0.94	203	7473.61	11.20
Oct-17	117	931.40	628.01	1401.16	1.40	27	214.94	0.32	90	716.46	1.07
Nov-17	1368	9571.83	6129.81	16382.10	14.34	30	209.91	0.31	1338	9361.92	14.03
Dec-17	542	4220.13	3050.95	5931.63	6.32	14	109.01	0.16	528	4111.12	6.16
Jan-18	166	1999.31	1036.99	3817.85	3.00	35	421.54	0.63	131	1577.77	2.36
Feb-18	237	1938.33	1400.86	2671.58	2.90	29	237.18	0.36	208	1701.15	2.55
Mar-18	125	855.11	624.84	1242.03	1.28	7	47.89	0.07	118	807.22	1.21

Razorbill MRSea Results

Hornsea Four Array Area	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Survey											
Apr-16	10	51.40	30.72	104.67	0.11	1	5.14	0.01	9	46.26	0.10
May-16	3	13.19	4.56	35.14	0.03	0	0.00	0.00	3	13.19	0.03
Jun-16	17	83.16	46.10	136.24	0.18	0	0.00	0.00	17	83.16	0.18
Jul-16	7	23.76	9.16	51.03	0.05	1	3.39	0.01	6	20.37	0.04
Aug-16	1	351.15	225.01	539.66	0.75	0	0.00	0.00	1	351.15	0.75
Sep-16	196	2750.35	1877.23	4258.90	5.85	0	0.00	0.00	196	2750.35	5.85
Oct-16	28	756.09	405.91	1356.64	1.61	4	108.01	0.23	24	648.08	1.38
Nov-16	18	197.55	116.59	327.39	0.42	4	43.90	0.09	14	153.65	0.33
Dec-16	0	2.64	0.37	14.03	0.01	0	0.12	0.00	0	2.52	0.01
Jan-17	36	213.32	117.60	401.48	0.45	1	5.93	0.01	35	207.40	0.44
Feb-17	4	40.72	22.92	73.49	0.09	2	20.36	0.04	2	20.36	0.04
Mar-17	29	114.53	50.37	307.14	0.24	5	19.75	0.04	24	94.79	0.20
Apr-17	15	188.32	85.71	380.38	0.40	3	37.66	0.08	12	150.66	0.32
May-17	31	262.02	160.43	459.11	0.56	6	50.71	0.11	25	211.30	0.45
Jun-17	0	25.10	8.67	73.90	0.05	0	3.63	0.01	0	21.46	0.05
Jul-17	0	54.33	23.46	140.96	0.12	0	7.87	0.02	0	46.46	0.10
Aug-17	316	925.89	497.84	1956.72	1.97	0	0.00	0.00	316	925.89	1.97
Sep-17	34	346.46	188.31	729.16	0.74	7	71.33	0.15	27	275.13	0.59
Oct-17	17	27.43	6.67	155.77	0.06	15	24.20	0.05	2	3.23	0.01
Nov-17	40	312.20	180.40	604.28	0.66	2	15.61	0.03	38	296.59	0.63
Dec-17	6	333.70	205.76	521.55	0.71	0	0.00	0.00	6	333.70	0.71
Jan-18	4	23.71	12.32	49.81	0.05	0	0.00	0.00	4	23.71	0.05
Feb-18	18	217.75	114.34	414.95	0.46	4	48.39	0.10	14	169.36	0.36
Mar-18	16	56.66	26.37	130.59	0.12	0	0.00	0.00	16	56.66	0.12

Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	12	111.00	63.78	225.61	0.12	1	9.25	0.01	11	101.75	0.11
May-16	6	28.49	10.07	75.21	0.03	0	0.00	0.00	6	28.49	0.03
Jun-16	33	179.60	101.03	297.86	0.20	1	5.44	0.01	32	174.16	0.20
Jul-16	9	51.32	19.95	111.88	0.06	1	5.70	0.01	8	45.62	0.05
Aug-16	30	758.37	481.15	1175.21	0.85	0	0.00	0.00	30	758.37	0.85
Sep-16	363	5939.84	4049.46	9038.76	6.69	0	0.00	0.00	363	5939.84	6.69
Oct-16	70	1632.91	864.40	2910.43	1.84	16	373.24	0.42	54	1259.67	1.42
Nov-16	25	426.65	251.92	730.44	0.48	4	68.26	0.08	21	358.39	0.40
Dec-16	2	5.70	0.80	31.23	0.01	0	0.00	0.00	2	5.70	0.01
Jan-17	54	460.70	253.43	852.64	0.52	1	8.53	0.01	53	452.17	0.51
Feb-17	7	87.93	47.78	162.32	0.10	2	25.12	0.03	5	62.81	0.07
Mar-17	64	247.35	112.23	649.92	0.28	12	46.38	0.05	52	200.97	0.23
Apr-17	33	406.71	190.61	836.46	0.46	7	86.27	0.10	26	320.44	0.36
May-17	45	565.87	340.88	995.13	0.64	11	138.32	0.16	34	427.55	0.48
Jun-17	4	54.20	18.49	164.48	0.06	0	0.00	0.00	4	54.20	0.06
Jul-17	3	117.33	50.16	295.42	0.13	0	0.00	0.00	3	117.33	0.13
Aug-17	541	1999.62	1101.15	4212.44	2.25	0	0.00	0.00	541	1999.62	2.25
Sep-17	50	748.23	409.71	1553.87	0.84	16	239.43	0.27	34	508.80	0.57
Oct-17	23	59.24	14.56	337.56	0.07	21	54.09	0.06	2	5.15	0.01
Nov-17	115	674.24	379.81	1313.03	0.76	3	17.59	0.02	112	656.66	0.74
Dec-17	7	720.69	441.30	1162.36	0.81	0	0.00	0.00	7	720.69	0.81
Jan-18	5	51.21	26.15	107.48	0.06	0	0.00	0.00	5	51.21	0.06
Feb-18	59	470.26	241.86	908.64	0.53	8	63.76	0.07	51	406.50	0.46
Mar-18	20	122.36	58.08	282.79	0.14	0	0.00	0.00	20	122.36	0.14

Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	11	79.02	46.32	160.69	0.12	1	7.18	0.01	10	71.84	0.11
May-16	3	20.28	7.11	53.73	0.03	0	0.00	0.00	3	20.28	0.03
Jun-16	20	127.85	71.67	209.61	0.19	0	0.00	0.00	20	127.85	0.19
Jul-16	7	36.53	14.20	78.94	0.05	1	5.22	0.01	6	31.31	0.05
Aug-16	5	539.86	345.41	828.21	0.81	0	0.00	0.00	5	539.86	0.81
Sep-16	310	4228.38	2899.45	6446.20	6.34	0	0.00	0.00	310	4228.38	6.34
Oct-16	45	1162.41	620.76	2063.15	1.74	7	180.82	0.27	38	981.59	1.47
Nov-16	19	303.72	180.12	510.30	0.46	4	63.94	0.10	15	239.78	0.36
Dec-16	2	4.06	0.57	21.87	0.01	0	0.00	0.00	2	4.06	0.01
Jan-17	40	327.96	181.38	609.40	0.49	1	8.20	0.01	39	319.76	0.48
Feb-17	7	62.60	34.61	113.87	0.09	2	17.88	0.03	5	44.71	0.07
Mar-17	49	176.08	79.06	465.37	0.26	10	35.94	0.05	39	140.15	0.21
Apr-17	20	289.52	134.66	587.05	0.43	5	72.38	0.11	15	217.14	0.33
May-17	42	402.83	245.48	703.40	0.60	11	105.50	0.16	31	297.32	0.45
Jun-17	1	38.58	13.29	114.94	0.06	0	0.00	0.00	1	38.58	0.06
Jul-17	1	83.53	35.96	212.00	0.13	0	0.00	0.00	1	83.53	0.13
Aug-17	366	1423.47	779.04	2998.19	2.13	0	0.00	0.00	366	1423.47	2.13
Sep-17	43	532.64	291.99	1108.62	0.80	12	148.64	0.22	31	384.00	0.58
Oct-17	23	42.17	10.34	239.79	0.06	21	38.50	0.06	2	3.67	0.01
Nov-17	52	479.97	273.99	927.58	0.72	3	27.69	0.04	49	452.28	0.68
Dec-17	6	513.03	316.78	811.35	0.77	0	0.00	0.00	6	513.03	0.77
Jan-18	5	36.45	18.83	76.39	0.05	0	0.00	0.00	5	36.45	0.05
Feb-18	27	334.76	174.26	640.78	0.50	5	61.99	0.09	22	272.77	0.41
Mar-18	18	87.10	41.06	199.91	0.13	0	0.00	0.00	18	87.10	0.13

Puffin MRSea Results

Hornsea Four Array Area	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	20	118.20	76.04	190.49	0.25	2	11.82	0.03	18	106.38	0.23
May-16	3	19.31	7.56	50.46	0.04	0	0.00	0.00	3	19.31	0.04
Jun-16	1	7.24	2.65	16.88	0.02	0	0.00	0.00	1	7.24	0.02
Jul-16	0	4.83	0.73	23.42	0.01	0	0.16	0.00	0	4.67	0.01
Aug-16	1	94.15	46.65	188.67	0.20	0	0.00	0.00	1	94.15	0.20
Sep-16	2	62.85	37.47	110.10	0.13	0	0.00	0.00	2	62.85	0.13
Oct-16	9	118.07	73.97	183.27	0.25	0	0.00	0.00	9	118.07	0.25
Nov-16	0	4.83	1.29	19.02	0.01	0	0.06	0.00	0	4.76	0.01
Dec-16	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	16.86	5.24	45.27	0.04	0	0.22	0.00	0	16.63	0.04
Mar-17	0	4.83	1.12	21.20	0.01	0	0.06	0.00	0	4.76	0.01
Apr-17	4	60.30	39.53	103.70	0.13	0	0.00	0.00	4	60.30	0.13
May-17	6	62.68	36.45	116.25	0.13	0	0.00	0.00	6	62.68	0.13
Jun-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	1	16.90	7.15	39.08	0.04	0	0.00	0.00	1	16.90	0.04
Aug-17	50	273.07	166.46	435.73	0.58	0	0.00	0.00	50	273.07	0.58
Sep-17	13	149.54	81.03	258.46	0.32	0	0.00	0.00	13	149.54	0.32
Oct-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	2.41	0.39	17.52	0.01	0	0.03	0.00	0	2.38	0.01
Jan-18	0	2.40	0.56	20.68	0.01	0	0.03	0.00	0	2.36	0.01
Feb-18	4	36.19	18.33	68.27	0.08	0	0.00	0.00	4	36.19	0.08
Mar-18	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km ⁻²)	Count	Abundance Estimate	Density (birds km ⁻²)	Count	Abundance Estimate	Density (birds km ⁻²)
Apr-16	30	228.97	146.30	376.16	0.26	2	15.26	0.02	28	213.71	0.24
May-16	4	37.41	14.66	97.01	0.04	0	0.00	0.00	4	37.41	0.04
Jun-16	2	14.03	5.19	33.11	0.02	0	0.00	0.00	2	14.03	0.02
Jul-16	0	9.35	1.43	46.71	0.01	0	0.31	0.00	0	9.04	0.01
Aug-16	4	182.40	91.28	363.02	0.21	0	0.00	0.00	4	182.40	0.21
Sep-16	7	121.75	71.92	222.60	0.14	0	0.00	0.00	7	121.75	0.14
Oct-16	24	228.73	138.40	361.81	0.26	0	0.00	0.00	24	228.73	0.26
Nov-16	0	9.35	2.56	36.31	0.01	0	0.12	0.00	0	9.22	0.01
Dec-16	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	1	32.66	10.26	88.52	0.04	0	0.00	0.00	1	32.66	0.04
Mar-17	1	9.35	2.20	40.70	0.01	0	0.00	0.00	1	9.35	0.01
Apr-17	12	116.81	74.43	202.67	0.13	0	0.00	0.00	12	116.81	0.13
May-17	11	121.43	70.58	231.30	0.14	0	0.00	0.00	11	121.43	0.14
Jun-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	1	32.74	13.98	75.65	0.04	0	0.00	0.00	1	32.74	0.04
Aug-17	79	528.99	327.62	845.08	0.60	0	0.00	0.00	79	528.99	0.60
Sep-17	23	289.69	158.59	511.28	0.33	0	0.00	0.00	23	289.69	0.33
Oct-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	4.68	0.77	32.95	0.01	0	0.06	0.00	0	4.61	0.01
Jan-18	1	4.64	1.08	40.82	0.01	0	0.00	0.00	1	4.64	0.01
Feb-18	10	70.10	35.89	134.49	0.08	2	14.02	0.02	8	56.08	0.06
Mar-18	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Survey	Total					Flying			Sitting		
	Count	Abundance Estimate	Lower Confidence Limit	Upper Confidence Limit	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)	Count	Abundance Estimate	Density (birds km-2)
Apr-16	24	173.46	112.07	280.72	0.26	2	14.46	0.02	22	159.01	0.24
May-16	3	28.34	11.19	73.72	0.04	0	0.00	0.00	3	28.34	0.04
Jun-16	2	10.63	3.94	24.90	0.02	0	0.00	0.00	2	10.63	0.02
Jul-16	0	7.08	1.08	34.90	0.01	0	0.24	0.00	0	6.85	0.01
Aug-16	2	138.18	69.15	275.17	0.21	0	0.00	0.00	2	138.18	0.21
Sep-16	3	92.23	55.11	164.19	0.14	0	0.00	0.00	3	92.23	0.14
Oct-16	15	173.28	107.35	270.16	0.26	0	0.00	0.00	15	173.28	0.26
Nov-16	0	7.08	1.93	27.67	0.01	0	0.09	0.00	0	6.99	0.01
Dec-16	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	24.74	7.75	66.63	0.04	0	0.33	0.00	0	24.41	0.04
Mar-17	1	7.09	1.66	30.96	0.01	0	0.00	0.00	1	7.09	0.01
Apr-17	5	88.49	57.40	152.12	0.13	0	0.00	0.00	5	88.49	0.13
May-17	9	91.99	53.88	172.19	0.14	0	0.00	0.00	9	91.99	0.14
Jun-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	1	24.80	10.58	57.09	0.04	0	0.00	0.00	1	24.80	0.04
Aug-17	62	400.75	248.00	637.46	0.60	0	0.00	0.00	62	400.75	0.60
Sep-17	21	219.46	119.95	379.79	0.33	0	0.00	0.00	21	219.46	0.33
Oct-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	3.54	0.58	25.23	0.01	0	0.05	0.00	0	3.50	0.01
Jan-18	1	3.52	0.83	30.53	0.01	0	0.00	0.00	1	3.52	0.01
Feb-18	6	53.11	27.18	100.47	0.08	0	0.00	0.00	6	53.11	0.08
Mar-18	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Red-throated diver

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Array Area plus 4 km Buffer	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	1	10	0	30	1.00	0.01	1	10	0	32	1.00	0.01	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Manx shearwater

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	1	10	0	55	1.00	0.02	1	10	0	56	1.00	0.02	0	0	0	0	-	0.00
Sep-16	9	90	0	487	1.00	0.19	0	0	0	0	-	0.00	9	90	0	511	1.00	0.19
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	65	1.00	0.02	1	10	0	66	1.00	0.02	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Array Area plus 4 km Buffer	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	1	10	0	30	1.00	0.01	1	10	0	31	1.00	0.01	0	0	0	0	-	0.00
Sep-16	9	90	0	278	1.00	0.10	0	0	0	0	-	0.00	9	90	0	261	1.00	0.10
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	38	1.00	0.01	1	10	0	36	1.00	0.01	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Curlew

Survey	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	1	10	0	30	1.00	0.01	1	10	0	31	1.00	0.01	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Black-headed gull

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	2	20	0	54	1.00	0.04	2	20	0	60	1.00	0.04	0	0	0	0	-	0.00

Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	1	10	0	28	1.00	0.01	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	3	30	0	66	0.72	0.03	3	30	0	66	0.72	0.03	0	0	0	0	-	0.00

Little gull

Hornsea Four Array Area	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	1	10	0	26	1.00	0.02	1	10	0	26	1.00	0.02	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	4	40	0	106	1.00	0.09	4	40	0	116	1.00	0.09	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	13	129	9	299	0.59	0.15	3	30	0	54	0.53	0.03	10	99	0	274	0.74	0.11
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	4	40	0	111	1.00	0.04	4	40	0	99	1.00	0.04	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Common gull

Hornsea Four Array Area	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	2	20	0	68	1.00	0.04	2	20	0	67	1.00	0.04	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	2	20	0	67	1.00	0.04	2	20	0	72	1.00	0.04	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	2	20	0	41	0.67	0.04	2	20	0	41	0.67	0.04	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	5	50	23	116	0.35	0.11	5	50	20	119	0.35	0.11	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	2	20	0	64	1.00	0.02	2	20	0	64	1.00	0.02	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	3	30	0	77	0.72	0.03	2	20	0	61	1.00	0.02	1	10	0	43	1.00	0.01
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	2	20	0	61	0.68	0.02	2	20	0	57	0.68	0.02	0	0	0	0	-	0.00
Apr-17	1	10	0	28	1.00	0.01	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00
May-17	3	30	0	60	0.72	0.03	3	30	0	66	0.72	0.03	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	4	40	9	69	0.44	0.05	4	40	8	68	0.44	0.05	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	12	111	29	216	0.46	0.13	11	102	26	200	0.47	0.11	1	9	0	36	1.00	0.01
Nov-17	1	10	0	27	1.00	0.01	1	10	0	29	1.00	0.01	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	3	30	0	82	1.00	0.03	2	20	0	56	1.00	0.02	1	10	0	27	1.00	0.01
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	1	10	0	29	1.00	0.01	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00

Herring gull

Hornsea Four Array Area	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	2	20	0	40	0.67	0.04	2	20	0	40	0.67	0.04	0	0	0	0	-	0.00
Jul-16	1	10	0	32	1.00	0.02	0	0	0	0	-	0.00	1	10	0	30	1.00	0.02
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	1	10	0	28	1.00	0.02	1	10	0	27	1.00	0.02	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00	1	10	0	27	1.00	0.02
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00	1	10	0	29	1.00	0.02
Sep-17	1	10	0	26	1.00	0.02	1	10	0	26	1.00	0.02	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	1	10	0	68	1.00	0.02	1	10	0	66	1.00	0.02	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00	1	10	0	27	1.00	0.02
Mar-18	1	10	0	29	1.00	0.02	1	10	0	26	1.00	0.02	0	0	0	0	-	0.00

Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	2	20	0	39	0.68	0.02	2	20	0	42	0.68	0.02	0	0	0	0	-	0.00
Jul-16	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	29	1.00	0.01
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	29	1.00	0.01
Oct-16	1	10	0	30	1.00	0.01	0	0	0	0	-	0.00	1	10	0	30	1.00	0.01
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	1	10	0	29	1.00	0.01	1	10	0	30	1.00	0.01	0	0	0	0	-	0.00
Jan-17	2	20	0	54	1.00	0.02	2	20	0	55	1.00	0.02	0	0	0	0	-	0.00
Feb-17	2	20	0	43	0.68	0.02	1	10	0	30	1.00	0.01	1	10	0	27	1.00	0.01
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	29	1.00	0.01
Sep-17	1	10	0	27	1.00	0.01	1	10	0	29	1.00	0.01	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	3	30	0	73	0.53	0.03	2	20	0	58	0.68	0.02	1	10	0	33	1.00	0.01
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	27	1.00	0.01
Mar-18	1	10	0	30	1.00	0.01	1	10	0	27	1.00	0.01	0	0	0	0	-	0.00

Hornsea 4



Lesser black-backed gull

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	2	20	0	55	1.00	0.04	2	20	0	55	1.00	0.04	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	28	1.00	0.02	1	10	0	27	1.00	0.02	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	2	20	0	56	1.00	0.02	2	20	0	54	1.00	0.02	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	3	30	0	74	0.72	0.03	2	20	0	60	1.00	0.02	1	10	0	45	1.00	0.01
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	1	10	0	31	1.00	0.01	1	10	0	30	1.00	0.01	0	0	0	0	-	0.00
Jun-17	5	50	0	138	1.00	0.06	5	50	0	142	1.00	0.06	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	28	1.00	0.01	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	1	10	0	90	1.00	0.01	1	10	0	96	1.00	0.01	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Sandwich tern

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	43	1.00	0.01	1	10	0	40	1.00	0.01	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	2	20	0	70	1.00	0.02	2	20	0	68	1.00	0.02	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Great skua

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	27	1.00	0.02	0	0	0	0	-	0.00	1	10	0	28	1.00	0.02
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	1	10	0	29	1.00	0.02	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	28	1.00	0.01	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	2	20	0	58	0.68	0.02	1	10	0	51	1.00	0.01	1	10	0	27	1.00	0.01
Sep-17	2	20	0	66	0.68	0.02	2	20	0	64	0.68	0.02	0	0	0	0	-	0.00
Oct-17	1	9	0	27	1.00	0.01	1	9	0	27	1.00	0.01	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Arctic skua

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	29	1.00	0.02	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	29	1.00	0.01	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	41	1.00	0.01	1	10	0	43	1.00	0.01	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Little auk

Survey	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	1	10	0	36	1.00	0.01	1	10	0	37	1.00	0.01	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Feral pigeon

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	1	10	0	49	1.00	0.01	1	10	0	50	1.00	0.01	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Starling

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	15	150	0	396	1.00	0.32	15	150	0	398	1.00	0.32	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	15	149	0	408	1.00	0.17	15	149	0	415	1.00	0.17	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Wader species

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	1	10	0	31	1.00	0.01	1	10	0	31	1.00	0.01	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Fulmar – gull species

Hornsea Four Array Area	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	3	30	0	73	0.72	0.06	0	0	0	0	-	0.00	3	30	0	73	0.72	0.06
Jun-16	10	100	14	165	0.44	0.21	1	10	0	27	1.00	0.02	9	90	13	138	0.44	0.19
Jul-16	3	30	0	61	0.52	0.06	0	0	0	0	-	0.00	3	30	0	62	0.52	0.06
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	30	1.00	0.02	0	0	0	0	-	0.00	1	10	0	30	1.00	0.02
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	1	10	0	27	1.00	0.02	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	1	10	0	64	1.00	0.02	0	0	0	0	-	0.00	1	10	0	69	1.00	0.02
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00	1	10	0	27	1.00	0.02
Jun-17	1	10	0	31	1.00	0.02	0	0	0	0	-	0.00	1	10	0	31	1.00	0.02
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	2	20	0	41	0.67	0.04	0	0	0	0	-	0.00	2	20	0	43	0.67	0.04
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	1	10	0	34	1.00	0.02	0	0	0	0	-	0.00	1	10	0	34	1.00	0.02
Feb-18	3	30	0	64	0.71	0.06	1	10	0	31	1.00	0.02	2	20	0	62	1.00	0.04
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	14	140	71	329	0.30	0.16	0	0	0	0	-	0.00	14	140	65	333	0.30	0.16
Jun-16	11	110	22	171	0.41	0.12	2	20	0	43	0.68	0.02	9	90	13	153	0.45	0.10
Jul-16	3	30	0	57	0.53	0.03	0	0	0	0	-	0.00	3	30	0	58	0.53	0.03
Aug-16	5	50	0	184	0.81	0.06	0	0	0	0	-	0.00	5	50	0	185	0.81	0.06
Sep-16	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	30	1.00	0.01
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	1	10	0	30	1.00	0.01	0	0	0	0	-	0.00	1	10	0	29	1.00	0.01
Dec-16	1	10	0	28	1.00	0.01	1	10	0	29	1.00	0.01	0	0	0	0	-	0.00
Jan-17	1	10	0	42	1.00	0.01	0	0	0	0	-	0.00	1	10	0	42	1.00	0.01
Feb-17	2	20	0	48	0.68	0.02	0	0	0	0	-	0.00	2	20	0	46	0.68	0.02
Mar-17	7	70	0	256	0.72	0.08	0	0	0	0	-	0.00	7	70	0	261	0.72	0.08
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	2	20	0	45	0.68	0.02	0	0	0	0	-	0.00	2	20	0	44	0.68	0.02
Jun-17	5	50	18	129	0.38	0.06	0	0	0	0	-	0.00	5	50	18	133	0.38	0.06
Jul-17	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	28	1.00	0.01
Aug-17	2	20	0	45	0.68	0.02	1	10	0	28	1.00	0.01	1	10	0	34	1.00	0.01
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	2	19	0	41	0.68	0.02	0	0	0	0	-	0.00	2	19	0	40	0.68	0.02
Nov-17	1	10	0	30	1.00	0.01	0	0	0	0	-	0.00	1	10	0	30	1.00	0.01
Dec-17	1	10	0	29	1.00	0.01	0	0	0	0	-	0.00	1	10	0	27	1.00	0.01
Jan-18	3	30	0	65	0.53	0.03	0	0	0	0	-	0.00	3	30	0	67	0.53	0.03
Feb-18	3	30	0	65	0.72	0.03	1	10	0	28	1.00	0.01	2	20	0	59	1.00	0.02
Mar-18	5	50	0	110	0.63	0.06	2	20	0	52	0.68	0.02	3	30	0	91	1.00	0.03

Hornsea 4



Unknown small gull species

Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	1	10	0	67	1.00	0.02	1	10	0	67	1.00	0.02	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	1	10	0	29	1.00	0.02	0	0	0	0	-	0.00	1	10	0	27	1.00	0.02
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	1	10	0	38	1.00	0.02	1	10	0	38	1.00	0.02	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	1	10	0	65	1.00	0.02	0	0	0	0	-	0.00	1	10	0	67	1.00	0.02

Survey	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	1	10	0	37	1.00	0.01	1	10	0	35	1.00	0.01	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	28	1.00	0.01
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	1	10	0	33	1.00	0.01	1	10	0	34	1.00	0.01	0	0	0	0	-	0.00
Mar-17	1	10	0	51	1.00	0.01	0	0	0	0	-	0.00	1	10	0	50	1.00	0.01
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	1	10	0	26	1.00	0.01	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	1	10	0	37	1.00	0.01	0	0	0	0	-	0.00	1	10	0	37	1.00	0.01

Hornsea 4



Unknown large gull species

Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	4	40	5	68	0.43	0.08	4	40	9	63	0.43	0.08	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	29	1.00	0.02	0	0	0	0	-	0.00	1	10	0	27	1.00	0.02
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	1	10	0	52	1.00	0.02	1	10	0	52	1.00	0.02	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00	1	10	0	29	1.00	0.02
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	1	10	0	29	1.00	0.02	1	10	0	30	1.00	0.02	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	4	40	7	69	0.44	0.04	4	40	9	67	0.44	0.04	0	0	0	0	-	0.00
Jul-16	2	20	0	43	0.68	0.02	2	20	0	42	0.68	0.02	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	4	40	0	92	0.77	0.04	3	30	0	64	0.72	0.03	1	10	0	27	1.00	0.01
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	1	10	0	32	1.00	0.01	1	10	0	30	1.00	0.01	0	0	0	0	-	0.00
Jan-17	1	10	0	32	1.00	0.01	1	10	0	31	1.00	0.01	0	0	0	0	-	0.00
Feb-17	1	10	0	26	1.00	0.01	0	0	0	0	-	0.00	1	10	0	28	1.00	0.01
Mar-17	3	30	0	153	0.53	0.03	3	30	0	147	0.53	0.03	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	1	10	0	49	1.00	0.01	0	0	0	0	-	0.00	1	10	0	50	1.00	0.01
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	1	9	0	27	1.00	0.01	1	9	0	28	1.00	0.01	0	0	0	0	-	0.00
Nov-17	1	10	0	34	1.00	0.01	1	10	0	33	1.00	0.01	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Unknown gull species

Hornsea Four Array Area	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00	1	10	0	29	1.00	0.02
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	29	1.00	0.02	0	0	0	0	-	0.00	1	10	0	28	1.00	0.02
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	1	10	0	53	1.00	0.02	0	0	0	0	-	0.00	1	10	0	54	1.00	0.02
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	1	10	0	64	1.00	0.02	0	0	0	0	-	0.00	1	10	0	62	1.00	0.02

Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	27	1.00	0.01
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	29	1.00	0.01
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	3	30	0	151	1.00	0.03	1	10	0	49	1.00	0.01	2	20	0	100	1.00	0.02
Apr-17	1	10	0	27	1.00	0.01	0	0	0	0	-	0.00	1	10	0	27	1.00	0.01
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	1	10	0	49	1.00	0.01	0	0	0	0	-	0.00	1	10	0	49	1.00	0.01
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	29	1.00	0.01	0	0	0	0	-	0.00	1	10	0	29	1.00	0.01
Sep-17	1	10	0	28	1.00	0.01	1	10	0	29	1.00	0.01	0	0	0	0	-	0.00
Oct-17	1	9	0	30	1.00	0.01	1	9	0	31	1.00	0.01	0	0	0	0	-	0.00
Nov-17	0	0	0	0	0.00	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	3	30	3	52	0.53	0.03	0	0	0	0	-	0.00	3	30	0	53	0.53	0.03
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	1	10	0	37	1.00	0.01	0	0	0	0	-	0.00	1	10	0	35	1.00	0.01

Hornsea 4



Unknown tern species

Hornsea Four Array Area	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Aug-16	6	60	0	183	0.67	0.13	4	40	0	99	0.77	0.08	2	20	0	115	1.00	0.04
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	-	0.00	0.00

Survey	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	1	10	0	28	1.00	0.01	1	10	0	27	1.00	0.01	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	15	150	24	274	0.46	0.17	6	60	8	109	0.53	0.07	9	90	0	205	0.69	0.10
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	14	140	0	685	1.00	0.16	0	0	0	0	-	0.00	14	140	0	658	1.00	0.16
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Tern / small gull species

Hornsea Four Array Area	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	1	10	0	29	1.00	0.02	0	0	0	0	-	0.00	1	10	0	29	1.00	0.02
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Array Area Plus 4 km Buffer	Total						Flying						Sitting					
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	4	40	0	99	0.77	0.04	0	0	0	0	-	0.00	4	40	0	99	0.77	0.04
Aug-16	2	20	0	42	0.68	0.02	1	10	0	31	1.00	0.01	1	10	0	29	1.00	0.01
Sep-16	3	30	0	88	0.72	0.03	2	20	0	86	1.00	0.02	1	10	0	29	1.00	0.01
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	2	20	0	66	0.68	0.02	1	10	0	50	1.00	0.01	1	10	0	43	1.00	0.01
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Skua species

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	1	10	0	31	1.00	0.02	0	0	0	0	-	0.00	1	10	0	31	1.00	0.02
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	1	10	0	27	1.00	0.01	0	0	0	0	-	0.00	1	10	0	30	1.00	0.01
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Large auk species

Hornsea Four Array Area	Total						Flying						Sitting					
	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	0	30	1.00	0.02	0	0	0	0	-	0.00	1	10	0	29	1.00	0.02
May-16	10	100	0	200	0.57	0.21	1	10	0	54	1.00	0.02	9	90	0	177	0.62	0.19
Jun-16	22	220	56	382	0.39	0.47	2	20	0	54	1.00	0.04	20	200	51	373	0.41	0.42
Jul-16	17	171	71	259	0.31	0.36	1	10	0	29	1.00	0.02	16	161	55	256	0.34	0.34
Aug-16	2	20	0	40	0.67	0.04	0	0	0	0	-	0.00	2	20	0	39	0.67	0.04
Sep-16	42	422	147	802	0.33	0.90	0	0	0	0	-	0.00	42	422	121	788	0.33	0.90
Oct-16	30	300	119	521	0.31	0.64	3	30	0	65	0.72	0.06	27	270	89	515	0.35	0.57
Nov-16	2	20	0	819	0.67	0.04	1	10	0	29	1.00	0.02	1	10	0	866	1.00	0.02
Dec-16	1	10	0	30	1.00	0.02	0	0	0	0	-	0.00	1	10	0	31	1.00	0.02
Jan-17	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00	1	10	0	28	1.00	0.02
Feb-17	8	80	9	148	0.53	0.17	0	0	0	0	-	0.00	8	80	10	149	0.53	0.17
Mar-17	26	259	146	390	0.22	0.55	4	40	0	89	0.77	0.08	22	219	104	366	0.28	0.47
Apr-17	4	40	0	145	0.56	0.08	2	20	0	41	0.67	0.04	2	20	0	130	1.00	0.04
May-17	8	80	15	207	0.43	0.17	3	30	0	66	0.72	0.06	5	50	0	174	0.62	0.11
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	2	20	0	61	0.67	0.04	0	0	0	0	-	0.00	2	20	0	67	0.67	0.04
Aug-17	175	1747	1013	3771	0.31	3.72	0	0	0	0	-	0.00	175	1747	1036	3629	0.31	3.72
Sep-17	6	60	20	81	0.30	0.13	1	10	0	26	1.00	0.02	5	50	11	73	0.36	0.11
Oct-17	7	70	8	143	0.57	0.15	4	40	0	122	1.00	0.09	3	30	0	61	0.52	0.06
Nov-17	47	469	124	854	0.37	1.00	16	160	0	432	0.67	0.34	31	310	95	482	0.37	0.66
Dec-17	4	40	10	85	0.43	0.08	0	0	0	0	-	0.00	4	40	5	87	0.43	0.08
Jan-18	18	180	58	254	0.35	0.38	0	0	0	0	-	0.00	18	180	52	254	0.35	0.38
Feb-18	3	30	4	85	0.52	0.06	0	0	0	0	-	0.00	3	30	0	88	0.52	0.06
Mar-18	1	10	0	27	1.00	0.02	0	0	0	0	-	0.00	1	10	0	28	1.00	0.02

Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	0	97	0.63	0.06	3	30	0	81	1.00	0.03	2	20	0	46	0.68	0.02
May-16	20	200	77	378	0.36	0.22	2	20	0	40	0.68	0.02	18	180	55	361	0.40	0.20
Jun-16	38	380	228	769	0.25	0.43	6	60	8	133	0.48	0.07	32	320	186	740	0.27	0.36
Jul-16	42	419	221	598	0.25	0.47	1	10	0	30	1.00	0.01	41	409	205	595	0.26	0.46
Aug-16	9	90	18	169	0.42	0.10	0	0	0	0	-	0.00	9	90	18	155	0.42	0.10
Sep-16	79	789	344	1212	0.30	0.89	0	0	0	0	-	0.00	79	789	379	1191	0.30	0.89
Oct-16	58	576	302	844	0.25	0.65	5	50	0	88	0.56	0.06	53	527	294	773	0.25	0.59
Nov-16	9	90	19	181	0.56	0.10	5	50	0	104	0.63	0.06	4	40	0	88	0.57	0.04
Dec-16	1	10	0	32	1.00	0.01	0	0	0	0	-	0.00	1	10	0	30	1.00	0.01
Jan-17	12	119	61	213	0.30	0.13	2	20	0	72	1.00	0.02	10	100	41	188	0.35	0.11
Feb-17	13	130	41	205	0.40	0.15	0	0	0	0	-	0.00	13	130	39	204	0.40	0.15
Mar-17	43	429	226	602	0.22	0.48	8	80	15	133	0.44	0.09	35	349	168	507	0.26	0.39
Apr-17	9	90	34	191	0.36	0.10	3	30	0	102	0.53	0.03	6	60	4	130	0.53	0.07
May-17	14	140	34	218	0.38	0.16	3	30	0	68	0.72	0.03	11	110	30	177	0.39	0.12
Jun-17	7	70	0	252	0.72	0.08	0	0	0	0	-	0.00	7	70	0	256	0.72	0.08
Jul-17	4	40	0	236	0.57	0.04	0	0	0	0	-	0.00	4	40	0	243	0.57	0.04
Aug-17	343	3429	2009	7773	0.22	3.86	0	0	0	0	-	0.00	343	3429	1980	7452	0.22	3.86
Sep-17	12	120	36	202	0.43	0.13	5	50	0	121	0.81	0.06	7	70	20	112	0.35	0.08
Oct-17	29	268	38	577	0.62	0.30	22	204	0	562	0.83	0.23	7	65	8	139	0.59	0.07
Nov-17	89	889	447	1571	0.29	1.00	20	200	42	419	0.53	0.22	69	689	363	1260	0.30	0.78
Dec-17	7	70	21	103	0.35	0.08	0	0	0	0	-	0.00	7	70	20	103	0.35	0.08
Jan-18	28	279	116	387	0.30	0.31	2	20	0	45	0.68	0.02	26	259	85	393	0.32	0.29
Feb-18	19	189	64	362	0.43	0.21	11	110	31	249	0.49	0.12	8	80	18	150	0.44	0.09
Mar-18	4	40	0	110	1.00	0.04	0	0	0	0	-	0.00	4	40	0	110	1.00	0.04

Hornsea 4



Small auk species

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	1	10	0	66	1.00	0.02	0	0	0	0	-	0.00	1	10	0	63	1.00	0.02
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	1	10	0	35	1.00	0.01	0	0	0	0	-	0.00	1	10	0	36	1.00	0.01
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Unknown auk species

Hornsea Four Array Area	Total						Flying						Sitting					
	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	12	120	34	179	0.37	0.26	6	60	0	100	0.52	0.13	6	60	10	103	0.46	0.13
May-16	13	130	54	529	0.45	0.28	2	20	0	44	0.67	0.04	11	110	32	525	0.53	0.23
Jun-16	14	140	42	289	0.39	0.30	0	0	0	0	-	0.00	14	140	38	274	0.39	0.30
Jul-16	6	60	10	110	0.45	0.13	0	0	0	0	-	0.00	6	60	10	108	0.45	0.13
Aug-16	11	110	48	522	0.31	0.23	0	0	0	0	-	0.00	11	110	54	530	0.31	0.23
Sep-16	10	100	26	185	0.40	0.21	0	0	0	0	-	0.00	10	100	32	187	0.40	0.21
Oct-16	29	290	105	403	0.34	0.62	0	0	0	0	-	0.00	29	290	102	414	0.34	0.62
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	6	60	10	108	0.52	0.13	0	0	0	0	-	0.00	6	60	9	116	0.52	0.13
Jan-17	2	20	0	40	0.67	0.04	0	0	0	0	-	0.00	2	20	0	39	0.67	0.04
Feb-17	5	50	15	90	0.36	0.11	0	0	0	0	-	0.00	5	50	14	84	0.36	0.11
Mar-17	13	130	50	221	0.31	0.28	1	10	0	63	1.00	0.02	12	120	46	173	0.33	0.25
Apr-17	11	110	31	165	0.37	0.23	0	0	0	0	-	0.00	11	110	35	166	0.37	0.23
May-17	17	170	20	324	0.52	0.36	1	10	0	30	1.00	0.02	16	160	21	306	0.50	0.34
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	4	40	0	131	0.67	0.09	0	0	0	0	-	0.00	4	40	0	126	0.67	0.09
Aug-17	56	559	312	772	0.22	1.19	0	0	0	0	-	0.00	56	559	299	766	0.22	1.19
Sep-17	17	169	88	557	0.32	0.36	1	10	0	35	1.00	0.02	16	159	73	551	0.35	0.34
Oct-17	1	10	0	26	1.00	0.02	0	0	0	0	-	0.00	1	10	0	27	1.00	0.02
Nov-17	13	130	9	287	0.76	0.28	1	10	0	28	1.00	0.02	12	120	0	312	0.83	0.25
Dec-17	4	40	6	65	0.43	0.08	0	0	0	0	-	0.00	4	40	9	65	0.43	0.08
Jan-18	3	30	1	52	0.52	0.06	0	0	0	0	-	0.00	3	30	0	49	0.52	0.06
Feb-18	3	30	0	85	1.00	0.06	3	30	0	84	1.00	0.06	0	0	0	0	-	0.00
Mar-18	1	10	0	29	1.00	0.02	1	10	0	29	1.00	0.02	0	0	0	0	-	0.00

Survey	Total						Flying						Sitting					
	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	23	230	111	349	0.28	0.26	11	110	31	211	0.43	0.12	12	120	25	214	0.43	0.14
May-16	37	369	110	987	0.46	0.42	3	30	0	119	0.53	0.03	34	339	73	1030	0.51	0.38
Jun-16	29	290	140	523	0.30	0.33	1	10	0	48	1.00	0.01	28	280	130	523	0.32	0.31
Jul-16	12	120	68	195	0.25	0.13	0	0	0	0	-	0.00	12	120	63	194	0.25	0.13
Aug-16	24	239	112	335	0.26	0.27	0	0	0	0	-	0.00	24	239	118	346	0.26	0.27
Sep-16	13	130	32	199	0.37	0.15	0	0	0	0	-	0.00	13	130	37	199	0.37	0.15
Oct-16	47	467	293	645	0.21	0.53	0	0	0	0	-	0.00	47	467	296	647	0.21	0.53
Nov-16	2	20	0	52	0.68	0.02	0	0	0	0	-	0.00	2	20	0	54	0.68	0.02
Dec-16	8	82	17	132	0.44	0.09	0	0	0	0	-	0.00	8	82	20	144	0.44	0.09
Jan-17	2	20	0	39	0.68	0.02	0	0	0	0	-	0.00	2	20	0	40	0.68	0.02
Feb-17	11	110	56	205	0.28	0.12	0	0	0	0	-	0.00	11	110	53	199	0.28	0.12
Mar-17	21	209	103	299	0.26	0.24	2	20	0	65	0.68	0.02	19	189	90	265	0.28	0.21
Apr-17	30	299	143	622	0.25	0.34	1	10	0	87	1.00	0.01	29	289	142	571	0.25	0.33
May-17	39	390	175	555	0.28	0.44	1	10	0	29	1.00	0.01	38	380	170	575	0.27	0.43
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	15	150	31	456	0.40	0.17	0	0	0	0	-	0.00	15	150	34	454	0.40	0.17
Aug-17	85	850	649	1098	0.15	0.96	0	0	0	0	-	0.00	85	850	644	1091	0.15	0.96
Sep-17	44	439	257	622	0.21	0.49	1	10	0	30	1.00	0.01	43	429	242	613	0.21	0.48
Oct-17	1	9	0	28	1.00	0.01	0	0	0	0	0.00	0.00	1	9	0	27	1.00	0.01
Nov-17	20	200	21	414	0.58	0.22	1	10	0	30	1.00	0.01	19	190	10	406	0.61	0.21
Dec-17	11	110	53	261	0.28	0.12	0	0	0	0	-	0.00	11	110	50	257	0.28	0.12
Jan-18	9	90	29	151	0.36	0.10	0	0	0	0	-	0.00	9	90	24	148	0.36	0.10
Feb-18	7	70	10	132	0.51	0.08	4	40	0	95	0.77	0.04	3	30	0	77	0.72	0.03
Mar-18	2	20	0	55	1.00	0.02	1	10	0	29	1.00	0.01	1	10	0	29	1.00	0.01

Hornsea 4



Large auk / diver species

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	29	1.00	0.01
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Auk / shearwater species

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	67	1.00	0.02	0	0	0	0	-	0.00	1	10	0	67	1.00	0.02
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	1	10	0	36	1.00	0.01	0	0	0	0	-	0.00	1	10	0	36	1.00	0.01
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Auk / small gull species

Hornsea Four Array Area	Total						Flying						Sitting					
	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	0	68	1.00	0.02	0	0	0	0	-	0.00	1	10	0	66	1.00	0.02
May-16	7	70	0	168	0.54	0.15	0	0	0	0	-	0.00	7	70	0	181	0.54	0.15
Jun-16	3	30	0	54	0.52	0.06	0	0	0	0	-	0.00	3	30	0	55	0.52	0.06
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	2	20	0	41	0.67	0.04	0	0	0	0	-	0.00	2	20	0	41	0.67	0.04
Sep-16	0	0	0	0	0.00	0.00	0	0	0	0	-	0.00	0	0	0	0	0.00	0.00
Oct-16	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00	1	10	0	28	1.00	0.02
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	1	10	0	29	1.00	0.02	0	0	0	0	-	0.00	1	10	0	28	1.00	0.02
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	1	10	0	30	1.00	0.02	0	0	0	0	-	0.00	1	10	0	29	1.00	0.02
Jun-17	1	10	0	29	1.00	0.02	0	0	0	0	-	0.00	1	10	0	29	1.00	0.02
Jul-17	2	20	0	68	0.67	0.04	0	0	0	0	-	0.00	2	20	0	62	0.67	0.04
Aug-17	4	40	0	90	0.56	0.08	0	0	0	0	-	0.00	4	40	0	91	0.56	0.08
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	1	10	0	29	1.00	0.02	0	0	0	0	-	0.00	1	10	0	30	1.00	0.02
Dec-17	6	60	0	146	0.83	0.13	1	10	0	26	1.00	0.02	5	50	0	116	0.81	0.11
Jan-18	1	10	0	39	1.00	0.02	1	10	0	38	1.00	0.02	0	0	0	0	-	0.00
Feb-18	1	10	0	28	1.00	0.02	0	0	0	0	-	0.00	1	10	0	29	1.00	0.02
Mar-18	1	10	0	40	1.00	0.02	0	0	0	0	-	0.00	1	10	0	39	1.00	0.02

Survey	Total						Flying						Sitting					
	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	20	0	48	0.68	0.02	0	0	0	0	-	0.00	2	20	0	49	0.68	0.02
May-16	14	140	63	264	0.30	0.16	0	0	0	0	-	0.00	14	140	70	265	0.30	0.16
Jun-16	5	50	13	142	0.38	0.06	0	0	0	0	-	0.00	5	50	13	130	0.38	0.06
Jul-16	2	20	0	41	0.68	0.02	0	0	0	0	-	0.00	2	20	0	41	0.68	0.02
Aug-16	12	120	59	168	0.28	0.13	0	0	0	0	-	0.00	12	120	59	173	0.28	0.13
Sep-16	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	28	1.00	0.01
Oct-16	1	10	0	29	1.00	0.01	0	0	0	0	-	0.00	1	10	0	28	1.00	0.01
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	28	1.00	0.01
Mar-17	1	10	0	50	1.00	0.01	0	0	0	0	-	0.00	1	10	0	50	1.00	0.01
Apr-17	1	10	0	30	1.00	0.01	0	0	0	0	-	0.00	1	10	0	28	1.00	0.01
May-17	2	20	0	47	0.68	0.02	0	0	0	0	-	0.00	2	20	0	46	0.68	0.02
Jun-17	1	10	0	28	1.00	0.01	0	0	0	0	-	0.00	1	10	0	29	1.00	0.01
Jul-17	2	20	0	42	0.68	0.02	0	0	0	0	-	0.00	2	20	0	42	0.68	0.02
Aug-17	10	100	22	244	0.48	0.11	0	0	0	0	-	0.00	10	100	17	254	0.48	0.11
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	3	30	0	56	0.53	0.03	0	0	0	0	-	0.00	3	30	0	58	0.53	0.03
Dec-17	21	210	98	374	0.35	0.24	2	20	0	47	0.68	0.02	19	190	84	355	0.36	0.21
Jan-18	2	20	0	51	0.68	0.02	2	20	0	57	0.68	0.02	0	0	0	0	-	0.00
Feb-18	1	10	0	26	1.00	0.01	0	0	0	0	-	0.00	1	10	0	28	1.00	0.01
Mar-18	1	10	0	35	1.00	0.01	0	0	0	0	-	0.00	1	10	0	34	1.00	0.01

Passerine species

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	3	30	0	88	1.00	0.06	3	30	0	89	1.00	0.06	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	5	50	0	105	0.70	0.06	5	50	0	105	0.70	0.06	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Hornsea 4



Small bird

Hornsea Four Array Area	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Array Area Plus 4 km Buffer	Total						Flying					Sitting						
	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	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-16	1	10	0	44	1.00	0.01	1	10	0	42	1.00	0.01	0	0	0	0	-	0.00
Oct-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-16	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Apr-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
May-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jun-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jul-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Aug-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Sep-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Oct-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Nov-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Dec-17	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Jan-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Feb-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00
Mar-18	0	0	0	0	-	0.00	0	0	0	0	-	0.00	0	0	0	0	-	0.00

Appendix B: Abundance Estimates and Behaviour Information of Key Seabirds recorded from Site-Specific Surveys (Apportioned and Corrected)

Fulmar MRSea Results

Survey	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Apr-16	195.33	195.33	0.42	124.30	124.30	0.26	71.03	71.03	0.15
May-16	333.96	346.03	0.74	91.08	91.08	0.19	242.88	254.95	0.54
Jun-16	129.50	161.28	0.34	4.47	4.55	0.01	125.03	156.73	0.33
Jul-16	21.04	23.32	0.05	0.00	0.00	0.00	21.04	23.32	0.05
Aug-16	30.08	30.08	0.06	6.02	6.02	0.01	24.06	24.06	0.05
Sep-16	33.15	33.25	0.07	0.00	0.00	0.00	33.15	33.25	0.07
Oct-16	155.85	155.85	0.33	31.17	31.17	0.07	124.68	124.68	0.27
Nov-16	33.07	33.07	0.07	11.02	11.02	0.02	22.05	22.05	0.05
Dec-16	29.98	32.05	0.07	23.99	26.05	0.06	6.00	6.00	0.01
Jan-17	150.03	150.03	0.32	64.30	64.30	0.14	85.73	85.73	0.18
Feb-17	78.07	82.29	0.17	34.70	34.70	0.07	43.37	47.59	0.10
Mar-17	201.42	201.42	0.43	53.71	53.71	0.11	147.71	147.71	0.31
Apr-17	105.10	105.10	0.22	84.08	84.08	0.18	21.02	21.02	0.04
May-17	57.12	58.76	0.12	28.56	28.56	0.06	28.56	30.20	0.06
Jun-17	42.11	52.11	0.11	14.04	14.04	0.03	28.07	38.07	0.08
Jul-17	24.04	24.04	0.05	24.04	24.04	0.05	0.00	0.00	0.00
Aug-17	81.24	81.24	0.17	48.74	48.74	0.10	32.50	32.50	0.07
Sep-17	117.10	117.10	0.25	19.52	19.52	0.04	97.58	97.58	0.21
Oct-17	41.35	47.71	0.10	0.00	0.00	0.00	41.35	47.71	0.10
Nov-17	39.21	39.21	0.08	0.00	0.00	0.00	39.21	39.21	0.08
Dec-17	27.07	27.07	0.06	27.07	27.07	0.06	0.00	0.00	0.00
Jan-18	104.42	104.42	0.22	104.42	104.42	0.22	0.00	0.00	0.00
Feb-18	75.06	85.13	0.18	45.04	47.69	0.10	30.03	37.44	0.08
Mar-18	54.11	54.11	0.12	18.04	18.04	0.04	36.07	36.07	0.08

Hornsea 4



Survey	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	385.62	385.62	0.43	282.78	282.78	0.601	102.83	102.83	0.219
May-16	659.28	703.56	0.79	137.76	137.76	0.293	521.52	565.80	1.203
Jun-16	255.65	283.12	0.32	11.89	12.09	0.026	243.76	271.03	0.576
Jul-16	41.54	42.58	0.05	20.77	20.77	0.044	20.77	21.81	0.046
Aug-16	59.38	60.13	0.07	11.88	11.88	0.025	47.50	48.26	0.103
Sep-16	65.45	65.52	0.07	13.09	13.09	0.028	52.36	52.43	0.111
Oct-16	307.67	307.67	0.35	36.92	36.92	0.079	270.75	270.75	0.576
Nov-16	65.29	68.92	0.08	16.32	16.32	0.035	48.97	52.59	0.112
Dec-16	59.19	61.14	0.07	51.79	53.74	0.114	7.40	7.40	0.016
Jan-17	296.19	300.05	0.34	126.94	126.94	0.270	169.25	173.11	0.368
Feb-17	154.12	161.34	0.18	85.62	85.62	0.182	68.50	75.72	0.161
Mar-17	397.64	427.93	0.48	260.75	260.75	0.554	136.89	167.19	0.356
Apr-17	207.48	207.48	0.23	148.20	148.20	0.315	59.28	59.28	0.126
May-17	112.76	115.22	0.13	45.10	45.10	0.096	67.66	70.11	0.149
Jun-17	83.14	94.07	0.11	22.67	22.67	0.048	60.46	71.39	0.152
Jul-17	47.46	47.46	0.05	47.46	47.46	0.101	0.00	0.00	0.000
Aug-17	160.38	161.20	0.18	87.48	88.07	0.187	72.90	73.13	0.156
Sep-17	231.18	231.18	0.26	30.15	30.15	0.064	201.02	201.02	0.427
Oct-17	81.64	86.90	0.10	0.00	0.00	0.000	81.64	86.90	0.185
Nov-17	77.40	79.21	0.09	38.70	38.70	0.082	38.70	40.50	0.086
Dec-17	53.43	53.43	0.06	53.43	53.43	0.114	0.00	0.00	0.000
Jan-18	206.15	221.82	0.25	141.05	141.05	0.300	65.10	80.78	0.172
Feb-18	148.19	158.06	0.18	70.19	72.11	0.153	77.99	85.95	0.183
Mar-18	106.83	122.03	0.14	53.41	57.40	0.122	53.41	64.63	0.137

Kittiwake MRSea Results

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Survey									
Apr-16	611.76	612.79	1.30	463.19	463.19	0.98	148.57	149.60	0.32
May-16	1141.90	1168.84	2.49	781.30	781.30	1.66	360.60	387.54	0.82
Jun-16	694.91	764.23	1.63	464.87	473.98	1.01	230.04	290.25	0.62
Jul-16	442.29	468.92	1.00	196.57	196.57	0.42	245.72	272.35	0.58
Aug-16	2640.06	2648.76	5.63	2525.28	2525.28	5.37	114.79	123.49	0.26
Sep-16	4020.02	4039.55	8.59	831.14	831.14	1.77	3188.87	3208.41	6.82
Oct-16	42.36	47.68	0.10	33.89	39.19	0.08	8.47	8.49	0.02
Nov-16	25.44	25.52	0.05	12.72	12.72	0.03	12.72	12.79	0.03
Dec-16	74.07	90.14	0.19	70.37	76.44	0.16	3.70	13.70	0.03
Jan-17	140.63	140.63	0.30	83.10	83.10	0.18	57.53	57.53	0.12
Feb-17	12.13	22.55	0.05	8.09	18.09	0.04	4.04	4.47	0.01
Mar-17	138.00	138.00	0.29	94.63	94.63	0.20	43.37	43.37	0.09
Apr-17	2537.82	2537.82	5.40	2239.26	2239.26	4.76	298.57	298.57	0.63
May-17	1289.98	1298.74	2.76	1144.15	1144.15	2.43	145.82	154.59	0.33
Jun-17	450.06	450.06	0.96	450.06	450.06	0.96	0.00	0.00	0.00
Jul-17	227.35	227.59	0.48	182.99	182.99	0.39	44.36	44.60	0.09
Aug-17	1834.73	1848.10	3.93	565.65	565.65	1.20	1269.08	1282.45	2.73
Sep-17	290.31	290.31	0.62	193.54	193.54	0.41	96.77	96.77	0.21
Oct-17	32.14	33.38	0.07	24.10	24.10	0.05	8.03	9.27	0.02
Nov-17	133.42	133.47	0.28	102.03	102.03	0.22	31.39	31.44	0.07
Dec-17	549.42	570.08	1.21	297.60	305.81	0.65	251.82	264.27	0.56
Jan-18	61.47	63.27	0.13	61.47	63.27	0.13	0.00	0.00	0.00
Feb-18	141.84	154.46	0.33	120.02	127.09	0.27	21.82	27.38	0.06
Mar-18	73.89	94.43	0.20	41.05	41.05	0.09	32.84	53.38	0.11

Hornsea 4



Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	1497.95	1500.38	1.69	1102.36	1102.36	1.24	395.58	398.02	0.45
May-16	2796.02	2915.98	3.28	1668.34	1668.34	1.88	1127.68	1247.64	1.40
Jun-16	1701.53	1786.84	2.01	1140.66	1159.75	1.31	560.88	627.10	0.71
Jul-16	1082.97	1152.84	1.30	512.99	512.99	0.58	569.99	639.85	0.72
Aug-16	6464.37	6541.34	7.36	3392.65	3400.12	3.83	3071.72	3141.22	3.54
Sep-16	9843.29	9894.10	11.14	2044.38	2064.18	2.32	7798.92	7829.92	8.81
Oct-16	103.73	109.48	0.12	80.68	86.41	0.10	23.05	23.07	0.03
Nov-16	62.30	65.17	0.07	24.92	24.92	0.03	37.38	40.25	0.05
Dec-16	181.37	198.02	0.22	176.19	182.83	0.21	5.18	15.18	0.02
Jan-17	344.35	356.18	0.40	146.67	146.67	0.17	197.68	209.51	0.24
Feb-17	29.70	41.08	0.05	16.97	26.97	0.03	12.73	14.11	0.02
Mar-17	337.91	401.82	0.45	202.74	211.34	0.24	135.16	190.49	0.21
Apr-17	6214.04	6224.26	7.01	5825.66	5825.66	6.56	388.38	398.60	0.45
May-17	3158.59	3187.23	3.59	2674.98	2684.87	3.02	483.61	502.36	0.57
Jun-17	1102.01	1152.17	1.30	885.93	885.93	1.00	216.08	266.25	0.30
Jul-17	556.69	566.82	0.64	504.50	504.50	0.57	52.19	62.32	0.07
Aug-17	4492.47	4547.60	5.12	1354.66	1371.45	1.54	3137.81	3176.15	3.57
Sep-17	710.84	717.69	0.81	533.13	539.98	0.61	177.71	177.71	0.20
Oct-17	78.70	81.49	0.09	63.94	65.79	0.07	14.76	15.71	0.02
Nov-17	326.69	331.94	0.37	219.03	219.03	0.25	107.66	112.91	0.13
Dec-17	1345.29	1416.76	1.59	575.97	592.17	0.67	769.33	824.59	0.93
Jan-18	150.50	154.82	0.17	150.50	154.82	0.17	0.00	0.00	0.00
Feb-18	347.31	362.32	0.41	276.67	284.24	0.32	70.64	78.08	0.09
Mar-18	180.91	213.87	0.24	143.80	154.53	0.17	37.11	59.34	0.07

Hornsea 4



Great black-backed gull MRSea Results

Survey	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun-16	1.15	2.30	0.005	1.15	2.30	0.005	0.00	0.00	0.00
Jul-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug-16	10.55	10.55	0.022	0.00	0.00	0.00	10.55	10.55	0.022
Sep-16	60.00	70.37	0.150	0.00	0.00	0.00	60.00	70.37	0.150
Oct-16	187.91	187.91	0.400	0.00	0.00	0.00	187.91	187.91	0.400
Nov-16	43.98	43.98	0.094	26.39	26.39	0.056	17.59	17.59	0.037
Dec-16	34.84	41.21	0.088	11.61	17.99	0.038	23.22	23.22	0.049
Jan-17	51.16	51.16	0.109	22.74	22.74	0.048	28.42	28.42	0.060
Feb-17	47.94	60.56	0.129	2.52	2.52	0.005	45.42	58.03	0.123
Mar-17	24.50	24.50	0.052	12.25	12.25	0.026	12.25	12.25	0.026
Apr-17	3.34	3.34	0.007	1.00	1.00	0.002	2.33	2.33	0.005
May-17	7.92	7.92	0.017	7.92	7.92	0.017	0.00	0.00	0.00
Jun-17	3.40	3.40	0.007	3.40	3.40	0.007	0.00	0.00	0.00
Jul-17	4.58	4.58	0.010	4.58	4.58	0.010	0.00	0.00	0.00
Aug-17	2.24	2.25	0.005	0.97	0.97	0.002	1.26	1.27	0.003
Sep-17	230.30	230.30	0.490	100.29	100.29	0.213	130.01	130.01	0.276
Oct-17	142.82	165.22	0.351	62.19	72.19	0.154	80.62	93.02	0.198
Nov-17	47.92	47.92	0.102	20.54	20.54	0.044	27.38	27.38	0.058
Dec-17	54.50	55.94	0.119	12.11	12.11	0.026	42.39	43.83	0.093
Jan-18	38.62	48.62	0.103	17.16	17.16	0.036	21.45	31.45	0.067
Feb-18	23.89	28.90	0.061	4.78	5.06	0.011	19.11	23.84	0.051
Mar-18	31.17	31.17	0.066	31.17	31.17	0.066	0.00	0.00	0.00

Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jun-16	2.71	5.29	0.011	2.71	5.29	0.011	0.00	0.00	0.00
Jul-16	0.00	5.72	0.012	0.00	5.72	0.012	0.00	0.00	0.00
Aug-16	24.77	25.16	0.054	0.00	0.00	0.000	24.77	25.16	0.054
Sep-16	140.91	178.97	0.381	0.00	28.37	0.060	140.91	150.60	0.320
Oct-16	441.33	441.33	0.938	386.16	386.16	0.821	55.17	55.17	0.117
Nov-16	103.29	106.89	0.227	54.68	54.68	0.116	48.61	52.21	0.111
Dec-16	81.82	90.16	0.192	27.27	35.62	0.076	54.55	54.55	0.116
Jan-17	120.16	131.53	0.280	48.06	55.13	0.117	72.10	76.41	0.162
Feb-17	112.60	132.06	0.281	14.07	14.07	0.030	98.52	117.99	0.251
Mar-17	57.53	102.82	0.219	13.28	43.84	0.093	44.26	58.98	0.125
Apr-17	7.84	7.98	0.017	2.36	2.36	0.005	5.48	5.62	0.012
May-17	18.60	18.60	0.040	18.60	18.60	0.040	0.00	0.00	0.00
Jun-17	7.98	7.98	0.017	7.98	7.98	0.017	0.00	0.00	0.00
Jul-17	10.75	10.75	0.023	10.75	10.75	0.023	0.00	0.00	0.00
Aug-17	5.25	5.29	0.011	2.29	2.30	0.005	2.97	2.98	0.006
Sep-17	540.87	543.89	1.157	235.54	238.56	0.507	305.33	305.33	0.649
Oct-17	335.41	360.83	0.767	146.07	159.28	0.339	189.35	201.55	0.429
Nov-17	112.54	123.88	0.263	44.21	52.37	0.111	68.33	71.51	0.152
Dec-17	127.99	132.25	0.281	35.20	35.20	0.075	92.79	97.05	0.206
Jan-18	90.69	102.61	0.218	41.22	41.22	0.088	49.47	61.38	0.131
Feb-18	56.12	60.44	0.129	18.71	19.22	0.041	37.41	41.23	0.088
Mar-18	73.20	91.60	0.195	20.92	22.48	0.048	52.29	69.12	0.147

Hornsea 4



'Commic' Tern

Survey	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	170	231.48	0.49	150	190.00	0.40	20	41.48	0.09
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	80	80.00	0.17	80	80.00	0.17	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	20	20.00	0.04	20	20.00	0.04	0	0.00	0.00
Aug-17	100	100.00	0.21	20	20.00	0.04	80	80.00	0.17
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	10.00	0.01	0	10.00	0.01	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	1666	1819.98	2.05	1127	1189.48	1.34	539	630.49	0.71
Sep-16	10	10.01	0.01	0	0.00	0.00	10	10.01	0.01
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	80	80.00	0.09	80	80.00	0.09	0	0.00	0.00
Jun-17	20	20.00	0.02	20	20.00	0.02	0	0.00	0.00
Jul-17	20	20.00	0.02	20	20.00	0.02	0	0.00	0.00
Aug-17	690	832.94	0.94	340	341.94	0.38	350	491.00	0.55
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Common Tern

Survey	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Survey									
Apr-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	10	10.09	0.01	10	10.09	0.01	0	0.00	0.00
Oct-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0	0.00	0	0.00	0.00	0	0.00	0.00

Guillemot MRSea Results

Hornsea Four Array Area	Total				Flying			Sitting			
	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	1245.96	1367.83	1746.27	3.71	101.41	152.82	0.32	1144.54	1215.01	1593.45	3.39
May-16	2533.00	2821.21	3651.26	7.76	126.32	156.32	0.33	2406.68	2664.89	3494.94	7.43
Jun-16	3634.44	4013.17	5155.56	10.96	325.47	345.47	0.73	3308.97	3667.69	4810.09	10.23
Jul-16	3524.69	3753.95	4891.05	10.40	93.63	103.29	0.22	3431.05	3650.67	4787.76	10.18
Aug-16	11825.65	11970.18	15698.60	33.38	0.00	0.00	0.00	11825.65	11970.18	15698.60	33.38
Sep-16	17972.80	18425.26	24164.27	51.39	0.00	0.00	0.00	17972.80	18425.26	24164.27	51.39
Oct-16	4809.05	5314.38	6951.71	14.78	48.41	57.70	0.12	4760.64	5256.68	6894.01	14.66
Nov-16	1621.87	1641.89	2149.63	4.57	9.95	11.80	0.03	1611.92	1630.09	2137.83	4.55
Dec-16	689.99	759.74	996.37	2.12	0.00	0.00	0.00	689.99	759.74	996.37	2.12
Jan-17	1117.56	1142.81	1494.11	3.18	14.97	14.97	0.03	1102.59	1127.84	1479.14	3.15
Feb-17	1366.08	1503.09	1941.92	4.13	94.21	94.21	0.20	1271.86	1408.88	1847.71	3.93
Mar-17	1948.87	2316.04	2929.90	6.23	298.34	345.23	0.73	1650.53	1970.81	2584.67	5.50
Apr-17	4952.47	5095.21	6555.23	13.94	389.52	407.76	0.87	4562.95	4687.45	6147.47	13.07
May-17	3651.43	3890.48	4954.11	10.54	439.77	475.64	1.01	3211.66	3414.84	4478.48	9.52
Jun-17	865.36	875.09	1117.71	2.38	96.15	96.15	0.20	769.21	778.94	1021.56	2.17
Jul-17	3690.83	3769.31	4917.58	10.46	82.75	82.75	0.18	3608.08	3686.55	4834.82	10.28
Aug-17	12216.83	14392.11	18873.27	40.13	5.22	5.22	0.01	12211.60	14386.88	18868.05	40.12
Sep-17	5203.86	5414.47	6927.36	14.73	539.66	557.33	1.19	4664.20	4857.15	6370.03	13.55
Oct-17	598.42	670.19	838.67	1.78	97.24	129.27	0.27	501.17	540.92	709.40	1.51
Nov-17	6149.84	6717.92	8730.08	18.56	109.09	257.81	0.55	6040.75	6460.11	8472.27	18.02
Dec-17	2711.41	2825.13	3684.23	7.83	65.14	66.93	0.14	2646.27	2758.19	3617.30	7.69
Jan-18	1284.55	1497.84	1874.84	3.99	279.25	287.44	0.61	1005.30	1210.39	1587.40	3.38
Feb-18	1245.37	1302.49	1652.57	3.51	155.67	178.56	0.38	1089.70	1123.93	1474.01	3.13
Mar-18	549.40	576.94	743.70	1.58	31.57	41.57	0.09	517.83	535.37	702.12	1.49

Survey	Total				Flying			Sitting			
	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	2737.10	3005.16	3840.57	4.32	196.59	323.04	0.36	2540.51	2682.11	3517.53	3.96
May-16	5564.45	6242.70	8095.73	9.11	243.48	293.48	0.33	5320.97	5949.21	7802.25	8.78
Jun-16	7984.09	8684.39	11154.58	12.55	684.35	753.80	0.85	7299.74	7930.60	10400.78	11.71
Jul-16	7742.99	8296.89	10799.61	12.16	252.06	261.84	0.29	7490.93	8035.05	10537.77	11.86
Aug-16	25978.45	26400.49	34623.59	38.97	0.00	0.00	0.00	25978.45	26400.49	34623.59	38.97
Sep-16	39482.42	40288.30	52831.76	59.46	17.20	17.20	0.02	39465.22	40271.10	52814.55	59.44
Oct-16	10564.46	11466.46	14985.23	16.87	154.69	169.34	0.19	10409.77	11297.12	14815.89	16.68
Nov-16	3562.91	3650.95	4759.69	5.36	66.60	91.29	0.10	3496.32	3559.66	4668.40	5.25
Dec-16	1515.76	1607.42	2108.09	2.37	0.00	0.00	0.00	1515.76	1607.42	2108.09	2.37
Jan-17	2455.05	2582.57	3347.97	3.77	106.74	125.26	0.14	2348.30	2457.31	3222.71	3.63
Feb-17	3000.98	3244.09	4187.37	4.71	215.68	215.68	0.24	2785.30	3028.41	3971.69	4.47
Mar-17	4281.24	4893.12	6172.44	6.95	692.08	785.80	0.88	3589.16	4107.32	5386.64	6.06
Apr-17	10879.52	11260.42	14449.57	16.26	984.78	1021.56	1.15	9894.74	10238.85	13428.01	15.11
May-17	8021.42	8530.13	10871.67	12.24	977.52	1012.56	1.14	7043.90	7517.57	9859.11	11.10
Jun-17	1901.02	1977.47	2528.51	2.85	208.33	208.33	0.23	1692.69	1769.14	2320.18	2.61
Jul-17	8107.97	8314.12	10854.43	12.22	158.36	158.36	0.18	7949.61	8155.76	10696.08	12.04
Aug-17	26837.77	30897.47	40519.83	45.61	4.62	4.62	0.01	26833.16	30892.85	40515.21	45.60
Sep-17	11431.78	11942.59	15430.96	17.37	698.40	743.09	0.84	10733.38	11199.50	14687.87	16.53
Oct-17	1314.59	1557.99	1906.88	2.15	268.11	437.86	0.49	1046.49	1120.12	1469.02	1.65
Nov-17	13509.88	14571.97	18971.81	21.35	249.95	446.15	0.50	13259.93	14125.82	18525.67	20.85
Dec-17	5956.38	6271.46	8181.63	9.21	135.03	138.83	0.16	5821.35	6132.64	8042.80	9.05
Jan-18	2821.88	3197.94	4022.09	4.53	517.16	551.98	0.62	2304.72	2645.96	3470.11	3.91
Feb-18	2735.81	2959.44	3753.53	4.22	288.41	410.00	0.46	2447.39	2549.44	3343.53	3.76
Mar-18	1206.92	1270.87	1644.49	1.85	61.37	71.37	0.08	1145.55	1199.51	1573.12	1.77

Hornsea 4



Survey	Total				Flying			Sitting			
	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	1939.25	2112.79	2716.82	4.07	106.99	173.54	0.26	1832.26	1939.26	2543.29	3.81
May-16	3942.45	4448.99	5760.79	8.63	197.42	237.42	0.36	3745.02	4211.57	5523.37	8.28
Jun-16	5656.78	6132.80	7876.38	11.80	494.97	534.97	0.80	5161.81	5597.83	7341.41	11.00
Jul-16	5485.95	5793.79	7538.67	11.30	182.07	191.79	0.29	5303.88	5601.99	7346.87	11.01
Aug-16	18405.88	18663.56	24476.79	36.68	0.00	0.00	0.00	18405.88	18663.56	24476.79	36.68
Sep-16	27973.52	28596.53	37503.65	56.19	0.00	0.00	0.00	27973.52	28596.53	37503.65	56.19
Oct-16	7484.98	8192.83	10706.96	16.04	103.00	121.15	0.18	7381.97	8071.68	10585.81	15.86
Nov-16	2524.34	2596.85	3383.94	5.07	51.94	69.87	0.10	2472.40	2526.98	3314.07	4.97
Dec-16	1073.92	1143.66	1499.88	2.25	0.00	0.00	0.00	1073.92	1143.66	1499.88	2.25
Jan-17	1739.41	1789.85	2331.10	3.49	52.18	52.18	0.08	1687.23	1737.67	2278.91	3.41
Feb-17	2126.21	2291.77	2968.22	4.45	120.03	120.03	0.18	2006.18	2171.75	2848.19	4.27
Mar-17	3033.28	3543.29	4483.27	6.72	460.53	525.46	0.79	2572.76	3017.83	3957.81	5.93
Apr-17	7708.20	7965.56	10283.46	15.41	506.38	523.88	0.78	7201.82	7441.68	9759.58	14.62
May-17	5683.22	6052.26	7678.39	11.51	796.20	831.52	1.25	4887.02	5220.74	6846.87	10.26
Jun-17	1346.88	1413.39	1768.01	2.65	274.87	274.87	0.41	1072.01	1138.52	1493.14	2.24
Jul-17	5744.54	5872.02	7671.02	11.49	96.28	96.28	0.14	5648.27	5775.74	7574.75	11.35
Aug-17	19014.71	21487.55	28178.69	42.22	5.46	5.46	0.01	19009.25	21482.08	28173.22	42.21
Sep-17	8099.48	8464.37	10890.77	16.32	625.87	674.35	1.01	7473.61	7790.02	10216.42	15.31
Oct-17	931.40	1015.07	1253.72	1.88	214.94	248.86	0.37	716.46	766.21	1004.86	1.51
Nov-17	9571.83	10292.90	13381.22	20.05	209.91	377.77	0.57	9361.92	9915.13	13003.45	19.48
Dec-17	4220.13	4426.47	5770.06	8.65	109.01	112.85	0.17	4111.12	4313.62	5657.21	8.48
Jan-18	1999.31	2298.82	2872.42	4.30	421.54	457.27	0.69	1577.77	1841.55	2415.14	3.62
Feb-18	1938.33	2037.96	2588.99	3.88	237.18	268.89	0.40	1701.15	1769.07	2320.10	3.48
Mar-18	855.11	909.88	1175.26	1.76	47.89	57.89	0.09	807.22	851.99	1117.37	1.67

Hornsea 4



Razorbill MRSea Results

Hornsea Four Array Area	Total				Flying			Sitting			
	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)
Survey											
Apr-16	51.40	56.85	67.19	0.14	5.14	7.75	0.02	46.26	49.11	59.44	0.13
May-16	13.19	14.61	17.68	0.04	0.00	0.00	0.00	13.19	14.61	17.68	0.04
Jun-16	83.16	92.18	111.58	0.24	0.00	0.00	0.00	83.16	92.18	111.58	0.24
Jul-16	23.76	25.42	29.98	0.06	3.39	3.74	0.01	20.37	21.67	26.23	0.06
Aug-16	351.15	355.44	430.27	0.91	0.00	0.00	0.00	351.15	355.44	430.27	0.91
Sep-16	2750.35	2819.59	3413.13	7.26	0.00	0.00	0.00	2750.35	2819.59	3413.13	7.26
Oct-16	756.09	844.34	994.98	2.12	108.01	128.73	0.27	648.08	715.61	866.25	1.84
Nov-16	197.55	207.44	240.15	0.51	43.90	52.05	0.11	153.65	155.39	188.10	0.40
Dec-16	2.64	2.90	3.48	0.01	0.12	0.12	0.00	2.52	2.77	3.36	0.01
Jan-17	213.32	218.07	262.73	0.56	5.93	5.93	0.01	207.40	212.15	256.80	0.55
Feb-17	40.72	42.91	47.66	0.10	20.36	20.36	0.04	20.36	22.55	27.30	0.06
Mar-17	114.53	136.03	159.85	0.34	19.75	22.85	0.05	94.79	113.18	137.00	0.29
Apr-17	188.32	194.20	226.78	0.48	37.66	39.43	0.08	150.66	154.77	187.35	0.40
May-17	262.02	279.52	326.82	0.69	50.71	54.85	0.12	211.30	224.67	271.97	0.58
Jun-17	25.10	25.37	29.94	0.06	3.63	3.63	0.01	21.46	21.73	26.31	0.06
Jul-17	54.33	55.34	65.33	0.14	7.87	7.87	0.02	46.46	47.47	57.46	0.12
Aug-17	925.89	1090.82	1320.45	2.81	0.00	0.00	0.00	925.89	1090.82	1320.45	2.81
Sep-17	346.46	360.17	420.48	0.89	71.33	73.66	0.16	275.13	286.51	346.82	0.74
Oct-17	27.43	35.66	36.39	0.08	24.20	32.18	0.07	3.23	3.48	4.22	0.01
Nov-17	312.20	354.07	420.84	0.89	15.61	36.89	0.08	296.59	317.18	383.95	0.82
Dec-17	333.70	347.82	421.03	0.90	0.00	0.00	0.00	333.70	347.82	421.03	0.90
Jan-18	23.71	28.55	34.56	0.07	0.00	0.00	0.00	23.71	28.55	34.56	0.07
Feb-18	217.75	230.18	266.95	0.57	48.39	55.50	0.12	169.36	174.68	211.45	0.45
Mar-18	56.66	58.58	70.91	0.15	0.00	0.00	0.00	56.66	58.58	70.91	0.15

Survey	Total				Flying			Sitting			
	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	111.00	122.63	145.24	0.16	9.25	15.20	0.02	101.75	107.42	130.04	0.15
May-16	28.49	31.85	38.55	0.04	0.00	0.00	0.00	28.49	31.85	38.55	0.04
Jun-16	179.60	195.20	235.03	0.26	5.44	5.99	0.01	174.16	189.21	229.04	0.26
Jul-16	51.32	54.85	65.15	0.07	5.70	5.92	0.01	45.62	48.93	59.23	0.07
Aug-16	758.37	770.69	932.93	1.05	0.00	0.00	0.00	758.37	770.69	932.93	1.05
Sep-16	5939.84	6061.13	7337.05	8.26	0.00	0.00	0.00	5939.84	6061.13	7337.05	8.26
Oct-16	1632.91	1775.63	2063.41	2.32	373.24	408.59	0.46	1259.67	1367.05	1654.82	1.86
Nov-16	426.65	458.45	535.26	0.60	68.26	93.57	0.11	358.39	364.88	441.69	0.50
Dec-16	5.70	6.05	7.32	0.01	0.00	0.00	0.00	5.70	6.05	7.32	0.01
Jan-17	460.70	483.17	582.78	0.66	8.53	10.01	0.01	452.17	473.16	572.77	0.64
Feb-17	87.93	93.41	107.79	0.12	25.12	25.12	0.03	62.81	68.29	82.67	0.09
Mar-17	247.35	282.65	331.06	0.37	46.38	52.66	0.06	200.97	229.99	278.40	0.31
Apr-17	406.71	421.08	490.88	0.55	86.27	89.49	0.10	320.44	331.58	401.38	0.45
May-17	565.87	599.58	695.63	0.78	138.32	143.28	0.16	427.55	456.30	552.35	0.62
Jun-17	54.20	56.65	68.57	0.08	0.00	0.00	0.00	54.20	56.65	68.57	0.08
Jul-17	117.33	120.38	145.72	0.16	0.00	0.00	0.00	117.33	120.38	145.72	0.16
Aug-17	1999.62	2302.15	2786.77	3.14	0.00	0.00	0.00	1999.62	2302.15	2786.77	3.14
Sep-17	748.23	785.65	897.40	1.01	239.43	254.75	0.29	508.80	530.89	642.65	0.72
Oct-17	59.24	93.85	95.01	0.11	54.09	88.34	0.10	5.15	5.51	6.67	0.01
Nov-17	674.24	730.93	878.19	0.99	17.59	31.40	0.04	656.66	699.54	846.79	0.95
Dec-17	720.69	759.22	919.05	1.03	0.00	0.00	0.00	720.69	759.22	919.05	1.03
Jan-18	51.21	58.79	71.16	0.08	0.00	0.00	0.00	51.21	58.79	71.16	0.08
Feb-18	470.26	514.09	603.23	0.68	63.76	90.65	0.10	406.50	423.44	512.58	0.58
Mar-18	122.36	128.12	155.09	0.17	0.00	0.00	0.00	122.36	128.12	155.09	0.17

Hornsea 4



Survey	Total				Flying			Sitting			
	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km ⁻²)
Apr-16	79.02	87.68	103.69	0.16	7.18	11.65	0.02	71.84	76.03	92.04	0.14
May-16	20.28	22.80	27.61	0.04	0.00	0.00	0.00	20.28	22.80	27.61	0.04
Jun-16	127.85	138.65	167.84	0.25	0.00	0.00	0.00	127.85	138.65	167.84	0.25
Jul-16	36.53	38.57	45.53	0.07	5.22	5.50	0.01	31.31	33.07	40.04	0.06
Aug-16	539.86	547.42	662.65	0.99	0.00	0.00	0.00	539.86	547.42	662.65	0.99
Sep-16	4228.38	4322.55	5232.48	7.84	0.00	0.00	0.00	4228.38	4322.55	5232.48	7.84
Oct-16	1162.41	1285.98	1511.92	2.27	180.82	212.67	0.32	981.59	1073.30	1299.24	1.95
Nov-16	303.72	331.08	382.67	0.57	63.94	86.01	0.13	239.78	245.07	296.66	0.44
Dec-16	4.06	4.32	5.24	0.01	0.00	0.00	0.00	4.06	4.32	5.24	0.01
Jan-17	327.96	337.52	406.84	0.61	8.20	8.20	0.01	319.76	329.32	398.64	0.60
Feb-17	62.60	66.29	76.47	0.11	17.88	17.88	0.03	44.71	48.40	58.59	0.09
Mar-17	176.08	205.39	240.00	0.36	35.94	41.00	0.06	140.15	164.39	199.00	0.30
Apr-17	289.52	299.26	346.49	0.52	72.38	74.88	0.11	217.14	224.38	271.61	0.41
May-17	402.83	427.81	494.67	0.74	105.50	110.18	0.17	297.32	317.63	384.49	0.58
Jun-17	38.58	40.98	49.60	0.07	0.00	0.00	0.00	38.58	40.98	49.60	0.07
Jul-17	83.53	85.41	103.39	0.15	0.00	0.00	0.00	83.53	85.41	103.39	0.15
Aug-17	1423.47	1608.64	1947.27	2.92	0.00	0.00	0.00	1423.47	1608.64	1947.27	2.92
Sep-17	532.64	560.41	644.67	0.97	148.64	160.16	0.24	384.00	400.25	484.51	0.73
Oct-17	42.17	48.50	49.33	0.07	38.50	44.58	0.07	3.67	3.92	4.75	0.01
Nov-17	479.97	528.84	629.68	0.94	27.69	49.83	0.07	452.28	479.01	579.84	0.87
Dec-17	513.03	538.30	651.62	0.98	0.00	0.00	0.00	513.03	538.30	651.62	0.98
Jan-18	36.45	42.55	51.50	0.08	0.00	0.00	0.00	36.45	42.55	51.50	0.08
Feb-18	334.76	353.94	413.65	0.62	61.99	70.28	0.11	272.77	283.66	343.37	0.51
Mar-18	87.10	91.94	111.29	0.17	0.00	0.00	0.00	87.10	91.94	111.29	0.17

Hornsea 4



Puffin MRSea Results

Hornsea Four Array Area	Total				Flying			Sitting				
	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)	
Survey												
Apr-16	118.20	129.84	148.32	0.32	11.82	17.81	0.04	106.38	106.38	106.38	106.38	
May-16	19.31	20.67	24.08	0.05	0.00	0.00	0.00	19.31	19.31	19.31	19.31	
Jun-16	7.24	7.60	8.86	0.02	0.00	0.00	0.00	7.24	7.24	7.24	7.24	
Jul-16	4.83	4.91	5.69	0.01	0.16	0.16	0.00	4.67	4.67	4.67	4.67	
Aug-16	94.15	95.15	110.85	0.24	0.00	0.00	0.00	94.15	94.15	94.15	94.15	
Sep-16	62.85	63.15	73.56	0.16	0.00	0.00	0.00	62.85	62.85	62.85	62.85	
Oct-16	118.07	134.48	156.66	0.33	0.00	0.00	0.00	118.07	118.07	118.07	118.07	
Nov-16	4.83	4.85	5.64	0.01	0.06	0.06	0.00	4.76	4.76	4.76	4.76	
Dec-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Jan-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Feb-17	16.86	17.62	20.49	0.04	0.22	0.22	0.00	16.63	16.63	16.63	16.63	
Mar-17	4.83	5.16	6.00	0.01	0.06	0.07	0.00	4.76	4.76	4.76	4.76	
Apr-17	60.30	61.69	71.86	0.15	0.00	0.00	0.00	60.30	60.30	60.30	60.30	
May-17	62.68	65.73	76.57	0.16	0.00	0.00	0.00	62.68	62.68	62.68	62.68	
Jun-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Jul-17	16.90	17.18	20.01	0.04	0.00	0.00	0.00	16.90	16.90	16.90	16.90	
Aug-17	273.07	285.40	332.48	0.71	0.00	0.00	0.00	273.07	273.07	273.07	273.07	
Sep-17	149.54	154.21	179.65	0.38	0.00	0.00	0.00	149.54	149.54	149.54	149.54	
Oct-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Nov-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Dec-17	2.41	2.48	2.89	0.01	0.03	0.03	0.00	2.38	2.38	2.38	2.38	
Jan-18	2.40	2.47	2.87	0.01	0.03	0.03	0.00	2.36	2.36	2.36	2.36	
Feb-18	36.19	36.46	42.48	0.09	0.00	0.00	0.00	36.19	36.19	36.19	36.19	
Mar-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Survey	Total				Flying			Sitting			
	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	228.97	246.86	283.81	0.32	15.26	22.86	0.03	213.71	224.00	260.95	0.29
May-16	37.41	40.57	47.27	0.05	0.00	0.00	0.00	37.41	40.57	47.27	0.05
Jun-16	14.03	14.64	17.06	0.02	0.00	0.00	0.00	14.03	14.64	17.06	0.02
Jul-16	9.35	9.51	11.03	0.01	0.31	0.31	0.00	9.04	9.20	10.72	0.01
Aug-16	182.40	184.75	215.22	0.24	0.00	0.00	0.00	182.40	184.75	215.22	0.24
Sep-16	121.75	122.12	142.26	0.16	0.00	0.00	0.00	121.75	122.12	142.26	0.16
Oct-16	228.73	247.90	288.79	0.33	0.00	0.00	0.00	228.73	247.90	288.79	0.33
Nov-16	9.35	9.42	10.95	0.01	0.12	0.12	0.00	9.22	9.30	10.83	0.01
Dec-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb-17	32.66	34.02	39.63	0.04	0.00	0.00	0.00	32.66	34.02	39.63	0.04
Mar-17	9.35	9.84	11.46	0.01	0.00	0.00	0.00	9.35	9.84	11.46	0.01
Apr-17	116.81	120.19	140.01	0.16	0.00	0.00	0.00	116.81	120.19	140.01	0.16
May-17	121.43	127.81	148.89	0.17	0.00	0.00	0.00	121.43	127.81	148.89	0.17
Jun-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul-17	32.74	33.43	38.94	0.04	0.00	0.00	0.00	32.74	33.43	38.94	0.04
Aug-17	528.99	546.11	636.20	0.72	0.00	0.00	0.00	528.99	546.11	636.20	0.72
Sep-17	289.69	300.47	350.04	0.39	0.00	0.00	0.00	289.69	300.47	350.04	0.39
Oct-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec-17	4.68	4.88	5.67	0.01	0.06	0.06	0.00	4.61	4.81	5.60	0.01
Jan-18	4.64	4.82	5.61	0.01	0.00	0.00	0.00	4.64	4.82	5.61	0.01
Feb-18	70.10	72.40	81.78	0.09	14.02	15.55	0.02	56.08	56.85	66.22	0.07
Mar-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Survey	Total				Flying			Sitting			
	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Corrected Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	173.46	190.07	217.56	0.33	14.46	23.45	0.04	159.01	166.62	194.11	0.29
May-16	28.34	30.82	35.90	0.05	0.00	0.00	0.00	28.34	30.82	35.90	0.05
Jun-16	10.63	11.05	12.87	0.02	0.00	0.00	0.00	10.63	11.05	12.87	0.02
Jul-16	7.08	7.21	8.36	0.01	0.24	0.24	0.00	6.85	6.97	8.13	0.01
Aug-16	138.18	139.75	162.80	0.24	0.00	0.00	0.00	138.18	139.75	162.80	0.24
Sep-16	92.23	92.54	107.81	0.16	0.00	0.00	0.00	92.23	92.54	107.81	0.16
Oct-16	173.28	191.80	223.44	0.33	0.00	0.00	0.00	173.28	191.80	223.44	0.33
Nov-16	7.08	7.13	8.29	0.01	0.09	0.09	0.00	6.99	7.04	8.20	0.01
Dec-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb-17	24.74	25.45	29.59	0.04	0.33	0.33	0.00	24.41	25.12	29.26	0.04
Mar-17	7.09	7.53	8.77	0.01	0.00	0.00	0.00	7.09	7.53	8.77	0.01
Apr-17	88.49	90.96	105.97	0.16	0.00	0.00	0.00	88.49	90.96	105.97	0.16
May-17	91.99	96.85	112.83	0.17	0.00	0.00	0.00	91.99	96.85	112.83	0.17
Jun-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul-17	24.80	25.28	29.45	0.04	0.00	0.00	0.00	24.80	25.28	29.45	0.04
Aug-17	400.75	413.95	482.23	0.72	0.00	0.00	0.00	400.75	413.95	482.23	0.72
Sep-17	219.46	226.80	264.21	0.40	0.00	0.00	0.00	219.46	226.80	264.21	0.40
Oct-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec-17	3.54	3.67	4.27	0.01	0.05	0.05	0.00	3.50	3.62	4.22	0.01
Jan-18	3.52	3.65	4.25	0.01	0.00	0.00	0.00	3.52	3.65	4.25	0.01
Feb-18	53.11	54.15	63.08	0.09	0.00	0.00	0.00	53.11	54.15	63.08	0.09
Mar-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hornsea 4



Red-throated diver

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	10	10.00	0.01	10	10.00	0.01	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Manx Shearwater

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	10	10.00	0.02	10	10.00	0.02	0	0.00	0.00
Sep-16	90	90.00	0.19	0	0.00	0.00	90	90.00	0.19
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	10	10.00	0.02	10	10.00	0.02	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	10	10.00	0.01	10	10.00	0.01	0	0.00	0.00
Sep-16	90	90.00	0.10	0	0.00	0.00	90	90.00	0.10
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	10	10.00	0.01	10	10.00	0.01	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Lapwing

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	10	10.00	0.01	10	10.00	0.01	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Curlew

Hornsea 4



Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	10	20.00	0.02	10	20.00	0.02	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Black-headed gull

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	20	20.00	0.04	20	20.00	0.04	0	0.00	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	10	10.71	0.00	10	10.71	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	30	32.23	0.04	30	32.23	0.04	0	0.00	0.00

Hornsea 4



Little gull

Survey	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Apr-16	0	0	0.00	0	0	0.00	0	0	0.00
May-16	0	0	0.00	0	0	0.00	0	0	0.00
Jun-16	0	0	0.00	0	0	0.00	0	0	0.00
Jul-16	0	0	0.00	0	0	0.00	0	0	0.00
Aug-16	0	0	0.00	0	0	0.00	0	0	0.00
Sep-16	0	0	0.00	0	0	0.00	0	0	0.00
Oct-16	10	11.56	0.02	10	11.56	0.02	0	0	0.00
Nov-16	0	0	0.00	0	0	0.00	0	0	0.00
Dec-16	0	0	0.00	0	0	0.00	0	0	0.00
Jan-17	0	0	0.00	0	0	0.00	0	0	0.00
Feb-17	0	0	0.00	0	0	0.00	0	0	0.00
Mar-17	0	0	0.00	0	0	0.00	0	0	0.00
Apr-17	0	0	0.00	0	0	0.00	0	0	0.00
May-17	0	0	0.00	0	0	0.00	0	0	0.00
Jun-17	0	0	0.00	0	0	0.00	0	0	0.00
Jul-17	40	40	0.09	40	40	0.09	0	0	0.00
Aug-17	0	0	0.00	0	0	0.00	0	0	0.00
Sep-17	0	0	0.00	0	0	0.00	0	0	0.00
Oct-17	0	0	0.00	0	0	0.00	0	0	0.00
Nov-17	0	0	0.00	0	0	0.00	0	0	0.00
Dec-17	0	0	0.00	0	0	0.00	0	0	0.00
Jan-18	0	0	0.00	0	0	0.00	0	0	0.00
Feb-18	0	0	0.00	0	0	0.00	0	0	0.00
Mar-18	0	0	0.00	0	0	0.00	0	0	0.00

Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	129	131.21	0.15	30	32.13	0.04	99	99.08	0.11
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	40	40.00	0.05	40	40.00	0.05	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Common gull

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	20	20.00	0.04	20	20.00	0.04	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	20	23.14	0.05	20	23.14	0.05	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	20	20.00	0.04	20	20.00	0.04	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	50	50.00	0.11	50	50.00	0.11	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	20	20.04	0.02	20	20.04	0.02	0	0.00	0.00
Sep-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	30	31.43	0.04	20	21.42	0.02	10	10.01	0.01
Nov-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	20	20.85	0.02	20	20.85	0.02	0	0.00	0.00
Apr-17	10	10	0.01	10	10.00	0.01	0	0.00	0.00
May-17	30	30.11	0.03	30	30.11	0.03	0	0.00	0.00
Jun-17	0	0	0.00	0	0.00	0.00	0	0.00	-0.00
Jul-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	40	40.50	0.05	40	40.50	0.05	0	0.00	0.00
Sep-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	111	114.52	0.13	102	104.94	0.12	9	9.58	0.01
Nov-17	10	10	0.01	10	10.00	0.01	0	0.00	0.00
Dec-17	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	30	32.98	0.04	20	20.57	0.02	10	12.41	0.01
Feb-18	0	0	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	10	10.75	0.01	10	10.75	0.01	0	0.00	0.00

Hornsea 4



Herring gull

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	20	39.83	0.08	20	39.83	0.08	0	0.00	0.00
Jul-16	10	11.08	0.02	0	0.00	0.00	10	11.08	0.02
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	10	15.49	0.03	10	15.49	0.03	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	10	12.78	0.03	0	0.00	0.00	10	12.78	0.03
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	10	10.08	0.02	0	0.00	0.00	10	10.08	0.02
Sep-17	10	10.00	0.02	10	10.00	0.02	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	10	10.00	0.02	10	10.00	0.02	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	10	12.47	0.03	0	0.00	0.00	10	12.47	0.03
Mar-18	10	10.00	0.02	10	10.00	0.02	0	0.00	0.00

Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	20	39.07	0.04	20	39.07	0.04	0	0.00	0.00
Jul-16	10	13.36	0.02	0	2.86	0.00	10	10.50	0.01
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	10	11.01	0.01	0	0.33	0.00	10	10.69	0.01
Oct-16	10	10.00	0.01	0	0.00	0.00	10	10.00	0.01
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	10	13.06	0.01	10	13.06	0.01	0	0.00	0.00
Jan-17	20	22.94	0.03	20	22.94	0.03	0	0.00	0.00
Feb-17	20	21.98	0.02	10	10.00	0.01	10	11.98	0.01
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	10.00	0.01	0	0.00	0.00	0	10.00	0.01
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	10	10.06	0.01	0	0.00	0.00	10	10.06	0.01
Sep-17	10	10.13	0.01	10	10.13	0.01	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	30	30.46	0.03	20	20.00	0.02	10	10.46	0.01
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	10	11.02	0.01	0	0.00	0.00	10	11.02	0.01
Mar-18	10	10.75	0.01	10	10.75	0.01	0	0.00	0.00

Hornsea 4



Lesser black-backed gull

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	20	39.83	0.08	20	39.83	0.08	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	10	10.00	0.02	10	10.00	0.02	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.31	0.00	0	0.31	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	20	39.07	0.04	20	39.07	0.04	0	0.00	0.00
Jul-16	0	11.43	0.01	0	11.43	0.01	0	0.00	0.00
Aug-16	30	30.16	0.03	20	20.00	0.02	10	10.16	0.01
Sep-16	0	1.31	0.00	0	1.31	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	10	10.00	0.01	10	10.00	0.01	0	0.00	0.00
Jun-17	50	50.00	0.06	50	50.00	0.06	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	10	10.07	0.01	10	10.07	0.01	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	10	11.84	0.01	10	11.84	0.01	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Sandwich tern

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	10	10.10	0.01	10	10.10	0.01	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	20	20.11	0.02	20	20.11	0.02	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Great skua

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	10.00	0.02	0	0.00	0.00	0	10.00	0.02
Aug-17	10	10.00	0.02	0	0.00	0.00	10	10.00	0.02
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	10	10.00	0.02	10	10.00	0.02	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	10	10.00	0.01	10	10.00	0.01	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	10.00	0.01	0	0.00	0.00	0	10.00	0.01
Aug-17	20	20.00	0.02	10	10.00	0.01	10	10.00	0.01
Sep-17	20	20.00	0.02	20	20.00	0.02	0	0.00	0.00
Oct-17	9	9.00	0.01	9	9.00	0.01	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Arctic skua

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	10	10.00	0.02	10	10.00	0.02	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	10	10.00	0.01	10	10.00	0.01	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	10	10.00	0.01	10	10.00	0.01	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Little auk

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	10	10.29	0.01	10	10.29	0.01	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Hornsea 4



Starling

Hornsea Four Array Area	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km ⁻²)
Survey									
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	150	180.00	0.38	150	180.00	0.38	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

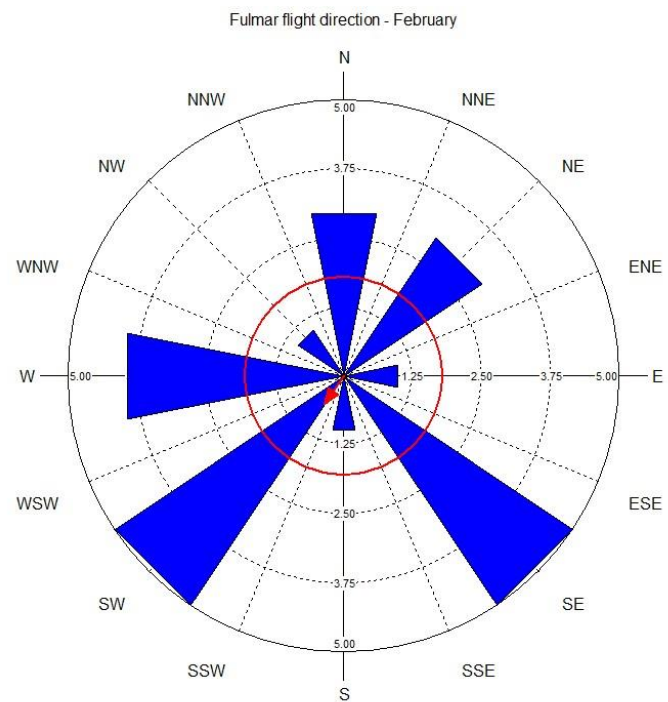
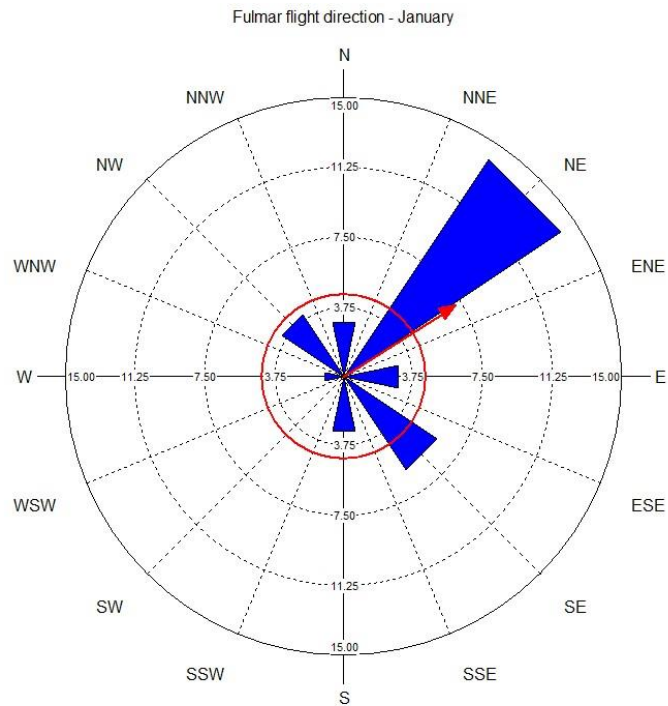
Hornsea 4



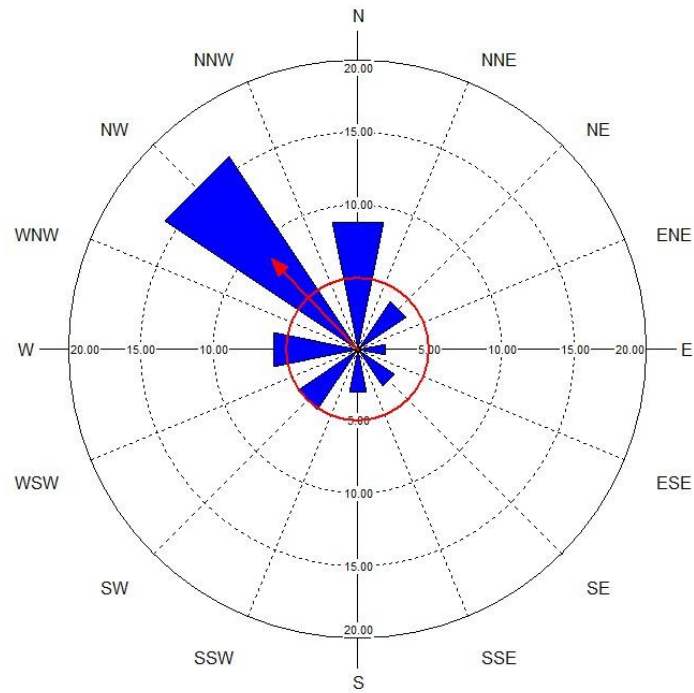
Array Area Plus 4 km Buffer	Total			Flying			Sitting		
	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)	Abundance Estimate	Apportioned Abundance Estimate	Density (birds km-2)
Apr-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-16	149	199.00	0.22	149	199.00	0.22	0	0.00	0.00
Nov-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-16	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Apr-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
May-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jun-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jul-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Aug-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Sep-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Oct-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nov-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Dec-17	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Jan-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Feb-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Mar-18	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00

Appendix C: Flight Directional Rose Diagrams for Seabirds Recorded in flight from Site-specific surveys

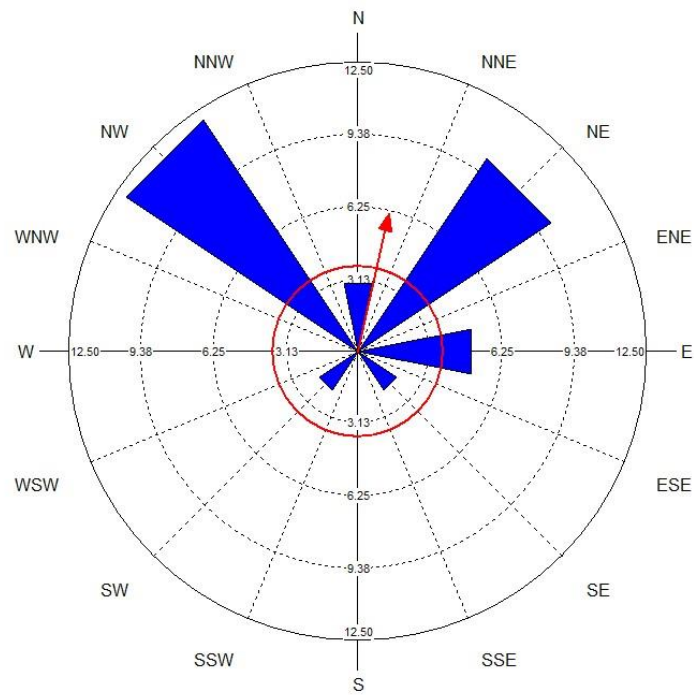
Fulmar



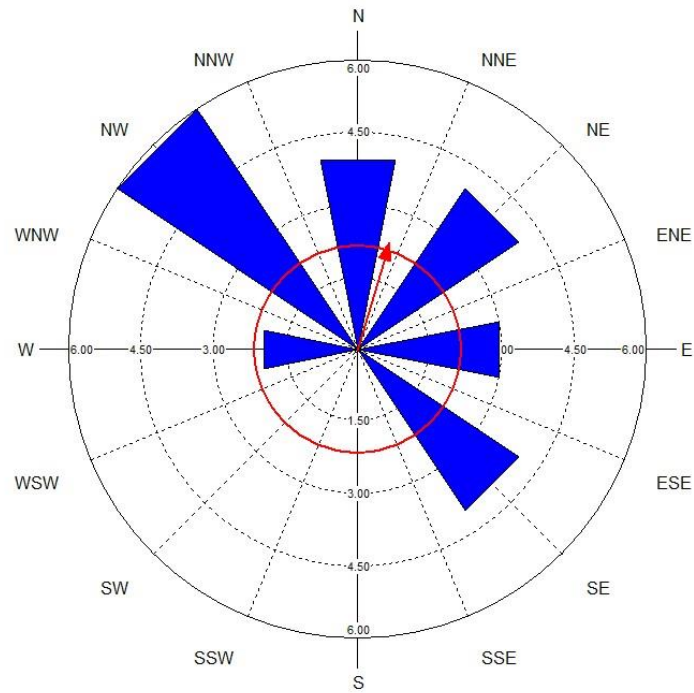
Fulmar flight direction - March



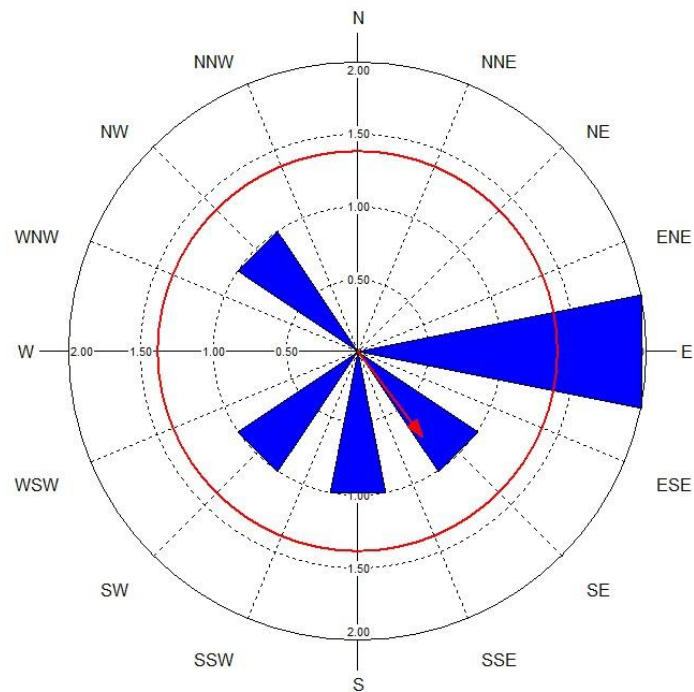
Fulmar flight direction - April

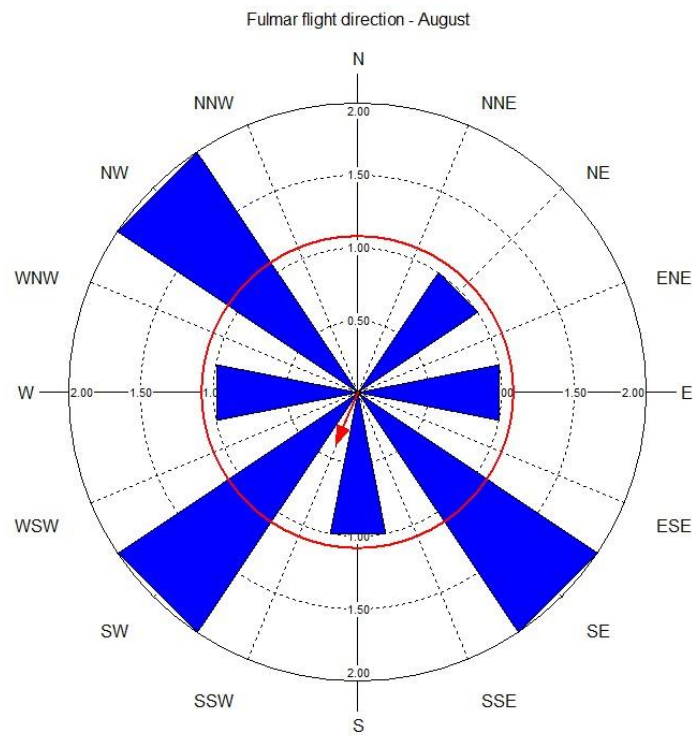
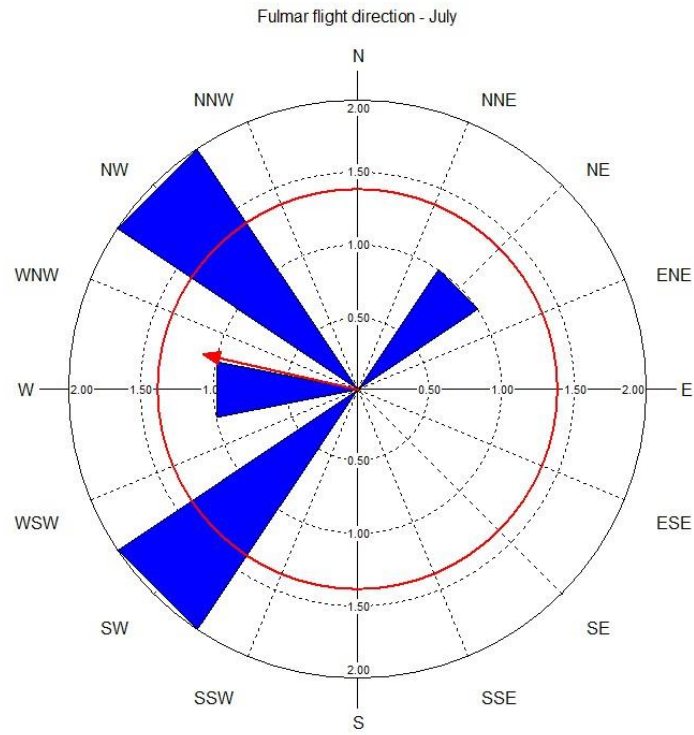


Fulmar flight direction - May

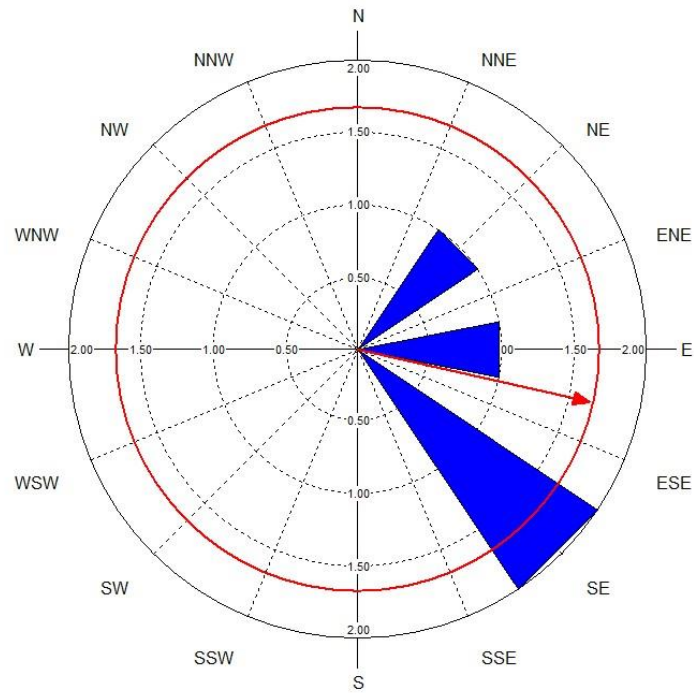


Fulmar flight direction - June

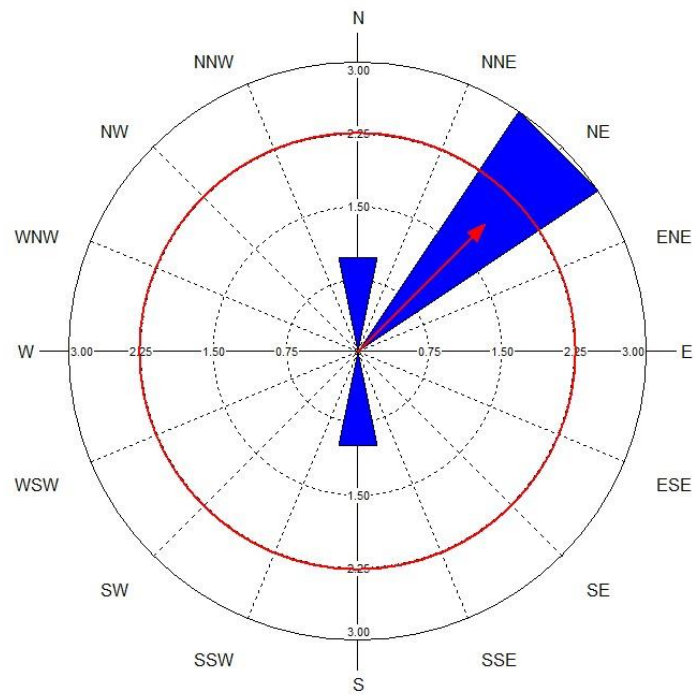




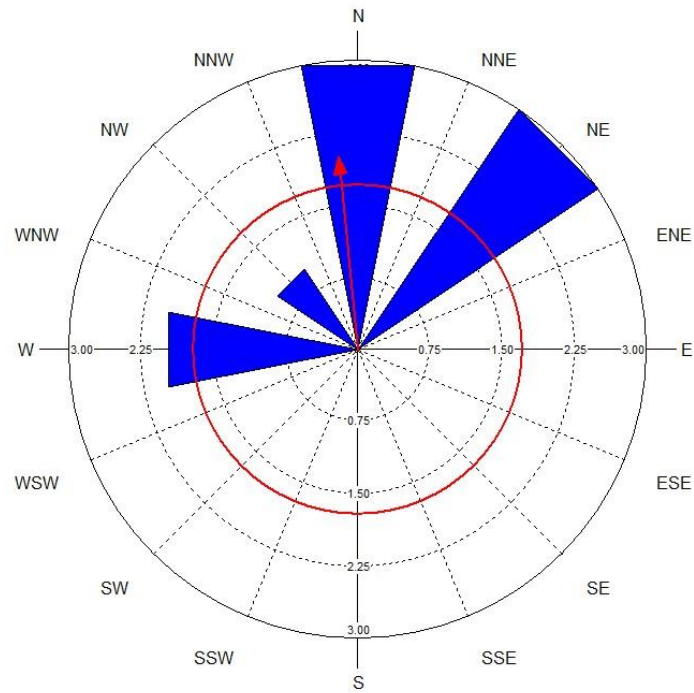
Fulmar flight direction - September



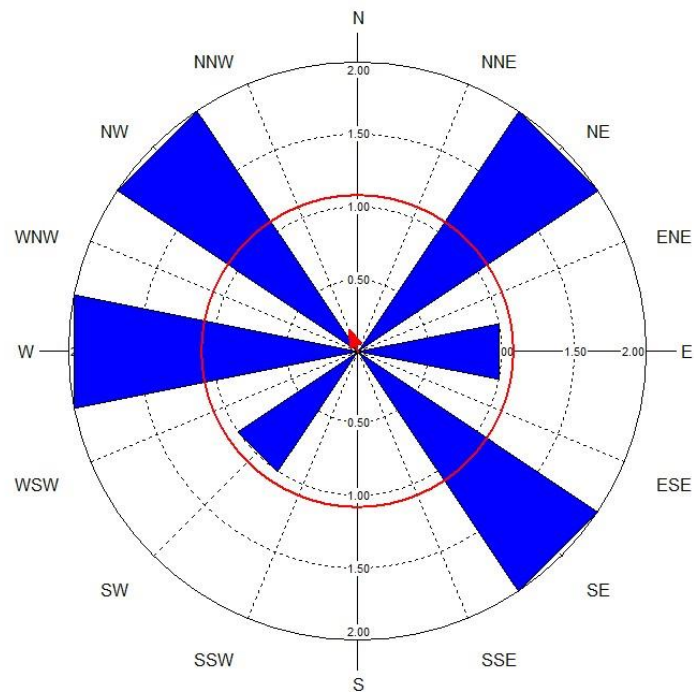
Fulmar flight direction - October



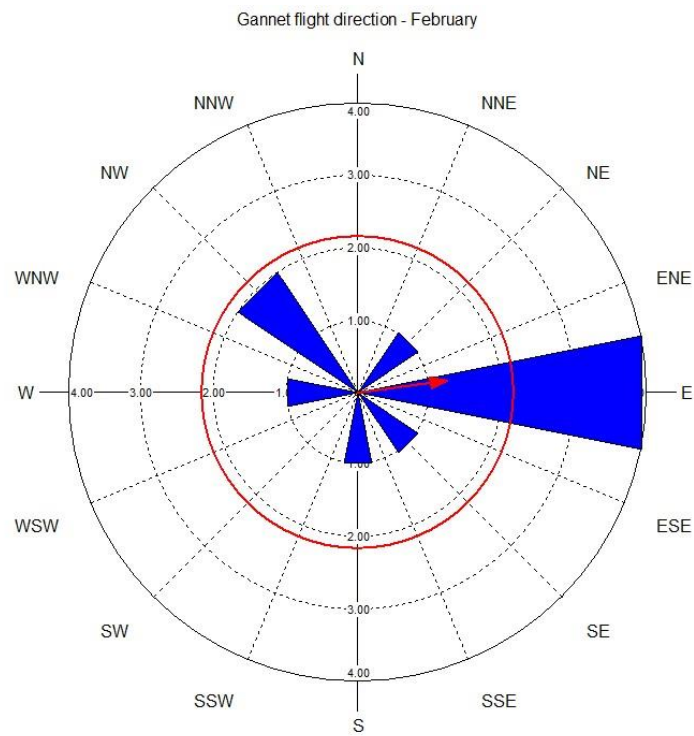
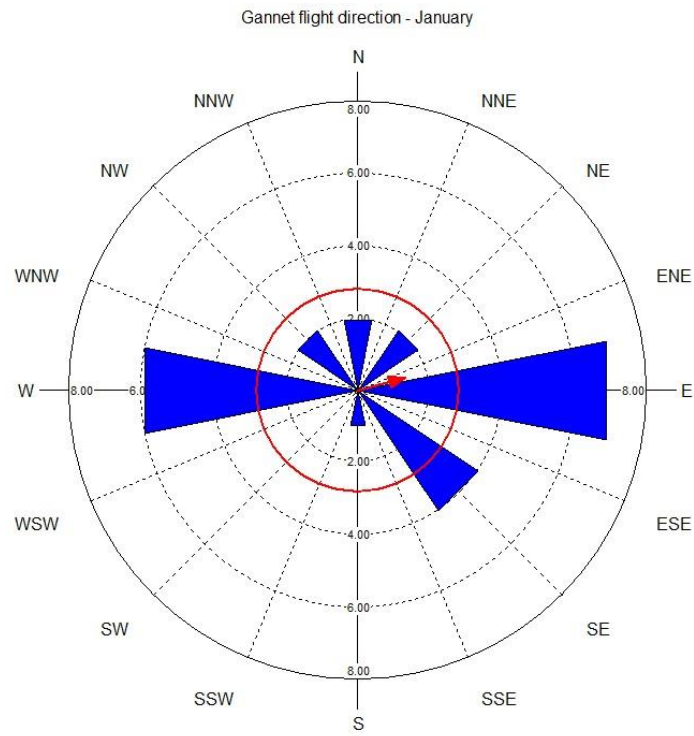
Fulmar flight direction - November



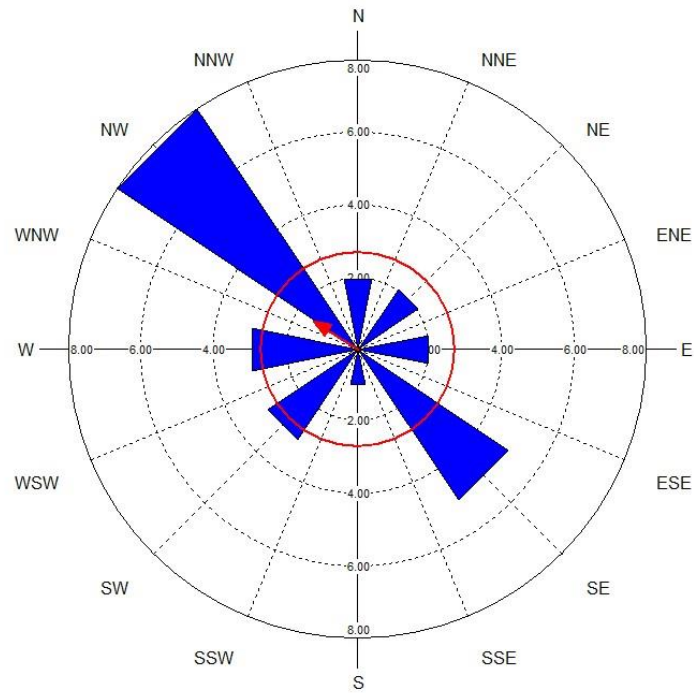
Fulmar flight direction - December



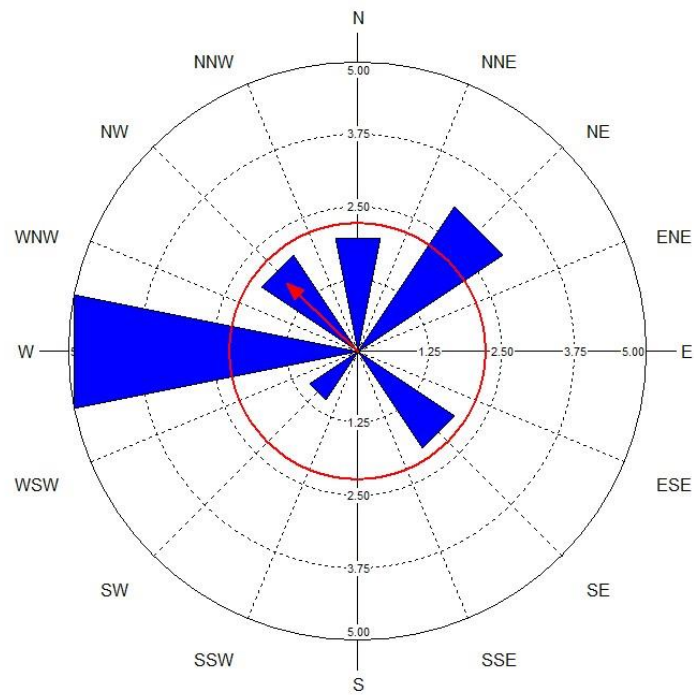
Gannet



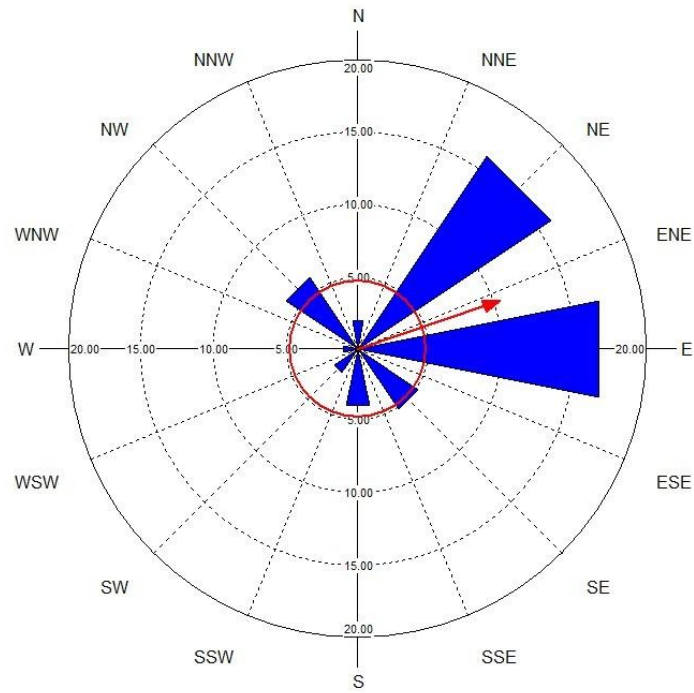
Gannet flight direction - March



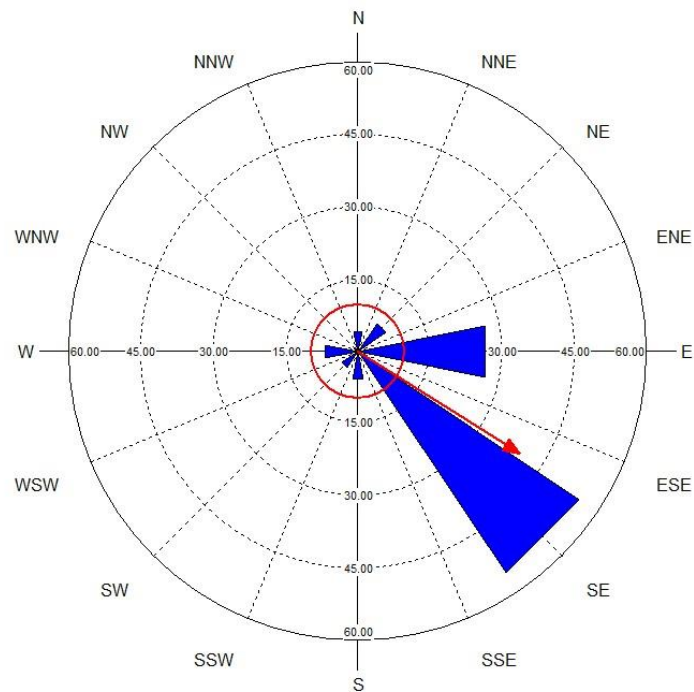
Gannet flight direction - April



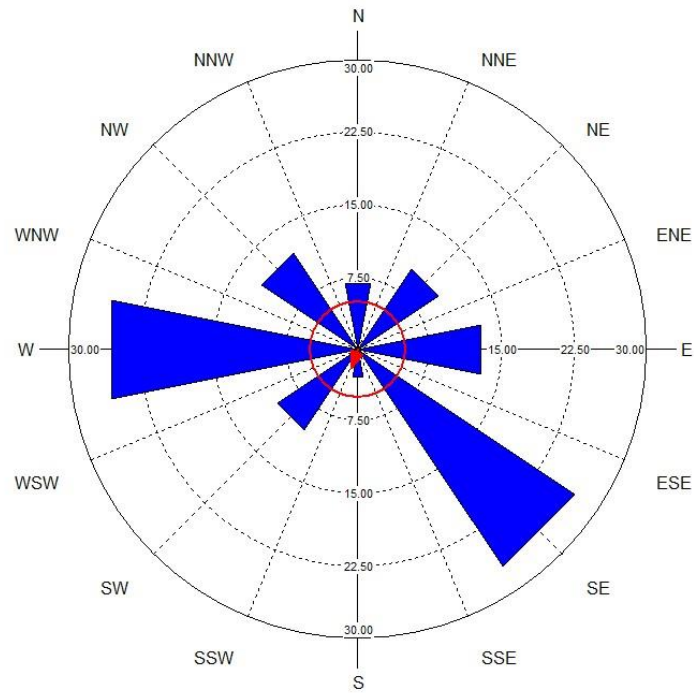
Gannet flight direction - May



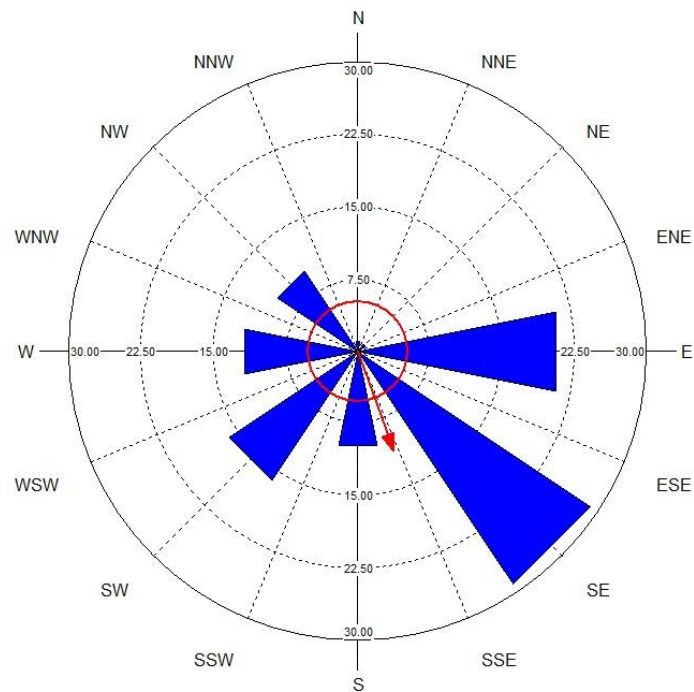
Gannet flight direction - June



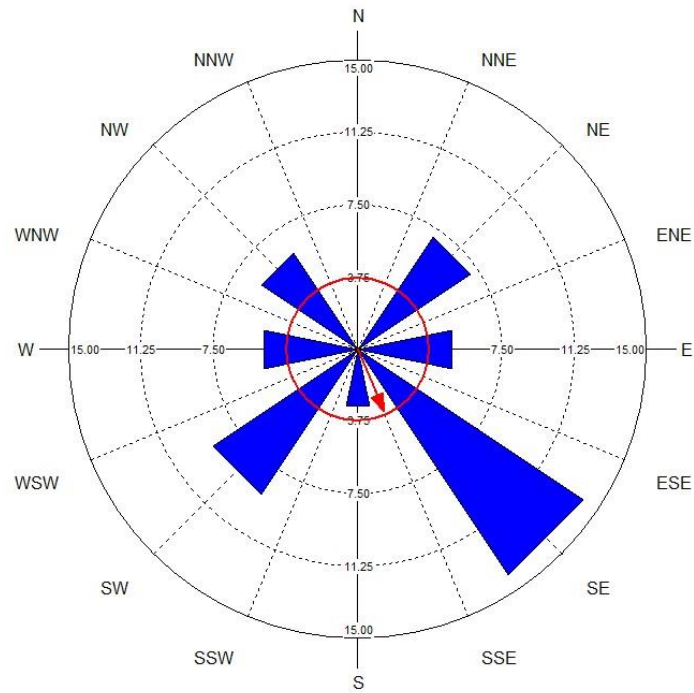
Gannet flight direction - July



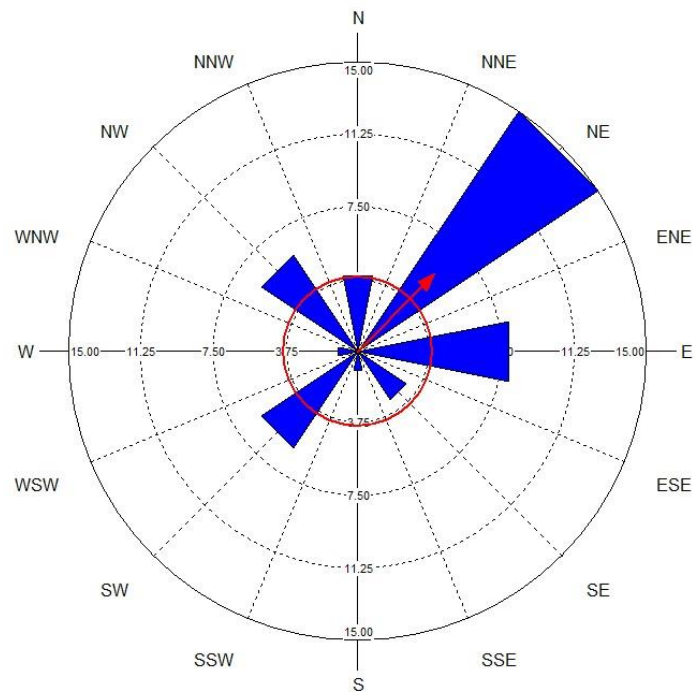
Gannet flight direction - August



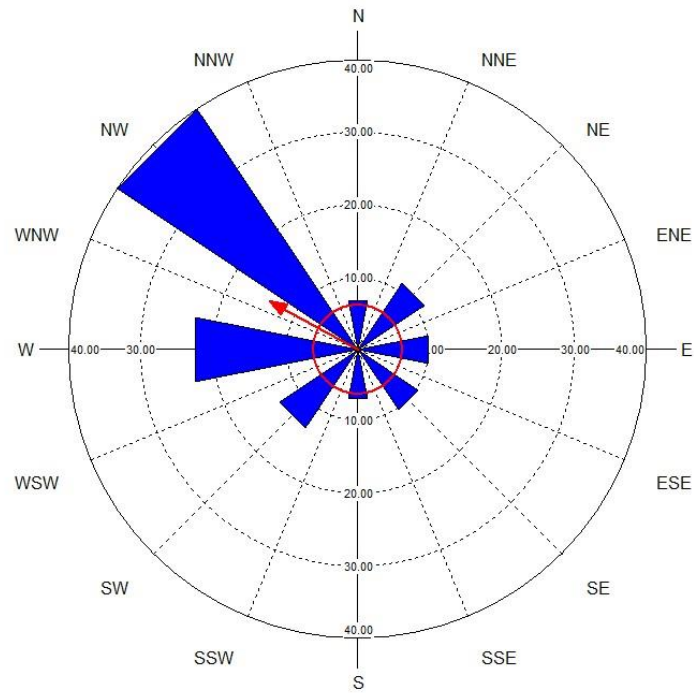
Gannet flight direction - September



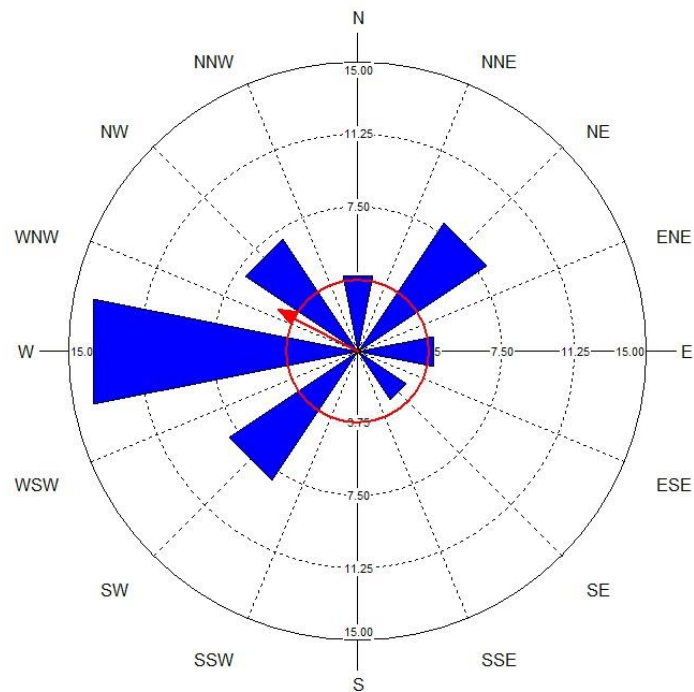
Gannet flight direction - October



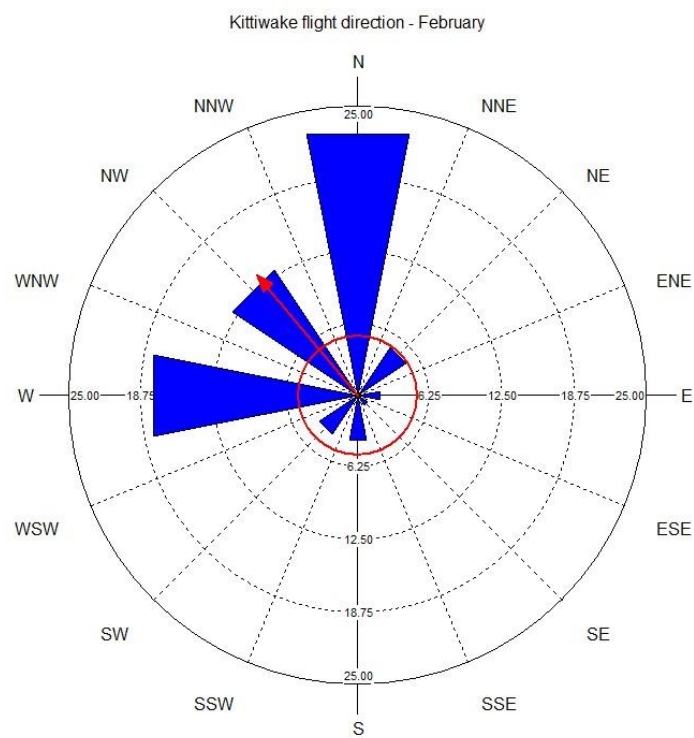
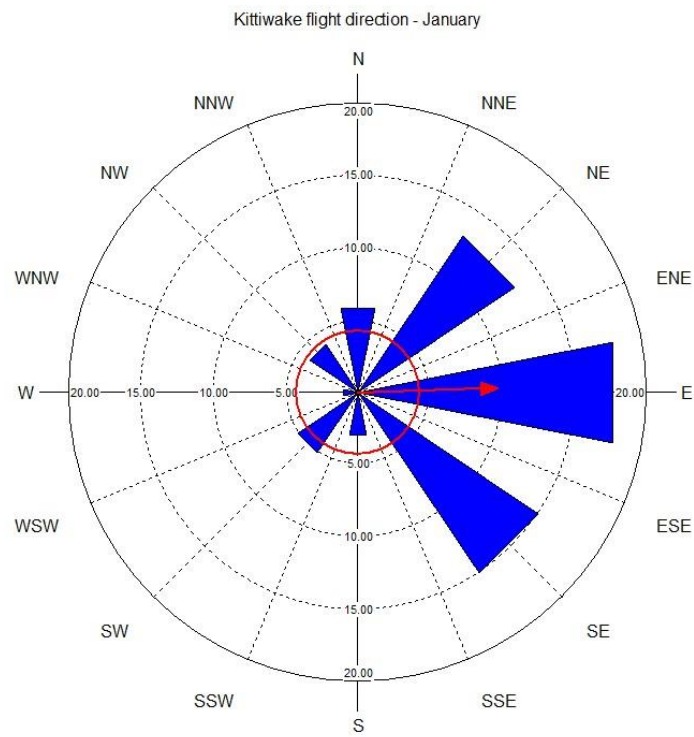
Gannet flight direction - November

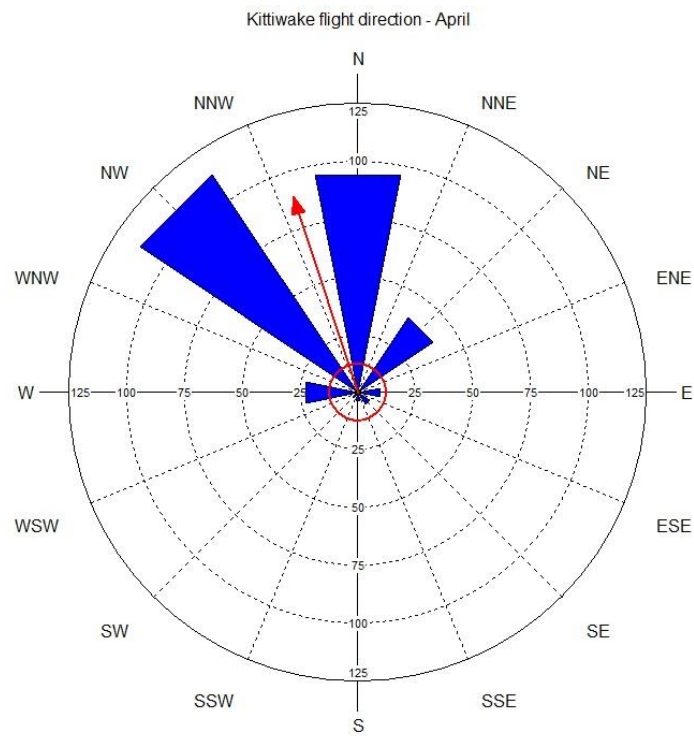
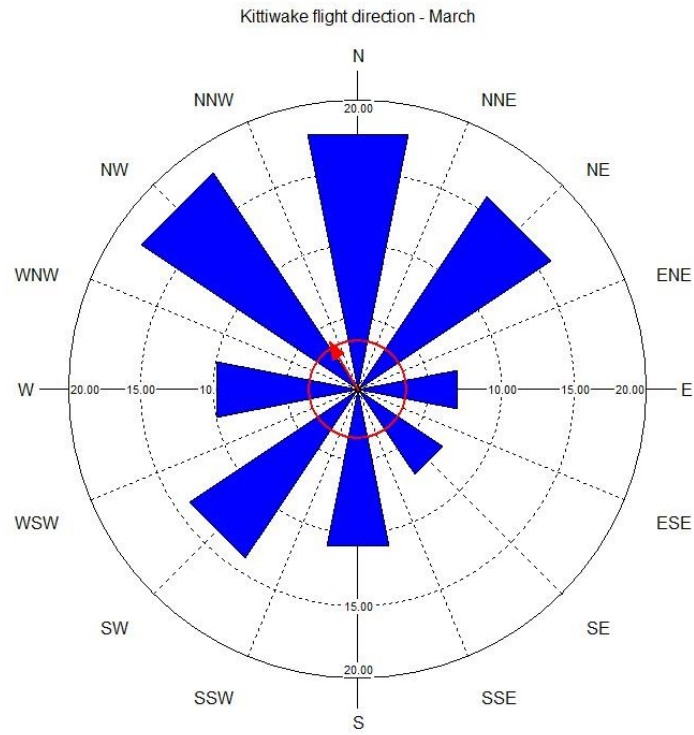


Gannet flight direction - December

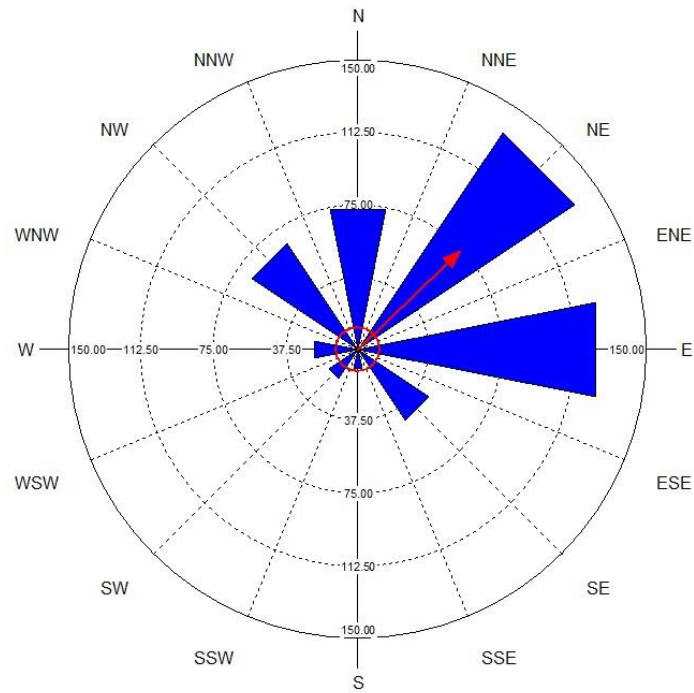


Kittiwake

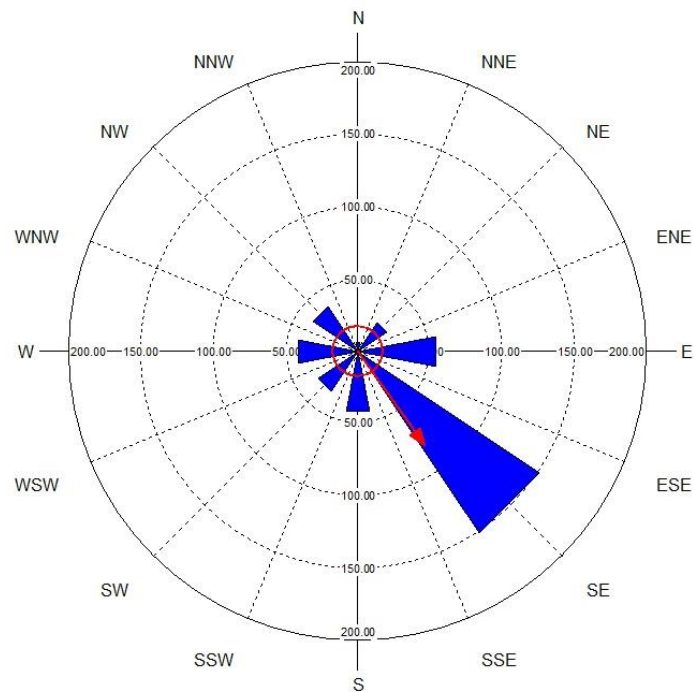




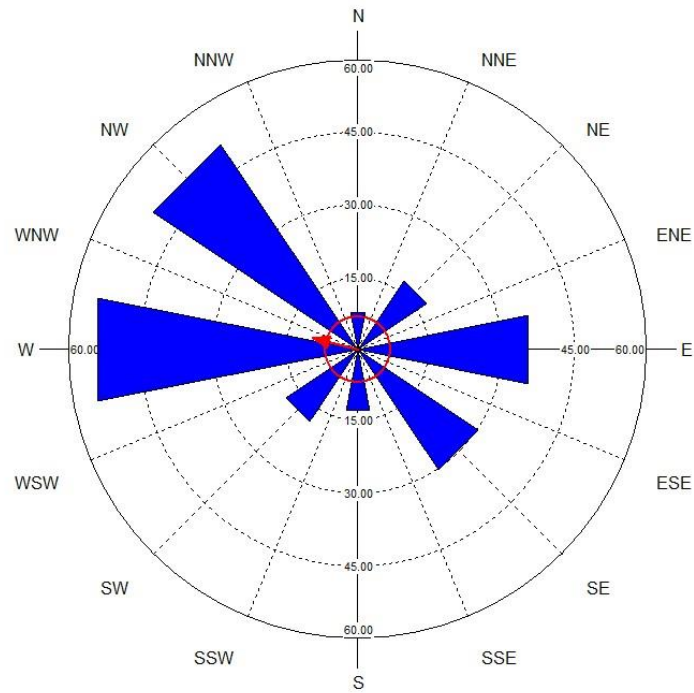
Kittiwake flight direction - May



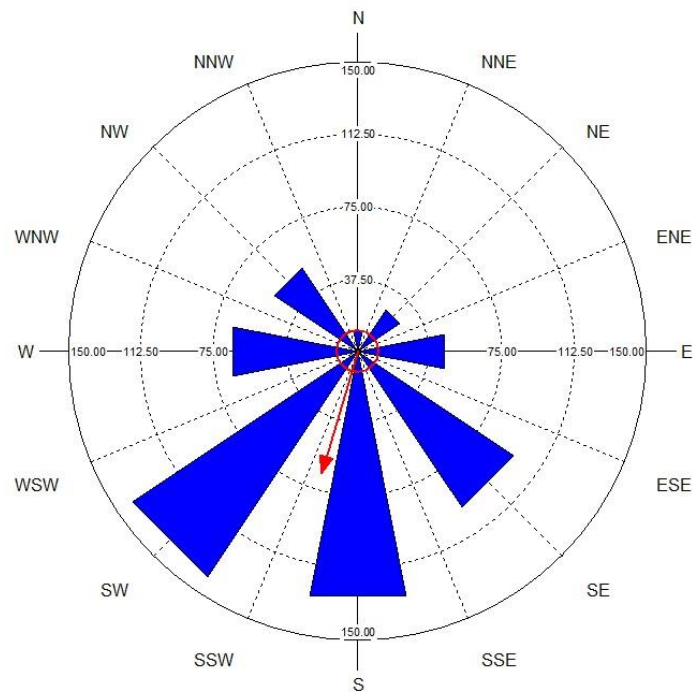
Kittiwake flight direction - June



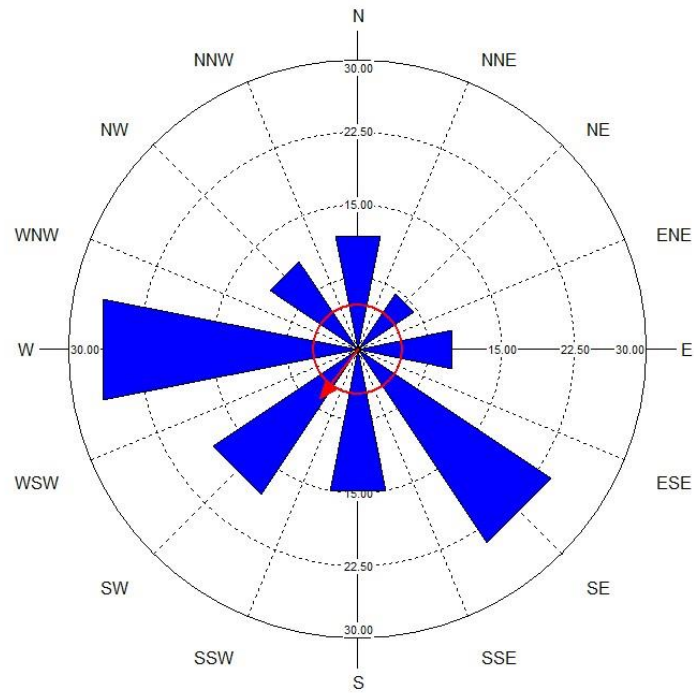
Kittiwake flight direction - July



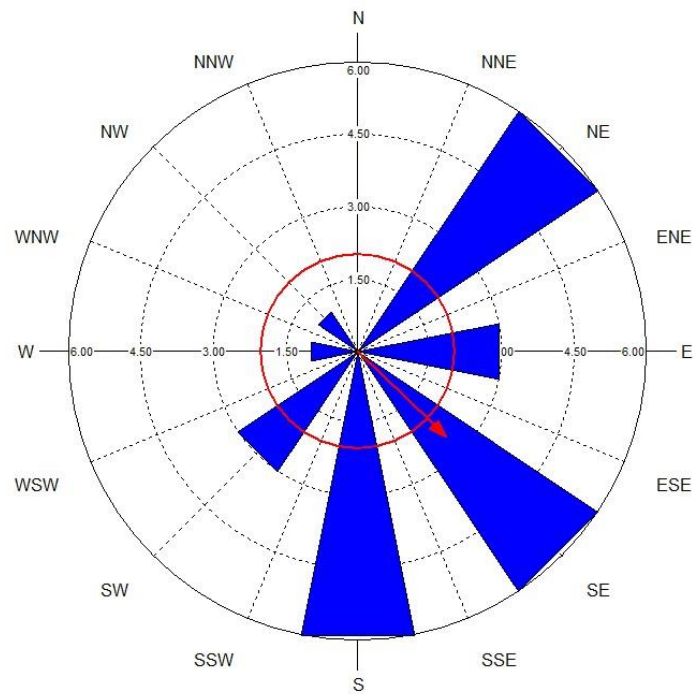
Kittiwake flight direction - August

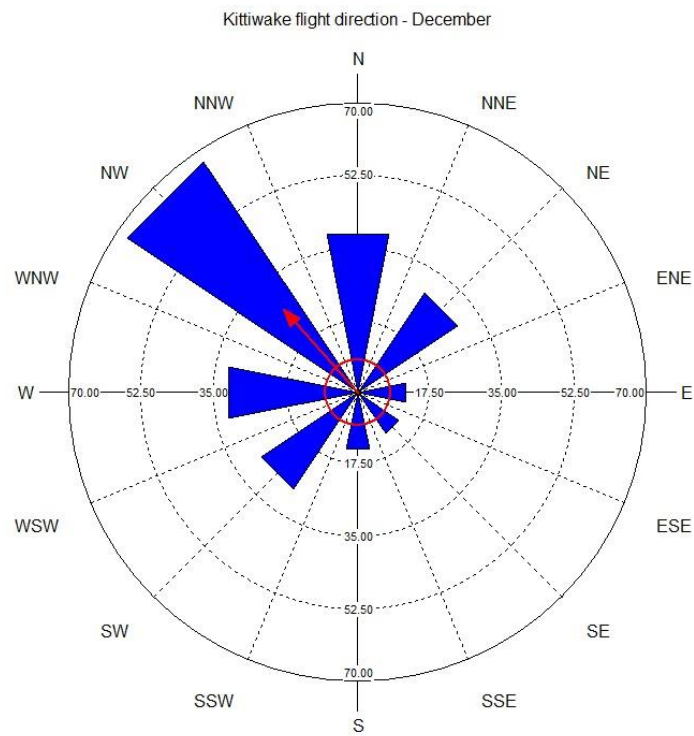
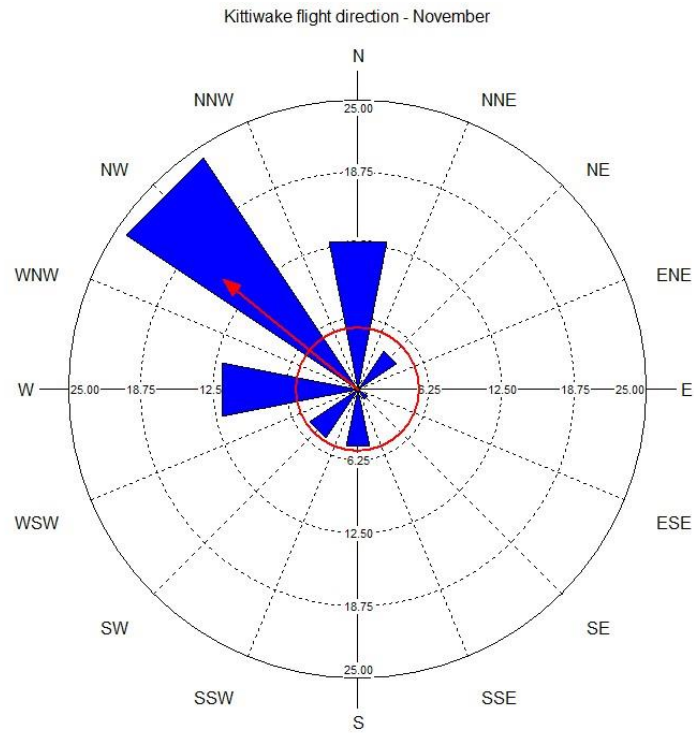


Kittiwake flight direction - September

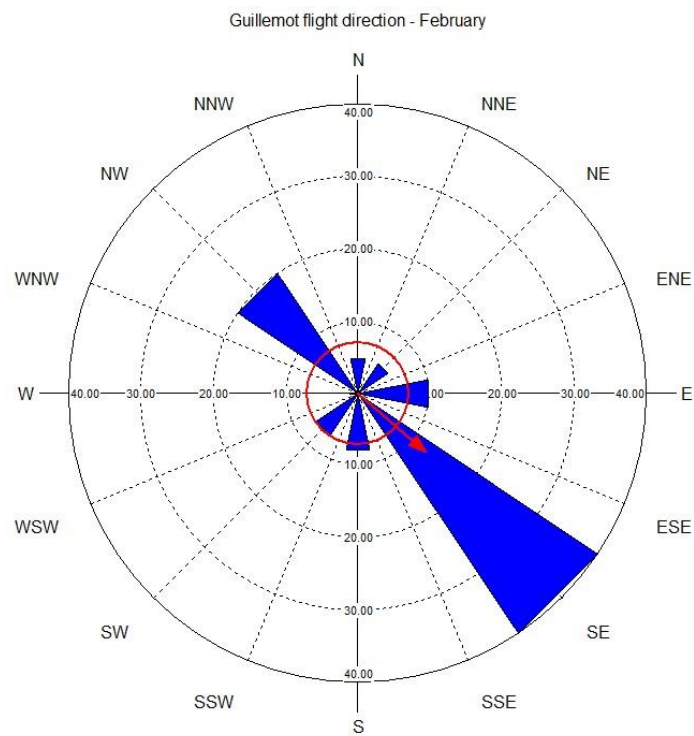
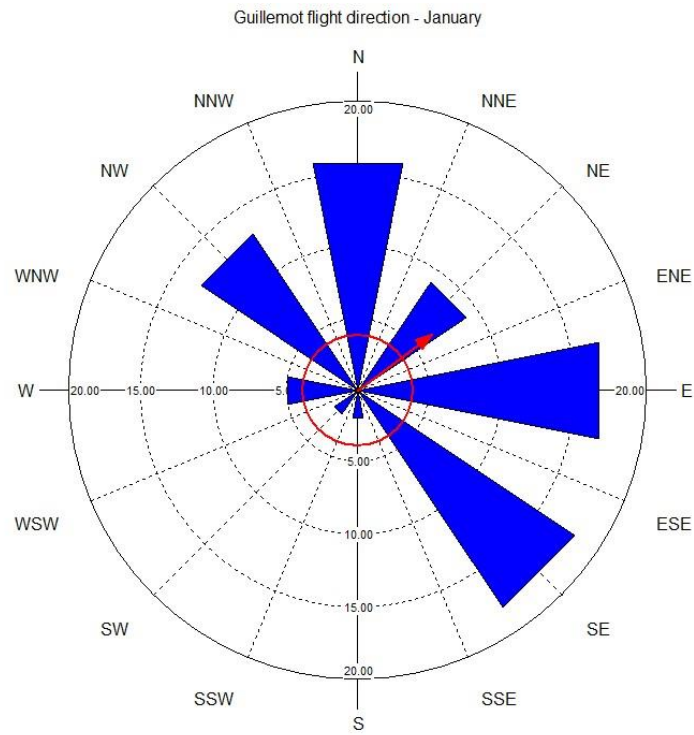


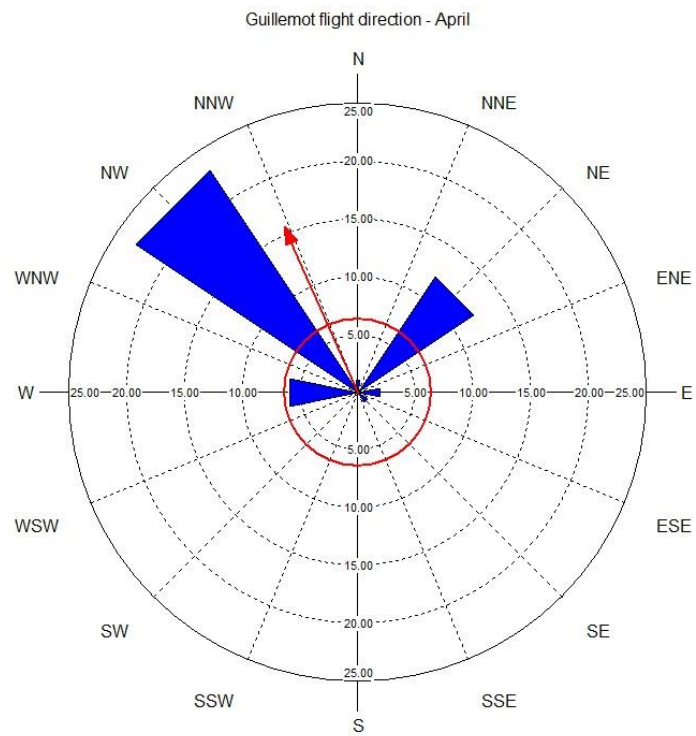
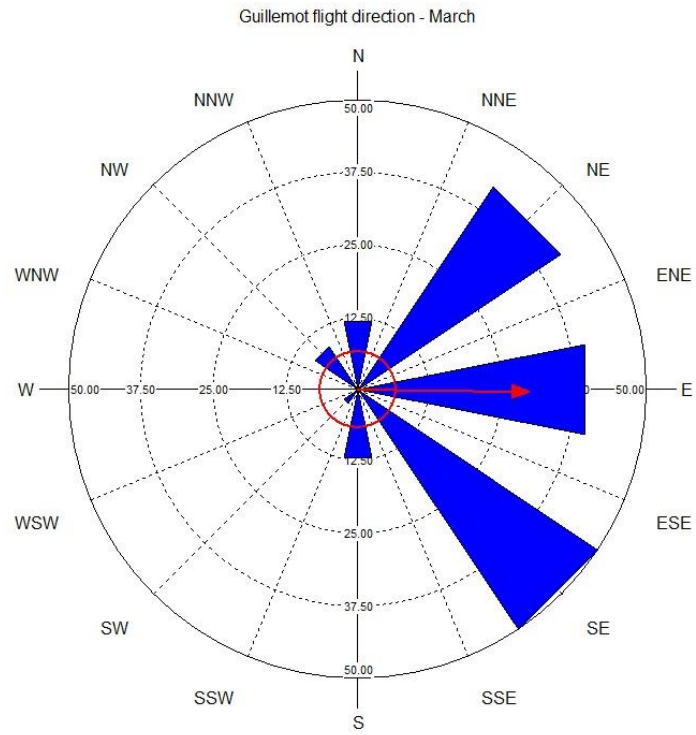
Kittiwake flight direction - October

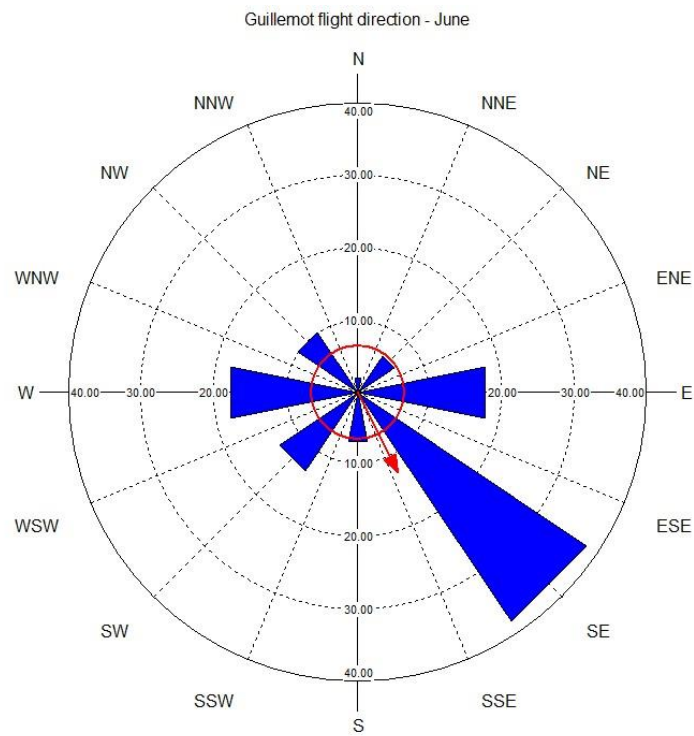
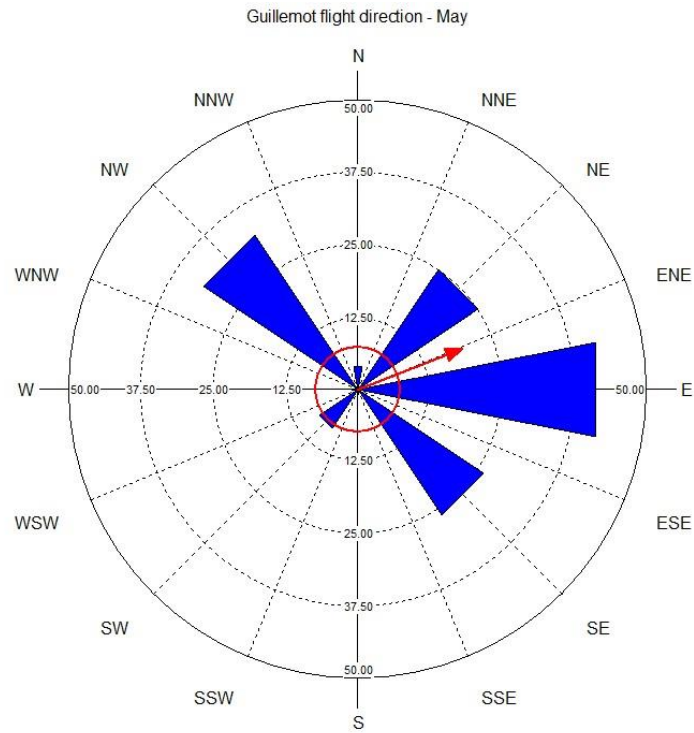


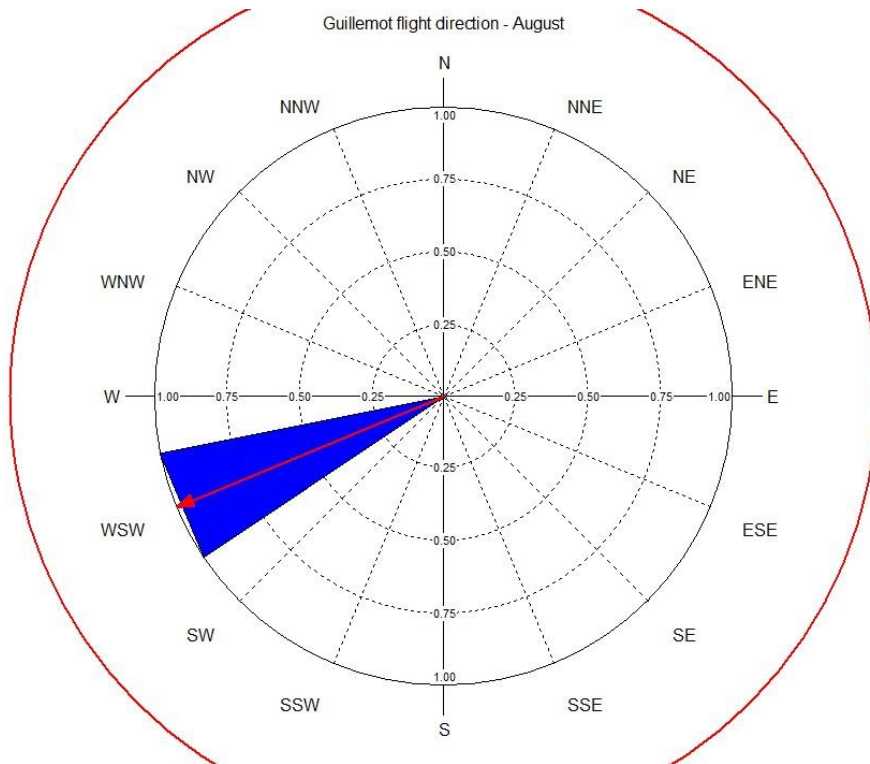
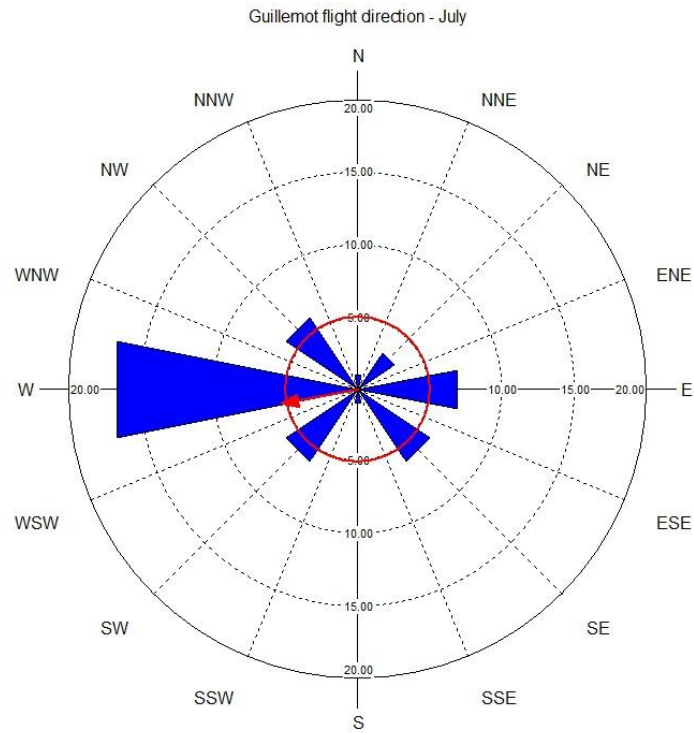


Guillemot

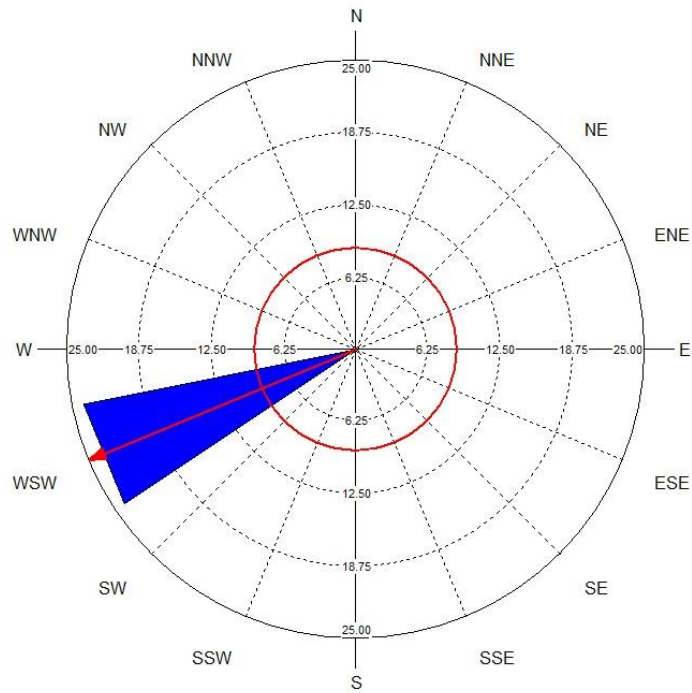




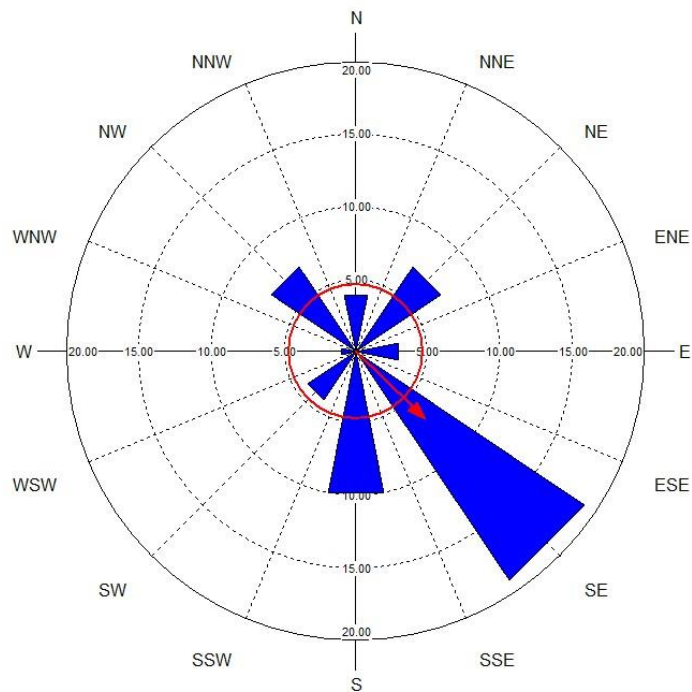


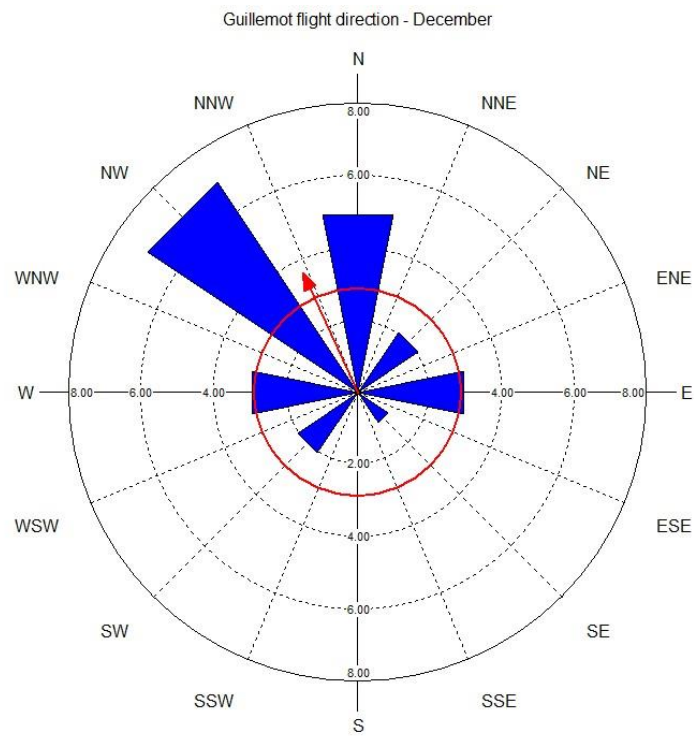
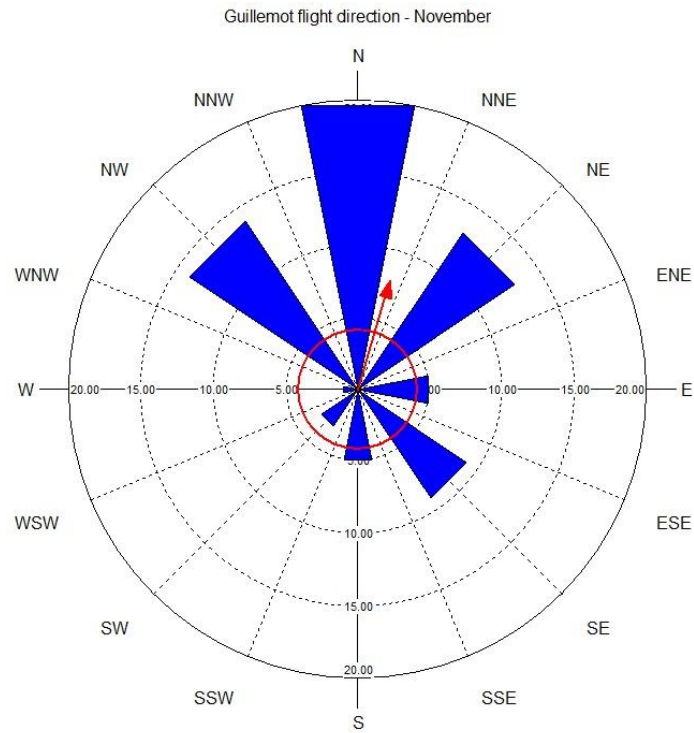


Guillemot flight direction - September



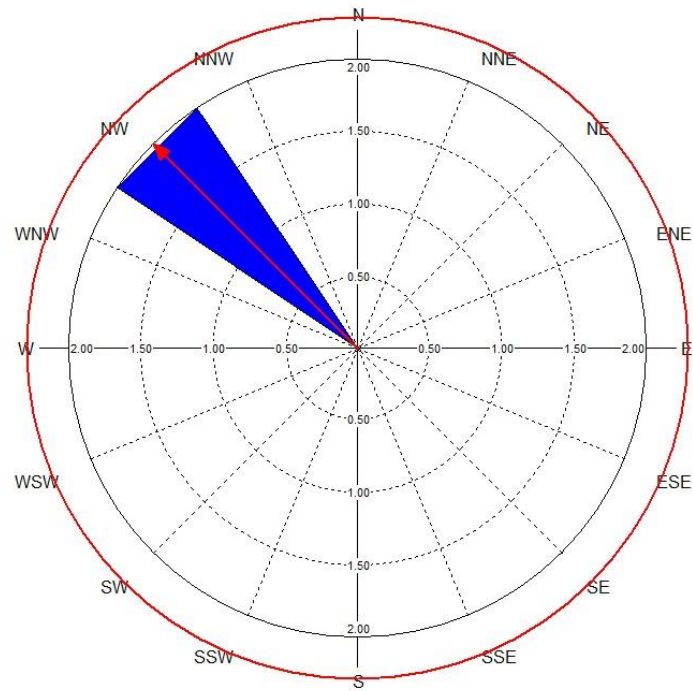
Guillemot flight direction - October



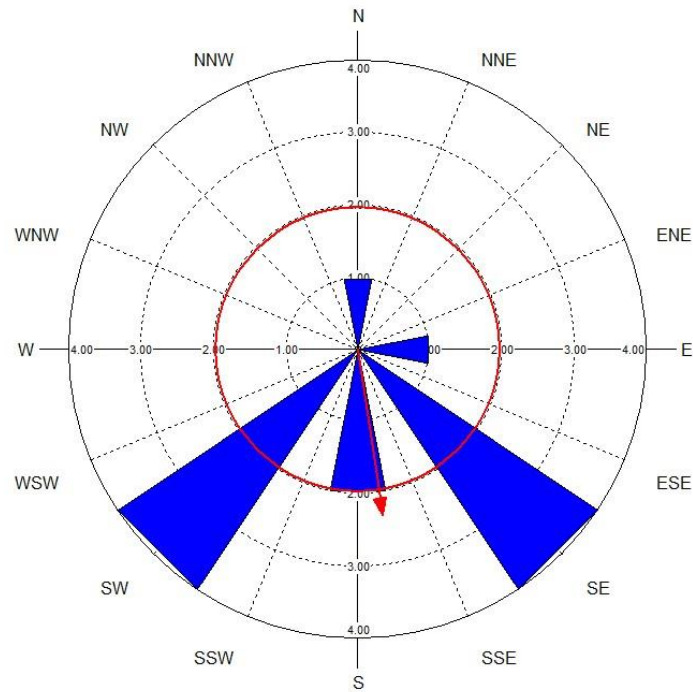


Razorbill

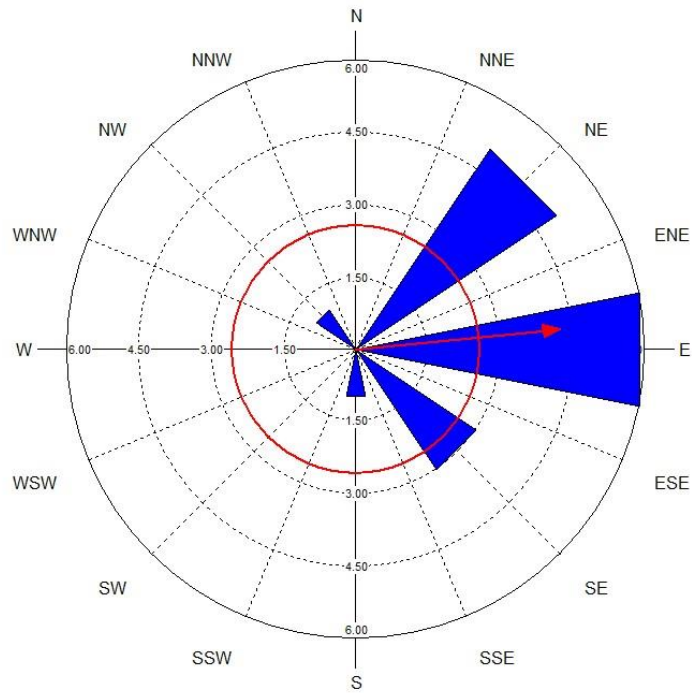
Razorbill flight direction - January



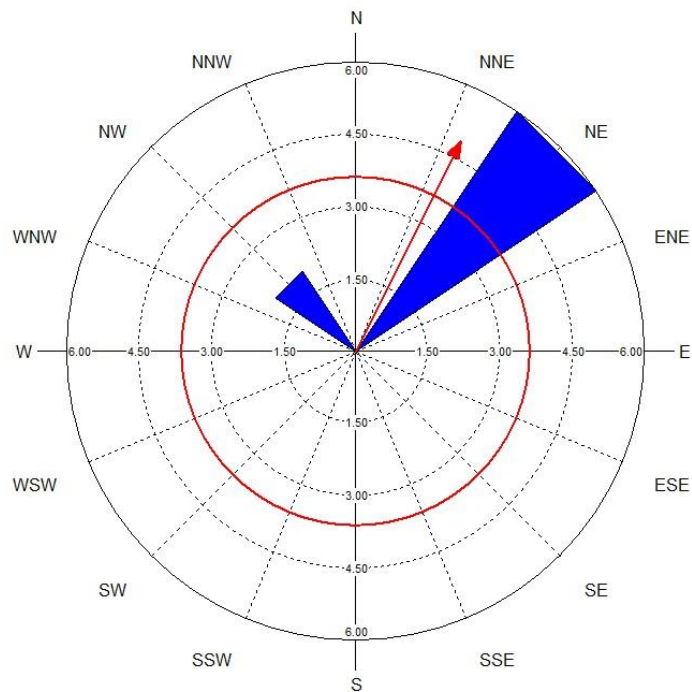
Razorbill flight direction - February



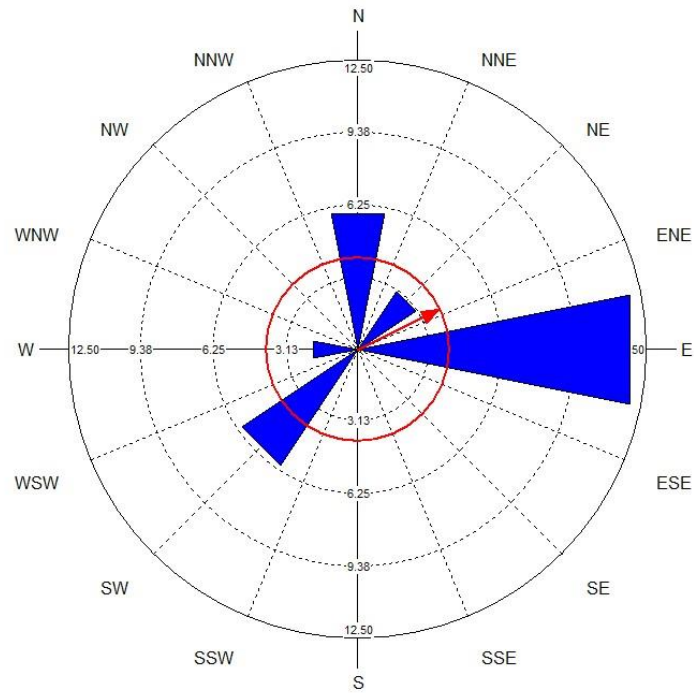
Razorbill flight direction - March



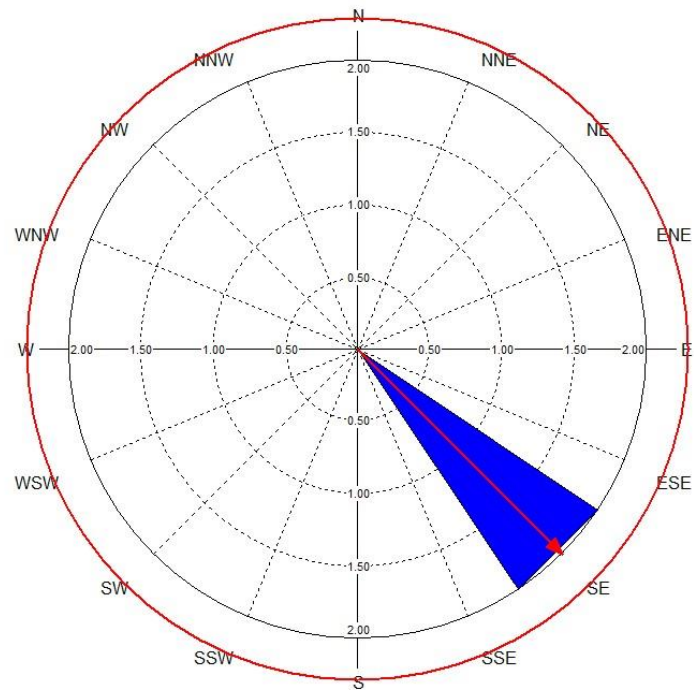
Razorbill flight direction - April

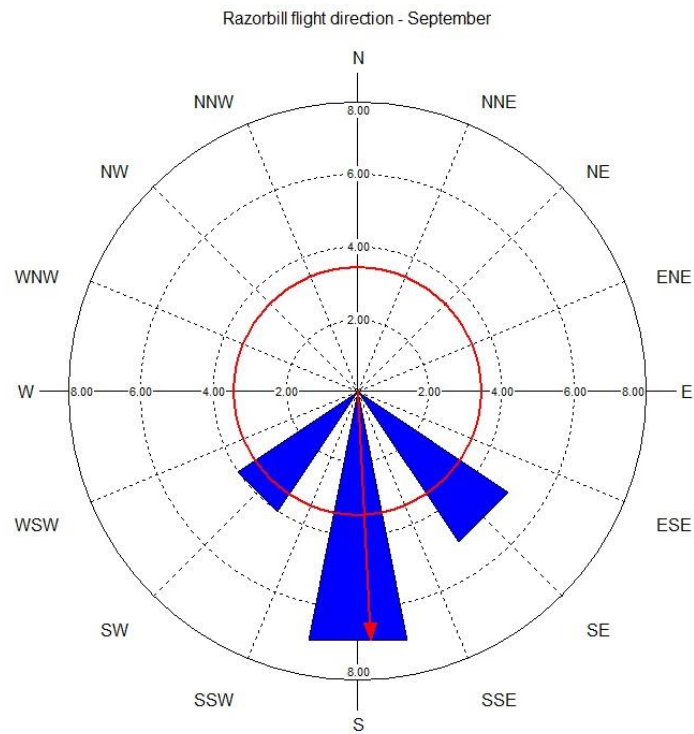
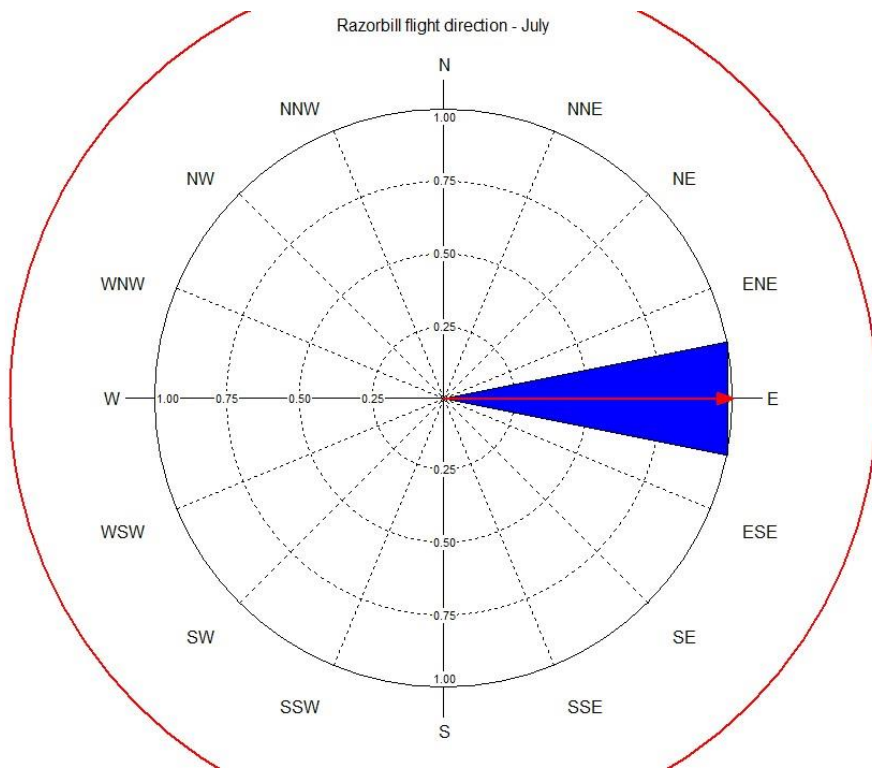


Razorbill flight direction - May

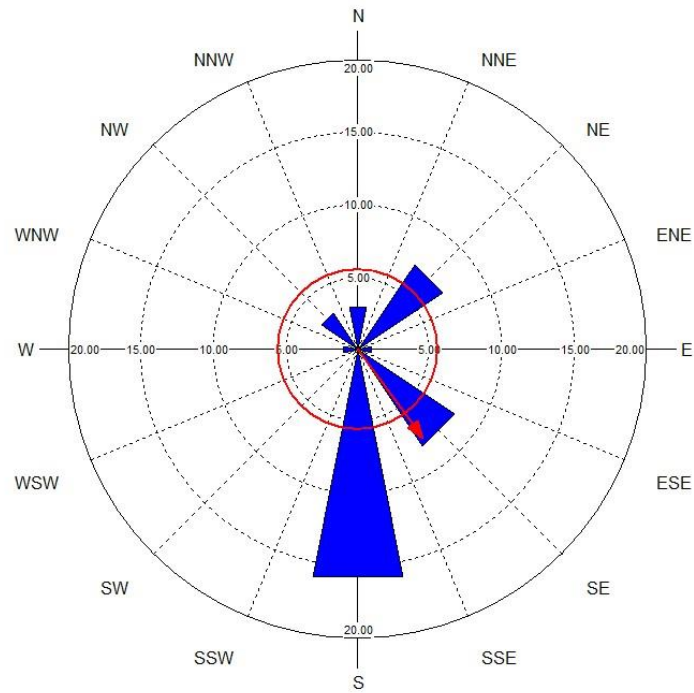


Razorbill flight direction - June

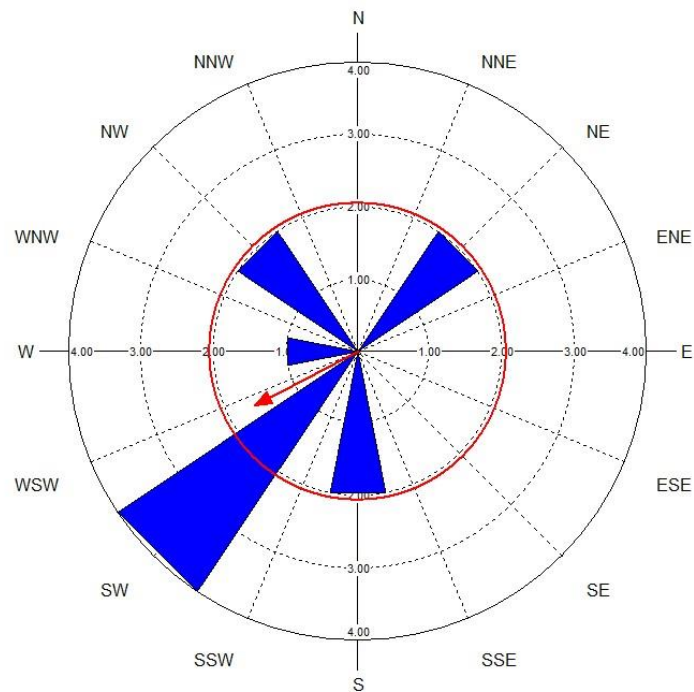




Razorbill flight direction - October



Razorbill flight direction - November



Appendix D: Age Classification of Seabirds from Site-Specific Surveys

Gannet

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	1	0	0	4	0	0
May-16	12	0	0	28	0	0
Jun-16	34	5	0	63	6	0
Jul-16	27	0	0	36	0	0
Aug-16	6	0	0	24	1	0
Sep-16	1	9	1	1	12	1
Oct-16	9	2	0	24	3	1
Nov-16	23	1	0	35	2	0
Dec-16	14	2	0	30	2	0
Jan-17	0	0	0	0	0	0
Feb-17	2	0	0	4	0	0
Mar-17	13	0	0	15	0	0
Apr-17	2	1	0	6	1	0
May-17	2	0	0	2	0	0
Jun-17	4	0	0	11	1	0
Jul-17	15	2	0	39	2	0
Aug-17	34	0	0	53	1	0
Sep-17	9	1	0	17	2	0
Oct-17	6	0	0	12	0	0
Nov-17	28	1	0	60	1	0
Dec-17	1	0	0	6	0	0
Jan-18	3	0	0	12	0	0
Feb-18	0	0	0	2	0	0
Mar-18	3	0	0	7	0	0

Razorbill

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	0	0	1	0	1
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0

Guillemot

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	15	0	15	33	0	33
Jul-16	45	0	46	95	0	97
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	28	1	27	72	1	72
Aug-17	10	0	9	36	0	35
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0

Large auk

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0
Jul-16	1	0	1	1	0	1
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0

Auk / small gull

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0
Jan-18	1	0	0	1	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0

Kittiwake

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	106	0	0	205	1	0
May-16	60	1	0	208	4	0
Jun-16	98	1	0	177	2	0
Jul-16	49	0	0	78	0	0
Aug-16	38	0	0	195	2	0
Sep-16	41	0	4	68	1	8
Oct-16	2	0	0	5	0	0
Nov-16	0	0	1	0	0	1
Dec-16	13	2	0	23	7	0
Jan-17	11	2	0	20	3	0
Feb-17	2	0	0	4	0	0
Mar-17	22	0	0	46	3	0
Apr-17	15	0	0	30	0	0
May-17	95	7	0	166	9	0
Jun-17	16	0	0	80	2	0
Jul-17	33	0	0	87	0	0
Aug-17	154	0	2	391	3	9
Sep-17	0	0	1	1	0	1
Oct-17	8	1	0	10	1	2
Nov-17	21	2	0	45	4	4
Dec-17	43	5	0	115	17	0
Jan-18	6	0	0	18	2	0
Feb-18	15	6	0	29	17	0
Mar-18	8	1	0	21	9	0

Common gull

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0
Aug-16	2	0	0	2	0	0
Sep-16	0	0	0	0	0	0
Oct-16	1	0	1	1	0	1
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	2	0	0
Apr-17	0	0	0	1	0	0
May-17	0	0	0	1	2	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	1	1	0	3	1	0
Sep-17	0	0	0	0	0	0
Oct-17	4	1	0	10	1	0
Nov-17	0	0	0	1	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	2	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	1	0	0

Black-headed gull

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	1	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	1	0	0	2	0	0

Herring gull

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	1	1	0	1	1	0
Jul-16	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	1	0	0	1	0	0
Jan-17	0	0	0	1	0	0
Feb-17	0	0	0	1	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	1	0	0	1	0
Sep-17	1	0	0	1	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	1	0	0	2	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	1	0	0	1	0	0

Great black-backed gull

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	1	0	0	1	0
Jul-16	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	3	4	0
Nov-16	2	1	0	6	2	0
Dec-16	2	1	0	4	2	0
Jan-17	6	0	0	9	1	0
Feb-17	0	1	0	1	3	0
Mar-17	1	1	0	1	2	0
Apr-17	0	0	0	0	0	0
May-17	0	1	0	0	1	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	6	0	0	10	0	0
Dec-17	5	1	0	8	2	0
Jan-18	4	0	0	9	1	0
Feb-18	1	0	0	4	0	0
Mar-18	0	2	0	0	3	0

Lesser black-backed gull

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	2	0	0	2	0	0
Jul-16	0	0	0	0	0	0
Aug-16	0	0	0	2	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	1	0	0
Jun-17	0	0	0	4	1	0
Jul-17	0	0	0	0	0	0
Aug-17	1	0	0	1	0	0
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	1	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0

Large gull species

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	0	2	1
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	1	0	0	1	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0

Gull species

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	1	0	0	1	0
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0

Arctic / Common tern

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0
Aug-16	1	0	0	1	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	0	0	20	0	0
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0

Common tern

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	1	0	0
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	0	0	0	0	0
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0

Arctic skua

Survey	Hornsea Four Array Area			Array Area Plus 4 km Buffer		
	Adult	Immature	Juvenile	Adult	Immature	Juvenile
Apr-16	0	0	0	0	0	0
May-16	0	0	0	0	0	0
Jun-16	0	0	0	0	0	0
Jul-16	0	0	0	0	0	0
Aug-16	0	0	0	0	0	0
Sep-16	0	0	0	0	0	0
Oct-16	0	0	0	0	0	0
Nov-16	0	0	0	0	0	0
Dec-16	0	0	0	0	0	0
Jan-17	0	0	0	0	0	0
Feb-17	0	0	0	0	0	0
Mar-17	0	0	0	0	0	0
Apr-17	0	0	0	0	0	0
May-17	0	0	0	0	0	0
Jun-17	0	0	0	0	0	0
Jul-17	0	0	0	0	0	0
Aug-17	0	0	0	1	0	0
Sep-17	0	0	0	0	0	0
Oct-17	0	0	0	0	0	0
Nov-17	0	0	0	0	0	0
Dec-17	0	0	0	0	0	0
Jan-18	0	0	0	0	0	0
Feb-18	0	0	0	0	0	0
Mar-18	0	0	0	0	0	0